



Finkl Steel

DC®

~AISI H13 - W.Nr. 1.2344 - X40CrMoV5-1

Hot/Cold Work
Die Steel

Typical Applications

- Tooling for Aluminum Die Casting
- Aluminum and Magnesium Extrusion Dies
- Forging Dies and Inserts
- Plastic Mold Dies
- Cores, Sleeves and Slides

General

Delivery Condition: Annealed to 229 HBW Max.

Quality Levels

DC®: Standard Quality for Dies and Inserts for Hot Forging, Molding and Extrusion

DCQ™: High Polishing Remelt Quality for Plastic Molding

DC® Premium: Fine Structure Quality for Low Pressure Die Casting. Qualified as NADCA Grade A.

DC® Superior: Remelted Fine Structure Quality for High Pressure Die Casting. Qualified as NADCA Grade B.

DC® is a high quality tool steel with high impact and shock resistance. It also has good wear resistance at high temperatures.

It is suitable for many hot work and cold work applications like hot heading, hot forging, hot punching, hot piercing, hot trimming dies, heavy duty hot and cold shear blades, forming tools and bending tools.

It has an excellent combination of high strength and toughness. It can reach hardness levels in the 42 to 52 HRC range with standard hardening procedures using vacuum heat treatments.

Typical Chemical Analysis* – % weight

C	Mn	Si	Cr	Mo	V
0.38	0.35	1.00	5.25	1.50	1.00

DC is forged using a special densifying process which assures optimum consolidation of the centerline of the tooling.

It is forged on our largest presses equipped with wide dies that assure maximum deformation during the forging process.

Characteristics

All quality levels of DC are characterized by:

- Improved wear resistance
- High temperature strength
- High impact resistance

DCQ and DC Superior provide the highest level of polishability for a lasting mirror finish.

DC Superior has the highest impact properties to meet NADCA Grade B requirements.

All quality levels of DC are 100% ultrasonic tested to very high standards and acceptance levels. It is defect free.

DC can be supplied pre-certified to NADCA Standard #207 upon request.



DC[®]

Hot/Cold Work
Die Steel

Heat Treatment

Annealing

Temperature: 1500-1550°F (816-843°C)
Rate of cooling: 25°F (14°C) max per hour
Typical annealed hardness: 229 HBW Max.

Key parameters of the NADCA recommended procedure for hardening dies for die casting services are:

Hardening

- Rate of heating: slow
- Preheat Temperature: 1200-1300°F (650-705°C)
- Hardening Temperature: 1875-1895°F (1025-1035°C)
- Time at temperature: 30-45 minutes
- Quench to 300°F (150°C)

Tempering

Tempering Temperature: 1050°F (565°C) minimum
Double tempering is recommended.

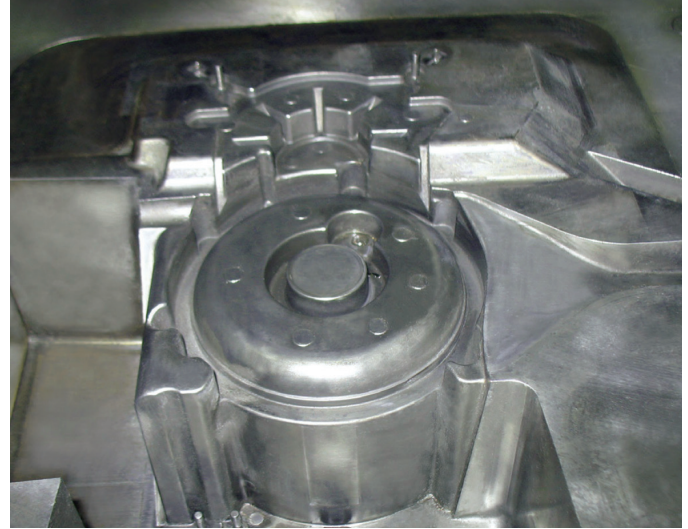
Stress Relieving

Temperature: 50-100°F (30-55°C) below final tempering temperature and slow cool to 875°F (470°C), then air cool.

Size		
Based on Approximate Rough Machined Sizes		
Max. weight	16330 kg	36,000 lbs
Max. section	0.90 m ²	1400 sq. in.
Max. width	1270 mm	50"
Max. thickness	760 mm	30"

**Note: Provided technical data and information in this data sheet are typical values. Normal variations in chemistry, size and conditions of heat treatment may cause deviations from these values. We suggest that information be verified at time of inquiry or order. For additional data or metallurgical assistance, please contact us.*

© Finkl Steel Trademark



Finkl Steel

Finkl Steel – Chicago
1355 E. 93rd Street
Chicago, IL 60619
773-975-2510
TOLL-FREE: 800-621-1460
FAX: 773-348-5347

Finkl Steel – Sorel
100 McCarthy Street
St-Joseph-de-Sorel, QC,
Canada J3R 3M8
450-746-4122
TOLL-FREE: 800-363-9484

Finkl Steel – Composite
2300 W. Jefferson Avenue
Detroit, MI 48216
313-496-1226
TOLL-FREE: 800-521-0520

Finkl Steel – Houston
14710 Cypress North Houston Road
Cypress, TX 77429
TOLL-FREE: 800-640-2050

www.finkl.com



Finkl Steel
Partner Program[™]

Contact your Finkl representative to learn more about our unique, customizable, online business center.