

GRAB DREDGER "GOSHO" OWNED BY KOJIMAGUMI CO., LTD. SETS A GUINNESS WORLD RECORDS™ TITLE FOR THE LARGEST GRAB DREDGER



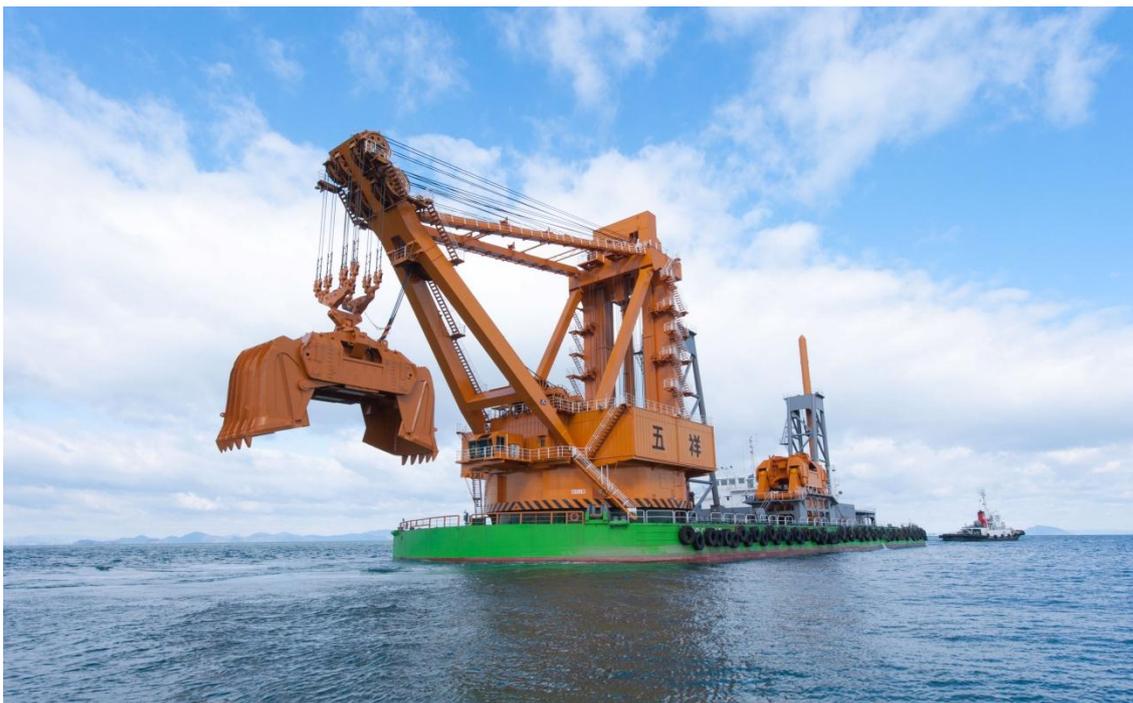
Grab dredger "GOSHO", built by Kojimagumi Co., Ltd. (Kojimagumi), in association with Sumitomo Heavy Industries, Ltd. (Sumitomo), Kawasaki Heavy Industries, Ltd. (Kawasaki) and Walter Hunger GmbH & Co. KG (Walter Hunger), has officially been recognized as the largest grab dredger by Guinness World Records Ltd.

**Certified title : LARGEST GRAB DREDGER**

<b>Certified record : GRAB BUCKET</b>	<b>CAPACITY</b>	<b>200m<sup>3</sup></b>	<b>(7.062 ft<sup>3</sup></b>	<b>1,607 in<sup>3</sup>)</b>
	<b>HEIGHT</b>	<b>8.84m</b>	<b>(29ft)</b>	
	<b>WIDTH</b>	<b>12.92m</b>	<b>(42ft 4in)</b>	
	<b>LENGTH</b>	<b>5.85m</b>	<b>(19ft 2in)</b>	

**(Capacity is measured by 3D laser scanner)**

"GOSHO" has been operating in Singapore since March, 2016. The presentation ceremony of the certificate is to be held in June, 2017.



\*Grab dredger is a work vessel for seabed excavation with the grab bucket. Main task is to deepen and widen the channel. Lately the grab dredger is highly recognized as one of the excavating methods for the seabed resources.

#### ■ “GOSHO” ‘s COUNTER WEIGHT SYSTEM realized “WORLD LARGEST”

“GOSHO” is equipped with Counter Weight System in the dredge to lift the grab bucket. Conventional grab dredger uses the winch to lift the bucket and the soil directly, and the limit of the winch’s hoisting capability was the wall in manufacturing the larger grab bucket. Kojimagumi, then, invented the Counter Weight System. The system hoists only the weight of the soil by the hydraulic cylinder, utilizing the counter weight for lifting, balancing the weight of the grab bucket with the counter weight. With this system, simpler structure and power saving was achieved and it led to the realization of the larger grab bucket.

#### ■ Structure of Electric Hydraulic Grab bucket

“GOSHO”’s bucket has built-in motor and hydraulic system. It consists of shell part, frame part, hydraulic unit part, cylinder part and hoisting hanger part. How it works mechanically is that it opens and closes the bucket by providing the cylinder with pressured oil generated by the hydraulic system. Power is supplied by the cable reel.

#### ■ Principal specifications

##### Grab bucket

: Self weight	370 ton
: Capacity	200m <sup>3</sup> (Equivalent to 40 of 10ton truck)
: Open/Close time	Closing time      26 sec Opening time      18 sec
: Hoisting rope	φ60mm x 16 ropes
: Power supply	Main pump          600V 60Hz   3φ Aux. Pump          600V 60Hz   3φ Operating circuit 220V 60Hz   1φ
: Motor	Main pump          132kW x 8 Aux. pump          7.5kW x 2
: Open/Close cylinder	φ580 x 430 x 3100 mm x 2
: Pump	Rated 350kgf/cm <sup>2</sup> Max. 400kgf/cm <sup>2</sup> x 8 Flow                  450L/min
: Tooth	10 teeth (Length 850mm, weight approx. 400kg each)

### Grab bucket hoisting cylinder

: Dimension	Ø970x660x19.800 mm
: Max. elongation	Approx. 20m

<b>Vessel</b>	: Breadth overall	36m
	: Length overall	100m (Equivalent to 22 valley ball courts)
	: Height	60m (Equivalent to a 20-story building)
	: Draught	3.6m

<b>Dredge</b>	: Electric hydraulic slewing system	
	: Hoisting load	690 ton
	: Working radius	31 m
	: Dredging depth	48m
	: Head above water	10m
	: Hoisting speed	In the air 0.758m/sec In the water 1.075m/sec
	: Lowering speed	0.905m/sec
	: Turning speed	0.6 times/min
	: Turning angle	±155°
	: Dredging depth	48m

### ■ Background of the challenge

“GOSHO”, built in 2000, has operated in the Middle East and Africa with the International dredging company since 2011. In 2014, as preparation for deeper and larger project, we started the major modification and development for “GOSHO”, which completed in January, 2016. For the mega size hoisting cylinder, as finding the fact that no manufacturer was capable for the job in Japan, we placed an order to German cylinder manufacturer, Walter Hunger. Crane’s structural part was manufactured by Sumitomo. Hydraulic system, by Kawasaki.



Taking this major modification and development as our opportunity, we decided to challenge the Guinness World Records title under their guidelines.

■ **Kojimagumi's outline**

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|-----------------------------|---|
| (1) Company name            | Kojimagumi Co., Ltd.  |
| (2) Location of head office | 1-6 Kiba-cho, Minato-ku, Nagoya, Aichi, Japan                         |
| (3) Representative          | Tokuaki Kojima Representative Director, President                     |
| (4) Description of business | Dredging, reclamation, civil construction work and related activities |
| (5) Paid-in capital         | 90 million yen  |
| (6) Founded                 | June, 1919  |
| (7) Established             | December, 1941  |

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