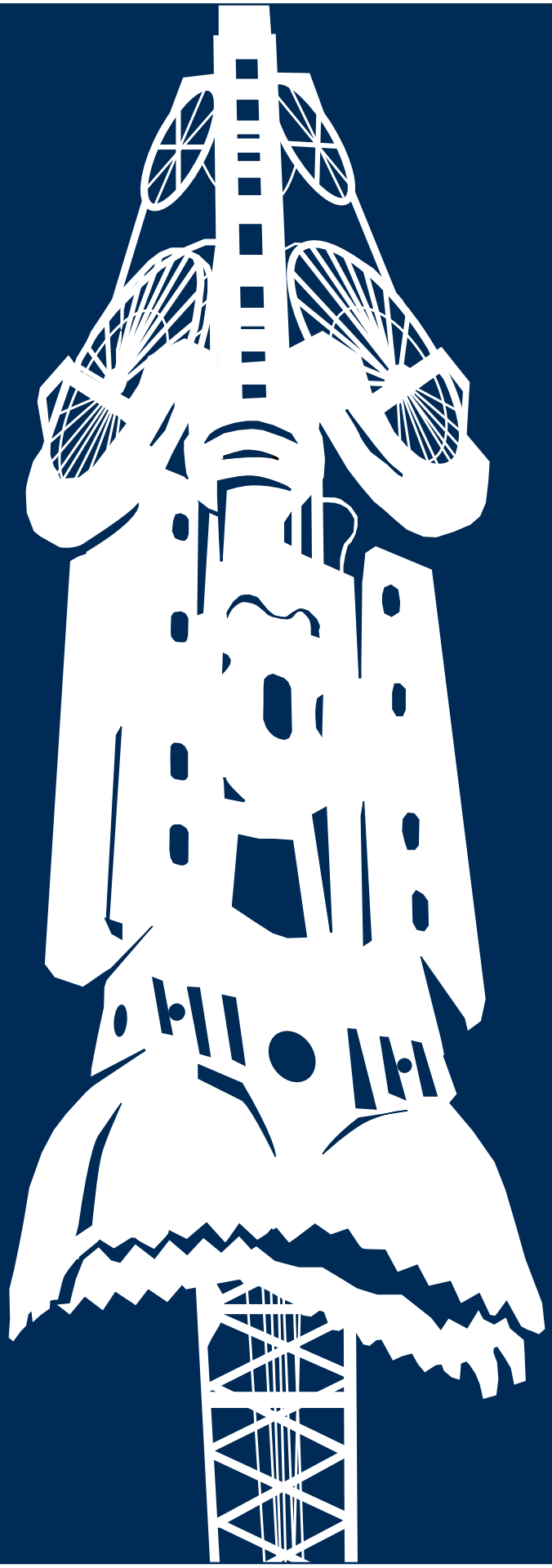
BH/GH

HYDRAULIC GRAB



soilmec
Drilling and Foundation Equipment

BH/GH

HYDRAULIC GRAB

A new model

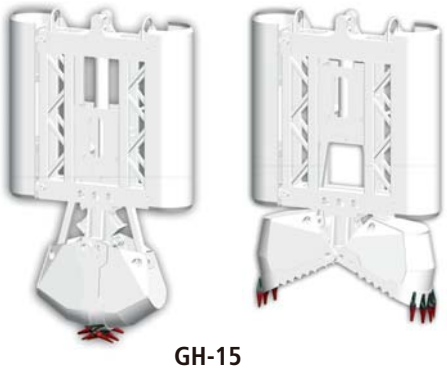
Soilmec hydraulic grabs are the result of years of research, investigation and innovation in the mechanical excavation sector. Collecting data from different job sites, testing them in different soil conditions, studying their performance in soil environments varying from very soft to the most difficult geological conditions, has meant that we are able to produce one of the most cost effective hydraulic grabs available on the market.

Soilmec hydraulic grabs are renowned for operating in difficult confined areas, low maintenance cost and efficiency in bulk excavations. They can work in almost any type of coarse and cohesive soils.
In conditions where large boulders or hard conglomerate formations are found, traditional chiselling is recommended.

Soilmec latest generation of hydraulic grabs consists of four different models: **BH-8, BH-12, GH-12** and **GH-15**. They can be rope-suspended or kelly-mounted.
Different jaw size can be available, from 350 to 1200 mm width and from 2000 to 4200 mm length.

BH-8

BH-12 / GH-12

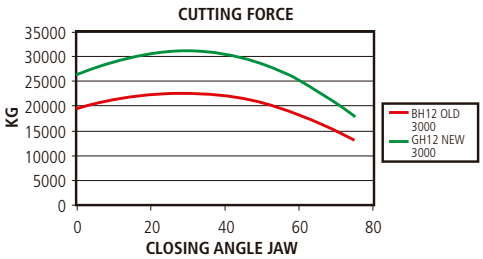


GH-15

BH-8, BH-12, GH-12 and **GH-15** jaw grab size (width/ length) range from/to:			
BH-8	width x length	mm	350 - 800 X 2000 - 3200
BH-12	width x length	mm	500 - 1000 X 3000 - 4200
GH-12	width x length	mm	500 - 1000 X 3000 - 4200
GH-15	width x length	mm	600 - 1200 X 3000 - 4200

Soilmec hydraulic grabs are specifically designed to give the following important characteristics:

- **Hardiness**
- **Heaviness,**
- **Modularity,**
- **Verticality,**
- **Productivity**
- **High power cutting force**



Cutting force has been improved on new GH type. Cutting force comparison graph between previous BH-12 and new GH-12 type is shown above. New GH-12 has 40% more cutting force than with previous BH-12.

Soilmec novel "Rotograb" system for diaphragm wall construction features an innovative 360° grab rotation especially useful for working in narrow or confined spaces.

40/120 tons hydraulic base crane units provide stability and suitable line pull.
Recommended Soilmec cranes to operate grabs are:

SC-40	SC-60	SC-90	SC-120
BH-8	**BH-8**	**BH-8**	**BH-8**
-	**BH-12**	**BH-12**	**BH-12**
-	**GH-12**	**GH-12**	**GH-12**
-	**-**	**GH-15**	**GH-15**

BH type

GH type

Soilmec grab bodies have long side guides to ensure weight and verticality. The combined action of grab weight with an accurate jaw closing provides a higher degree of penetration. All pivots and bushings are made of wear-resistant steel, in order to prevent damage from seepage of bentonite mud.

Technical data BH-8		
Excavation width	mm	350-800
Jaws opening	mm	2000-3200
Excavation depth	m	70
Continuous operating pressure	MPa	30
Kelly guide weight	kg	4000
Cutting force (at 2500 mm)	kN	153
Grab weight (600x2500)	kg	8000
Grab capacity (600x2500)	mc	1,2
Operating Cylinder		
Bore	mm	200
Thrust at 30 MPa	kN	940

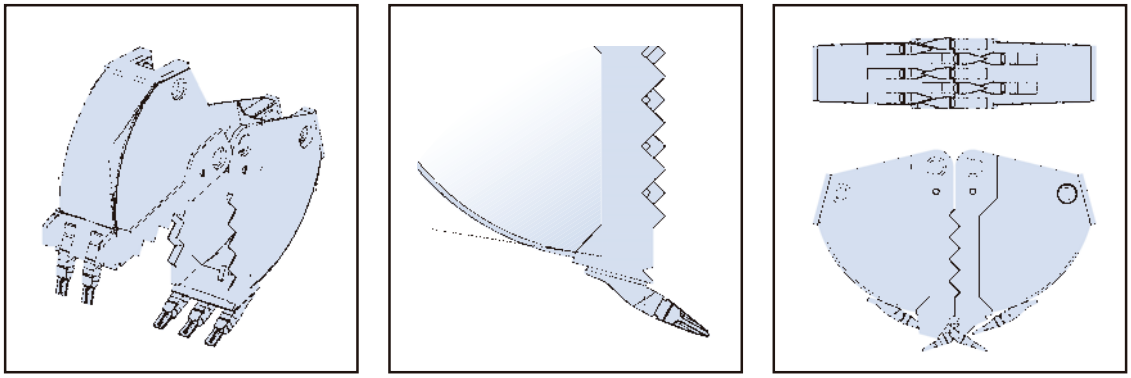
Technical data BH-12/GH-12		
Excavation width	mm	500-1000
Jaws opening	mm	3000-4200
Excavation depth	m	70
Continuous operating pressure	MPa	30
Kelly guide weight	kg	4000
Cutting force (at 4000 mm)	kN	234
Grab weight (800x4000)	kg	12500
Grab capacity (800x4000)	mc	2,2
Operating Cylinder		
Bore	mm	240
Thrust at 30 MPa	kN	1360

Technical data GH-15		
Excavation width	mm	600-1200
Jaws opening	mm	3000-4200
Excavation depth	m	70
Continuous operating pressure	MPa	30
Kelly guide weight	kg	4000
Cutting force (at 4000 mm)	kN	234
Grab weight (800x4000)	kg	15200
Grab capacity (600x2500)	mc	2,2
Operating Cylinder		
Bore	mm	240
Thrust at 30 MPa	kN	1360

Jaws

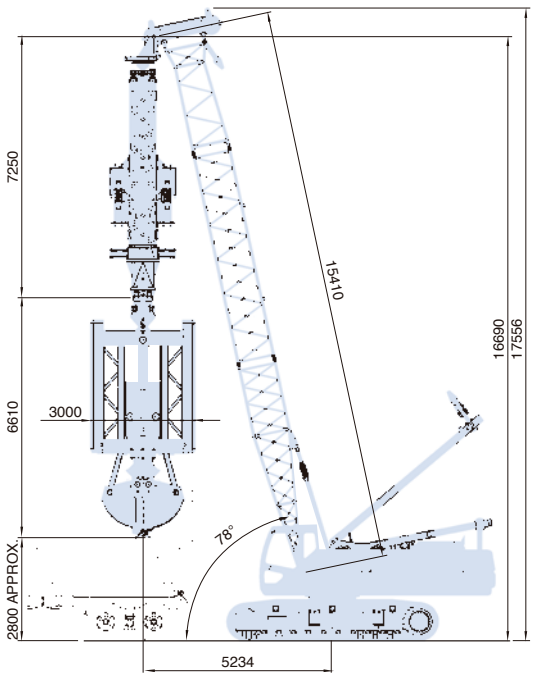
Soilmec jaws can be either round or rectangular in section. Jaws are made by wear-resistant and alloy steel plates for a longer life span. The new design guarantees a higher jaw closing force which eliminates any loss of material or bentonite mud.

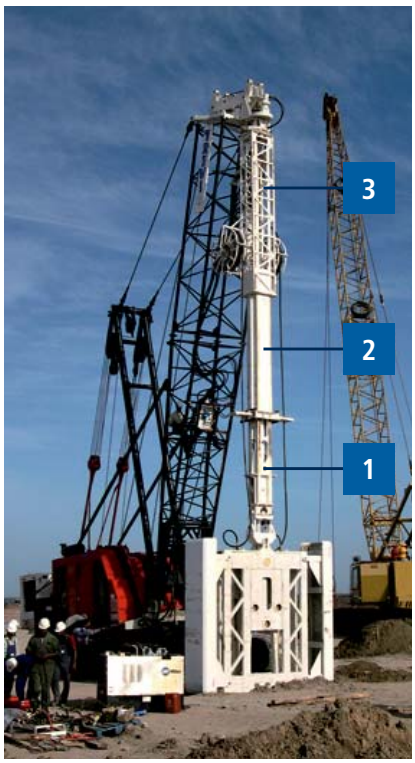
ESCO Super V teeth have been chosen to be fitted on Soilmec jaws. They give the following advantages: reduced wear and tear, faster and easier replacement as well as a wider selection of teeth.
The use of Super V tooth holders also give the advantage of interchangeable teeth.
Customized solutions with different tooth patterns can also be provided.
Outside welded teeth can guarantee a tighter jaw closure. This must be carefully considered when selecting jaw teeth. In cohesive soils like clay, a loose closure is preferred to allow bentonite to drain while clay must remain inside the jaws; on the contrary, in sandy soils a tight closure is preferred to avoid sand draining.



Grab guiding system

Soilmec grab guiding system combines the operating principles of rope and kelly-type equipment, to maintain the advantages offered by the two systems. The kelly guiding system increases verticality control during excavation initial stages.



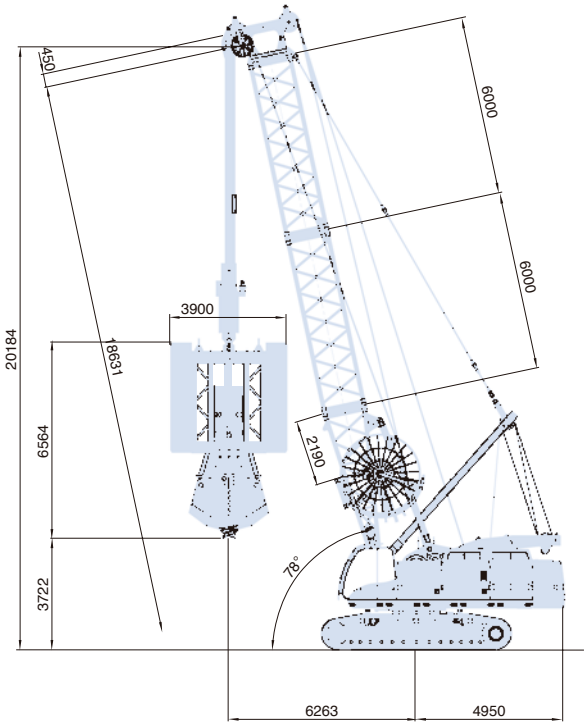


BH-8 and BH-12 grab guiding system.

Grab guiding system comprises the following:
- Short square box connection element with grab attachment (1).
- Intermediate square (2) box section element sliding along the outer kelly lattice guide (3).

BH-8 and BH-12 grabs are fully guided until the side guides are well into the excavation. The telescopic leader is provided with a revolving system allowing a quick grab repositioning over the trench. A hydraulic gear (cardan joint) provides +/- 180° grab revolving to rectify any misalignment during excavation.

HYDRAULIC GRAB

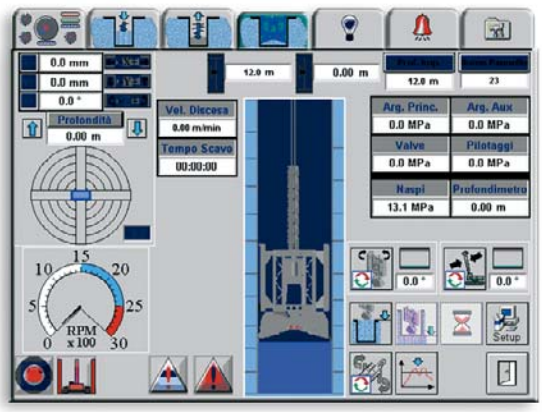


GH-12 and GH-15 grab guiding system (Rotograb).
Rotograb guiding system comprises two squared section elements. The internal element is (1) fixed to the grab body while a hydraulic gear, which provides 360° grab rotation is fitted to the bottom of the external element (2). Hydraulic hose winders are positioned and fitted on the boom.

This unique and innovative solution provides:
- 360° grab rotation in confined areas
- Excavation close to existing buildings
- Quick and accurate repositioning over the trench.
- Robust guiding system to ensure initial trench verticality.

Rotograb guiding system main characteristics are:
- Outer element complete with cardan joint.
- Hydraulic gear for 360° rotation.
- Internal sliding element with grab attachment.
- Hose drum with automatic tensioning and rewinding system fixed on crane boom.

DMS
Drilling Mate System



DMS performs real time excavation control. Verticality is constantly monitored by sensors installed directly on the grab-body, allowing corrective actions, if required.

Our DMS system shows and records main excavation parameters, such as:
- Depth,
- Excavation time,
- Penetration rate,
- Etc, etc, etc.

Graphs and recording of:

Grab inclination (X) according to excavation depth
Grab Inclination (Y) according to excavation depth

Optional: grab rotation (Z) according to excavation depth

Grab inclination (X) according to time
Grab inclination (Y) according to time

Optional: grab rotation (Z) according to time

Data recording on memory card
Transmission of grab data to rig via radio modem

Optional: connection to download data

- Connection from office (headquarters) to rig via GSM-GPRS
- Connection from office (headquarters) to rig via Satellite

- Send e-mails upon excavation completion from rig to office/headquarters
- Transmission of production data from rig to office/headquarters


SOILMEC
THÖMEN
TREVI
HOCHTIEF
LAMKEWITZ

BH-12

BH-8

GH-15

GH-15

SOILMEC distributes machinery and structures all over the world, supported by SOILMEC subsidiary companies and representative offices as:

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CERTIFIED QUALITY SYSTEM

In 1990 Soilmec was awarded with the certification of its Quality System complying with ISO 9001:2000 and ISO 14001:2004 standards.

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