

### High Performance Solutions for Large Extrusion Applications



**High Performance Metal Solutions** 

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### Maximize Material Yields through Extrusion Technology

H.C. Starck Solutions is one of the largest producers of refractory materials with world class extrusion capabilities and services. We help customers solve material processing and fabrication challenges with extrusion technology and an extensive knowledge in the processing and metallurgy of a wide spectrum of metals and alloys.

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Our extrusion services offer the ability to convert material to meet the size and shape requirements of customers. With a highly qualified staff of Engineers and Production Developers, we can assist with specifications for your material process and design needs. H.C. Starck Solutions focuses on extrusion process development to optimize extrusion quality and material yields. By producing near-net-shapes and pipes, extrusion reduces machining costs and improves material yields.

H.C. Starck Solutions can also provide extruded products, such as pipe and shapes, in many ferrous and nonferrous metals. We have one of the only extrusion operations in the world that can produce extruded pipe with a flange. As a fullyintegrated supplier, we can manage the entire process from material procurement, extraction billet preparation to a wide range of finishing processes, including heat treatment, cleaning, straightening, and cutting.

Our extrusion expertise comprises specialty metals and alloy based systems including titanium, molybdenum, tantalum, niobium and other metals for large extrusion applications.

## Extrusion Services and Product Offerings for a Wide Variety of Markets



Aerospace & Defense



Medical

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Chemical Processing



Automotive



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Electronics



Energy

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## H.C. Starck Solutions is a World Class Leader in Extrusion Technology

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#### **Technology & Capabilities**

Premiere High Temperature Extrusion Source
Forward extruded shapes and pipe
Back extruded heavy wall pipe
Force

5,000 metric tons (5,500 tons)

**Extrusion Ram Speed** 1.27 – 203 mm/sec (0.05 – 8.0 inch/sec)

#### **Billet Temperature**

260 – 1315 °C (500 – 2400 °F) gas fired controlled atmosphere 815 – 1925 °C (1500 – 3500 °F) induction inert atmosphere

#### Input Billet Diameter 152 – 432 mm (6 inch – 17 inch) diameters

H.C. Starck Solutions is unique in its ability to extrude almost any metal in any size range. From concept to production, from small 6 inch diameter to large scale 17 inch diameter billet, we provide extrusion services to deliver specified material, size and shape to your specific needs. H.C. Starck Solutions' extensive extrusion capabilities allow us to provide extrusion services with as little as two weeks lead-time.

At H.C. Starck Solutions we utilize our 5,000 metric ton (5,500 ton) extrusion press to extrude rods, tubes and shapes from difficult to extrude materials, including:

#### **Copper and Copper Alloys**

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C10100 | C15000 | C16200 | C17200 | C17500 | C18200 C63000 | C70600 | C71500 | Copper and Niobium

Stainless Steels 300 series | 400 series | 15-5 PH | 17-4 PH | Duplex

Nickel Base Alloys C276 | 400 | 625 | 718 | 800H | 925

Titanium and Titanium Alloys CP2 | 6AI | 4V

#### **Refractory Metals**

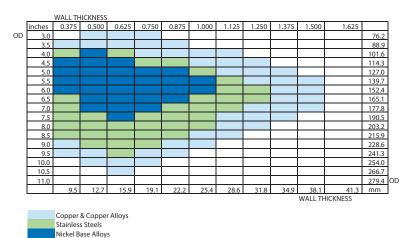
Molybdenum and Molybdenum Alloys Tantalum and Tantalum Alloys Niobium | Chrome

#### **Aluminum Metal Matrix Composites**

Composite Billets

Superconductor Materials Clad Materials

#### PIPE MATRIX



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Pipe capability at 20 feet (6 m) minimum extruded lengths. Please inquire for other sizes and metals.

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