



Engineering
The Best
For You

Wimac Crane Solutions

Engineering • Manufacturing • Global Supply

wimac.com.tr



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Engineering **The Best**
for You

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On her way she met a copy. The copy warned the Little Blind Text, that.

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Little Blind Text should turn around me and return to its own, safe country.

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About Wimac Crane



Wimac Crane

Established in 2012 in Konya, Turkey, Wimac is specialized in designing and manufacturing a wide range of lifting solutions

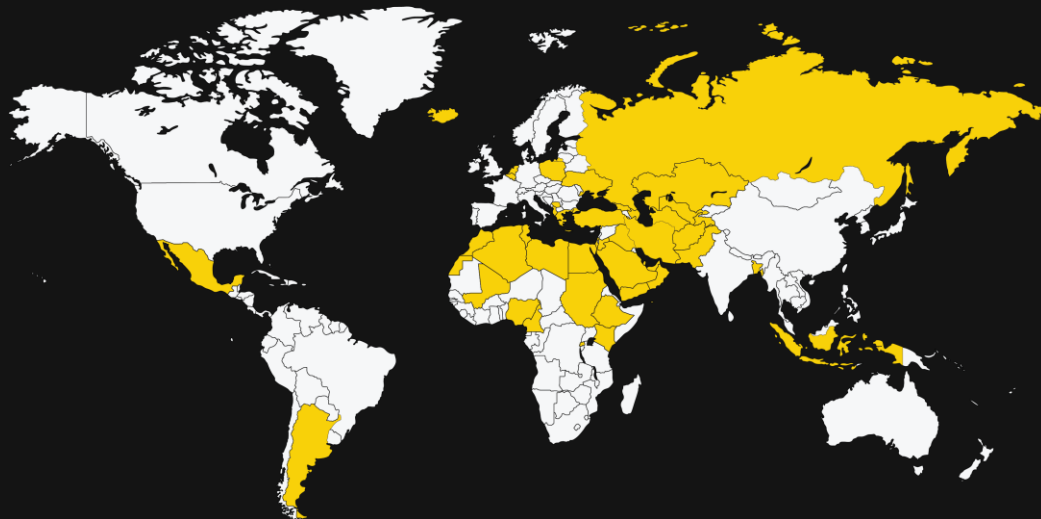
Compliance with EU Standards

All Wimac solutions are designed and manufactured in accordance with all EU standards for quality and safety.



- Afghanistan
- Azerbaijan
- Bangladesh
- Georgia
- Indonesia
- Iran
- Iraq
- Jordan
- Kazakhstan
- Oman
- Pakistan
- Palestine
- Qatar
- Saudi Arabia
- Tajikistan
- Turkmenistan
- Türkiye
- UAE
- Uzbekistan
- Algeria
- Cameroon
- Egypt
- Ethiopia
- Kenya
- Libya
- Morocco
- Nigeria
- Rwanda
- Sudan
- Tunisia
- Albania
- Belgium
- Greece
- Iceland
- Kosovo
- Poland
- Russia
- The Netherlands
- Ukraine
- Mexico
- Argentina

TRUSTED BY CLIENTS IN
over 40 Countries
in 4 continents



+16

Service Partners

& Official Distributors



OUR **GLOBAL**
SUCCESS

Hoists & Trolleys



Machinery (MD) Directive 2006/42/EC

305/2011/EU Construction Products Regulation

Low voltage (LVD) Directive 2014/35/EU

Electromagnetic Compatibility (EMC) Directive 2014/30/EU

Noise Emission by Outdoor Equipment Directive 2000/14/EC

6331 Health and Safety Conditions Regulation

All products are manufactured in accordance with ISO and FEM standards.

Standard Monorail Hoist



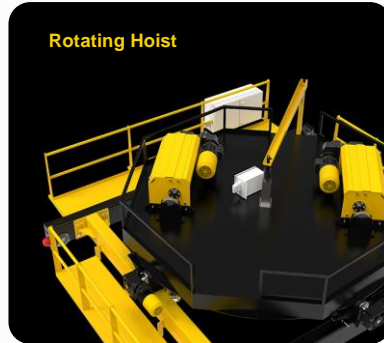
Low-Headroom Monorail Hoist



Double Girder Trolley



Rotating Hoist



Heavy Duty Process Hoist



Crane Solutions



Metal Material ISO Standards

TS EN 1563

TS EN ISO 683-1

TS EN 10293

TS EN ISO 683-2,3

TS EN 10219-1

TS EN 10025-1,2

Paint ISO Standards

TS EN ISO 8501

TS EN ISO 8503

TS EN ISO 12944

Mechanical Design Standards – EN ISO

Cranes - Bridge and gantry cranes EN 15011

Cranes - General design EN 13001-1

Crane safety - General design - Part 2: Load EN 13001-2

Design of steel structures TS EN 1993-6

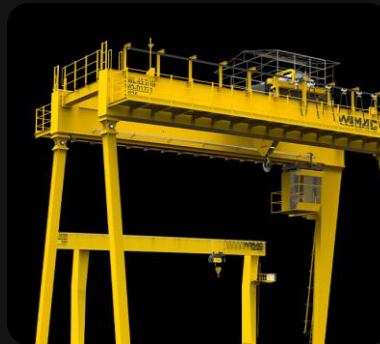
Limit States and proof competence of steel structure TS EN 13001-3-1+A2



Heavy Duty Process Cranes



Overhead Cranes



Gantry Cranes



Jib Cranes

Load Handling Solutions



Custom and Unique load handling solutions, designed to meet the specific needs of each project.

Non-fixed load attachments are designed and manufactured in accordance with **EN 13155 & ASME B30.20** standards



Tong



Upenders



Coil Hooks



Lifting Beams



Heavy Duty Spreader Beams



Loading Equipment

Crane Design



Box girder cross-section and structural properties used for beam design verification.

Here are some of the standards according to which we work

Mechanical Design Standards – EN ISO

Cranes – Bridge and gantry cranes

EN 15011

Cranes – General Design

EN 13001-1

Design of steel structures

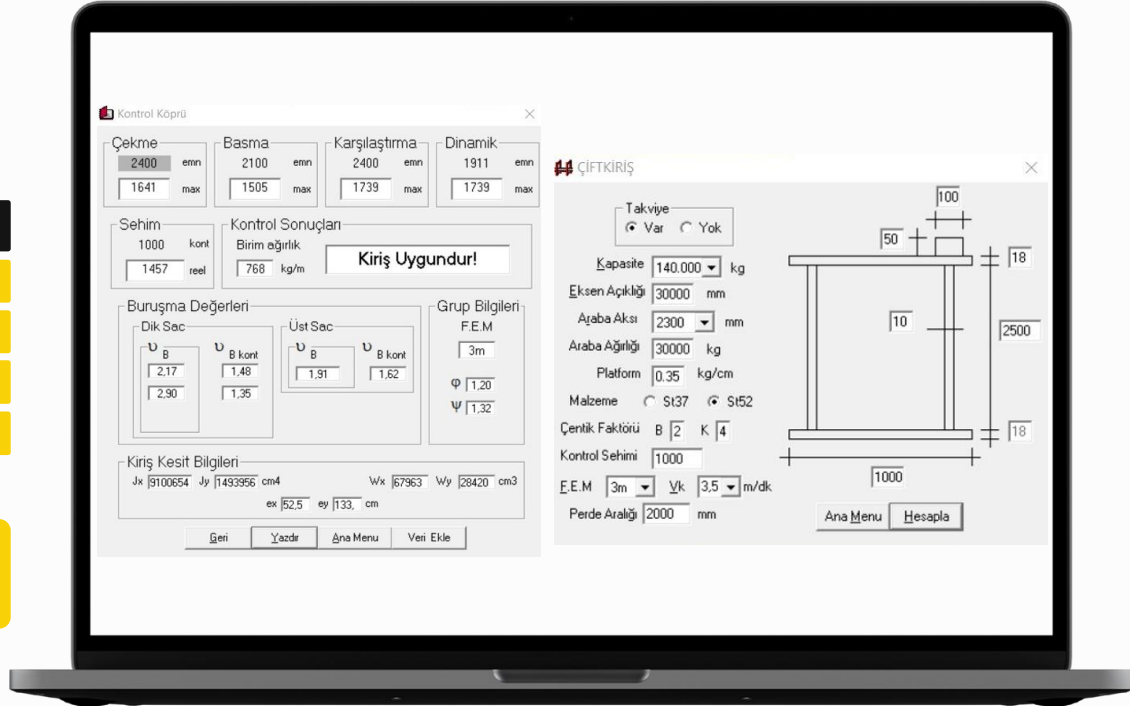
EN 1993-6

Classification of Mechanisms

ISO 4301

To access all the standards we use please click down at

Wimac Crane Components Design, Manufacturing and Inspection Standards & Directives

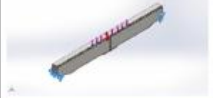



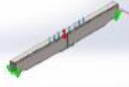
Bridge Analysis

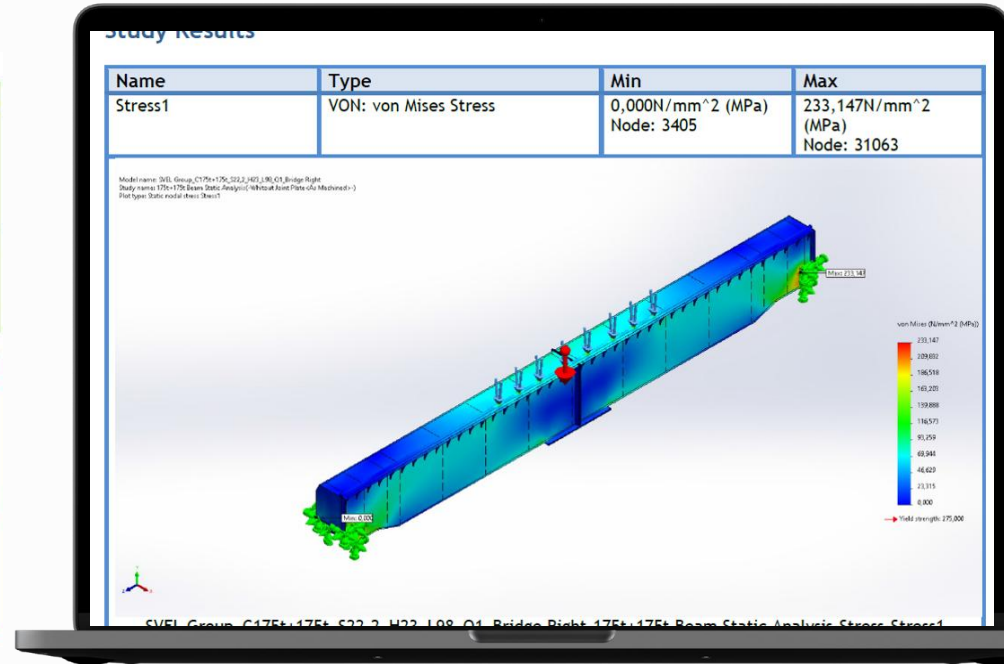


Finite Element Analysis (FEA) performed to evaluate structural performance under rated load conditions.

Loads and Fixtures

Fixture name	Fixture Image	Fixture Details		
Fixed-1		Entities: 16 face(s) Type: Fixed Geometry		
Resultant Forces				
Components	X	Y	Z	Resultant
Reaction force(N)	0,00012207	2,38558e+06	0,395508	2,38558e+06
Reaction Moment(N.m)	-52,0827	12,908	1,225,79	1,226,96

Load name	Load Image	Load Details
Force-1		Entities: 8 face(s) Type: Apply normal force Value: 2,12415e+06 N
Gravity-1		Reference: Üst Düzlem Values: 0 0 -9,81 Units: m/s ²



Rope, Drum & Sheave



Safety Factor & Load Calculation

The rope safety factor varies according to the crane's specific FEM standard. To determine the required minimum breaking load for your application, use the following formula:

$$\text{Rope Breaking Load} = (\text{Total Capacity} / \text{Number of Ropes}) * \text{FEM Multiplier}$$

Available Rope Configurations

Rope Type / Specification	Rotation Feature
6X36 WS Fiber Core	Rotating Rope
6X36 WS Steel Core	Rotating Rope
35X7 NUFLEKS	Rotating Rope
18X7	Rotating Rope
Hyfil K8 1960 GRADE	Rotating Rope
Hyfil K16S	Non-Rotating Rope

ISO / FEM Standard Multipliers

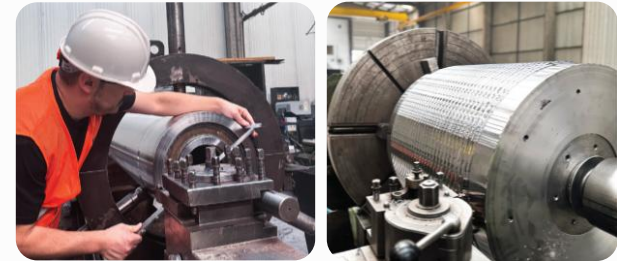
Use the chart below to find the correct multiplier based on your equipment's classification:

ISO / FEM	Multiply Factor
M1 (1Dm)	3.15
M2 (1Cm)	3.35
M3 (1Bm)	3.55
M4 (1Am)	4.0
M5 (2m)	4.5
M6 (3m)	5.6
M7 (4m)	7.1
M8 (5m)	9.0

Rope, Drum & Sheave



Drum and Sheave Diameter Ratio Selection, in accordance with guidelines from FEM 1.001 (Rules for the Design of Hoisting Appliances) and ISO 4301 / ISO 4308.



Crane Duty Mode: ISO / FEM	Drum		Sheave	
	Rotating Rope	Non-Rotating Rope	Rotating Rope	Non-Rotating Rope
M1 (1Dm)	12.5	11.2	14	12.5
M2 (1Cm)	14	12.5	16	14
M3 (1Bm)	16	14	18	16
M4 (1Am)	18	16	20	18
M5 (2m)	20	18	22.4	20
M6 (3m)	22.4	20	25	22.4
M7 (4m)	25	22.4	28	25
M8 (5m)	28	25	31.5	28

Hoisting Motor+Gearbox



FEM Class Service Factors for HT Series Gearboxes

M3 (1Bm)	M4 (1Am)	M5 (2m)	M6 (3m)	M7 (4m)	M8 (5m)
(fs=1,0)	(fs=1,0)	(fs=1,2)	(fs=1,3)	(fs=1,4)	(fs=1,4)

FEM Class Service Factors for VR Series Gearboxes

ISO (FEM)	M1 (1Dm)	M2 (1Cm)	M3 (1Bm)	M4 (1Am)	M5 (2m)	M6 (3m)	M7 (4m)	M8 (5m)
fs	0,8	0,8	0,8	0,8	0,8	0,9	1,1	1,4

Hook Block



DIN 15401



DIN 15402



DIN 15407

P Class: Fine-grained carbon steel, S355J2



Design Factor (Safety Factor) 5:1



Heavy Duty Hook Block

M7, M8



Standard Duty Hook Block

M4, M5, M6

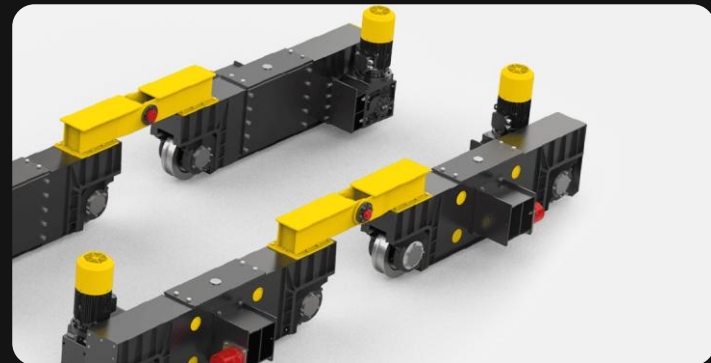
Hook Block



Duty Mode										Strength Class
-	-	-	-	1Bm/M3	1Am/M4	2m/M5	3m/M6	4m/M7	5m/M8	M ISO/FEM
-	-	-	1Bm/M3	1Am/M4	2m/M5	3m/M6	4m/M7	5m/M8	-	P ISO/FEM
-	-	1Bm/M3	1Am/M4	2m/M5	3m/M6	4m/M7	5m/M8	-	-	S ISO/FEM
-	1Bm/M3	1Am/M4	2m/M5	3m/M6	4m/M7	-	-	-	-	T ISO/FEM
1Bm/M3	1Am/M4	2m/M5	3m/M6	4m/M7	-	-	-	-	-	V ISO/FEM

Lifting Capacity (KG)										Hook NR
4.000	3.200	2.500	2.000	1.600	1.250	1.000	800	630	500	0.8
5.000	4.000	3.200	2.500	2.000	1.600	1.250	1.000	800	630	1
8.000	6.300	5.000	4.000	3.200	2.500	2.000	1.600	1.250	1.000	1.6
12.500	10.000	8.000	6.300	5.000	4.000	3.200	2.500	2.000	1.600	2.5
20.000	16.000	12.500	10.000	8.000	6.300	5.000	4.000	3.200	2.500	4
25.000	20.000	16.000	12.500	10.000	8.000	6.300	5.000	4.000	3.200	5

Travelling Mechanism



Crane design standard	EN 13001
Bridge crane design	EN 15011
Wheel and rail tolerances	ISO 12488-1
Wheel shafts	DIN 15078
Wheel loads and rail stresses	FEM 9.755



Wheel Block



Our wheels are designed and calculated in compliance with **EN 13135:2013 (E)** standards, and machined from **42CrMo4QT** using our CNC machines.

Wheel Block		Wheel Shaft
DIN 15049	DIN15074	DIN 15091
DIN 15090	DIN15078	
DIN 1025	DIN15079	



ISO: M7, M8

ISO: M4, M5, M6



Wheel Load Calculation



$$P_w = \frac{Q + G_t + 0.5 (G_e + G_p + G_b)}{n}$$

P_w : Wheel Load per Wheel

Q : Rated Capacity

G_t : Hoist / Trolley Weight

G_e : Bridge End Carriages

G_p : Maintenance Platform

G_b : Bridge Girder

n : Number of Wheels on One Side

The result of the formula is given in Newton (N). To obtain the value in kilonewtons (kN), the result must be divided by 1000.

CRANE MAXIMUM WHEEL LOADS 5t S21,8m H8m

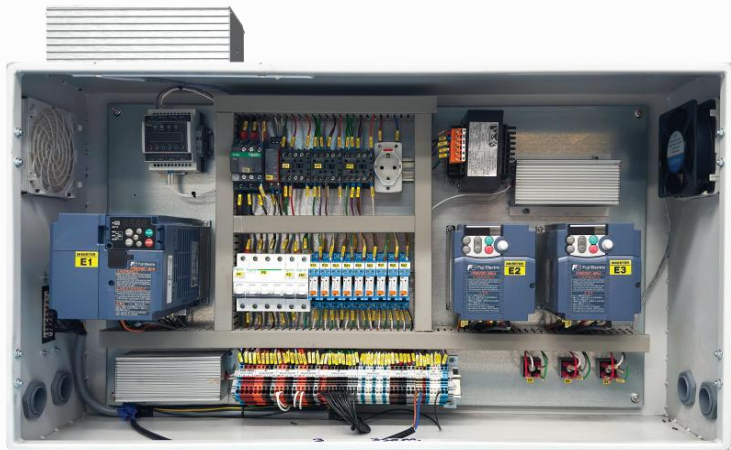
Max. Wheel Horizontal Load KN	Max. Wheel Load KN	RC	HT	ET	EP	CW	NWb
12.14	80.93	Crane Rated Capacity	Trolley Weight	End Truck Weight	Electrical Panel + Platform Weight	Crane Weight	Number of end truck wheels
Impact		1.2	1	1	4	1	4
Weight		10000	1000	600	400	6000	
Total Weight 8000 kg		117720	9810	5886	3924	58860	2

Electrical Panel



Environment Temperature
- 40°C to +70°C

Protection Class
IP55 - IP67



Electrical Design Standard	
Rotating electrical machines	TS EN 60034-1+Cor
Safety of machinery - Safety-related parts of control systems	TS EN ISO 13849-1
Safety of machinery - Electrical equipment of machines	TS EN 60204-32
Emergency stop function	TS EN ISO 13850

Electrical Panel



Heavy Duty Process Crane Electrical Panel

IP 55-67

Power Supply Room (Main Power Distribution Room)



Regenerative Drive Control Room



Drive Control Rooms



PLC Automation Room

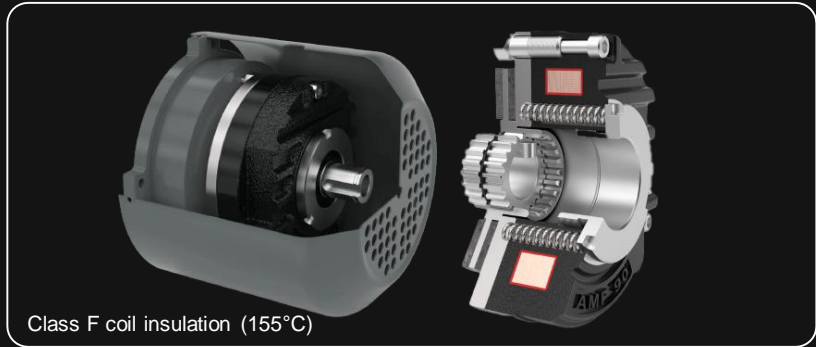


Safety Equipment



Brake Types

Shoe Brakes & Disc Brakes are Italy-made, fully compliant with DIN 15435 and DIN 15431 standards, respectively.



Hydraulic Shoe Brake



Disc Brake

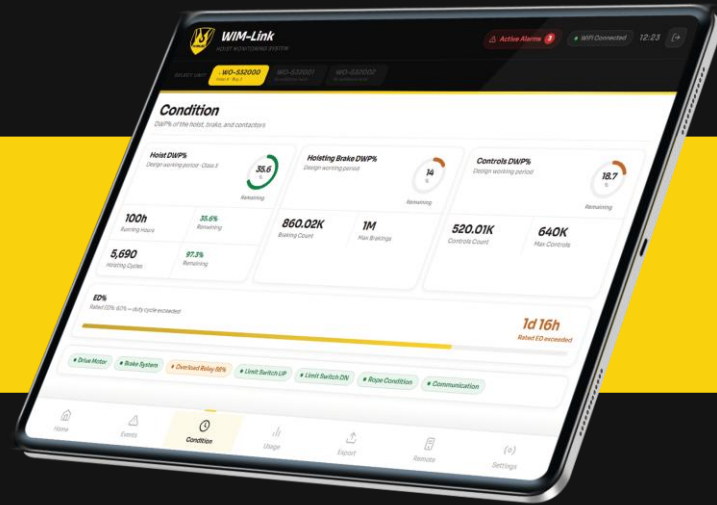
Electromagnetic Brake

The required braking torque is calculated from the motor input torque ($9550 \times \text{kW} / \text{rpm}$) multiplied by a safety factor. Minimum safety factors are typically 2.5 for hoisting and 1.5 for travel motions, and may increase depending on ambient temperature and dusty operating conditions.

WIM-Link



The WIM-Link system is an **Intelligent Hoist monitoring solution** designed to collect and analyze operational parameters. Through an intuitive interface and a dedicated mobile app, all critical data is instantly accessible directly on-site.



- ➔ Hoist condition (Safe Working Period - SWP, brake and contactor wear).
- ➔ Hoist usage (Load spectrum, runtime, overload incidents).
- ➔ Safety alerts (Number of emergency stops, engine overheating, fault diagnostics).

Safety Equipment



Angle Limit Sensor



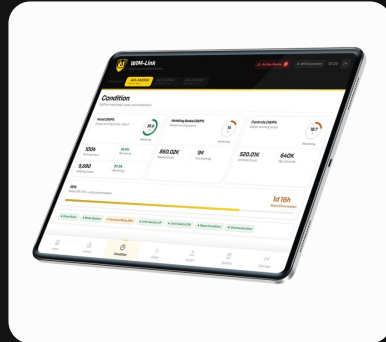
Data Logger



Limit Switches



Storm Brakes (Gantry Cranes)



Remote Access



Digital Load Indicator



Some
Custom
Projects



Heavy Duty Process Crane



Hydro-Power Plant Process Crane

The World's Largest Dam



Rogun Dam, Tajikistan

Lifting Height

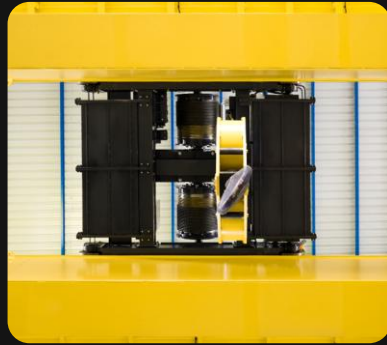
230 m

Lifting Capacity (SWL)

130+5 T



Heavy Duty Process Crane



Heavy Duty Steel mill Process Crane



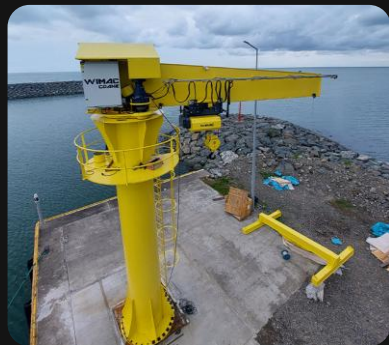
Izmir, Turkey

ISO – FEM Crane Duty Mode Classification

M7 – 4m



360° Jib Crane



360° Rotating Port Jib Crane



Batumi, Georgia

Lifting Capacity (SWL)


10 Ton

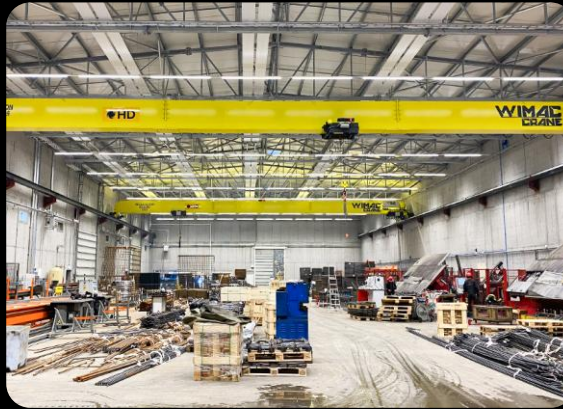


Other Custom Projects




360° Rotating Hoist
Double Girder Overhead Crane

 Konya, Turkey




28.3 m span
Tandem Single Girder Overhead Cranes

 Kópavogur, Iceland



L-Type
Single Girder Gantry Crane (SWL 20 MT)

 Istanbul, Turkey



WIMAC[®]
CRANE

Thank You

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Website

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