

KINOCRANES

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European Standard Overhead Crane

KS Single Girder · KD Double Girder · 2 - 80 t (up to 500 t custom)

Product Guide - Technical Overview & Specifications



2-80 t

rated capacity,
up to 500 t custom

10.5-28.5 m

standard spans,
larger on request

CE · FEM · DIN · ISO

certification &
design codes

30-40 %

lighter than
conventional cranes

WHY EUROPEAN DESIGN

Lighter. Lower. More efficient.

European-standard overhead cranes replace the heavy conventional (Soviet-type) design with compact, low-headroom hoisting units and optimised box-girder structures - CE certified and engineered to FEM 1001, DIN 15018 and ISO design codes. For the buyer, the difference shows up directly in building cost, energy cost and uptime.

■ 30-40 % lighter dead weight

Sharply lower wheel loads allow smaller rails and a lighter runway and building structure - significantly lower steel and foundation investment for new plants, and no reinforcement in most retrofits.

■ Over 40 % electricity saving

High-efficiency hardened gearing and inverter drives cut installed motor power by around half versus conventional cranes (32 t model: 70.9 kW down to 36.8 kW).

■ 0.8-1.8 m lower headroom

Low-headroom hoists reduce the required building height for the same hook height - or win extra lifting height inside an existing building - cutting construction cost and lifetime heating/cooling energy.

■ Maintenance-free by design

Gearboxes lubricated for life, adjustment-free disc brakes rated for 1,000,000 braking cycles, galvanized wire rope with no re-greasing - and spare parts shipped in 1-7 days.

Measured against a conventional crane

Documented comparison from the manufacturer's technical files, double-girder cranes at 25.5 m span:

Capacity	Dead weight (t) conventional / KD	Max wheel load (kN) conventional / KD	Building height saving (mm)	Installed power (kW) conventional / KD
5 t	25.7 / 12.4	98 / 31.3	1,528	22.9 / 7.2
10 t	27.8 / 14.4	137 / 46.5	1,578	27.4 / 11.7
20 t	36.3 / 17.7	255 / 75.2	802	42.6 / 30.6
32 t	44.5 / 20.3	315 / 108.2	1,298	70.9 / 36.8
50 t	57.5 / 25.2	435 / 156.9	1,826	75.3 / 43.7

Source: manufacturer parameter comparison, 25.5 m span double-girder cranes, conventional vs European design.



ENGINEERING DETAILS

Component highlights

Flexible end carriages

NC-bored wheel housings for exact wheel alignment; articulated connection eliminates rail gnawing and skewing. Double-flanged wheels, derailment protectors, rubber buffers; patented eccentric-sleeve alignment.



Hardened, sealed gearbox

Ground helical gears case-hardened to HRC 60 in a die-cast aluminium housing over 60% lighter than cast iron. Lubricated for the life of the crane; oil grade and bolt torques cast on the housing.



Dedicated hoist motor

Class H insulation (180°C), IP55, 60% ED duty rating, independent cooling fan and premium bearings. 6:1 two-speed dual winding or stepless inverter drive; every rotor 100% dynamically balanced.



Inverter control system

Schneider-based inverter control with soft start and precise positioning on both travel motions. ESR light-load speed boost (1.2–2× below 20% load), anti-shock slowdown, electronic braking; optional anti-sway.



iSS safety monitor (patented)

33 real-time monitoring and protection items: load, brake wear, overheating, phase loss and more. Calculates the remaining Safe Working Period (SWP), keeps full fault logs; optional 4G/SMS remote access.



Redundant dual braking (option)

Second disc brake on the gearbox high-speed shaft, or a drum flange brake with open-first / brake-last sequencing. Standard braking torque at least 200% of rated; fail-safe normally-closed design.



Full-circle rope guide

Self-lubricating ductile-iron guide encircles the drum completely, preventing slack rope and rope derailing. Large capacities use an articulated nylon-segment guide—only worn segments are replaced.



Six-step hoisting limits

Four-step programmable geared limit switch (slow-down, stop, phase-sequence ultimate limit) plus a counterweight limit as an independent second barrier—reliable anti-two-block protection.



SAFETY & INTELLIGENCE

Engineered layers of protection

Every crane ships with staged, redundant protection as standard - and an on-board monitor that turns safety data into maintenance planning.

Staged overload protection

Dual electronic + mechanical load sensing with ± 2 % full-load accuracy responds in three stages:

100 %	Overload alarm	Operator warned; monitoring records the event
110 %	Hoisting blocked	Lifting stops; lowering remains available
125 %	Automatic stop	All hoisting motion stopped until load is corrected

iSS intelligent safety monitor - standard on every hoist

The patented iSS monitor supervises **33 protection items** in real time - overload, overheating, motor stall, phase loss/sequence, brake wear and more - and computes the hoist's remaining **Safe Working Period (SWP)** so overhauls are planned, not improvised. Full fault logs, event counters and a multilingual display are built in; 4G/SMS remote monitoring and a mobile app are available as options.

Complete protection set

Under-voltage, over-current, earth-fault and short-circuit protection · Phase-loss and phase-sequence protection · Motor thermal protection on all drives · Electronic + mechanical overload protection · Six-step hoisting limits with anti-two-block ultimate limit · Two-step cross-travel and infrared long-travel limits (IP65) · Anti-derailment and anti-drop devices on all travels · Energy-absorbing buffers · Anti-collision option for adjacent cranes · Options: electronic anti-sway, zero-speed hover, micro-move (2-100 mm), area limitation, brake-failure backup

Smooth handling as a safety feature

Inverter control on all motions means soft starts, no load swing on acceleration, and electronic braking that slows the drive to near zero speed before the mechanical brake closes - protecting the load, the crane and the people underneath. Hook drift stays below 0.4 %, and True Lift keeps positioning accurate.



TECHNICAL DATA

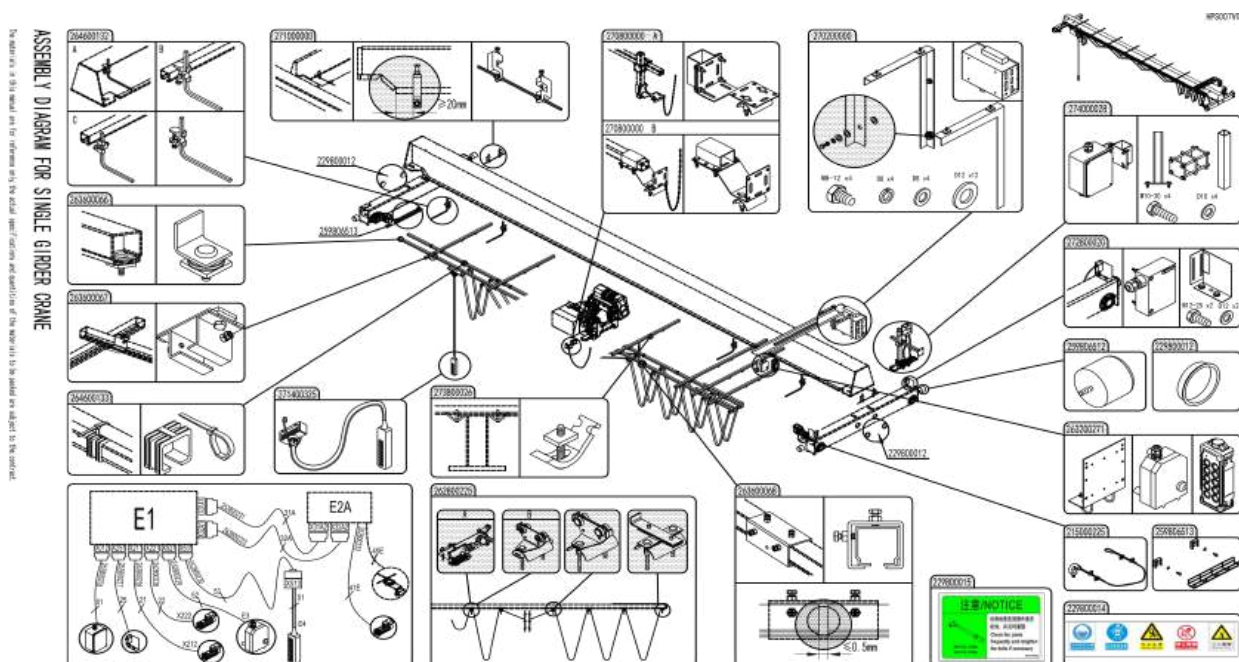
Series range

Product series	KS European single-girder crane · KD European double-girder crane
Rated capacity	Single girder 2 / 3.2 / 5 / 8 / 10 t; double girder 5-80 t; winch-trolley design up to 500 t
Standard span	10.5 / 13.5 / 16.5 / 19.5 / 22.5 / 25.5 / 28.5 m - larger spans on request
Lifting height	Standard 9 m (18 m variants); hoist options up to 60 m (SG) / 90 m (DG); custom winch up to 160 m
Duty class	Crane A5 (GB); hoisting unit FEM M4-M6 (1Am-3m); heavy-duty winch M3-M7 (per FEM 9.511)
Hoisting speed	Two-speed, ten steps from 2/0.3 to 20/3.3 m/min - or stepless inverter control
Travel speeds	Trolley: inverter 0-20 m/min (0-25 / 0-32 optional); crane: inverter 0-32 m/min
Design standards	FEM 1001 · DIN 15018 · ISO · CMAA · welding to AWS D14.1 / DIN 18800 · hooks to DIN 15400 · motors to IEC 34
Certification	CE certified - current certificates available on request
Power supply	3-phase five-wire TN-S, AC 380-415 V $\pm 10\%$, 50 Hz (other voltages / 60 Hz on request)
Control voltage	AC 48 V standard via isolating transformer (≤ 50 V safety limit; 115/220 V optional)
Protection class	Motors IP55 · control panels IP54/IP55 · limit switches and pendant IP65
Ambient conditions	-10 to +45 °C, relative humidity below 90 %
Control modes	Radio remote (2.4 GHz) · pendant (IP65) · cabin · remote control

Typical configurations

Model	Capacity	Span	Lifting height	Hoisting speed (m/min)	Wheels	Max/min wheel load (kN)	Rail	Total weight (kg)
KS 5 t	5 t	16.5 m	9 m	4 / 0.7	4	38 / 10.7	P22	3,800
KS 10 t	10 t	19.5 m	9 m	5 / 0.8	4	66.6 / 14.6	P22	6,530
KD 10 t	10 t	22.5 m	9 m	4 / 0.7	4	90.4 / 30.5	P22	12,990
KD 20 t	20 t	22.5 m	9 m	4 / 0.7	8	72.2 / 16.6	P30	14,560
KD 50 t	50 t	22.5 m	9 m	3.2 / 0.5	8	169.4 / 34.4	P43	23,880

Trolley travel 0-20 m/min and crane travel 0-32 m/min, inverter-controlled, on all models above. Duty class A5. Full parameter tables for every capacity/span combination are available on request.



QUALITY YOU CAN AUDIT

Manufacturing & testing

Every claim in this guide traces back to process capability you can inspect - and that third-party auditors already have.

Fabrication process

Girder webs are cut from whole plates on a 40 m NC cutting system and joined by automatic submerged-arc welding; welds are verified by UT/MT/PT non-destructive inspection. Complete girders pass through shot blasting to Sa2.5 before a dual-layer epoxy coating system ($\geq 120 \mu\text{m}$ total) rated for a 10-year service life. Girder camber is held to 1/800-1/1000 of span; web straightness within 2 mm per 2,000 mm.

Factory testing - before anything ships

14 test categories cover every critical component: 100 % dynamic balancing of all rotors, stator insulation and surge testing, motor dynamometer curves, gearbox pressure-tightness testing, CMM dimensional inspection of housings, full-life testing of limit switches, and load calibration of every safety monitor on a hydraulic NC test rig. Every hoisting unit passes a powered full-function test and load test before dispatch.

Certified and audited

Products carry **CE certification**, with current certificates available to customers on request. Cranes are produced at a dedicated 12,863 m² facility in Tianjin, China (8,521 m² of production buildings), running Baosteel plate and Schneider Electric components as standard. The plant was assessed by independent auditor V-Trust in a full supplier assessment covering production flow, quality system and R&D. Products are exported to the EU, North and South America and Southeast Asia.


HRC 60

gear hardness,
lubricated for life

±2 %

overload sensing
accuracy

1,000,000

brake cycles
rated life

1-7 days

spare parts
dispatch

Ready to specify your crane?

Send us your capacity, span and duty requirements - we will return a full technical proposal with dimensional drawings and wheel loads for your building design.

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Specifications subject to change with product development. Values in this guide are drawn from the manufacturer's technical documentation; configuration-specific data is confirmed at quotation.