



When all you need is everything

Let us be your partner of choice

Howco has invested in manufacturing and processing facilities on a global scale for many years, and confidently provides the entire spectrum of services from raw materials to finished parts.

Our thorough understanding of both materials and their properties, combined with more than 40 years of experience of the demanding sectors we serve, ensures that everything we contribute is fit for purpose.

- Raw Materials
- Inventory Management
- Semi Finished Products
- Precision Machined Components
- Pressure Testing & Assembly
- Additive Manufacturing
- Electromechanical Assembly
- Heat Treatment
- Fully Independent Test Laboratory
- Turnkey Solutions



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Materials

Materials for the most challenging applications

Howco holds extensive inventories of Low Alloy Steels, Nickel and Super Alloys, Stainless, Duplex, Super Duplex and Non-Magnetic materials and is a global provider of these products to a range of industries including upstream, mid and downstream and the energy sector.

PRODUCT FORMS

- Ingot / Billet
- Forged and Rolled Round Bar
- Forged Flat Bar
- Tubulars i.e. Mechanical Tube, Coupling Stock, Hollow Bar, OCTG

SEMI-FINISHED / FINAL MACHINED PRODUCTS

- | | |
|-----------------------------|---|
| • Tubing Hangers | • Valve Internals / Actuator Components |
| • Tree Caps | • Polished Bore Receptacles (PBRs) |
| • Tubing Heads | • Mandrels |
| • Production/Annulus Blocks | • Extensions |
| • Bonnets | • Flow Couplings |
| • Bored / Honed Bar | • Pup Jts |
| • Pump Shaft Bar (PSQ) | |

FORGED PRODUCT

- | | |
|-------------------|------------------------|
| • Shaped Forgings | • Rolled Ring Forgings |
| • Blocks | • Blanks |
| • Shafts | |



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MATERIALS

NICKEL & SUPER ALLOYS

- | | |
|-------------|--------------|
| • Alloy 625 | • Alloy 945 |
| • Alloy 718 | • Alloy 945X |
| • Alloy 725 | • G3 |
| • Alloy 825 | • 28CR |
| • Alloy 925 | |

STAINLESS, DUPLEX & SUPER DUPLEX

- 304/316L
- 410
- 420 Modified/13Cr
- 13-5-2/ Super 13Cr
- F6NM
- 17-4 PH
- S31803-F51 (Duplex) /22 Cr
- S32760-F55 (Super Duplex)/25 Cr

LOW ALLOY STEELS

- | | |
|--------------|--------------|
| • 4130/4130M | • 8630/8630M |
| • 4140/4140M | • F22/F22M |
| • 4145/4145M | • 9Cr |
| • 4324 | • L80 T95 |
| • 4330v | • C110 P110 |
| • 4340 | • Q125 |
| • 8620 | |

NON-MAG

- 1515-HS MAX / SCF-260
- SCF-19



Materials and precision engineering for tomorrow's energy

Our world energy mix is changing. Energy security, climate change, the need to reduce greenhouse gas emissions to achieve Net Zero and the requirement of affordable, clean energy solutions means major shifts are underway today from governments, companies and investors. These are driving a rise in clean energy technologies that will change the energy landscape for future generations.

Knowledge and expertise

As a leading global distributor and processor of Nickel Alloys, Low Alloy, Stainless Steel and Duplexes to the energy sector, we have continually adapted and evolved over a 40 year history to the ever-changing needs of customers, and the role we are playing in today's Energy Transition is no exception.

From downhole and subsea to surface applications, where high pressure, high temperature and corrosive conditions reign, materials supplied by Howco can be found.

Current and future segments include:

- Carbon Capture and Storage
- Electrification
- Geothermal
- Offshore Wind



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Our Energy Transition team members are taking their understanding of materials and their properties, combined with decades of experience of the demanding sectors they serve, to ensure that they are ready to deal with more Energy Transition requirements.

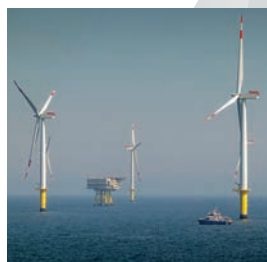


We have invested in manufacturing and processing facilities on a global scale for many years and we have the capabilities to supply ingot, billet, forged and rolled bar and forged flat bar. Our in-house processing provides the flexibility to offer a full range of semi-finished and full turnkey components from our 3 dedicated precision engineering sites. With that in mind, we're proud of the past and we're prepared for the future of Energy Transition.

World Class. Worldwide.

11 locations in 6 countries:

UK - SCOTLAND, ENGLAND
USA - TEXAS, LOUISIANA, OKLAHOMA
NORWAY
SINGAPORE
DUBAI, UAE



Integrated Services



Sawing

- Cutting range from 12.7mm to 1300mm diameter capacity
- Automatic and lights out operation
- Material Handling up to 26,000kgs
- Bundle cutting for large quantities for all sections
 - round, squares and flats

Forging

One of Howco's many core strengths is our technical expertise in forging to precise parameters that meet the exacting needs of our customers. By ensuring that the optimum characteristics are achieved during forging, we are able to supply the highest quality products in Nickel Alloys, Stainless Steel and Low Alloy from raw ingot through to fully heat treated near net shape components.





First Stage Machining

Howco's global first stage machining capabilities utilise both conventional and CNC machinery. Our worldwide resources offer capacities up to 1270mm work piece diameter and work piece weight up to 26,000kgs.

Supplying a near net shape component provides:

- Improved product integrity
- Components with uniform metallurgical properties
- Reduced machining costs
- Reduced energy costs
- Reduced logistics costs

Deep Hole Boring

We offer an unrivalled range of capacity and capability worldwide to our customers including:

- Deep Hole Drilling machines – 18
- Bore sizes available from 25mm - 483mm dia from solid bar
- Parts from 50mm – 10,000mm in length & up to 1010mm dia

As a result, we are able to machine an extensive range of products using solid, counter and pull boring techniques, as well as offering skiving and honing as finishing processes.

PRODUCT RANGE INCLUDES:

- PBR
- Drill Collars
- Offset Boring
- Seal Bore Extensions
- Offset gauge mandrels
- Able to produce cores up to 298mm max through trepanning



Heat Treatment

Howco prides itself on operating one of the largest capacity heat treatment facilities in the UK, specialising in the heat treatment of Nickel Alloys, Stainless and Low Alloy steels.

We utilise energy efficient furnaces, maintaining tight quality control over the heat treatment process to provide exceptional quality and on-time service.

- Various sized furnaces up to 20 Tonnes, max. length 6.4m
- Fully computerized recording system producing digital furnace charts
- Annealing, normalising, age & precipitation hardening, tempering
- Solution annealing
- Stress relieving
- Quench media – water, polymer, oil with sub 60 second transfer time
- Straightening to commercial tolerances up to 14" diameter/350mm
- Temperature ranges 500°C - 1100°C offering tolerances of +/-5°C
- Hardness inspection



Testing

Mechanical and metallurgical testing is provided by our fully independent ISO17025 UKAS-accredited test laboratory, offering a range of Mechanical, Metallurgical and Corrosion Testing carried out to recognised national and international standards within many sectors of the metals industry. Fields of capabilities include:

METALLURGICAL TESTS:

- Grain Size
- Ferrite Count
- Cleanliness Test
- Corrosion Test
- Micro Examination (including API 6A CRA)
- Macro Examination

MECHANICAL TESTS:

- Tensile
- Impact
- Hardness



Non-Destructive Testing

At our wide-ranging test facilities around the world, qualified inspectors and technicians conduct non-destructive testing across the whole range of products as well as offering consultancy services in these fields of expertise.

NON-DESTRUCTIVE TESTS:

- PCN Level III consultancy
- Procedure – technique sheets and scan plan writing in all disciplines
- PCN Level II Operators
- Phased Array Ultrasonic testing
- Ultrasonic testing (UT) – Forgings / Wrought Products & the Weld sector
- Magnetic Particle Inspection (MT)
- Dye Penetrant Inspection (PT)
- Positive Material Inspection (PMI)
- Visual Inspection (VT)

INSPECTION

Howco has invested in a comprehensive range of inspection equipment to ensure full compliance and certification in accordance with today's demanding material requirements.





HOWCO

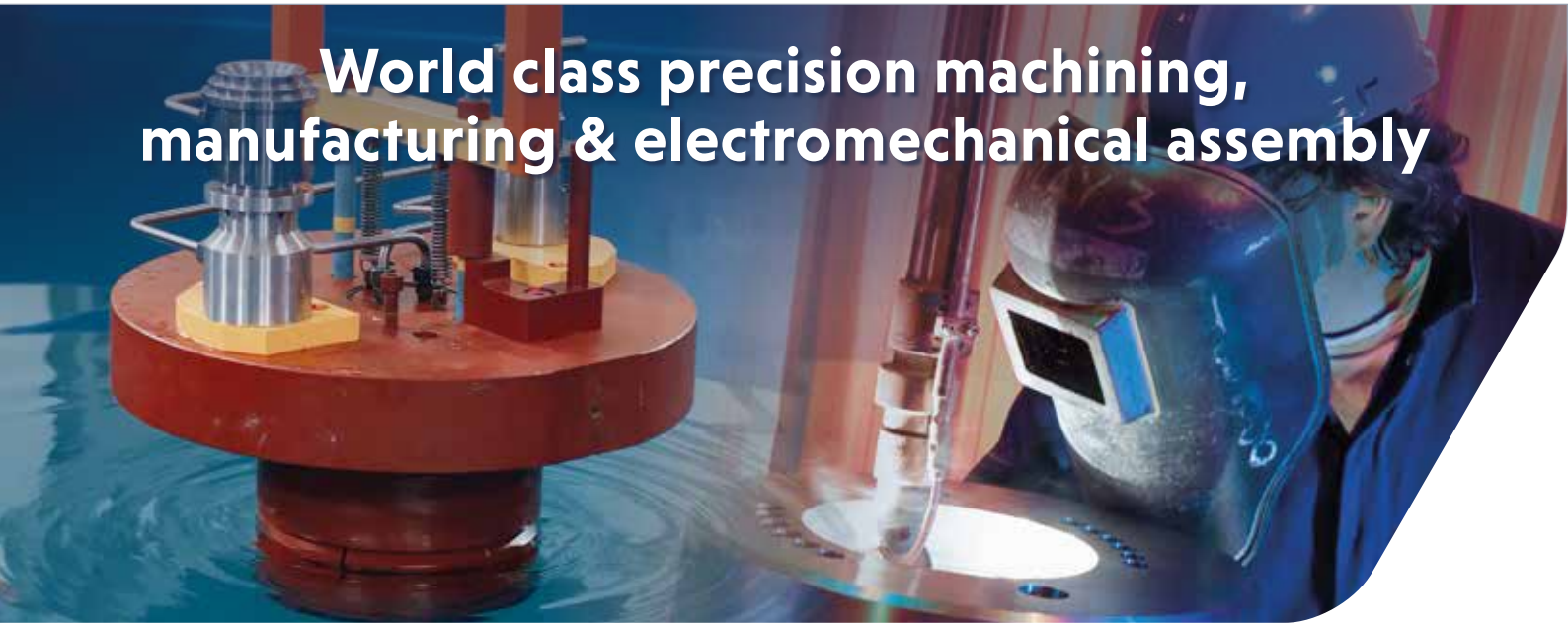
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World class precision machining, manufacturing & electromechanical assembly



CNC Machining

A wide range of Millturn Machines, Vertical Borers and Horizontal Borers are operated by a dedicated team of machinists trained to the highest of standards. This allows them to exploit the full capabilities of our machine tools including features such as;

- 5 Axis Machining
- Facing & Contouring Heads
- Multi – Angled Milling Heads and Outfacing Bars

Assembly & Pressure Testing

Approved Hydrostatic and Gas testing facilities in-house, complete with full electronic data recording capabilities for real time production of certification.

- 2 x 550 m² Assembly and Pressure Test Facilities
- Lifting capabilities of 20 ton
- Hydrostatic Pressure Testing up to 23,000 psi
- Gas Testing up to 20,000 psi



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Weld Cladding & Overlay Facility

The compact and vertical cladding systems of our established supply chain partners are designed to perform fully-automated GTAW build-up of corrosion-resistant alloy welding on engineered components for the oil & gas, petrochemical and engineering sectors.

Modern Butt Welding Stations are designed to perform automated GTAW butt welds. The use of automation gives improved quality control and repeatability for batches of components.



Electric Post Weld Heat Treatment (PWHT) & Stress Relieving ovens suitable for the heat treatment of welded components to industry standards/requirements or for stress relieving operations which assists with maintaining machining tolerance during production.



Coating & Finishing

All coating processes are qualified in line with customer/industry requirements

- Norsok M-501 System 7 B & C, System 1 coatings
- Phenolic Based Thermosetting Resin (PTFE) coatings
- Phenolic Based Thermosetting Resin (Primer with Moly Disulphide) coatings
- Everslik 1201/1301 Bonded Molybdenum Disulphide Coatings
- Polyurethane Coatings
- Phosphating process – M-ZN 4333
- Shot blasting (aluminium 60-80)
- Coating inspection personnel Nace level 2, ICorr level 3 qualified



Electromechanical Assembly

Howco Scientific is involved in a number of sectors including Oilfield, Semi-Conductor and Scientific Instrument Industries and our vision is to become a one-source supplier for all our customers' turnkey manufacturing requirements.

We provide turnkey electromechanical assemblies and sub-assemblies to customer drawings/designs/specifications.

- Aqueous UHV cleaning
- Cleanroom technology (Class 10,000)
- Electromechanical Assembly
- Helium leak checking (Min. detectable leak rate < 5 x 10⁻¹² mbarL/s)
- Engineering Support



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Additive Manufacturing



With continued investment in manufacturing and processing facilities we are able to provide an outstanding and cost-effective solution to the supply of metals and components around the globe. Howco has the utmost confidence in its manufacturing capabilities and believes in putting them to the test.

Howco Additive, founded in 2019, specializes in production parts and engineering services using Laser Powder Bed Fusion Technology.

3D Direct Metal Printing Services Specializing in:

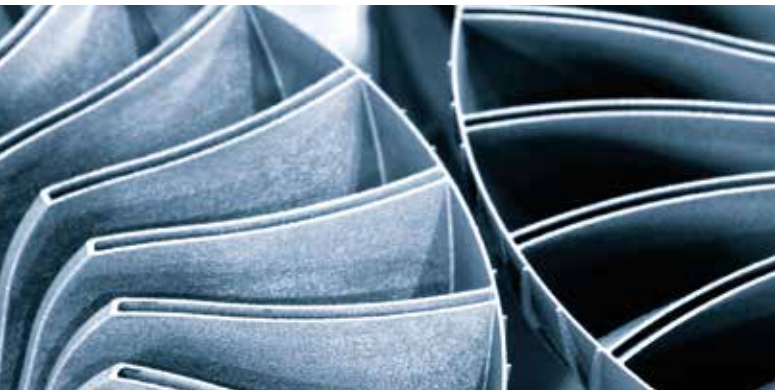
- Ti-based Alloy Ti6Al4V
- Ni-based Alloy 718
- Ni-based Alloy 625
- Fe-based Alloy 316 (1.4404)
- Nb-based Alloy C103

Services Available

- L-PBF (Laser Powder Bed Fusion) Printing
- 3D Scanning
- Heat Treatment
- Engineering/Designing for Additive
- Reverse Engineering
- Surface Finishing
- 5 - Axis CNC Machining

ITAR Registered

AS9100D - Manufacture of Additively Manufactured Parts including Machining, Heat Treatment, Testing and Hot Isostatic Pressing.



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Accreditations

LRQA ISO 9001: 2015 QUALITY ASSURANCE

- Howco Group Global

LRQA AS 9100D: QUALITY ASSURANCE

- Howco Houston, USA

LRQA ISO 14001: 2015 / ISO 45001 : 2018 OCCUPATIONAL HEALTH & SAFETY STANDARD

- Bredbury | Cumbernauld | Irvine | Sheffield | Norway

LRQA ISO 50001: 2018

ENERGY STANDARD - HELD BY ALL UNITED KINGDOM
MANUFACTURING SITES.

- Bredbury | Cumbernauld | Irvine | Sheffield

ISO 17025: 2017

TEST LABORATORY MECHANICAL TESTING

- Howco, UK (Sheffield)

WORLDWIDE ASNT NDE LEVEL II: NONDESTRUCTIVE TESTING

- Howco, Cumbernauld, UK
- Howco, Sheffield, UK
- Howco, Dubai, UAE
- Howco, Houston, USA
- Howco, Irvine, Scotland
- Howco, Singapore
- Howco, Figgjo, Norway

API-5B MONOGRAM

- Howco, Dubai, UAE

API-7-2 MONOGRAM

- Howco, Dubai, UAE

API SPECIFICATION Q1

- Howco, Houston, USA
- Howco, Cumbernauld, UK
- Howco, Dubai, UAE





World Class. Worldwide.

Howco manufactures and distributes high performance alloys and components for deployment in the world's most challenging scenarios, conditions and locations.

Our clients are typically in the energy sectors - clients who work exclusively with suppliers that truly understand the value and importance of what they do.

From multiple locations in 6 countries on 4 continents, we supply products of unparalleled integrity. Limiting service disruption, downtime and costs for our customers, we truly are world class, worldwide.

**GLASGOW SCOTLAND
CORPORATE OFFICES ONLY**

2nd Floor Fountain House
1-3 Woodside Crescent
Glasgow, G3 7UL
Tel: +44 (0)141 353 7800
finance@howcogroup.com

CUMBERNAULD, SCOTLAND

3 Blairlinn Road
Cumbernauld, G67 2TF
Tel: +44 (0)1236 454111
EuropeDistEnquiries@Howcogroup.com

IRVINE, SCOTLAND

Drybridge Park, Shewalton Road
Irvine, KA11 5AL
Tel: +44 (0)1294 313131
EuropeManEnquiries@Howcogroup.com

SHEFFIELD, ENGLAND

211 Carbrook Street
Sheffield
South Yorkshire, S9 2JN
Tel: +44 (0)114 244 6711
EuropeDistEnquiries@Howcogroup.com

BREDBURY, ENGLAND

Cromwell Road, Bredbury
Stockport, SK6 2RH
Tel: +44 (0)161 430 3173
EuropeManEnquiries@Howcogroup.com

WARRINGTON, ENGLAND

U18/19 Birch Court
Grosvenor Grange, Woolston
Warrington WA1 4GD
Tel: +44 (0)161 430 3173
EuropeManEnquiries@Howcogroup.com

FIGGJO, NORWAY

Fladene 7
4332 Figgjo, Norway
Tel: +47 51 97 17 70
EuropeDistEnquiries@Howcogroup.com

HOUSTON, TEXAS

9611 Telge Road
Houston, TX 77095
Tel: +1 281 649 8800
Toll Free: +1 800 392 7720
WHEnquiries@Howcogroup.com

KIEFER, OKLAHOMA

14963 S 49TH West Ave
Kiefer, Oklahoma 74041
Tel: +1 918 992 6869
WHEnquiries@Howcogroup.com

GRAY, LOUISIANA

3639 West Park Ave.
Gray, Louisiana 70359
Tel: +1 985 872 1297
WHEnquiries@Howcogroup.com

SINGAPORE

21 Tuas South Street 5
Singapore, 637384
Tel: +65 6597 1050
Tel: +65 6861 3885
APEnquiries@Howcogroup.com

DUBAI, UAE

PO Box 50273
Hamriyah Free Zone
Sharjah
UAE
Tel: +971 (0)6 5139500
MiddleEastEnquiries@HowcoGroup.com