



# BRODER METALS GROUP

## Product and Services Catalogue

**Our philosophy:** customer service first, second & third — quick response to requests for quote, same day / next day service on UK deliveries, long term relationships, and generally making the extra effort — all to earn our motto of 'Global Reach, Personal Touch'.

**Stock range:** we hold stocks of the material below and offer a sourcing service to find what you want if it is not in our range. It seems to be appreciated by our UK, European and Worldwide fastener and valve manufacturers and specialist oil & gas sector machinist customer base as it adds up to about 1/3<sup>d</sup> of our turnover.

High Temperature Power Generation Bolting Steel	
<b>Alloy 286/ 660</b>	We supply only air melt material to ASTM A453 GR 660, ASTM A653 (Type 1) UNS S66286. Material is supplied to ASTM A453 with stress rupture tests to conform to 660 grade A and to meet grade D requirements (giving a guaranteed yield strength of 105 ksi minimum).  <b>We stock a range of sizes from 8mm/ 0.3" to 436mm/ 17'1" diameters.</b>
<b>BMG-AT41</b>	Our material meets or exceeds the following industry standard specifications: National - BS 1506 681-820, BS 4882 B16A, BSEN 10269 1999, Material Number 1.7729, CEGB - GDCD TD2 ISS2, CEGB 0259604/82 041). 20CrMoVTiB4-10 GEC Turbine Generators Ltd - spec 30/227 ISS 10/83, Siemens -AG spec TLV 9185 01, Siemens UK 221 Other: Durehete™ 1055  <b>We stock a range of sizes from 15.8mm/ 5/8 diameters to 298.45mm/ 11.3/4" diameters.</b>
Special / Custom Products	
<b>CW112C</b>	CW112C is also be known by its copper numbers C70250 and C70320 and chemical reference CuNi3Si.  <b>We stock a range of customer specific sizes</b>
<b>Bespoke Forging and Pipe-work Fittings</b>	We supply bespoke forgings as black or finished machined shapes as well as finished product such as flanges. We complement the latter with a wide variety of fittings for gas and fluid pipework system components — tube, pipe, bar and plate.
<b>Sourcing Service</b>	We use our extensive industry knowledge and contacts to locate products/grades/sizes that customers prefer us to source for them. Examples include: 15/5PH, 321, 410, 4130, 4140, 4142, 416, 420, 431, 440C, 60, 600, 725, 800H/HT, 904, 925, ALLOY 20, 82, 87, BS1387, BS2870, C22, C276, C61400,C71500, C95800, CZ121, D5, F22, F44, F51, F55, JETHETE, NITRONIC 50, PN102, PH13 8MO, SW342 and many more.

All our material is of European or USA origin, from mills that have certified they do not source conflict minerals in compliance with the Dodd—Frank Wall Street Reform and Consumer Protection Act 2010.

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Corrosion Resistance Alloys	
<b>MP35N</b>	<p>We stock the cold drawn and aged variety to meet the requirements of NACE MR 0175, and can also source the AMS 5844 high strength variety with capability to meet AMS 5845.</p> <p><b>We stock a range of sizes from 12.7mm / ½" diameters to 76.2mm / 3" diameters</b></p>
<b>C276</b>	<p>ASTM B574, UNS N10276, Werkstoffe 2.4819</p> <p><b>We stock a range of sizes from 10 mm / 0.39" diameters to 250 mm / 9.84" diameters</b></p>
<b>UNS 32760 F55 condition S to meet FG, FLT &amp; FLT+</b>	<p>We supply F55 to ASTM A276 either as solution treated (condition A) or as cold worked (condition S). We also offer the latter with charpy impact test results meeting FG and FLT requirements, as well as our more demanding specification (FLT+ tested at -101 °C with single minimum 35 Joules, average over 3 tests of 45 Joules minimum).</p> <p><b>We stock a range of sizes from 15.875mm / 5/8" diameters to 383mm / 15.07" diameters</b></p>
<b>Alloy 718</b>	<p>Our stock is bought to meet API 6A 718 and NACE requirements and meets most application uses for the oil industry to maximise resistance to stress corrosion cracking or treated to give maximum strength, high creep resistance and weldability.</p> <p><b>We stock a range of sizes from 12.7mm / 1/2" diameters to 405mm / 15.94" diameters</b></p>
<b>Alloy 625</b>	<p>We stock Alloy 625 in the annealed condition to provide good strength and hardness. Our material can be released to the following specifications: ASTM 8446-03 Grade 1, UNS N06625 GRADE I/DIN 2.4856, AMS 5666 REV F, BS3076 1989 NA21, NACE MR0175 (ISO 151563, latest version). We can also convert to ASTM B446-03 Grade 2.</p> <p><b>We stock a range of sizes from 12.7mm / ½" diameters to 406.4mm / 16" diameters</b></p>
<b>Alloy K500</b>	<p>We supply Alloy K500 material in both the cold worked and hot worked and aged condition to the following specifications: BS 3076-89 NA18, UNS N05500, ASTM B865-04, QQN-286, NACE MR0175/ISO 15156-3 2003.</p> <p><b>We stock a range of sizes from 12.7mm / 1/2" diameters to 406.4mm / 12" diameters</b></p>
<b>Alloy 825</b>	<p>We supply round bar to the full range of the following specifications: ASTM B425, UNS N008825, BS ISO 3076 NA16, NACE MR0175/ISO 15156-3, Werkstoffe 2.4858 We can supply material in the hot worked annealed and peeled or annealed and cold drawn.</p> <p><b>We stock a range of sizes from 8mm / 0.31" diameters to 340mm / 13.5" diameters</b></p>
<b>17/4 PH</b>	<p>We stock material to meet the following specifications:</p> <p>ASTM A564 type 630, AMS 5604, UNS S17400, EURONORM 1_4542 X5CrNiCuNb 16-4, AFNOR Z5 CNU 17-4PH, DIN 1 4542, ASTM A484. We also offer 17-4 PH to 1150D double aged to provide higher tensile strengths.</p> <p><b>We stock a range of sizes from 12.7mm / ½" diameters to 619.25mm / 24.37" diameters</b></p>

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<b>HTS</b>	Material is produced to meet EN ISO 3506-1 (and associated AKER & FMC specifications) and ASTM A193 bolting specifications. <b>We stock a range of sizes from 14.3mm / 0.56" diameters to 63.5mm / 2.5" diameters</b>
<b>BroderNab 22 (C63200 to TQ-50)</b>	Material is offered to meet ASTM B150: C63200 TQ-50 (Quench hardened & temper annealed) <b>We stock a range of sizes from 15.875mm / 5/8" diameters to 105mm / 4.13" diameters</b>
<b>BMG-HSCN</b>	Complies with specifications DTD900/4805, C72400, 2.1504, CuNi14A13. <b>We stock a range of sizes from 25.4mm / 1" diameter to 57.15mm / 2.25" diameter</b>

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At Broder Metals Group we understand the difficulties in finding materials to comply with increasingly demanding specifications.

That's why we offer both the testing of materials with intent to meet EN 10204 3.2 and full manufacturing or conversion processing to meet EN 10204 3.1 and 3.2. Please see our table below for our full list of services.

<b>Metal Processing and Testing Services</b>			
Forgings	We can supply black (as forged) as well as rough or finished machined fully tested and complying with all modern standards or to customer's own specifications.		Our bespoke service can handle the production of forgings from 1" diameter to 3 metres and up to a weight of 3 tonnes.
Top Turning	Tensile Elevated	Maximum diameter 406.4mm	Maximum length 2800mm
Heat Treating	Single items to full batch treatments		
Cutting	Maximum diameter 800mm		
Milling	Maximum size 1200 mm square x 600mm long		
Boring	Maximum bore diameter 600mm	Maximum length 2500mm	
Reeling	More than 1" diameter 33000mm maximum length	Less than 1" diameter 1400mm maximum length	All of our subcontractors are approved to relevant standards, all material is sourced from European and US origin unless previously agreed.
Metallurgical Testing	Fraction volume counting, inclusion counts, cleanliness check , grain size, intergranular examination, decarburisation measurement, case depth.		
Mechanical testing	Room temperature, tensile elevated, temperature tensile stress rupture, impacts (Charpy/izod), % shear and lateral expansion, hardness surveys.		
Corrosion Testing	Pitting and crevice corrosion, intergranular corrosion.		
Ultrasonic Inspection	Full inhouse UT level PCN		
Chemical Analysis	Gas analysis (hydrogen, oxygen and nitrogen)	Optical emission	Wet chemistry
Third Party Witness	Management of independent witnessing by: customer, Lloyds register, TUV, Royal Sun Alliance and others.		