
A PCC COMPANY
WE CONNECT, GROW AND POWER THE WORLD

OVERVIEW

WESTERN AUSTRALIAN SPECIALTY ALLOYS

Western Australian Speciality Alloys are a manufacturer and global supplier of Ni Superalloy and select Fe based alloys comprised of two facilities – WASA Perth, a specialist melting facility with expertise in VIM / VAR / ESR melting practices, and WASA Albury, a specialist forging facility with expertise in round billet / bar, block products and shaped bespoke forgings. Both facilities are based in Australia and are part of Precision Castparts Corp.

WASA - Perth

- Located in Perth, Western Australia
- Commissioned in 1993
- 6800 m^2 of manufacturing areas
- Exclusively for melting of high temperature Superalloys

WASA - Albury

- Located in Albury, New South Wales
- Acquired by WASA in 2013
- 12000 m^2 of manufacturing areas
- Forging operation for nickel and steel alloys

PERTH

CAPABILITIES

VIM / VAR / ESR CAPABILITIES

WASA's vacuum induction furnace has a melting capacity of 5 tonnes (11,000 lbs) or 15 tonnes (33,000 lbs) and can produce input stock for master melts or secondary and tertiary melting.

WASA's VAR furnaces have upgraded control systems for precision melting control. Ingots can be supplied via the double melt VIM + VAR process or the triple melt VIM + ESR + VAR process for premium quality rotating grade applications.

WASA operates modern Consarc and ALD manufactured ESR furnaces for the supply of round double melted VIM + ESR ingots or as feedstock for the VAR in the triple melt VIM + ESR + VAR process.

ALBURY

CAPABILITIES

FORGING / HEAT TREATMENT / MACHINING / TESTING / CERTIFICATION

Forging and Auxiliary Equipment
Davey 2300 Tons Open Die Hydraulic Press:

- Fully re-built and upgraded in 2012
- Double rail bound manipulators
- Fully integrated control system
- Six forge furnaces certified to AMS 2750
- Medart bar peeler and full machine shop with CNC capabilities
- Matec immersion ultrasonic tank - Fully NADCAP certified
- Heat treatment furnaces surveyed to AMS 2750

Forged Products

- Inconel - 625, 718, 725, 825, 925, 945X
- Bars
- Slabs
- Discs
- Stepped Forgings / Bespoke Forgings

Fully integrated lab and test facilities, which include the ability to perform destructive inspection including:

- Tensile
- Impact
- Hardness
- Micro & Macro
- Cleanliness
- Grain Size
- Non-Destructive Ultrasonic
- Mag Particle
- Dye Pen & Dimensional Inspection

WROUGHT PRODUCT

SUPERALLOY INGOT/ BILLET / BAR

Producers of VIM / VAR or VIM / ESR Superalloy ingot, billet, bar, and block for forging, ring rolling, and machining applications for space exploration, commercial and military aerospace, power generation, and oil & gas markets.

Profile consists of over 40 wrought alloy grades including IN718, Waspaloy, IN625, X750, 13/8, IN725, IN925, R41, IN945, IN945X, S188, C263, IN907, IN909.

WASA Wrought Advantage

- Flexible MOQ's
- Competitive lead times
- Competitive pricing
- Local stocking where applicable to facilitate expedited / on-time delivery

Wrought Product Condition of Supply

- Turned or peeled
- Ingot sizes:

  Nominal 16”(405mm) diameter

  7275lbs (3300Kg) finished ingot weight

  Double melt process

  Nominal 20” (508mm) diameter

  9480lbs (4300Kg) finished ingot weight

  Double or triple melt process

  Nominal 24” (610mm) diameter

  14550lbs (6600Kg) finished ingot weight

  Double melt process

- 18” VIM / ESR ingot

  Nominal 18” (457mm) diameter

  9260lbs (4200Kg) finished ingot weight

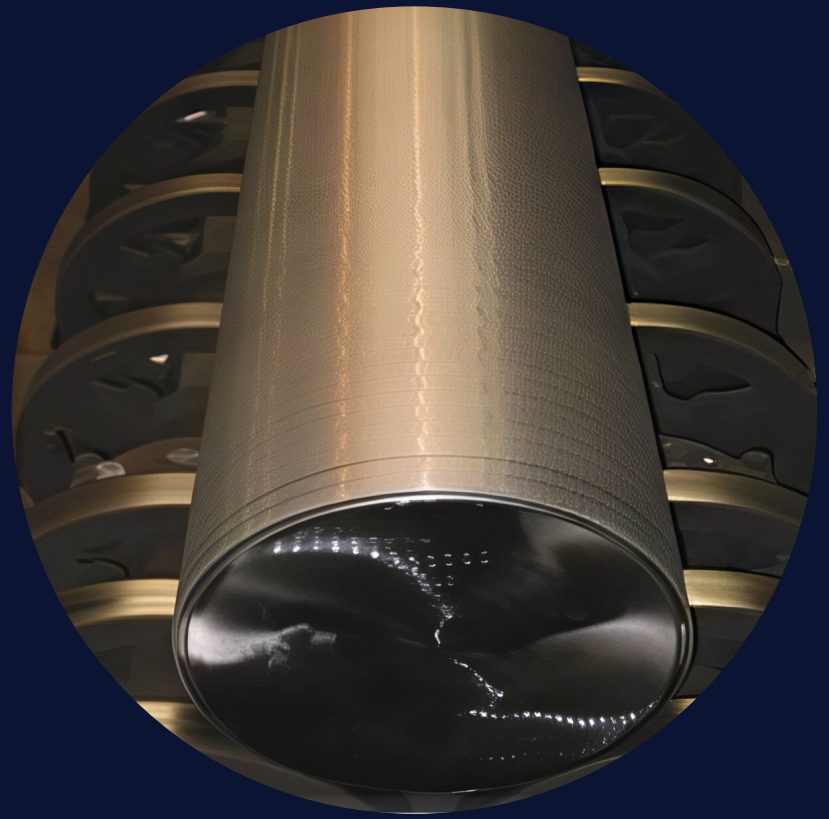
- 6” - 14” round billet, other sizes or stepped forgings available on request
- 4” thick – 23” wide block, rough-machined to size
- Random lengths or cut weight

CAST PRODUCT

VIM SUPERALLOY MASTER BAR STOCK

Producers of VIM Superalloy ingots either for use in casting applications or input stock for powder material for space exploration, commercial and military aerospace, and power generation applications.

Master bar-stock used in equiaxed, columnar grain, single crystal and powder atomization applications. With a total portfolio of over 60 separate grades. Examples of the major alloys produced are 13-8, IN738, GTD111, R108, MM247, IN792, MM002, C1023, IN713, IN718, R77, PWA1455LS, PWA1475LS, IN100, R88, RR1000, ME16, SRR99, IN939.



WASA Cast Advantage

- Brick Lining for crucible - this leads to reduced abrasion and hence reduced ceramic inclusions in melt
- Direct pour launder system, direct fill of stick moulds, reduced inclusions
- Double filtered as standard, triple filter available
- Local stocking where applicable to facilitate expedited / on-time delivery
- Competitive lead times
- Competitive pricing

Cast Product Condition of Supply

- Ground
- Shot blast
- Laser cleaned
- 3” up to 7” diameter
- Notched to weight
- Cut to weight
- 5t MOQ / order increments

Melting Capabilities

- Vacuum Induction Furnace
- WASA’s vacuum induction furnace has a melting capacity of 5 tonnes (11,000 lbs) or 15 tonnes (33,000 lbs) and can produce input stock for master melts or secondary and tertiary melting.

CAST PRODUCT

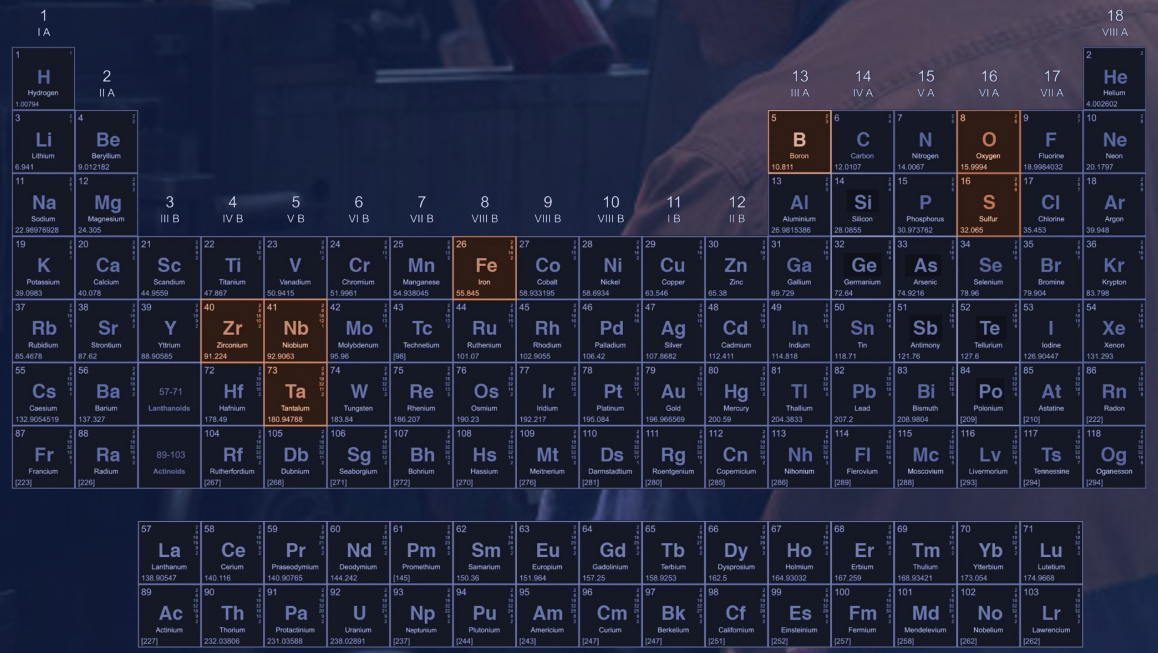
TECHNICAL STRENGTHS

Along with standard grades of Superalloy, we offer collaborative, tailored, chemistries for long life, extreme temperature, resistant applications – beyond the scope of industry practices. Our technical expertise includes:

- Iron based vacuum alloys, derivatives of air cast grades.
- Unusual or one-off chemistries such as Boron dominant bearing Superalloys, rare-earth additions.

We are able to achieve, consistently, ultra low residual levels of targeted trace elements - S, O and other trace elements.

We are able to formulate charges of virgin and/or processed revert to specifications for the most stringent requirements.



QUALITY

APPROVALS & AWARDS

We apply the highest standard of process controls using the very latest in analytical equipment and ensure the most exacting requirements are achieved.

- S1000 (GEAE)
- S400 (GEAE)
- SABRe 9000 (RR)
- ISO 17025
- ISO9001
- AC7000, AC7006, AC7101/1, AC7101/2, AC7101/14 (Nadcap)
- AS9000
- AS9100
- PWA LCS
- NATA 17025

HISTORY OF SUPPLY

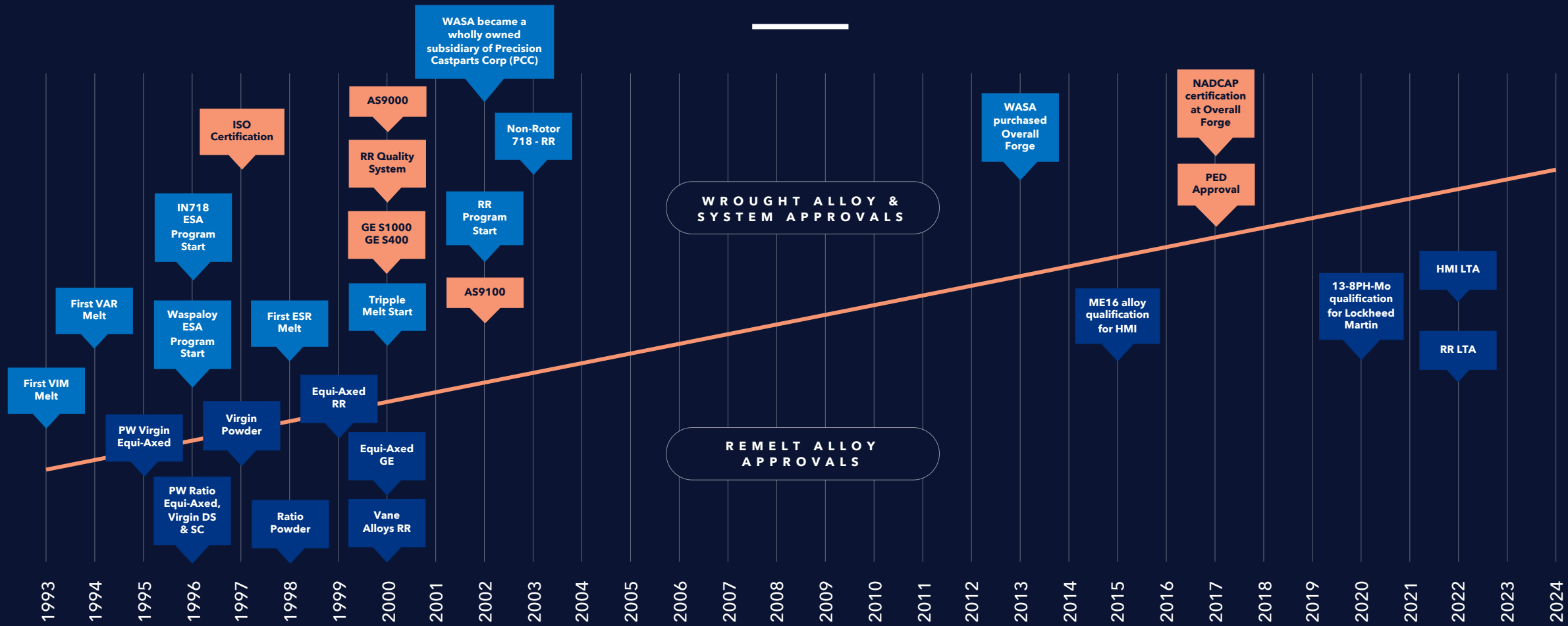
- Approved supplier to **Pratt and Whitney** since 1995.
- Approved supplier to **Rolls Royce** since 1999.
- Approved supplier to **GE** since 2000.
- Approved supplier to **Turbomeca** since 2005.
- Approved supplier to **Boeing** for 13/8 since 2012.

Approval from aircraft engine manufactures **GE, Rolls Royce** and **Pratt and Whitney**, for ingot melting procedures used for forging and casting alloys.

WASA also supplies to IGT customers including **Siemens**, **Alstom**, **Mitsubishi** and **GE**. Oil & Gas customers include **Exxon Mobil**, **Chevron** and **BP**.

TIMELINE

EVENTS SINCE COMMISSIONING IN 1993



CONTACT

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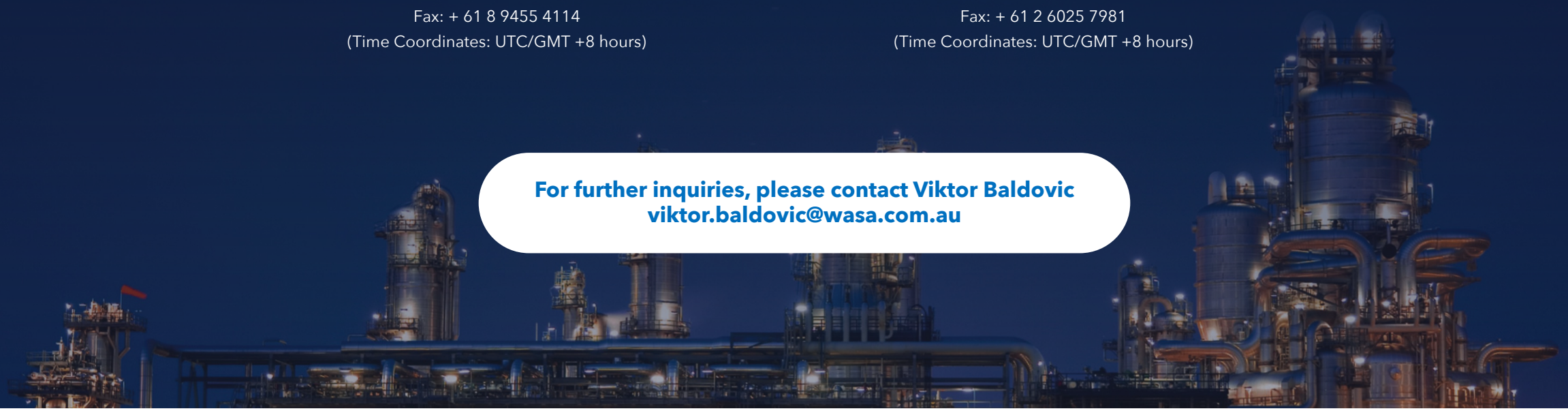

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