

7TH GENERATION PRODUCT

HC180

Rapid Impact Compaction Machine

Deep foundations. Heavy-duty compaction. With 180 kJ impact energy and a 12-ton hammer, the HC180 is engineered for the most demanding deep-fill projects, airports, ports, roads and large-scale infrastructure ground improvement.

A heavy-duty Rapid Impact Compaction Machine for deep ground improvement, delivering higher energy and deeper effective depth for the most demanding infrastructure projects.



180 kJ / Impact Energy	4-8 m / Effective Depth	30-80 bpm / Working Frequency
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Product Overview

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HC180 Rapid Impact Compaction Machine is a heavy-duty 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 12-ton-class hammer delivers 180 kJ of impact energy for fill improvement and foundation treatment at depths of 4-8 m — for the most challenging ground conditions with the highest compaction demands.

The machine combines hydraulic drive with a patented internal-cylinder design. Its 12-ton hammer delivers 180 kJ impact energy for deep fill improvement and foundation treatment at greater depths.

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	12,000	kg	12-ton-class hydraulic hammer
Impact Energy	180	kJ	Maximum impact energy per blow
Overall Dimensions	1730 x 1638 x 6838	mm	Length x width x height; current model
Operating Weight	23.8	t	Including frame assembly
Standard Foot Diameter	1,500	mm	Standard configuration
Effective Improvement Depth	4-8	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	600	L/min	Required hydraulic flow rate
Carrier Excavator	60+	t	CAT 374 / SDLG E6600F / XCMG XE650GK / SANY SY650H

Advantages & Applications

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Deep Compaction <i>Deep Compaction</i> 180 kJ-class impact energy reaches an effective depth of 4-8 m for deep fills and weak-ground improvement — the deepest effective depth in the HC series.	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 60 t+ excavators, including CAT 374, SDLG E6600F, XCMG XE650GK and SANY SY650H 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 Large-Scale Equipment Cluster
Large-Scale HC150/HC180 Deployment in Medina
Equipment: HC150/HC180 mixed fleet
Date: 2025
Scale: 10+ units
Application: Large-scale ground treatment
In 2025, more than 10 high-energy HC150/HC180 machines were deployed simultaneously in Medina — one of the largest high-energy equipment clusters in the Saudi market. HC180 units delivered the heaviest blows for deep foundation treatment zones, demonstrating continuous heavy-duty operation capability on major desert infrastructure projects.

Selected Projects in China

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CHINA • YUNNAN
Kunming Changshui International Airport
Kunming Changshui International Airport Foundation Treatment
Equipment: HC180
Energy: 180 kJ
Effective depth: 6 m+
Carrier: XCMG XE490
Application: In-situ foundation compaction, airport base treatment
HC180's 180 kJ impact energy delivered effective compaction depth exceeding 6 meters for the airport's foundation treatment. The automated control system enabled precise operation management on a major aviation hub project.

Company Profile & Contact

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Taian Hengda Machinery Co., Ltd. <i>TAIAN HENGDA MACHINERY CO., LTD.</i> 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.