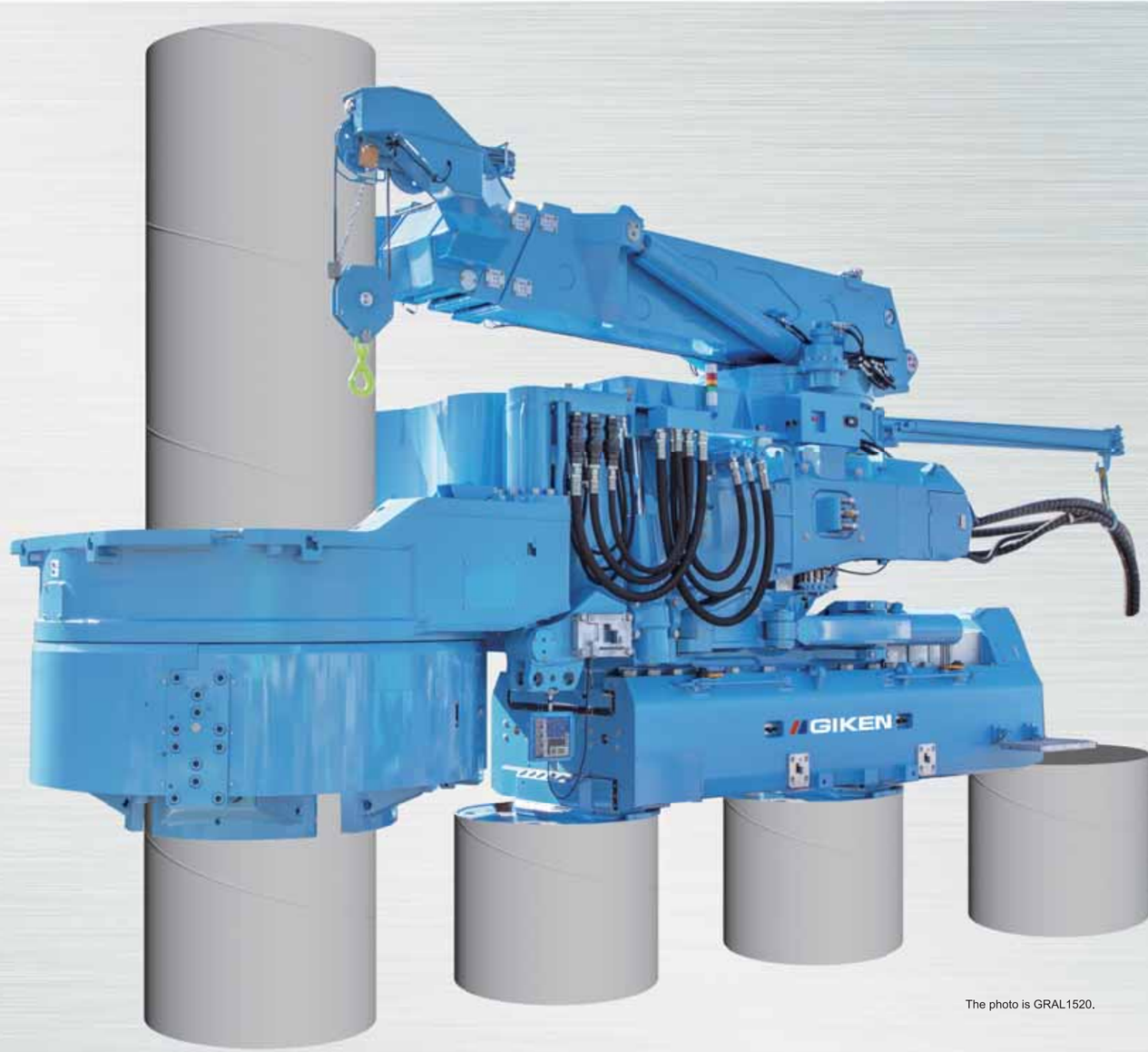
GIKEN

GYRO PILER™

GRAL1015
GRAL1520

For Gyropress Method™



The photo is GRAL1520.

GIKEN **Construction Solutions Company**

www.giken.com

CONTACT US

Ver 1.0EN03 / 14 Jun 2023

GYRO PILER™

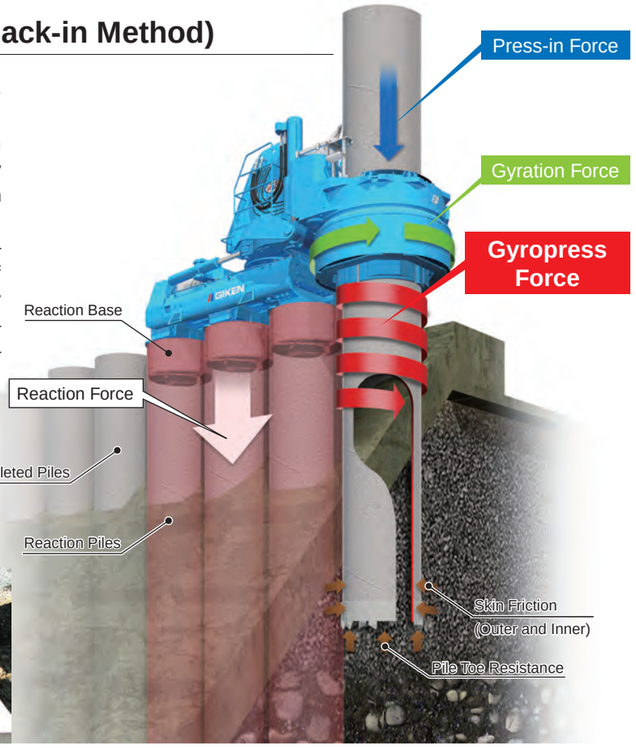
Rotary Cutting Press-in Rig for Limited Headroom

GRAL1015 / 1520

GYRO PILER GRAL1015 (SP6A)
GYRO PILER GRAL1520 (SP8A)

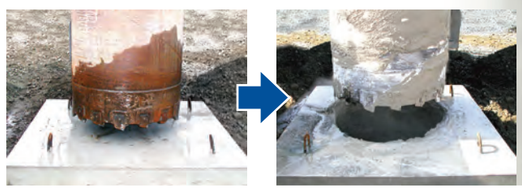
1 Gyropress Method™ (Rotary Jack-in Method)

Gyropress Method is a rotary jack-in piling method to press-in tube piles with cutting bits attached to the pile toe. In this piling method, Gyro Piler, a SILENT PILER™ with rotary press-in function, installs piles by utilizing previously driven piles as reaction and self-walks on top of the reaction piles.
This method is applied where piling is difficult with conventional methods due to ground conditions or presence of underground reinforced concrete structures. Besides, by adopting GRB System, all piling work activities can be carried out without building massive temporary working platforms. Consequently, this environmentally-friendly piling method can minimize total construction costs and duration.



Cutting Reinforced Concrete

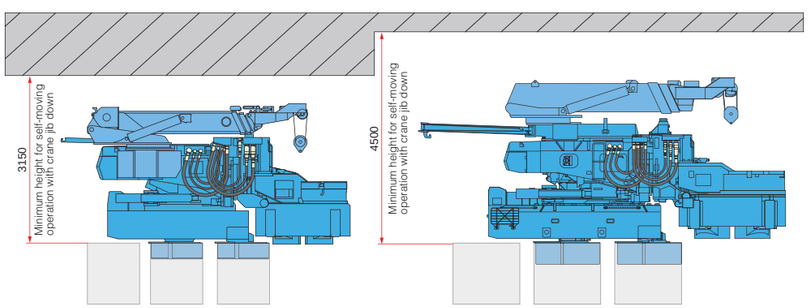
The followings present cutting off performance through reinforced concrete
(t = 80 cm, σck = 24 N/mm², D16@250 x 3 layers).



2 For Overhead Clearance Method

Constructions can be carried out without impairing superiorities of Press-in Method, even under limited headroom that are difficult to overcome with conventional machines, such as under a bridge and under high-voltage cables.

Under the bridge



GRAL1015 GRAL1520

* The minimum height may differ from working conditions and site constrains.

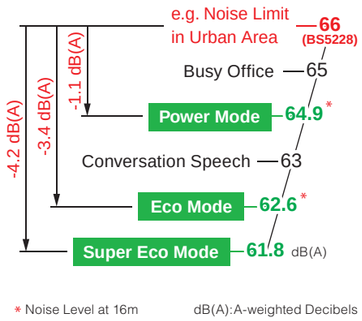
3 Outstanding Environmentally-Friendly Design

Low Emission Engine

The Power Unit has environmentally-friendly specifications. It is designed with strict concepts for clean emissions with high combustion efficiency and GIKEN original hydraulic control technologies.

Ultra Low Noise Level

It clears allowable construction noise levels in many industrialised countries.



* Noise Level at 16m dB(A):A-weighted Decibels

Standard Application of Biodegradable Oil

The GRAL1015/GRAL1520 uses bio-degradable PILER ECO Oil and PILER ECO Grease.
Hence, if hydraulic oil or grease is spilled into soil or water, there will be no environmental damage to the surrounding ecosystem. In addition, the machines are painted with TX-Free non-leaded paint*.

*Environmentally-friendly paint which does not contain toluene, xylene and lead based pigment.

Biodegradable Oil PILER ECO Oil & Grease

4 Scientific Execution of Press-in Work & Advanced IT Functions

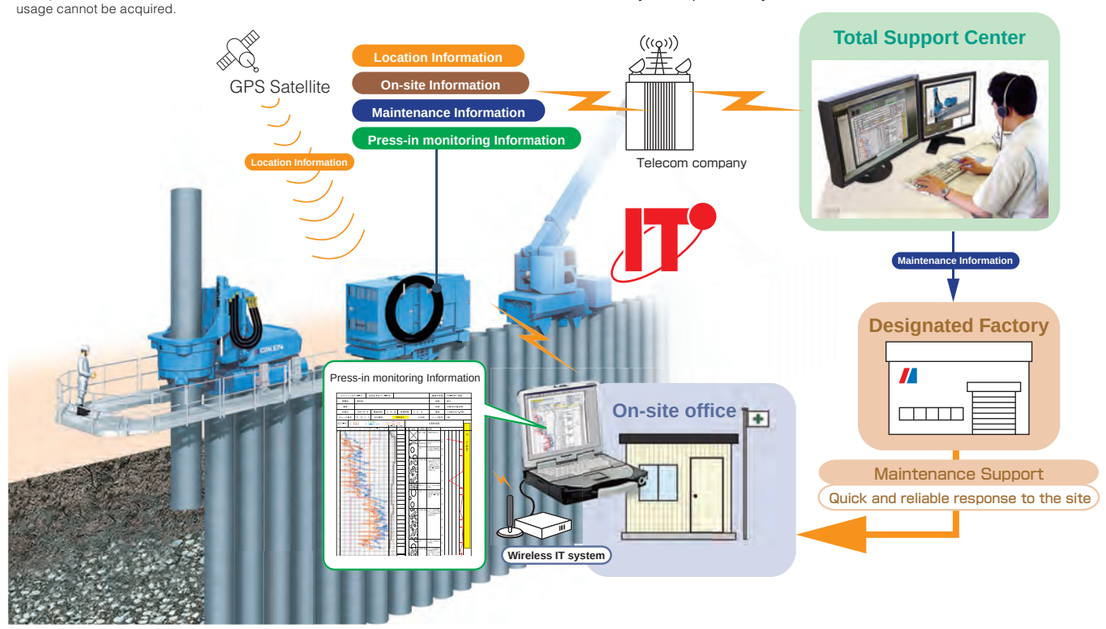
GIKEN IT System

GIKEN experts can monitor real time information of the press-in machines being active on sites such as location and maintenance information. They can provide you judgements and measures for any machine troubles, and also appropriate information can be provided to prevent troubles.

* The system is not available in the countries where authorisation for usage cannot be acquired.

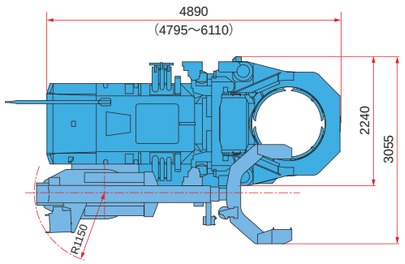
Press-in Monitoring and Data Logging System

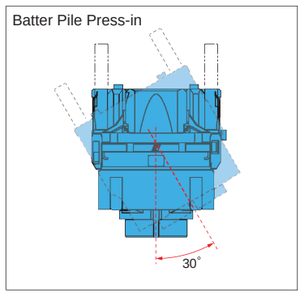
Press-in monitoring data can proves the press-in record to contractors and main contractors, and enables reliable and responsible construction. With wireless IT system, operators are able to check data from distant places such as office and in a car. As a result, you can monitor press-in operations safely and precisely.

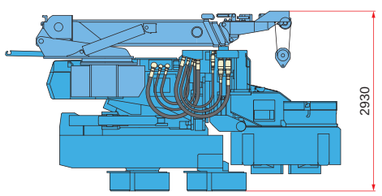


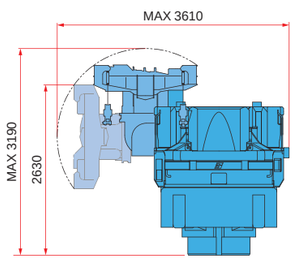
Dimensions & Specifications

GRAL1015









Press-in Machine Main Body		
Applicable Piles	Tubular Pile ϕ800～1000*1 mm	
Max. Press-in Force	1500 kN	
Max. Extraction Force	1600 kN	
Chuck Rotation Torque	600 kN•m	
Chuck Rotation Velocity	12.0 min^{-1}	
Stroke	700 mm	
Press-in Speed	0.8 ～ 6.3 m/min	
Extraction Speed	0.6 ～ 4.7 m/min	
Control System	Radio Control	
Travailing Method	Self-Moving	
Mass	for D 800mm	22150 kg
	for D 900mm	22350 kg
	for D 1000mm	22550 kg
	for D 1000mmS	22650 kg
Chuck Inc. Angle	30 Degrees, Either Side	

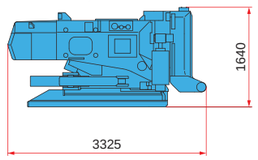
*1 For D 900mm Tubular Piles, optional Chuck Teeth are required.

* An external power source is required for Chuck rotation.
(200V-50/60Hz, 220V-60Hz, Min. 30KVA, 3 phases)

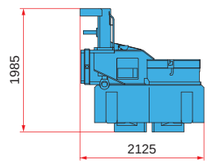
Crane Attachment	CLC1-2G + AM60
Hoisting Capacity	2.95 t × 4.5 m
Boom Length	3.1m ～ 6.2 m
Applicable Pile Diameter	D 1000mm or less
Mass	2870 kg

At press-in machine disassembly

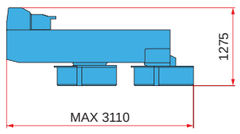
Mast (Width : 2000)



Chuck (Width : 2085)



Saddle (Width : 1280)

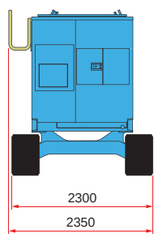


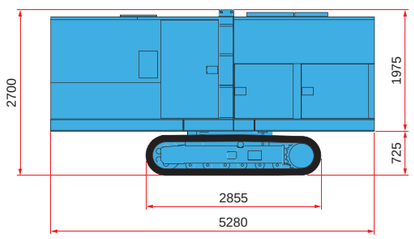
Mast		
Mass		9050 kg

Saddle		
Mass	ϕ800mm	4750 kg
	ϕ900mm	4950 kg
	ϕ1000mm	5050 kg
	ϕ1000 Light weight mode	5150 kg

Chuck		
Mass	ϕ800mm	8350 kg
	ϕ900mm	8350 kg
	ϕ1000mm	8450 kg

Power Unit

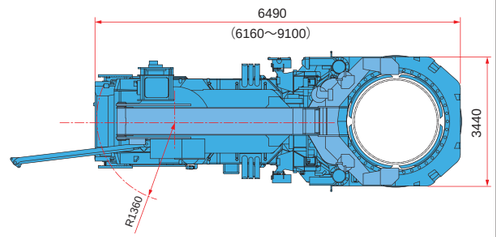


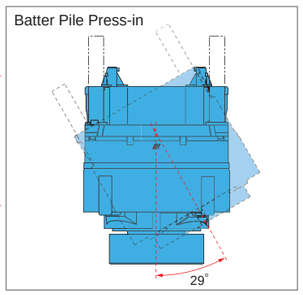


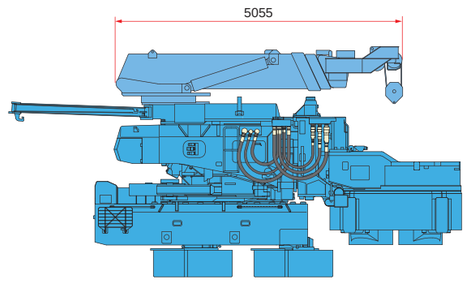
Power Unit		EU500B4
Power Source		Diesel Engine
Rated Output	Power Mode	350 kW(476 ps)/1800 min^{-1}
	Eco Mode	311 kW(423 ps)/1600 min^{-1}
	Super Eco Mode	272 kW(370 ps)/1400 min^{-1}
Fuel Tank Capacity		800 L
Hydraulic Reservoir		PILER ECO Oil 660 L
Moving Speed		1.4 km/h
Mass		11050 kg (with 30m Hose)

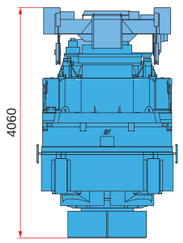
Dimensions & Specifications

GRAL1520









Press-in Machine Main Body		
Applicable Piles	Tubular Pile ϕ1200~1500 mm	
Max. Press-in Force	2000 kN	
Max. Extraction Force	2100 kN	
Chuck Rotation Torque	1300 kN•m	
Chuck Rotation Velocity	8.0 min^{-1}	
Stroke	800 mm	
Press-in Speed	0.6 ～ 4.6 m/min	
Extraction Speed	0.4 ～ 3.3 m/min	
Control System	Radio Control	
Travailing Method	Self-Moving	
Mass	for D1200 mm	42310 kg
	for D1300 mm	42530 kg
	for D1400 mm	42990 kg
	for D1500 mm	43460 kg
Chuck Incline Max.Angle	29° to the both side	

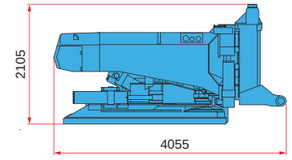
*1 For D 1200mm Tubular Piles, optional Chuck teeth are required.

* An external power source is required for Chuck rotation.
(200V-50/60Hz, 220V-60Hz, Min. 30KVA, 3 phases)

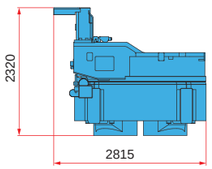
Crane Attachment	CLC3-1
Hoisting Capacity	7.0 t × 6.89m
Boom Length	3.89 m ～ 6.89 m
Applicable Pile Diameter	D 1500mm or less
Mass	8000 kg

At press-in machine disassembly

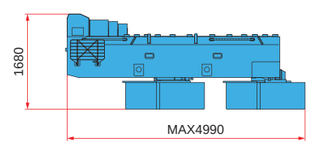
Mast (Width : 2230)



Chuck (Width : 2320)



Saddle (Width : 1480)

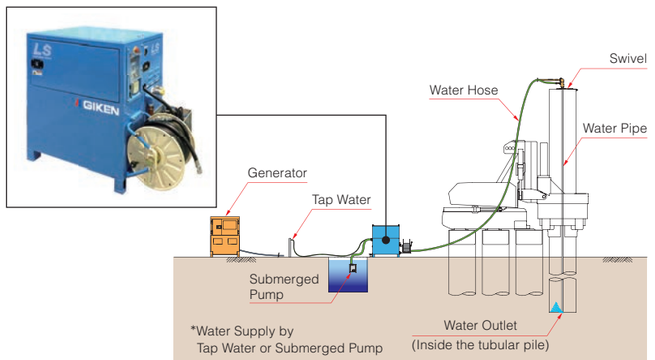


Mast		
Mass		16450 kg

Saddle		
Mass	ϕ1200mm	11040 kg
	ϕ1300mm	11220 kg
	ϕ1400mm	11500 kg
	ϕ1500mm	11770 kg

Chuck		
Mass	ϕ1200mm	14820 kg
	ϕ1300mm	14860 kg
	ϕ1400mm	15040 kg
	ϕ1500mm	15240 kg

Lubrication System



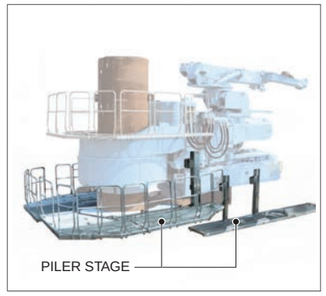
Lubrication System	OP114A
Input Voltage(3 phases)	AC200V, 50/60Hz, 24KVA or more
Water Pump Discharge Rate	Max. 60 L/min
Water Pump Discharge Pressure	Max. 6 MPa
Outer Dimension(W x D x H)	1505 × 755 × 1230 mm
Water Tank Capacity	300 L
Mass(without water)	410 kg

The above specifications are subject to alteration without prior notice.

Standard Accessories

*Accessories vary depending on sales package.

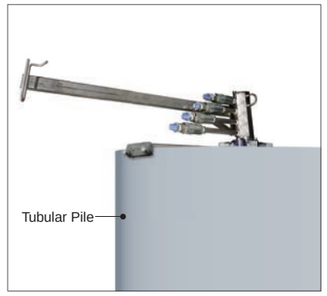
● PILER STAGE
ST29 (GRAL1015)
ST30 (GRAL1520)



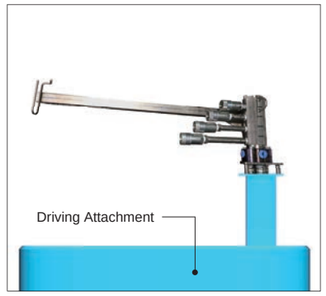
● PILE LASER
PL-3

● Lubrication System
OP114A

● 4 ports swivel
OP149 (for Tubular Piles)



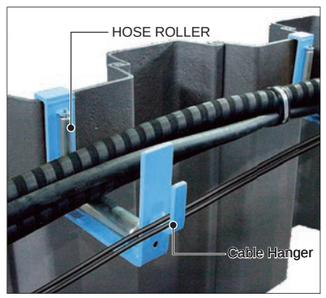
● 4 ports swivel
OP150 (for Driving Attachment)



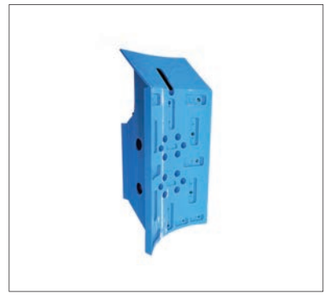
● PILE ROLLER

● Module Box
(from the left, MB17, MB14 and MB15)

● HOSE ROLLER



● Chuck Teeth
ϕ 800～1000（GRAL1015）
ϕ1200～1500（GRAL1520）



Chuck Teeth Set		
Mass	ϕ800	1000 kg
	ϕ900	1000 kg
	ϕ1000	1080 kg

* 4 pieces for 1 set (Exclude fixed stand)

Chuck Teeth Set		
Mass	ϕ1200	2540 kg
	ϕ1300	2580 kg
	ϕ1400	2760 kg
	ϕ1500	2960 kg

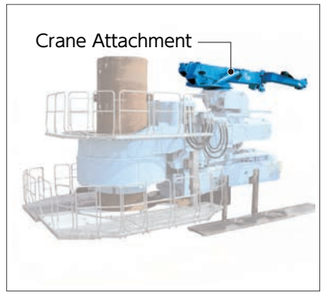
* 4 pieces for 1 set (Exclude fixed stand)

● Driving Attachment
ϕ 800～1000（GRAL1015）
ϕ1200～1500（GRAL1520）

Driving Attachment		
Mass	AM69 (ϕ800)	2050 kg
	AM90 (ϕ900)	2300 kg
	AM105 (ϕ1000)	3350 kg
	ϕ1000 - Light weight mode	2760 kg

Driving Attachment		
Mass	AM105 (ϕ1200)	4100 kg
	AM86A (ϕ1300)	3500 kg
	AM92 (ϕ1400)	4000 kg
	AM93 (ϕ1500)	4450 kg

● Crane Attachment
CLC1-2G
CLC3-1



Crane Attachment	CLC1-2G + AM60
Hoisting Capacity	2.95 t × 4.5 m
Boom Length	3.1m ～ 6.2 m
Applicable Pile Diameter	D 1000mm or less
Mass	2870 kg

Crane Attachment	CLC3-1
Hoisting Capacity	7.0 t × 6.89m
Boom Length	3.89 m ～ 6.89 m
Applicable Pile Diameter	D 1500 or less
Mass	8000 kg