



High Performance Metal Solutions

High Performance Solutions using Rotary Forging

H.C.Starck 

High Performance Metal Solutions

Precision Rotary Forging Minimizes Material Losses

Manufacturing efficiency and scrap reduction are critical factors when dealing with expensive materials. H.C. Starck Solutions has the capabilities to produce precision forged bar products through its state-of-the-art rotary forging technology.

H.C. Starck Solutions developed this process to reduce cost and waste associated with machining. Cost savings are gained from the use of less material and therefore less scrap as well as the reduction or elimination of machining.

In addition to precision forged bar, our CNC controlled forging machine can process produce tapers and steps for near net shape products. A state-of-the-control system samples power, tonnage, temperature and other process data once per second for piece to piece consistency.

Rotary Forging Services and Products

H.C. Starck Solutions produces a wide variety of sizes from a wide spectrum of materials; soft metals such as copper and difficult to forge materials like Cobalt and Nickel Alloys.

We can minimize end effects and outside diameter losses, enabling us to consistently deliver high quality products to our customers. As a fully-integrated supplier, we can take your project from material procurement through billet preparation and forging, to final processing.

Wide spectrum of materials:

- > Cobalt and Nickel Alloys
- > Titanium Alloys
- > High Strength Stainless Steels
- > Cu-Be Alloys
- > Pure Metals

Rotary Forge Capabilities

Geometry

At H.C. Starck Solutions we are capable of producing stepped and tapered products. Geometries depend on the tooling available and the workpiece properties at the desired forging temperature. Tooling can be manufactured for specific applications and requirements. H.C. Starck Solutions' CNC controlled rotary forging machine can typically hold a total forged tolerance of 1 mm (0.040 inch).

Length

The maximum forged length for automatic unload is 6.25 meters (20.5 feet). If needed, longer lengths can be pushed manually to 6.85 meters (22.5 feet). Maximum lengths are dependant on material type and temperature requirements.

Furnace

Our gas fired furnace is 36 inch wide by 36 inch tall by 10 feet deep. We can maintain temperatures ranging from 1500 °F to 3000 °F.

ROUND FORGING INPUT SIZES

Max. Diameter (inch)	6.375	SM	LF	MF	
	6.000	SM			HF
	5.750	SM		LF	
	5.500				MF
	5.000				HF
	4.500		LF		
		25	28	30	31.5
		Minimum Length (inch)			

- Cold Forged: Work piece starts at room temperature
- Cold Working: Hardening of material during working process
- Hot Working: No hardening of material during working process

- Maximum Start Length: 110 inch
- Maximum Weight: 750 kg
- Minimum Forged Diameter: 1.18 inch (30 mm)

HF = High Flow Stress Materials:

- > Co Superalloys
- > Ni Superalloys
- > Ti Alloys

MF = Medium Flow Stress Materials:

- > Tool Steel
- > Precipitation Hardening S.S.
- > Heat Resistant Alloys

LF = Low Flow Stress Materials:

- > Medium Alloy Steels
- > Low Alloy Steels
- > 300 Stainless Steels
- > 400 Stainless Steels
- > Cu-Be Alloys

SM = Soft Metals:

- > Copper
- > Pure Al and others

The Rods chart above defines starting billet diameters and length.

USA

H.C. Starck Inc.

21801 Tungsten Road
Euclid, OH 44117-1117 USA
T +1 216 692 3990
F +1 216 692 0029

H.C. Starck Inc.

45 Industrial Place
Newton, MA 02461 USA
T +1 617 630 5800
F +1 617 630 5879

H.C. Starck Inc.

460 Jay Street
Coldwater, MI 49036 USA
T +1 517 279 9511
F +1 517 269 9512

United Kingdom

H.C. Starck Ltd.

1 Harris Rd.
Calne, Wiltshire SN11 9PT UK
T +44 1249 822 122
F +44 1249 823 800

Germany

H.C. Starck Hermsdorf GmbH

Robert-Friese-Straße 4
Hermsdorf, Germany 07629
T +49 36601 922 0
F +49 36601 922 111

Japan

H.C. Starck Fabricated Products GK

3F Shiodome Building,
1-2-20 Kaigan,
Minato-ku, Tokyo
105-0022 JAPAN
T +81-3-6721-8177
F +81-3-6733-8896

Korea

CMT Co., Ltd.

20, Gangnam-daero 47-gil,
Seocho-gu, Seoul
(Seocho-dong, 2F), 06729, Korea
T +82 2 597 6207

Taiwan

H.C. Starck International Sales GmbH

Room 1307, 13F, No. 88, Sec. 2,
Zhongxiao E. Rd., Zhongzheng
Dist.,
Taipei City 100, Taiwan ROC
T +886 2 2393 3337
F +886 2 2393 2083

China

H.C. Starck Specialty Materials (Taicang) Co., Ltd.

Taicang Zhongyu Science Park
No.111 N. Dongting Rd of Taicang
Taicang City Jiangsu Province 215400
T +86 512 5318 8278
F +86 512 5318 8282

India

H.C. Starck (India) Pvt. Ltd.

Level 2 Raheja Centre Point
294 CST Road Near
Mumbai University Off Bandra-Kurla
Complex, Santacruz (E)
Mumbai, Maharashtra 400 098 India
T +91 72 5917 7599
F +91 22 6162 3086

H.C. Starck (India) Pvt. Ltd.,

#148, Prestige Featherlite Tech Park,
2nd Phase, EPIP Zone, Whitefield,
Bangalore – 560 066
T +91 7259177599

DPAP 03/2020

The conditions of your use and application of our products, technical assistance and information (whether verbal, written or by way of production evaluations), including any suggested formulations and recommendations, are beyond our control. Therefore, it is imperative that you test our products, technical assistance and information to determine to your own satisfaction whether they are suitable for your intended uses and applications. This application-specific analysis at least must include testing to determine suitability from a technical as well as health, safety, and environmental standpoint. Such testing has not necessarily been done by H.C. Starck Solutions. All information is given without warranty or guarantee. It is expressly understood and agreed that the customer assumes and hereby expressly releases H.C. Starck Solutions from all liability, in tort, contract or otherwise, incurred in connection with the use of our products, technical assistance and information. Any statement or recommendation not contained herein is unauthorized and shall not bind H.C. Starck Solutions. Nothing herein shall be construed as a recommendation to use any product in conflict with patents covering any material or its use. No license is implied or in fact granted under the claims of any patent. Properties of the products referred to herein shall as general rule not be classed as information on the properties of the item for sale. In case of order please refer to issue number of the respective product data sheet. All deliveries are based on the latest issue of the product data sheet and the latest version of our General Conditions of Sale and Delivery.

The values in this publication are typical values and do not constitute a specification.

info@hcstarcksolutions.com
www.hcstarcksolutions.com

H.C. Starck 

High Performance Metal Solutions