

— 7TH GENERATION PRODUCT —

HC150

Rapid Impact Compaction Machine

Deep foundations. Powerful compaction. With 150 kJ impact energy, the HC150 is designed for deep fills, airports, ports, roads and major infrastructure ground improvement.

A high-capacity Rapid Impact Compaction Machine for deep ground improvement, developed for demanding infrastructure projects.

150

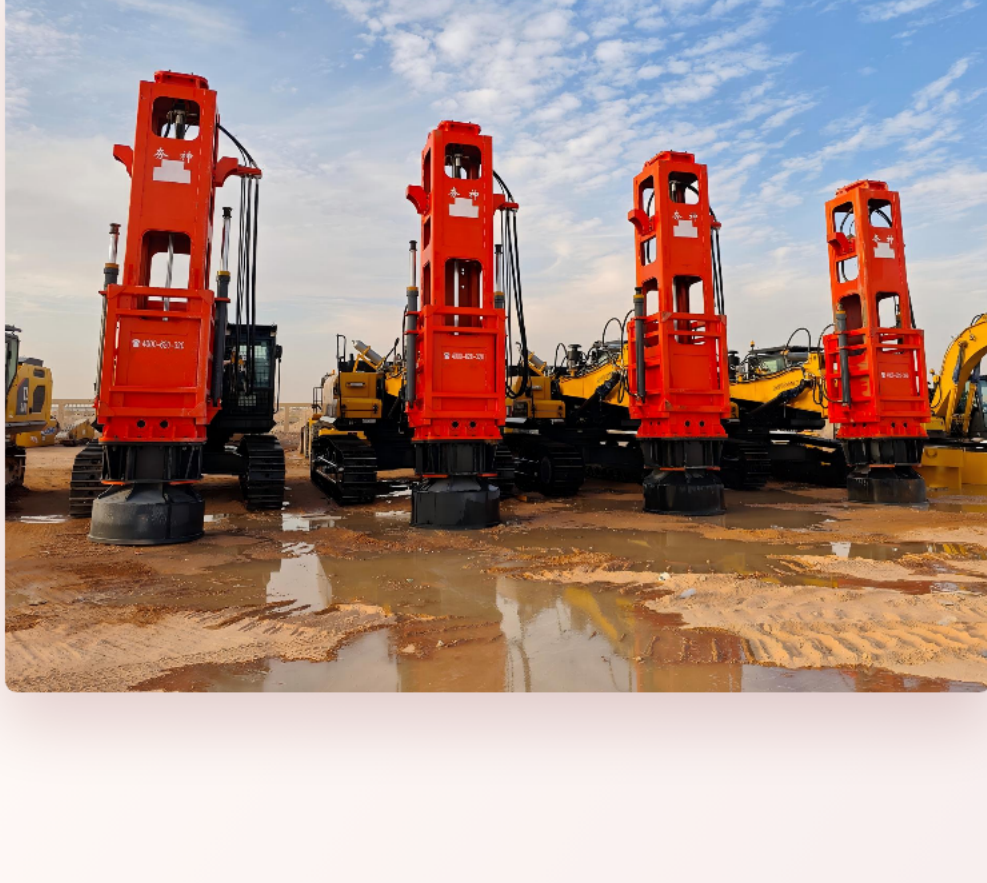
kJ / Impact Energy

4-8

m / Effective Depth

30-80

bpm / Working Frequency



Product Overview

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HC150 Rapid Impact Compaction Machine is a core seventh-generation model of Taian Hengda Machinery Co., Ltd.'s Hangshen series. It was developed under the leadership of Mr. Cao Bin, the inventor of China's Rapid Impact Compaction Machine and a recipient of the State Council Special Government Allowance.

The machine uses hydraulic drive and a patented internal-cylinder design. Its 10-ton-class hammer delivers at least 150 kJ of impact energy for fill improvement and foundation treatment at depths of 4.0-8.0 m.

The machine combines hydraulic drive with a patented internal-cylinder design. Its 10-ton hammer delivers at least 150 kJ impact energy for deep fill improvement and foundation treatment.

Typical Applications

- Airport runways, aprons and expansion works
- Port, wharf and yard foundations
- High embankments, bridge approaches and road widening interfaces
- Industrial parks, residential developments and large building platforms

Core Technical Specifications

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Parameter	Value	Unit	Description
Hammer Mass	10,000	kg	10-ton-class hydraulic hammer
Impact Energy	>=150	kJ	Maximum impact energy per blow
Overall Dimensions	1730 x 1638 x 6920	mm	Length x width x height; current model
Operating Weight	21.5	t	Including frame assembly
Standard Foot Diameter	1,500	mm	Standard configuration
Effective Improvement Depth	4.0-8.0	m	Deep ground improvement
Impact Stroke	1.5	m	Stroke per blow
Working Frequency	30-80	bpm	Blows per minute
Working Pressure	31.5	MPa	Rated hydraulic system pressure
Flow Rate	500	L/min	Required hydraulic flow rate
Carrier Excavator	45-55	t	CAT 349 / VOLVO EC480 / SANY SY500H

Advantages & Applications

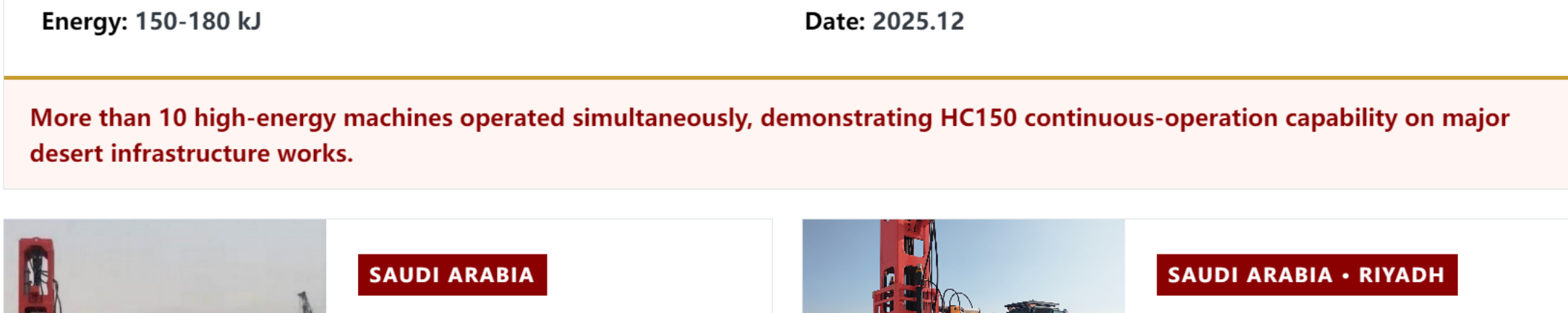
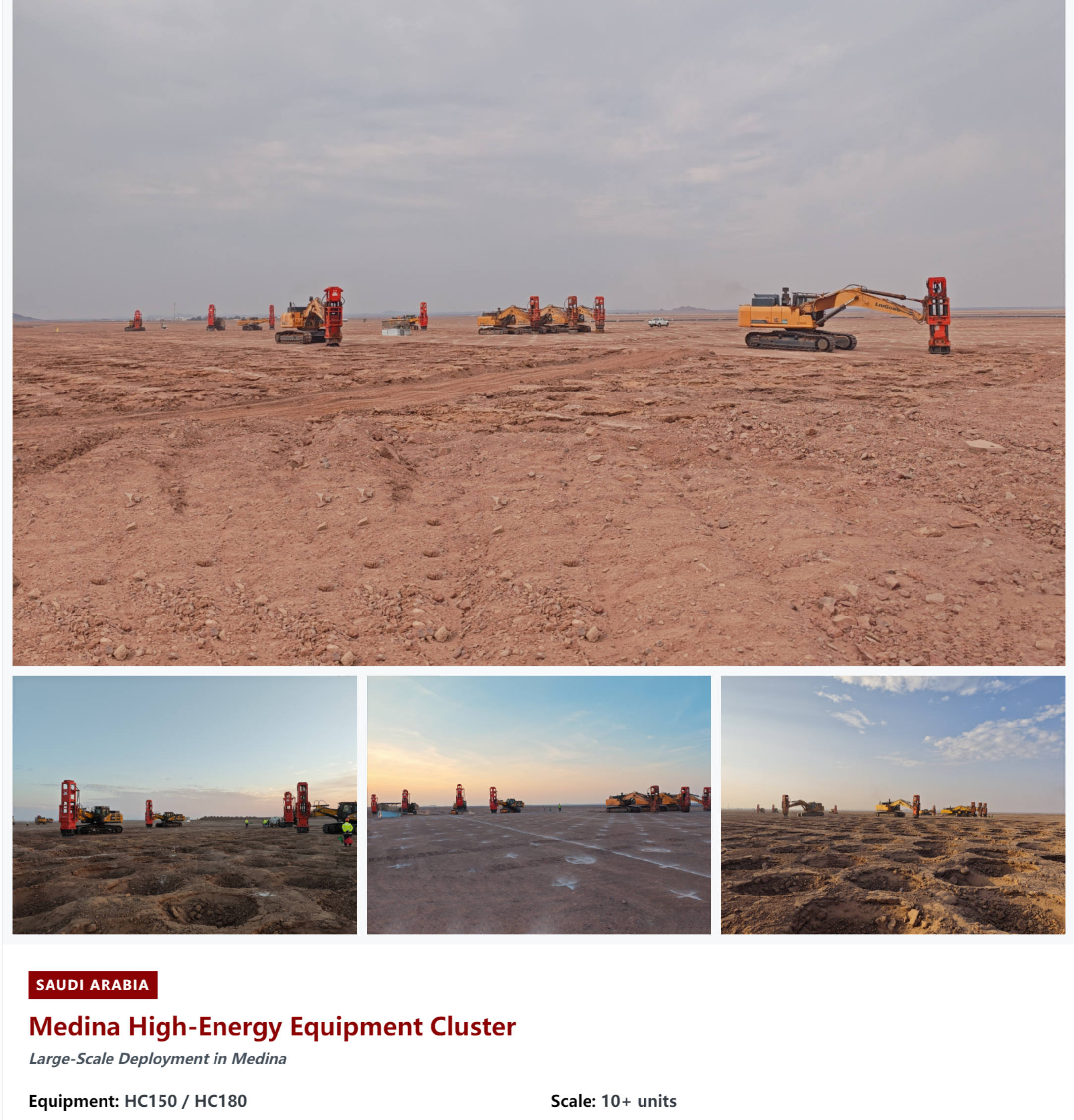
Advantages & Applications

Deep Compaction <i>Deep Compaction</i> 150 kJ-class impact energy reaches an effective depth of 4-8 m for deep fills and weak-ground improvement.	High Productivity <i>High Productivity</i> Adjustable frequency from 30 to 80 bpm allows the operating rhythm to be tuned to fill type, moisture and site conditions.	Stable & Reliable <i>Stable & Reliable</i> The internal-cylinder design reduces exposed components and supports intensive, continuous ground treatment.
Carrier Compatibility <i>Carrier Compatibility</i> Designed for 45-55 t excavators, including mainstream CAT, VOLVO and SANY carrier platforms.	Site Adaptability <i>Site Adaptability</i> Suitable for sand, native soil, fill and blended materials across a range of ground improvement applications.	Field Proven <i>Field Proven</i> Proven on airports, ports, roads and residential developments across the Middle East, Southeast Asia and China.

Airport Airport & Runway	Port Port & Wharf	Road Road & Embankment	Building Site Industrial & Building Sites
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International Project References

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SAUDI ARABIA Medina High-Energy Equipment Cluster <i>Large-Scale Deployment in Medina</i> Equipment: HC150 / HC180 Energy: 150-180 kJ Scale: 10+ units Date: 2025.12
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More than 10 high-energy machines operated simultaneously, demonstrating HC150 continuous-operation capability on major desert infrastructure works.

SAUDI ARABIA King Abdulaziz International Airport <i>King Abdulaziz International Airport</i> Carrier: CAT 349 Application: Airport ground improvement Fill: Local sand Depth: 4-8 m Deep compaction across large runway areas in a hot, arid desert environment.	SAUDI ARABIA - RIYADH Riyadh Foundation Compaction <i>Riyadh Foundation Compaction Project</i> Carrier: Not specified Application: In-situ ground compaction Fill: Local sand Depth: 4-8 m Validated HC150 performance and operating stability in desert sand conditions.
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SAUDI ARABIA - JIZAN Jizan Airport Runway Area <i>Jizan Airport Runway Ground Improvement</i> Equipment: HC150 Application: Runway ground improvement Fill: Local sand Project: Jizan Airport HC150 was used for in-situ compaction in the runway area; this is a separate project from King Abdulaziz International Airport in Jeddah.	INDONESIA Indonesia Factory Foundation <i>Indonesia Infrastructure Project</i> Carrier: SANY SY500H Application: In-situ ground compaction Fill: Native soil and marine sand Environment: Humid coastal climate HC150 improved the bearing performance of blended marine-sand and native-soil fill.
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UNITED ARAB EMIRATES Abu Dhabi Infrastructure <i>Abu Dhabi Factory Foundation</i> Carrier: SANY SY500H Application: Foundation compaction Fill: Local sand Client: GEOHARBOR Delivered with Shanghai Geoharbour Group, demonstrating HC150 acceptance in the premium Middle East market.

Selected Projects in China

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CHINA - HONG KONG Hong Kong International Airport Third Runway Reclamation <i>Hong Kong International Airport Third Runway Reclamation</i> Located north of Lantau Island, the project included approximately 650 hectares of reclamation, a new passenger terminal, 57 aircraft stands and a 3,800 m runway. With a 7 m clearance limit, proximity to the existing runway and hydraulically placed fill, the project used HC84 Rapid Impact Compaction Machines for large-scale densification. Equipment: HC84 and HC150 Volume treated: Approx. 8 million m³ Effective depth: More than 5 m Deployment: 65+ units Area treated: Approx. 2.7 million m² Fill: Marine sand, manufactured sand and public fill	2021 Science & Technology Progress Award - Third Prize China Waterborne Transport Construction Association Research on equipment upgrades and construction methods for complex rapid impact compaction conditions
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CHINA - SHANDONG Jinan Yaoqiang International Airport <i>Jinan Yaoqiang International Airport</i> Carrier: Lingong E6500F Application: Airport ground compaction Type: Airport expansion Equipment: HC150 A domestic hub airport foundation treatment project with trial compaction data confirming effective improvement depth at different energy levels.	CHINA - YUNNAN Kunming Changshui International Airport <i>Kunming Changshui International Airport</i> Carrier: XCMG XE490 Application: Airport foundation treatment Equipment: HC180 + HC150 Type: In-situ ground compaction HC150 and HC180 worked together on airport foundation treatment for a major aviation hub.
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CHINA - JIANGSU Nanjing Vanke Residential Foundation <i>Nanjing Vanke Residential Foundation</i> Carrier: SANY SY500H Application: Building foundation compaction Type: Residential community Depth: 4-6 m Foundation treatment for a high-density residential community, balancing bearing capacity and settlement control.	CHINA - HAINAN Haikou Xinhai Port and Nangang Port <i>Haikou Port Foundation Treatment</i> Carrier: Not specified Application: Port foundation treatment Type: Port infrastructure Equipment: HC150; HC84 also deployed HC150 contributed to large-scale port foundation treatment; HC84 was also used on the same development.
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CHINA - INNER MONGOLIA Baotou Community Foundation Compaction <i>Baotou Community Foundation Compaction</i> Carrier: Lingong E6600F Application: In-situ ground compaction Fill: Native soil and sand Depth: 4-8 m Demonstrated HC150 adaptability in cold highland conditions and sandy soils.	CHINA - SHANDONG Yantai Native-Soil and Sand Compaction <i>Yantai Soil and Sand Compaction</i> Carrier: Lingong E6500F Application: In-situ ground compaction Fill: Local native soil and sand Equipment: HC150 A coastal Shandong ground treatment project demonstrating HC150 suitability for native-soil and sand sites.
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CHINA - SHANDONG Taian HC150 Foundation Compaction <i>Taian HC150 Foundation Compaction</i> Carrier: XCMG XE490L Application: Foundation compaction Fill: Local native soil Equipment: HC150 A local Taian foundation project using HC150 with a 50-ton-class excavator carrier.

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Company Profile & Contact

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Taian Hengda Machinery Co., Ltd. <i>TAIAN HENGDA MACHINERY CO., LTD.</i> A National High-Tech Enterprise, a national technology-based SME, a Shandong specialized and innovative enterprise, and a Top 20 industrial enterprise in Daiyue District. China's first Rapid Impact Compaction Machine was invented and named by Chief Engineer Cao Bin in 2002 and has since evolved to its seventh generation. Our equipment has been deployed in Saudi Arabia, the United Arab Emirates, Indonesia, Cambodia, Angola, Canada, Hong Kong and other markets, with extensive field experience across airports, ports, roads, industrial parks and building foundations.	70%+ Domestic market share	#1 Independently developed
	2002 Year of invention	7+ International markets
National High-Tech Enterprise • Official high-tech enterprise recognition	National Technology-Based SME • Recognized by the Ministry of Science and Technology	
Shandong Specialized and Innovative Enterprise • Recognized by the Shandong Provincial Department of Industry and Information Technology	ISO Quality Management System Certification • International standard	
19 Utility Model Patents + 4 Invention Patents	China Highway & Transportation Society • Council member, Road Construction Machinery Branch	

			
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Building stronger foundations with proven equipment.