Heavy Cast Steel — Capability Statement

Structural and transmission castings for mining drive systems, bulk handling equipment, and heavy industrial machinery. Produced to OEM drawings with full NDT, CMM inspection, and mechanical certification.

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1. Casting Capability Overview

Parameter	Capability
Casting process	Sand casting (resin-bonded and green sand)
Weight range	Under 10 kg to over 5,000 kg per piece
Material	Carbon steel, alloy steel (Cr-Mo, Ni-Cr-Mo), manganese steel, ductile iron
Heat treatment	Normalising, Q+T, solution annealing — in-house furnaces, load TC verified
Max. furnace capacity	Suitable for components to 5,000+ kg — confirm at enquiry
Machining (in-house)	Turning to 1,500 mm swing / 4,000 mm between centres
Extended machining	Network facilities: turning to 10 m+, boring to several metres depth
CMM inspection	Full geometric verification of critical components
NDT capability	UT, MPI (wet fluorescent), PT — in-house
Mechanical testing	Tensile, Charpy impact, hardness — in-house laboratory

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2. Component Types and Applications

Planetary Carriers

Alloy steel planetary carriers for mining gearboxes, wheel drives, and industrial drive systems. Planet bore positional accuracy — verified by CMM against the carrier centreline — determines load distribution among planet gears and is the primary dimensional quality indicator for this component type.

Material	Low-alloy or Ni-Cr-Mo steel to OEM specification
Heat treatment	Q+T to 280–380 HBW typical; Charpy impact testing where specified
Machining	Bore positions by CMM; spigot and flange faces to drawing tolerance
NDT	UT of critical web sections; MPI of finished surfaces
Weight range	Up to 5,000 kg — confirm at enquiry for larger

Industrial Gearbox Housings

Alloy steel housings for mining and industrial gearboxes. Bearing housing bore positions determine shaft alignment; all interface surfaces are machined after heat treatment. UT of critical wall sections before machining is standard practice to avoid adding machining cost to a casting with an internal defect.

Material	Alloy steel or ductile iron per application and weight requirements
Heat treatment	Normalised or Q+T per drawing specification
Machining	All bearing bores, flanges, seal faces and register diameters
NDT	UT walls + MPI machined surfaces standard
Weight range	Up to 5,000 kg per housing section

Track Shoes

High-manganese steel track shoes for rope shovels, hydraulic excavators, and crawler-mounted mining equipment. Solution-annealed to the fully austenitic condition for work-hardening in service. Supplied in dimensionally matched sets for track assembly.

Material	Mn13Cr2 or Mn18Cr2 per OEM specification
Condition	Solution annealed — as-supplied hardness 170–220 HBW
Matching	Pin boss bore and rail dimensions verified; sets supplied weight-matched
NDT	MPI on pin boss areas and rail interface

Chute Sidewalls and Structural Transfer Chute Components

Alloy steel chute sidewalls for high-tonnage bulk material transfer points. Cast construction provides monolithic impact resistance at feed zones where fabricated plate liner systems are prone to deformation and fastener loosening.

Material	Alloy steel to hardness and toughness requirements of application
Heat treatment	Q+T to specified hardness — wear face hardness confirmed per batch
Mounting	Machined or drilled interfaces to drawing specification

Sprockets and Drive Components

Drive sprockets for mining conveyor and haulage systems are produced by forging (not casting) in alloy steel, with precision machining of tooth profiles and mounting interfaces. Cast drive components in this category include gear blanks, coupling bodies, and bearing housings.

Sprocket material	Alloy steel forged, Q+T + induction hardening of tooth faces
Tooth face hardness	55–62 HRC on hardened faces; verified per batch
Tooth profile	Machined to OEM drawing; profile verified after machining
Gear blanks	Alloy steel sand cast, Q+T, machined to gear-cutting tolerance

3. Material Grades — Reference

Standard	Typical Grade	UTS (MPa)	Application
EN 10293	GS-42CrMo4 / GS-34CrNiMo6	900–1,100 / 1,000–1,200	Structural, transmission, high-load
ASTM A148	Grade 90-60 / 105-85	620–720 / 725–830	General structural castings
BS EN 10293	GX5CrNiMo19-11-2	480–690	Corrosion-resistant (where specified)
High-Mn (GB/T)	ZGMn13Cr2 / ZGMn18Cr2	—	Track shoes, crusher liners
Alloy specific	Per OEM material call-out	Per Q+T condition	Planetary carriers, housings

4. Quality Assurance and Certification

Quality system	ISO 9001 certified — full scope casting through delivery
Material certs.	EN 10204 3.1 standard; 3.2 (independent inspector) on request
Heat treatment	Load thermocouple verification — workpiece temperature confirmed
Mechanical testing	Tensile (Rm, Rp0.2, A%, Z) + Charpy impact per batch where specified
Hardness	Multiple points per component; actual values recorded
UT standard	EN 12680 / ASTM A609 or equivalent per drawing specification
MPI	Wet fluorescent MPI available for high-sensitivity requirements
Dimensional	CMM verification of critical features; report supplied with delivery
Traceability	Heat number, HT batch, inspection records — retained minimum 10 years
Third-party	SGS, Bureau Veritas, Lloyd's, TUV witness inspection supported
NDA	Executed before proprietary drawing review — standard for all OEM supply
First article	FAI report against all drawing requirements — client approval before volume
Response time	1–2 working days for technical and commercial enquiries

This capability statement is intended for engineering evaluation and supplier qualification purposes. All specifications are subject to confirmation at enquiry stage. © Mine Components | inquiry@minecomponents.com | www.minecomponents.com