

# DHA-HS1™

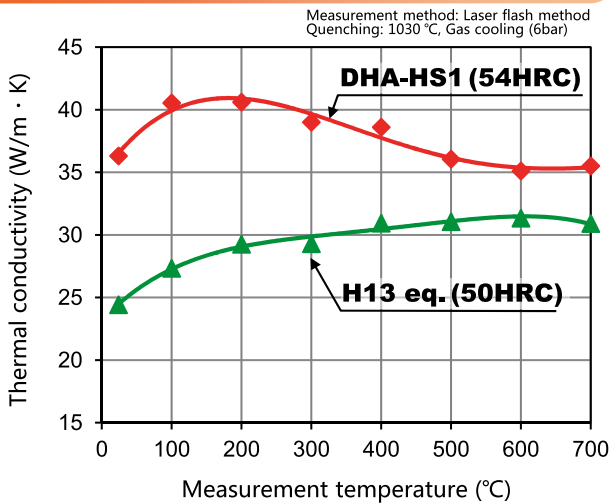
High thermal conductivity, High softening resistance  
**Hot Stamping Die Steel**

## Features

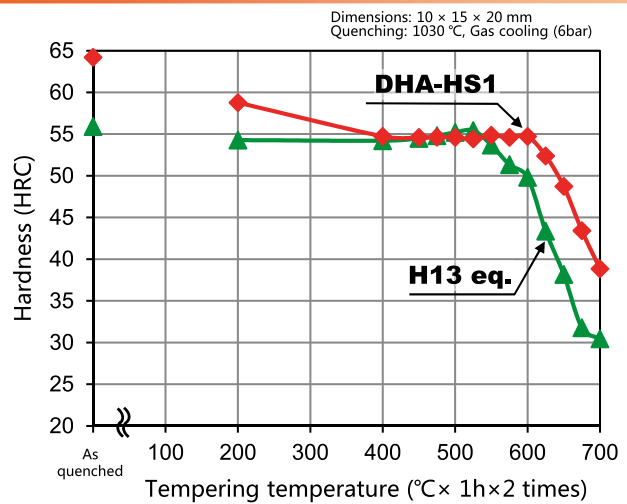
DHA-HS1 is “Hot stamping die steel”, which offers high thermal conductivity as well as excellent abrasion resistance at high temperatures. It contributes to increasing productivity and improving die life.

- ◆ **High thermal conductivity** : With high thermal conductivity of approx. **36(W/m·K)** at room temperature, DHA-HS1 helps reduce cooling time of dies and steel sheets.
- ◆ **High hardness** : Practical hardness of up to **54 HRC** is obtained at a wide range of tempering temperatures. Surface treatment also can be applied.
- ◆ **High softening resistance** : DHA-HS1 retains high hardness at elevated temperatures when in contact with hot steel sheets.

## Thermal conductivity

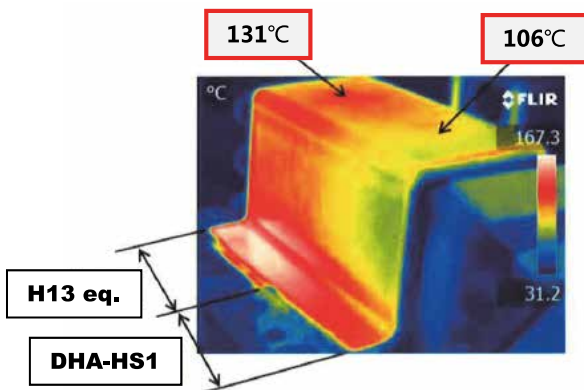


## Quenching and tempering hardness

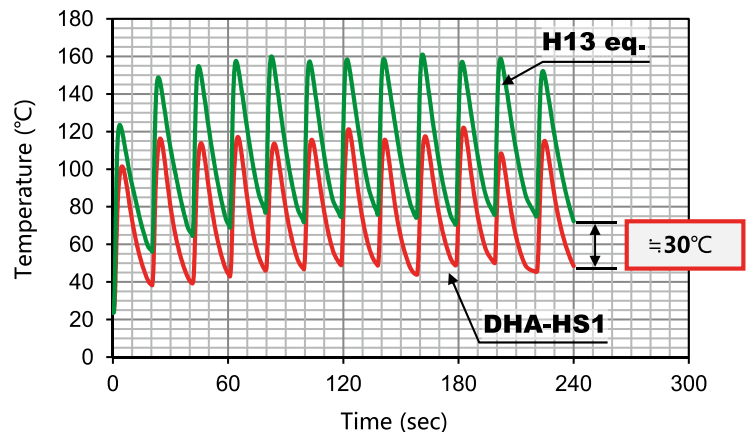


## Test results by an actual hot stamping equipment

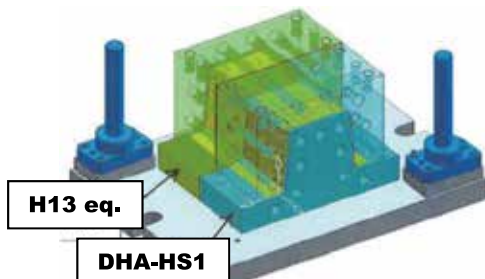
Panel temperature after the final shot



Die temperature during forming (Lower die)



Hot stamping test conditions



Forming	Forming cycle	<b>3.0 spm</b>
	Holding time at the bottom dead center	<b>6.0 sec.</b>
Heating	Temperature of steel sheet when forming process started	<b>850 °C</b>
Quenching	Cooling water temperature	<b>18 °C</b>
	Water line position	<b>10 mm</b> from the die surface
Measurement	Thermocouple position	<b>5 mm</b> from the die surface (Surface of lower die) <b>5 mm</b> from the water line



Tokyo Head Office  
(Tool Steel Div. Tool Steel  
Marketing & Sales Dept.  
Overseas Sect.)

Daido Shinagawa Building, 6-35, 1-Chome, Konan, Minato-ku,  
Tokyo, Japan

Phone: + 81-3-5495-1270 Fax: +81-3-5495-6739

Bangkok Office

Unit2-1, 22nd Fl., Silom Complex Bldg., 191, Silom Road,  
Silom, Bangrak, Bangkok 10500, Thailand

Phone: + 66-2-231-3214 Fax: +66-2-231-3216

Europe Office

Insterburger Strasse 16, 60487 Frankfurt am Main, Germany

Phone: + 49-69-29802867-0 Fax: +49-69-29802867-40

Daido Steel (America) Inc.

1111 Plaza Drive, Suit 740, Schaumburg, Illinois 60173 U.S.A.

Phone: + 1-847-517-7950 Fax: +1-847-517-7951

Daido Steel (Shanghai) Co., Ltd.

Room 1402, Ruijin Building, 205 Mao Ming Nan Road,  
Shanghai, 200020, China

Phone: + 86-21-5466-2020 Fax: +86-21-5466-0279

Daido Steel (Shanghai) Co., Ltd.  
Guangzhou Subsidiary Company

Room 2601, No.8, Linhezhoug Road, Tianhe District,  
Guangzhou, 510610, China

Phone: + 86-20-3877-1632 Fax: +86-20-8550-1126

[www.daido.co.jp](http://www.daido.co.jp)

**DHA** is a registered trademark or trademark of Daido Steel Co., Ltd.

■ Document Disclaimer

The product characteristics included in this brochure are the representative values based on the result of our measurements, and do not guarantee the performance in use of the products. Please inquire the latest information to our department in charge as the information of this brochure is updated without previous notice as needed.

Copyright©2019 Daido Steel Co., Ltd. All rights reserved.

No.SC1906 19.12.0,0 (DDD)