HITACHI

Reliable solutions

Dredging solutions

From mining to dredging

Hitachi large excavators deliver the same levels of reliability and durability for offshore applications

Renowned for manufacturing reliable and durable machines for the mining industry, Hitachi has used its extensive expertise to produce a range of large excavators suitable for dredging. Mounted on pontoons and stabilised in the water by means of spuds, they can be used on rivers and canals, and in harbours and ports, for construction, maintenance, reclamation and expansion projects.

Designed and built in Japan, these excavators share the same characteristics as standard models: high levels of productivity, durability and easy maintenance, and advanced technological features. Corrosion-resistant for offshore operations, they are designed to work in extreme conditions, 24 hours a day. Compatible with a variety of attachments depending on soil type, they can be used to carry out different jobs, including rock crushing, dredging, loading and levelling.

Hitachi large excavators can also be customised to meet the requirements of individual customers, with the help and expertise of official Hitachi dealers within its global network. They are supported by an experienced team of Hitachi product specialists to ensure maximum availability, optimum performance and a favourable total cost of ownership.

Notes: The photos in this brochure may include optional and/or customer-installed equipments.

A pioneering approach

Built using decades of experience, Hitachi excavators bring many advantages to the dredging industry

Hitachi was the first manufacturer in the Japanese market to produce an excavator for use on a pontoon and has since developed a reputation for reliable, high-performance machines with sophisticated specifications. Using its experience in both offshore and onshore applications, it has created a wide range of EX models that can now be found on dredging vessels, from the EX1200-6 to the EX8000-6.

Hitachi excavators can be used to dredge sand, gravel and soft rock to depths of up to 19 meters. They have several advantages over other types of dredging vessels, such as grab or pump dredging pontoons, including greater productivity and accuracy, and easy operation and maintenance.

With a powerful digging force, smooth front operation and swing movement, and short cycle times, Hitachi large excavators can achieve high levels of productivity. They can position the bucket accurately on the sea or river bed for efficient dredging and levelling.

They are easy to operate using responsive, two-lever controls and advanced technological features in the cab. These include an on-board computer (DUL), which monitors the performance of the engine and hydraulic system.

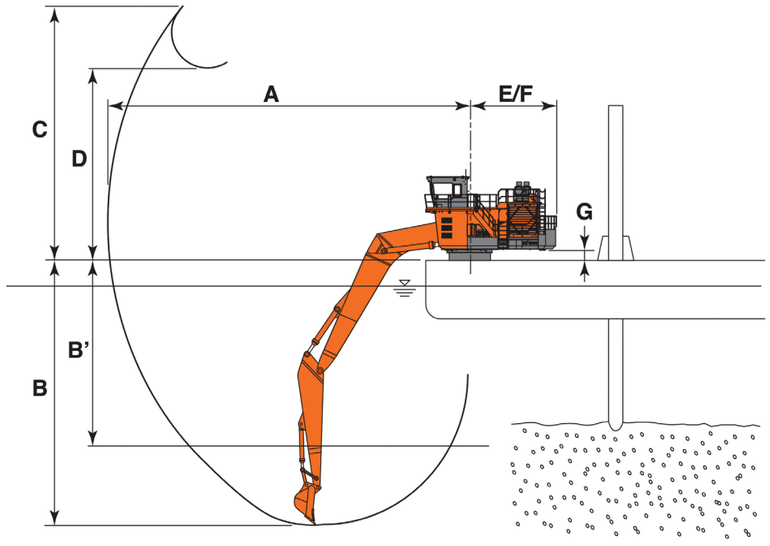
Hitachi excavators used on pontoons are subject to greater forces and heavier loads than land-based machines, as the digging operation is carried out underwater and unseen by the operator. As a result, they require frequent routine maintenance to ensure optimum performance.

Hitachi engineers have designed the excavators to be easy to maintain, for example the front attachment can be easily lubricated using a grease gun with a hose reel. A fast-fill system at the front of the machine allows for easy access to refill fuel and lubricants.

The excavators can be used with a variety of buckets. A ripper bucket is powerful for direct digging and dredging soft rock, while a single shank ripper increases the efficiency of crushing bedrock at the bottom of the sea. A hydraulic breaker is ideal for demolishing piers, and a clamshell bucket can be used for easy positioning, and digging deposits of sand and gravel.

SPECIFICATIONS

		EX1200-6		EX1900-6		EX2600-6	EX3600-6		EX5600-6
Front attachment Boom		9.0 m	11.0 m	8.3 m BE	13.5 m	8.7mBE	9.6 m BE	14.5 m	10.1mBE
Front attachment Arm		3.6 m	6.0 m	3.6 m BE	8.0 m	3.9mBE	4.5 m BE	10.6 m	5.0mBE
Bucket capacity (MAX.)	m^3	5.2	2.7	12.0	4.0	17.0	22.0	4.0	34.0
Upperstructure weight (without swing base)	kg	71 300	76 000	130 900	138 000	173 300	245 100	245 200	344 200
Swing speed	min^{-1}(rpm)	5.2		4.7		3.8	3.2		3.3
Max. digging force Bucket (ISO)	kN (kgf)	438 (44 700)	337 (34 400)	529 (54 000)	402 (41 000)	664 (67 800)	793 (80 900)	527 (53 800)	1 183 (120 800)
Max. digging force Arm (ISO)	kN (kgf)	390 (39 800)	282 (28 800)	384 (39 200)	280 (28 600)	483 (49 300)	573 (58 500)	377 (38 500)	808 (82 400)
Engine									
Model		CUMMINS		CUMMINS		CUMMINS	CUMMINS		CUMMINS
		QSK23-C		QSKTA38-CE		QSKTA50-CE	QSKTA60-CE		QSKTA50-CE
Rated engine output	kW/min^{-1}	567/1 800		810/1 800		1 119/1 800	1 450/1 800		2×1 119/1 800
Rated engine output	HP/min^{-1}	760/1 800		1 086/1 800		1 500/1 800	1 944/1 800		2×1 500/1 800
Piston displacement	L(cc)	23.15		37.8		50.0	60.0		2×50.0
		(23 150)		(37 800)		(50 000)	(60 000)		(2×50 000)
Fueltank (diesel)	L	1 470		4 140		5 300	7 450		11 300
Hydraulic system									
Hydraulic pump type		3 variable displacemet axial piston pumps		6 variable displacemet axial piston pumps		6 variable displacemet axial piston pumps	8 variable displacemet axial piston pumps		12 variable displacemet axial piston pumps
Working range									
A.Max. digging reach	mm	15 350	19 450	15 250	24 530	15 580	18 240	27 910	20 200
B. Max. digging depth (from deck)	mm	10 290	14 470	9 170	17 970	9 480	9 670	18 830	10 260
B'. Max. digging depth (from deck) x 0.7	mm	7 200	10 130	6 420	12 600	6 640	6 770	13 200	7 180
C. Max. cutting height (from deck)	mm	12 550	14 380	13 150	18 130	14 540	16 670	20 360	18 160
D. Max. dumping height (from deck)	mm	8 170	10 360	7 020	6 330	7 500	9 110	6 880	9 200
E. Rear-end length	mm	4 740		5 990		6 190	6 650		7 820
F. Rear-end swing radius	mm	4 850		6 035		6 290	6 780		7 950
G. Counterweight clearance	mm	910		1 000		1 000	1 500		1 500
Reference Barge dimensions	(L×W) m	30×12		35×14		43×15	55×18		63×20



Notes: 1. These specifications are prepared for the sake of consideration and negotiation. Final specifications are to be determined by discrete negotiations and meetings by referring to dredging conditions and requirements of the project.
2. Maximum bucket capacity is set on condition that apparent specific gravity of materials to be dredged is 1.8 t/m^3, despite heaped or struck capacity.
3. Maximum digging force is set less than that of a land excavator to reduce serious damage due to extra external force.
4. Working ranges may be limited by lifting capacity. (EX1900-6 with 13.5 m boom)

Options and modifications

To meet the specific requirements of customers, Hitachi excavators are available with a range of options, including a centralised lubrication system. They can also be customised, with the assistance of official Hitachi dealers. For example, a custom-modified front attachment, additional piping for breaker attachments, and additional arms can be provided.

These specifications are subject to change without notice.
Illustrations and photos show the standard models, and may or may not include optional equipment, accessories, and all standard equipment with some differences in color and features.
Before use, read and understand the Operator's Manual for proper operation.

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