



**Diaphragm
Walls
Grabs**

BH / GH
BHR / GHR
GC

Diaphragm
Walls Grabs

GH **BH**
GHR **BHR**
GC

soilmeco
Drilling and Foundation Equipment

Diaphragm walling main key words

Soil penetration efficiency and capacity to secure excavation vertical alignment are the main characteristics requested to diaphragm walling grabs. Other features, such as the possibility to **unload the excavated spoils directly over the truck and the capability to operate close to existing walls**, make grabs particularly suitable in urban environment.

Vertical alignment

Because the grab can be bent, gravity remains the best reliable guide. Soilmecc GH, GHR, BH, BHR and GC diaphragm walling grab models are rope suspended, having their gravity center located in the body lower part. To avoid lateral deviation deriving from unequal number of teeth fitted on the grab jaws, GH, BH, GHR and BHR series are **complete with hydraulic revolving gear**. The latter allows the operator to turn easily the grab from time to time, when coming back over the excavation mouth after unloading. Both maneuvers are performed and combined in one single movement, without any interruption of the production cycle.

Soil penetration efficiency

The grab weights, ranging from 8 t to 16 t, are associated with high hydraulic or mechanical

closing forces, actuated by rope or a unique cylinder for perfect synchronism of the jaws closure. In hard soils, free rope hanging, large dimensioned body design for impact energy absorption, allow chiseling for excavation profile correction. Jaws may also be completed with chisel block for short chiseling blows operation.

High performances

The GH, BH, GH-R and BH-R are free hanging in the trench but fully guided out of it. Therefore, the operator may accomplish smooth and rapid excavation cycles, reaching easily the excavation mouth after unloading even after revolving the grab.



DMS vertical alignment checking

DMS-grab is a specific version of DMS, dedicated to diaphragm walling. The drilling data monitoring system allows excavation vertical alignment checking.

Low running costs

GH, BH, GHR and BHR Series are designed for heavy-duty use. They are fitted with alloyed steel bushing and hardened jaws axes, protected against bentonite mud penetration by a pressurized **lubrication system**.



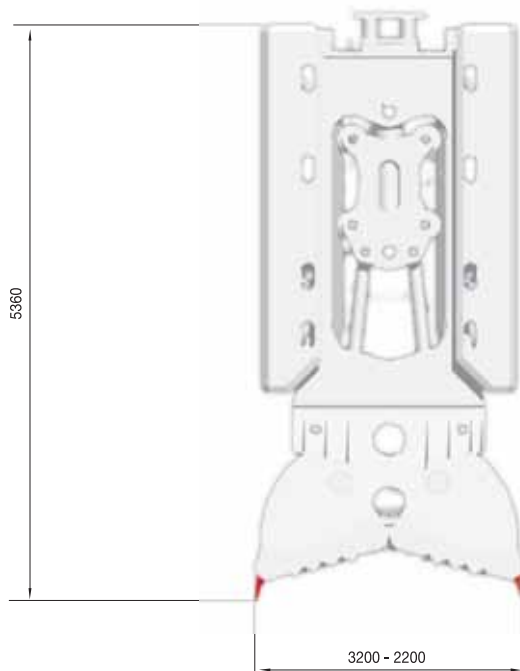
Grab Model	BH/BHR	GH/GHR	GC
Type	Rope suspended	Rope suspended	Rope suspended
Operation	Hydraulically	Hydraulic	Cable operated
Guiding outside of the trench	☒	☒	☐
Max depth	75 m / 246 ft	75 m / 246 ft	Depending on crane

	BH-8/BH-8R	BH-12/BH-12R	GH-12/GH-12R	GH-15/GH-15R	GC-11	GC-16
SC-40	☒	☐	☐	☐	☐	☐
SC-65	☒	☒	☒	☐	☒	☐
SC-100	☒	☒	☒	☒	☐	☒
SC-120	☒	☒	☒	☒	☐	☐

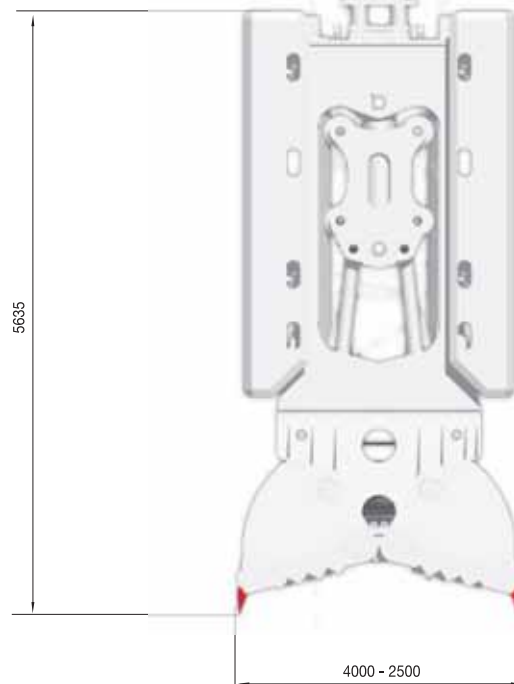


BH series

BH-8

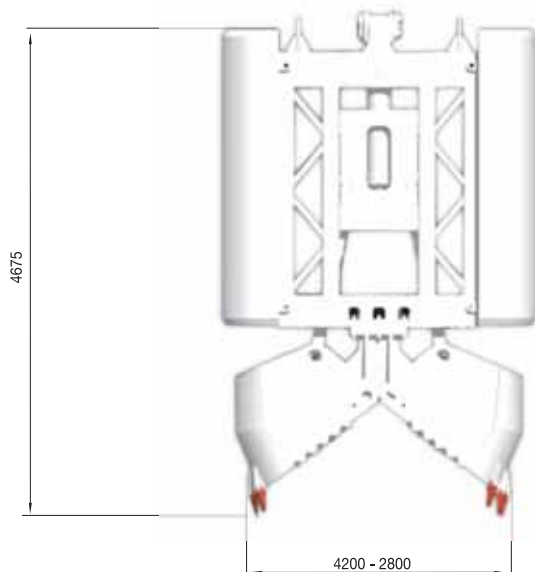


BH-12

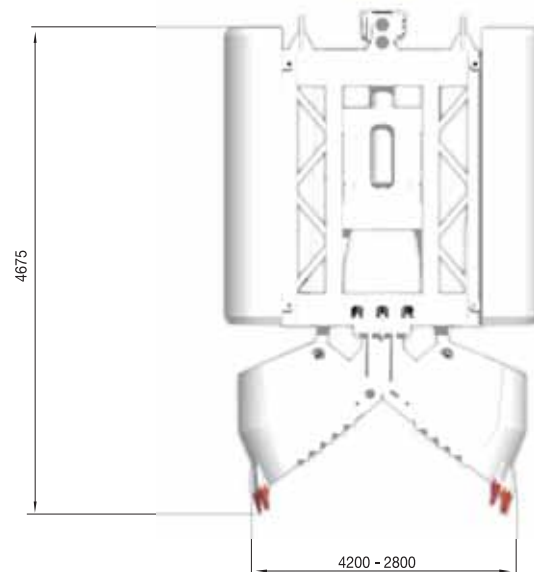


GH series

GH-12



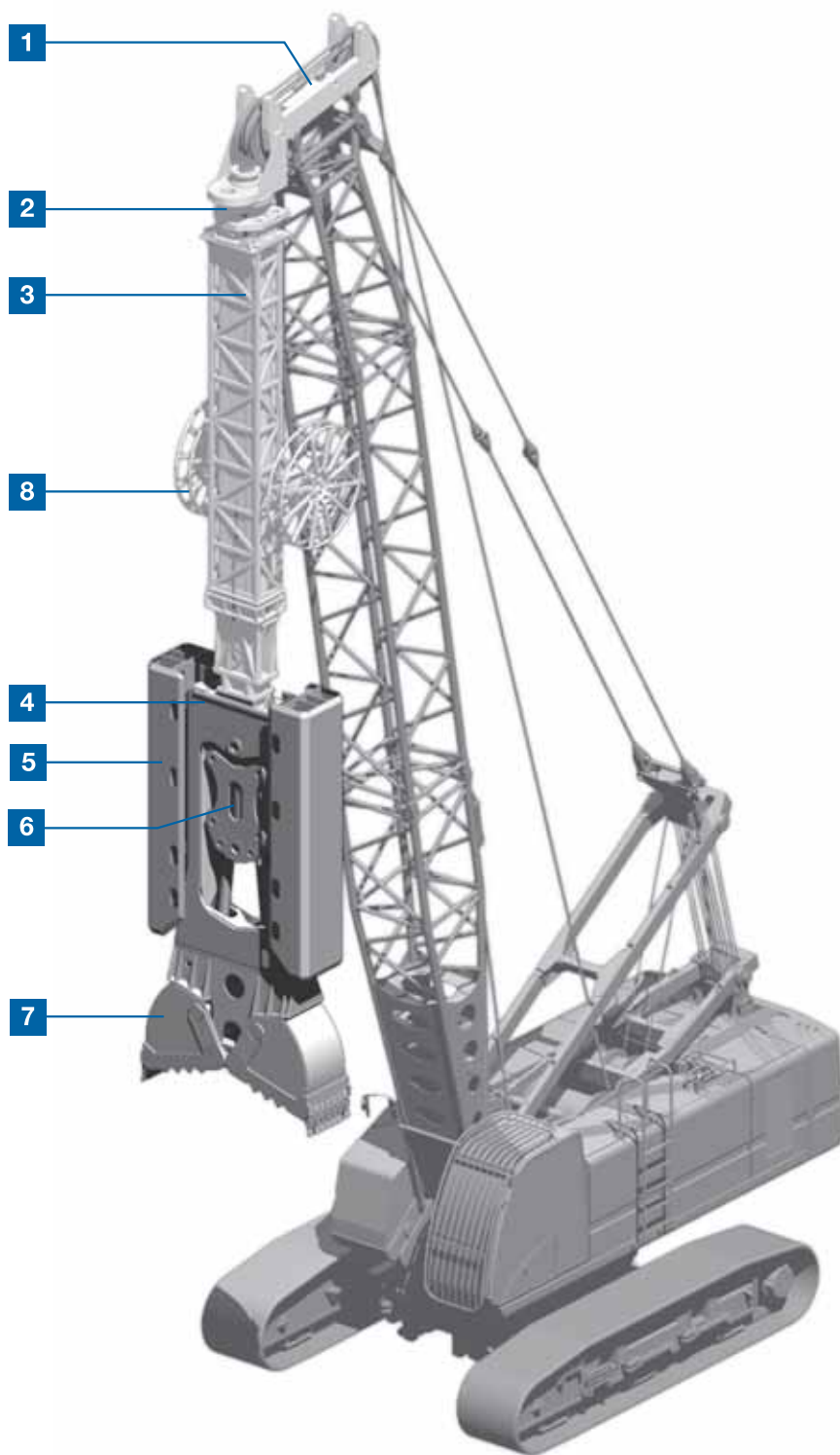
GH-15



Model	Max depth		Excavation dimension		Weight tot.	
BH-8 / BH-8R	75 m	246 ft	350/800 x 2000/3000 mm	14/31.5 x 79/126 in	8 t	17637 ft
BH-12 / BH-12R	75 m	246 ft	500/1200 x 2000/3500 mm	20/47 x 79/138 in	12 t	26455 ft
GH-12 / GH-12R	75 m	246 ft	500/1200 x 2500/4200 mm	20/47 x 98/165 in	12.5 t	27558 ft
GH-15 / GH-15R	75 m	246 ft	600/1500 x 2800/4200 mm	24/60 x 112/165 in	15.2 t	33510 ft
GC-11	depending on cranes		500/1200 x 2500/3000 mm	24/47 x 98.5/118 in	11.3 t	24912 ft
GC-16	depending on cranes		800/1200 x 2800/3500 mm	31.5/47 x 110/138 in	16 t	35274 ft

DIAPHRAGM WALL GRABS

Kelly system



The Soilmech hydraulic grabs are the result of years of research and development in mechanical excavation. The collection of data from various sites, tests on different soil types, the study of the performance of difficult soft soils and layers allowed the production of the series of hydraulic grabs more competitive available on the market.

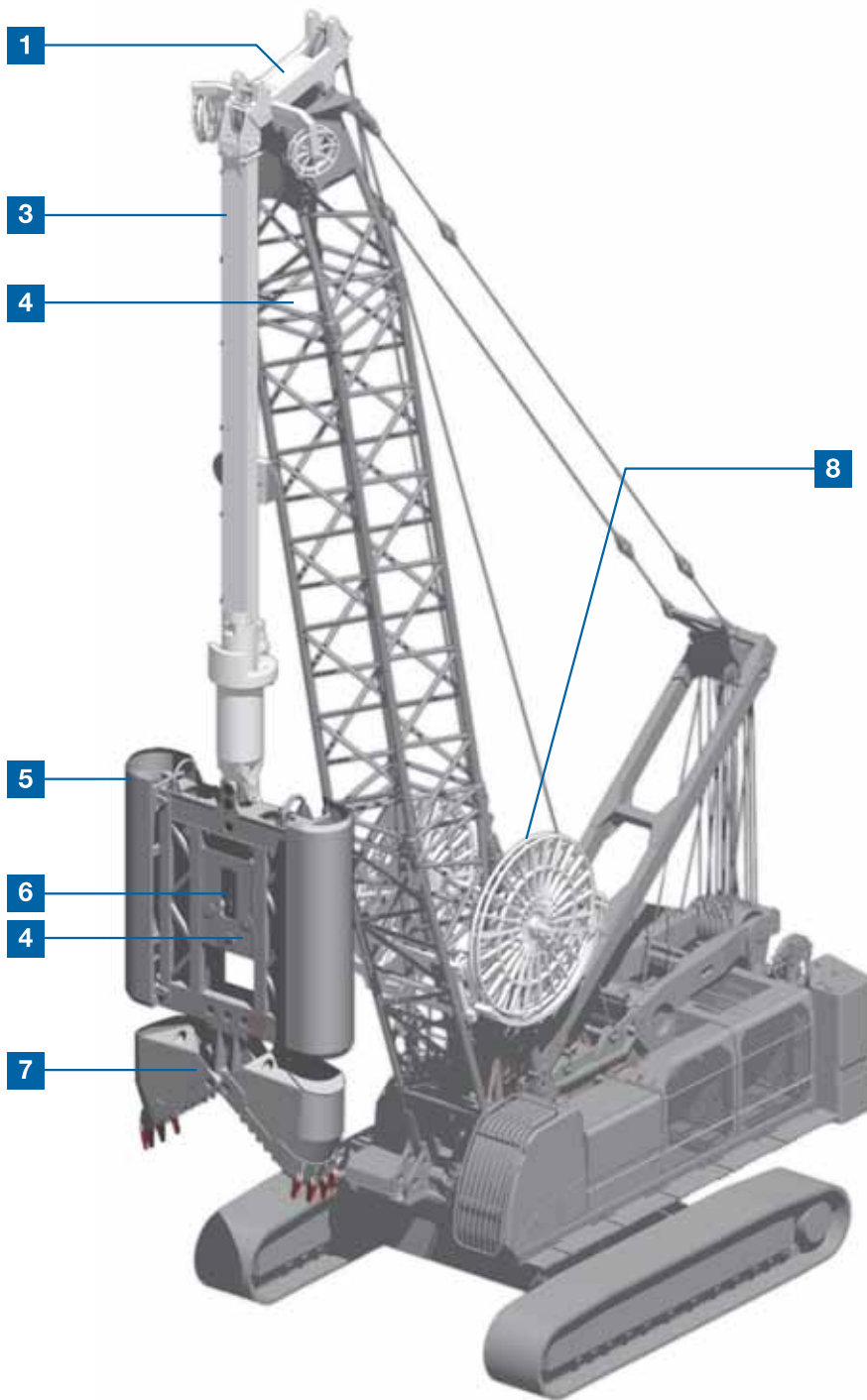
The grabs are known for their ability to dig voluminous material directly downloaded onto the truck and for low maintenance costs. Since the kelly can inflect, gravity is the best guide possible so much so that diaphragm walling model is defined **“rope suspended”**.

To avoid lateral deviations during the phase of excavation due to the different number of teeth mounted on the jaws the grab series is equipped with a system of hydraulic winders. The latter allows the operator to easily perform the turn to the excavation after the unloading phase: both operations are performed and combined in a single movement without interrupting the working cycle.

They can operate in any soil type coarse or cohesive. In the presence of large boulders or hard conglomerate formations, we recommend the traditional chiseling.

- 1 Special cathead
- 2 Hydraulic revolving gear motors +/-180°
- 3 Telescopic external guide
- 4 Grab body
- 5 Side guides
- 6 Grab operation cylinder
- 7 Jaws
- 8 Hydraulic coilers

Model	max depth		excavation dimension (width x lenght)		weight tot. (approx)	
BH-8	75 m	246 ft	350/800 x 2000/3200 mm	14/31,5 x 79/126 in	8 t	17637 lb
BH-12	75 m	246 ft	500/1200 x 2000/3500 mm	20/47,2 x 79/138 in	12 t	26455 lb
GH-12	75 m	246 ft	500/1200 x 2500/4200 mm	20/47,2 x 98.4/165 in	12,5 t	27557 lb
GH-15	75 m	246 ft	600/1500 x 2500/4200 mm	24/59 x 98.4/165 in	15,2 t	33510 lb



Rotograb is the innovative solution to carry out diaphragm walls along side existing buildings in the city for underground garages.

In respect to the GH and BH series, the rotograb models differ by the guiding system that has been designed to allow the grab to excavate practically in contact with existing wall. The system has a 360° grab revolving capacity to ease rig positioning (*for panels located in the corners*) and avoid diaphragm longitudinal deviation.

The rotograb series have an external guide complete with two guiding sections only. One is free hanging at the compact cathead, while the second is fixed to the grab body and slides in the first, when the grab is lifted out of the trench.

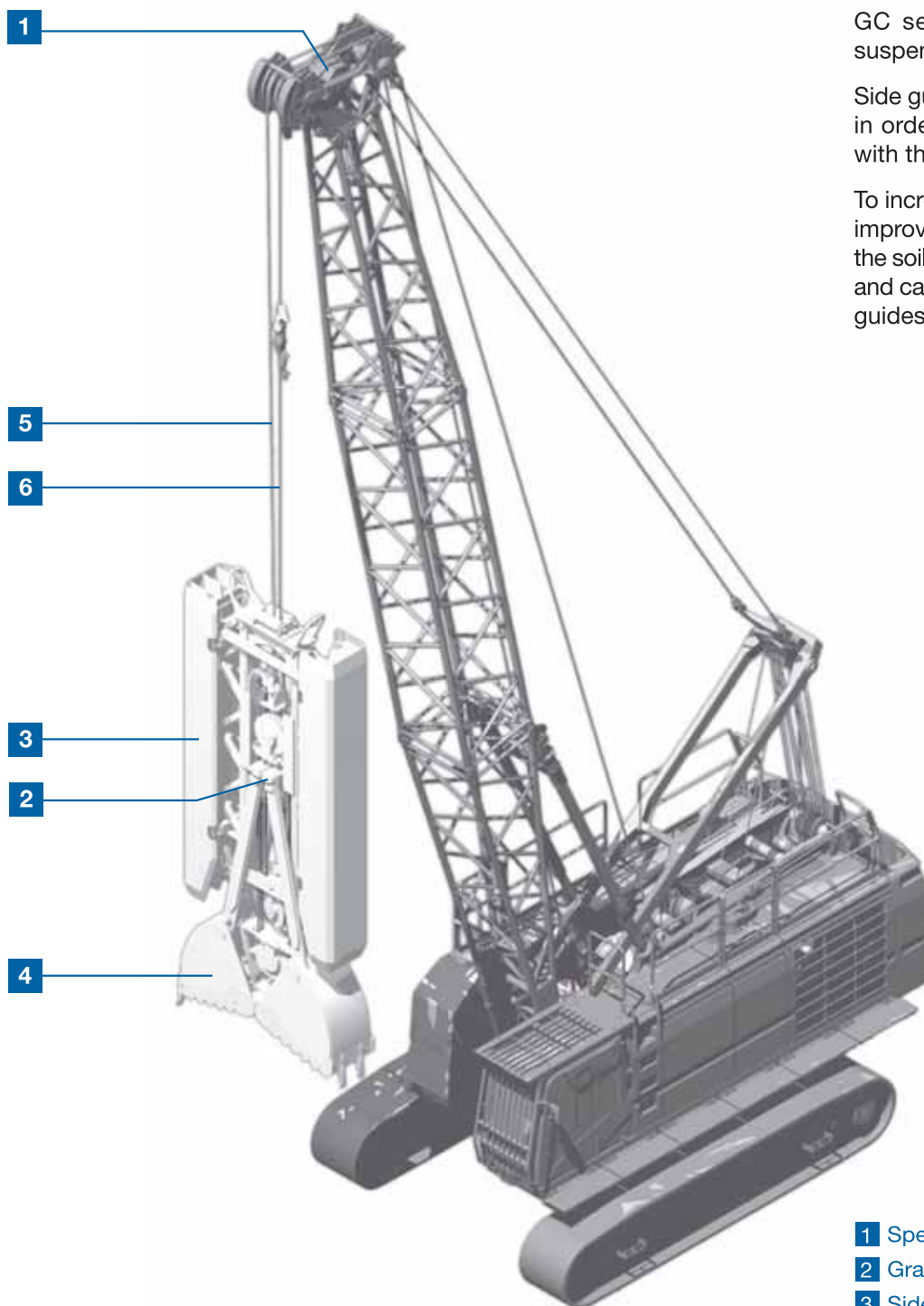
Hydraulic hose coilers are fixed to the crane boom lower section, allowing to work close to a wall and easing the coilers maintenance.

- 1 Special cathead
- 2 Hydraulic revolving gear motors 360°
- 3 Telescopic external guide
- 4 Grab body
- 5 Side guides
- 6 Grab operation cylinder
- 7 Jaws
- 8 Hydraulic coilers

Model	max depth		excavation dimension (width x lenght)		weight tot. (approx)	
BH-8R	75 m	246 ft	350/800 x 2000/3200 mm	13,8/31,5 x 79/126 in	8 t	17637 lb
BH-12R	75 m	246 ft	500/1200 x 2000/3500 mm	20/47,2 x 79/138 in	12 t	26455 lb
GH-12R	75 m	246 ft	500/1200 x 2500/4200 mm	20/47,2 x 98.4/165 in	12,5 t	27557 lb
GH-15R	75 m	246 ft	600/1500 x 2500/4200 mm	24/59 x 98.4/165 in	15,2 t	33510 lb

DIAPHRAGM WALL GRABS

Cable operated grab



GC serial mechanical grabs are rope suspended and rope operated.

Side guides and jaws are interchangeable in order to perform different panel sizes with the same grab body.

To increase the grab penetration capacity, improving at the same time the guiding in the soil, the grab body length is extendable and can be completed with additional side guides.

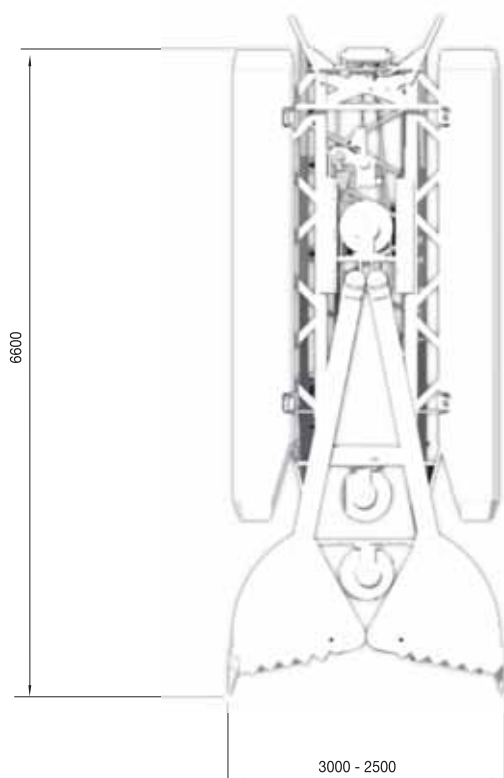
- 1 Special cathead
- 2 Grab body
- 3 Side guides
- 4 Grab jaws
- 5 Lifting rope
- 6 Operation rope

Model	max depth	excavation dimension (width x length)		weight tot. (approx)	
GC-11	depending on crane	600/1200 x 2500/3000 mm	23.6/47.2 x 98.5/118 in	11,3 t	24912 lb
GC-16	depending on crane	800/1200 x 2800/3500 mm	31.5/47.2 x 110/138 in	16 t	35274 lb

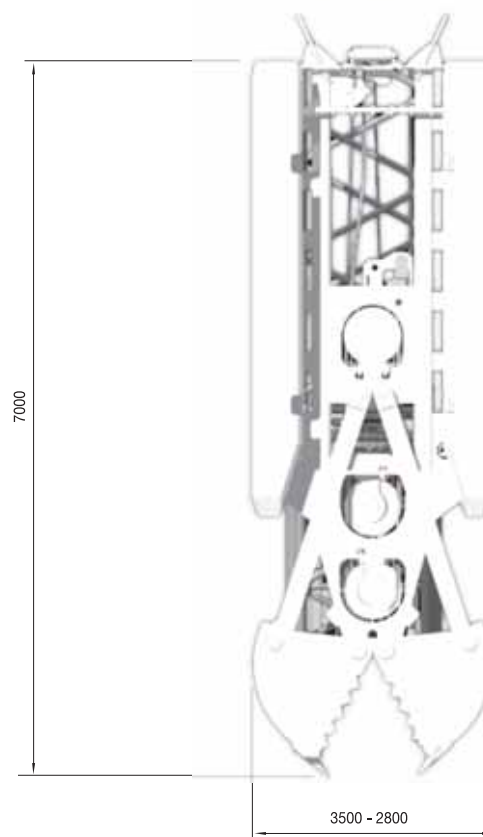
DIAPHRAGM WALL GRABS

Cable operated grab

GC-11



GC-16



	GC-11		GC-16	
Rope diameter	30 mm	1.2 in	34 mm	1.3 in
Nr. Of rope lines	5	5	5	5





DMS

DRILLING MATE SYSTEM

Soilmec innovative DMS - Drilling Mate System - has been designed to incorporate:

- CAN OPEN bus system
- colour touch screen suitable for the drilling field

DMS consists of 3 items:

- **DMS**
- **DMS PC**
- **DMS MANAGER**



DMS Drilling Mate System

For excavation vertical alignment monitoring, grabs are provided with sensors located on the grab body (optional).

Data stored during the excavation phase, are then, when the grab is lifted out of the trench, sent wirelessly to the DMS unit located in the base machine cab.

Excavation data is stored, and displayed on DMS screen under the form of graphics allowing the driver to trace the eventual deviation and operate the necessary corrections.

Main data are:

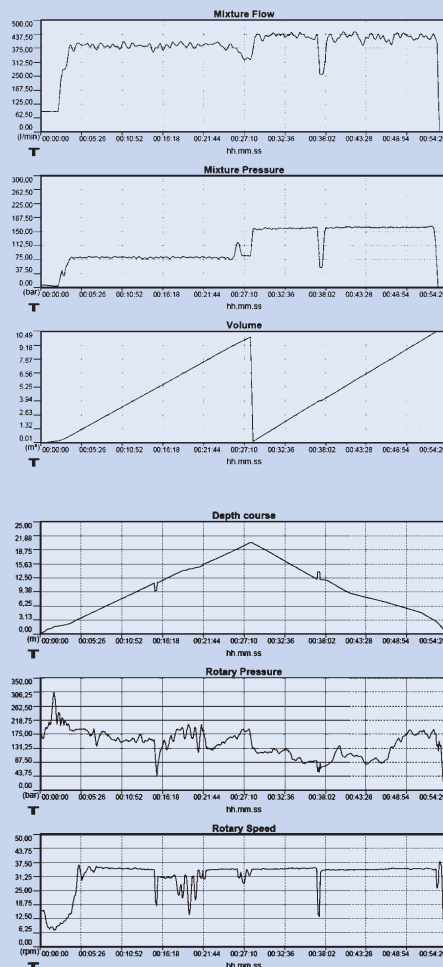
- **Excavation depth,**
- **Excavation time,**
- **Penetration rate,**
- **Excavation deviation** in respect to longitudinal, transversal and vertical axis.

Data stored on a USB key can be sent (on driver request) by e-mail in the form of attached file through the modem (GSM/GPRS EDGE) to customer office. To read and process the data file, DMS PC software must be installed on customer's PC.

DMS PC

DMS PC is the software installed on customer's PC. It allows the customer to read and process the excavation data file stored on USB key or attached to e-mail sent by the DMS unit.

DMS PC allows establishing daily production reports.



DMS Manager

A system designed for surveying a machines fleet. It includes a dedicated server and software. It enables access to, through internet, permanent contact with the rig, receiving in real time, alarms as well as production data sent by the machines (GPRS modem, satellite).





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