

DATA SHEET

Ductile (Spheroidal Graphite) Cast Iron

TY Grade HD5, HD5M (GCD500, FCD500)

1. Characteristics: HD5 has increased pearlitic structure against 400-18 resulting in higher wear resistance and increased strength with improved heat-treatment response when compared to HD4 while still possessing good machinability and excellent surface finish. Noise and vibration damping are good in this grade.

2. Conforms: ASTM A536 Grade 65-45-12, EN-16482:2014 EN-GJS-500-7, JIS G-5502 FCD500-7

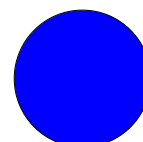
3. Size Range:

STANDARD SIZE AND SUPPLY.		
Concast (HD5)	Round	Ø25mm ~ Ø260mm
	Square & Rectangle	■40×50 ~ ■205×220
Mold Cast (HD5M)	Round	Ø270mm ~ Ø510mm (proof machined)
	Square & Rectangle	■200×250 ~ ■500×600
Standard Sizes	Length	· Continuous Cast Iron Bar: 3m(3000mm) · Metal Mold Cast: max. 1m(1000mm)
	Supply condition	· As-cast. Cut. · Round: turned and peeled · Square&Rectangle: milled (proof machined)
Non-Standard Sizes		other lengths available

4. Chemistry: Typical Ranges:(Analysis at the discretion of T-Y)

Color Code

ELEMENT	TYPICAL(%)
Carbon	2.90~3.90
Silicon	2.20~3.40
Manganese	max. 0.70
Phosphorous	max. 0.10
Sulfur	max. 0.02
Magnesium	max. 0.065
Others/Alloying	Residual
Iron	Balance

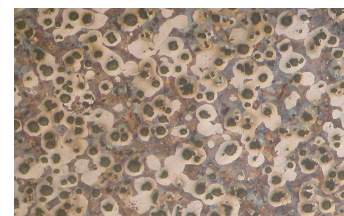


5. Mechanical Properties: (Taken from mid-radius of cast bar, not separately cast test bar)

Material grade	Diameter(D) (mm)	0.2% Proof Stress min. (N/mm ²)	Tensile (UTS) min. (N/mm ²)	Elongation min. (%)	BHN 3000kgf (10mm dia Ball)
HD5	D < 60	320	500	7	max. 240
	60 < D ≤ 200	300	450	7	
	200 < D ≤ 400	290	420	10	

6. Microstructure: Contains Type V&VI nodular(spheroidal) graphite in accordance with ISO 945

- Nodularity: ≥80%
- Nodular Count(approximately): Rim Zone ≥200 nodules/mm²
Core Zone ≥80 nodules/mm²
- Ferritic/Pearlitic: 10~50% pearlite (core matrix)



7. Application:

Cylinder Blocks, Manifolds, Rotors, Valves, Gears, Pulleys
Rotary Screws, Blank Molds and so on.