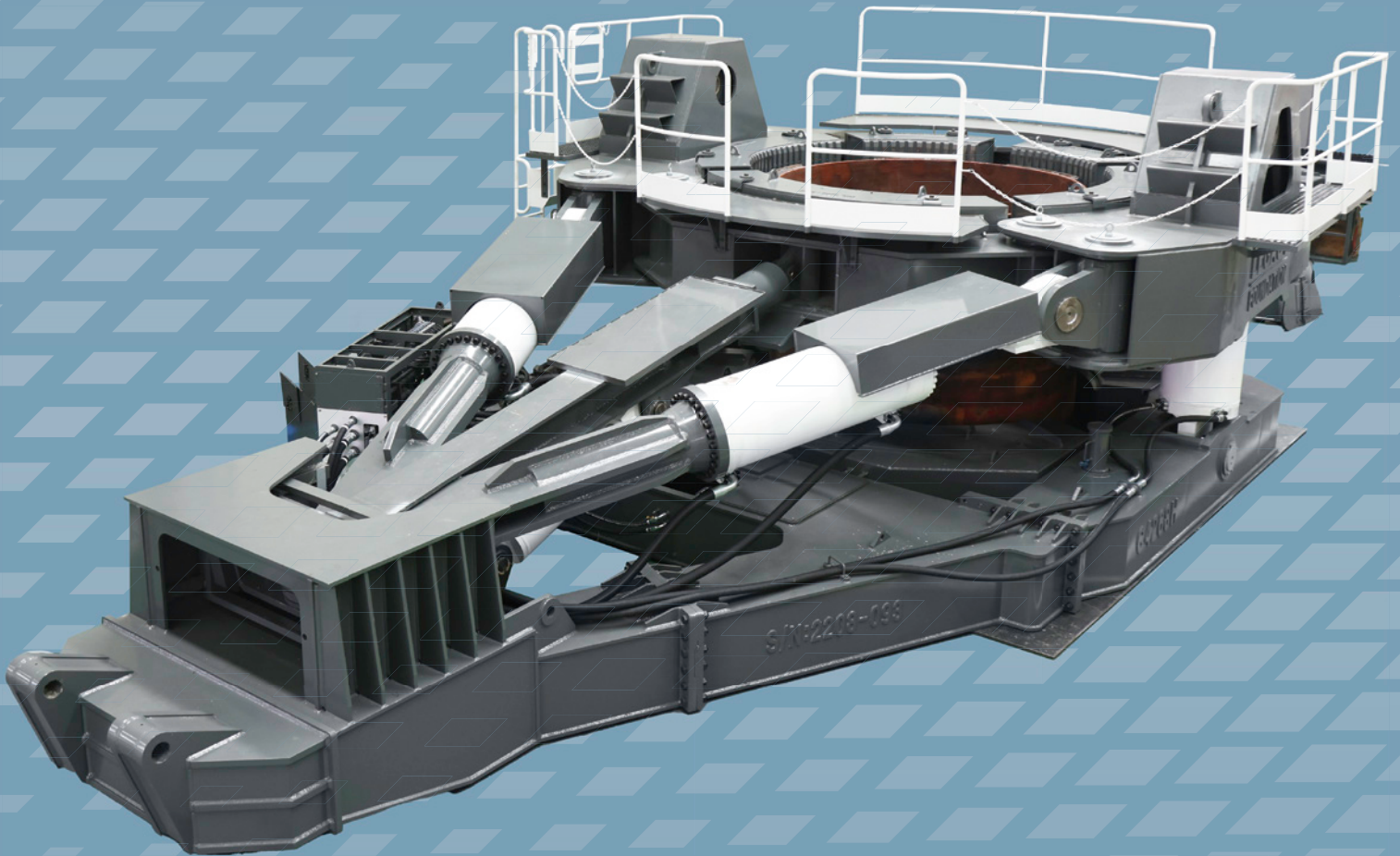


# CASING OSCILLATOR

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Trust cannot be replaced



**BUMA CE CO., LTD.**  
BUMA Construction Equipment





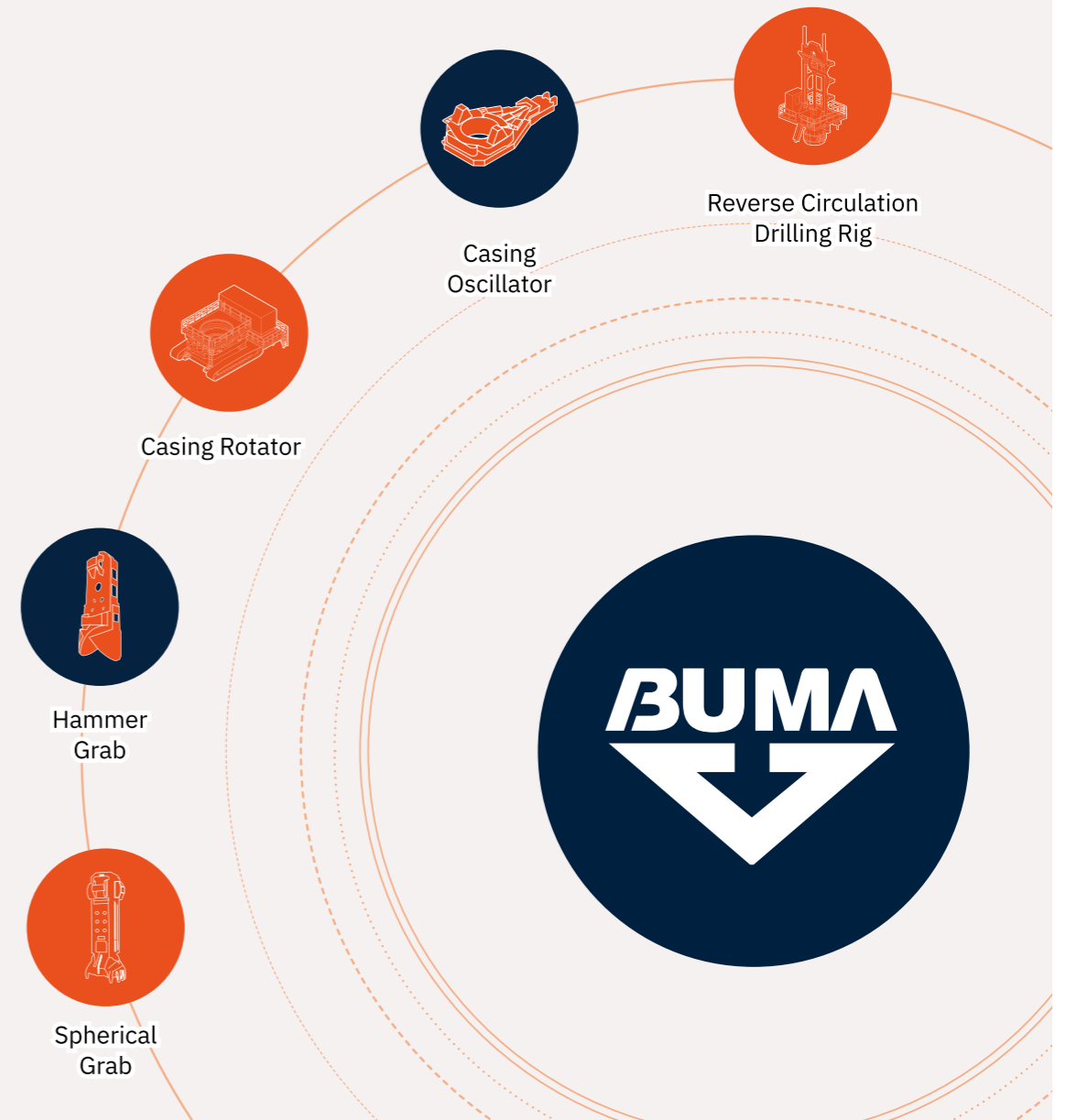
BUMA CE stands as a premier manufacturer and supplier of advanced foundation drilling equipment, headquartered in Korea. Established in 1992, BUMA has swiftly evolved into a global powerhouse, renowned for its unwavering commitment to excellence and profound mastery of foundation work and methodologies.

## Our Mission

At BUMA CE, our overarching mission centers on delivering ingenious solutions that are deeply rooted in engineering principles and fortified by decades of hands-on experience. Through our innovative approach, we empower our valued customers with cutting-edge solutions that redefine industry standards.

## Application Range

- Bore Piling for Big Structure Building and Bore Piling at Any Offshore Condition.
- Bore Piling for Bridge & Terminal (Coal, Oil & Gas).
- Bore Piling for Jetty & Harbour & Drydocks.





# Casing Oscillator Method

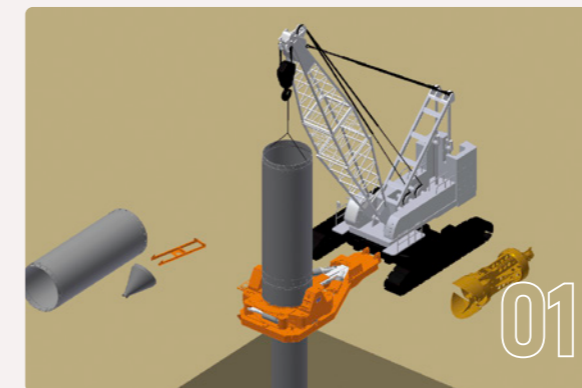
Cased Drilled Shafts are essential when ground conditions are sufficiently unstable that drilled holes cannot be safely stabilized using drilling slurry, or when ground loss must be carefully managed.

Casing, which can be composed of either temporary or permanent steel pipes, ensures 100% stability throughout the entire length of the drilled shaft excavation. The Casing Oscillator method offers a superior approach to drilled shaft construction, guaranteeing high-quality results and a seamless construction schedule by eliminating any disruptions.

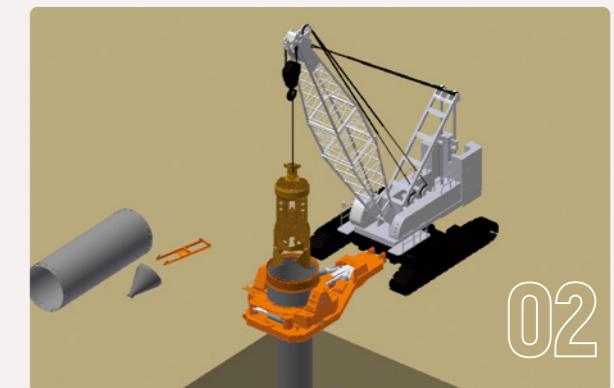
This technology stands as the sole proven method for drilling large-diameter shafts under caving conditions, such as loose sands and gravelly soil containing cobbles and boulders. Even boulders several feet in diameter can be safely removed using the Hammer Grab technique, minimizing significant disruptions to the excavation process. As water is the only drilling medium employed, environmental concerns are minimized or completely eliminated.



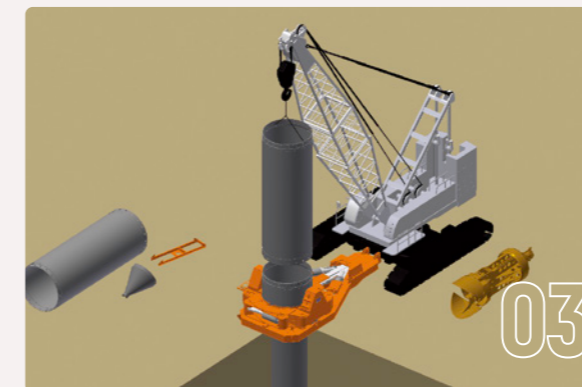
# Working Procedure



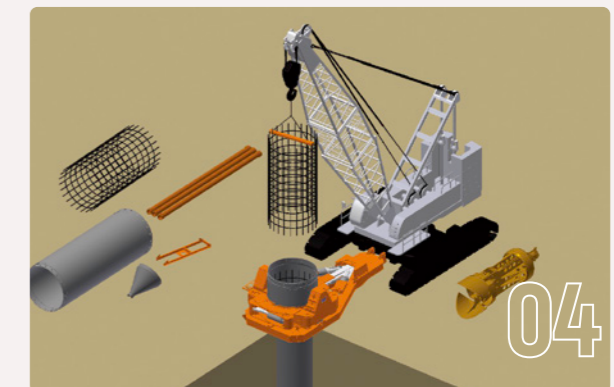
01 Install starter casing equipped with cutting teeth. Add new casing section with bolted connection.



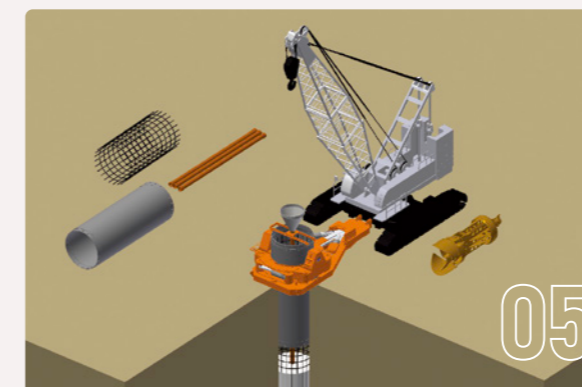
02 Excavate soil continuously during casing installation. Maintain water head inside casing to balance external hydrostatic head at all times.



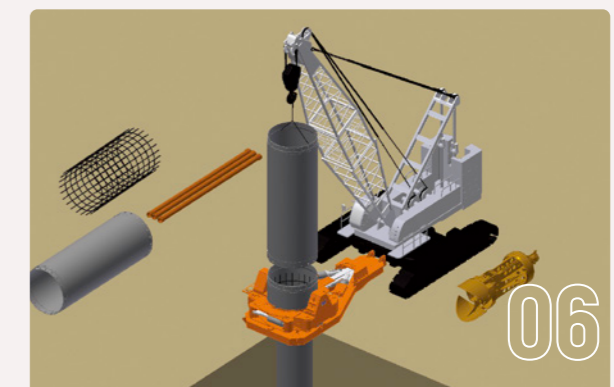
03 Add new casing sections until pile has been excavated to depth. Keep casing tip ahead of excavation at all times.



04 Install reinforcement cage and suspend at proper elevation.



05 Pour concrete using sectional tremie pipe. Maintain concrete head above casing tip at all times.



06 Remove casing and tremie pipe sections simultaneously as concrete is poured.

# Advantages of BUMA Casing Oscillator

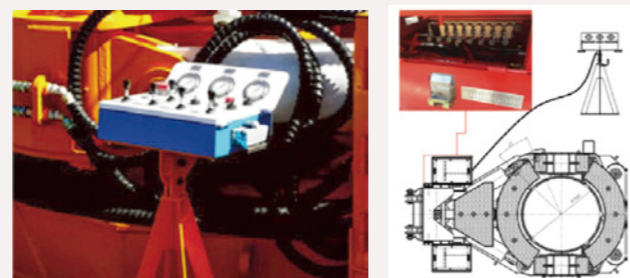
## - Flexible Sliding Box

When the oscillator is in operation, a significant amount of torque and force is concentrated on the oscillating cylinder's rod and center rod. This concentrated stress can occasionally lead to excessive strain on these parts, resulting in breakage. BUMA's patented flexible sliding box effectively mitigates this stress, providing a stable and durable working condition.



## - Remote Control

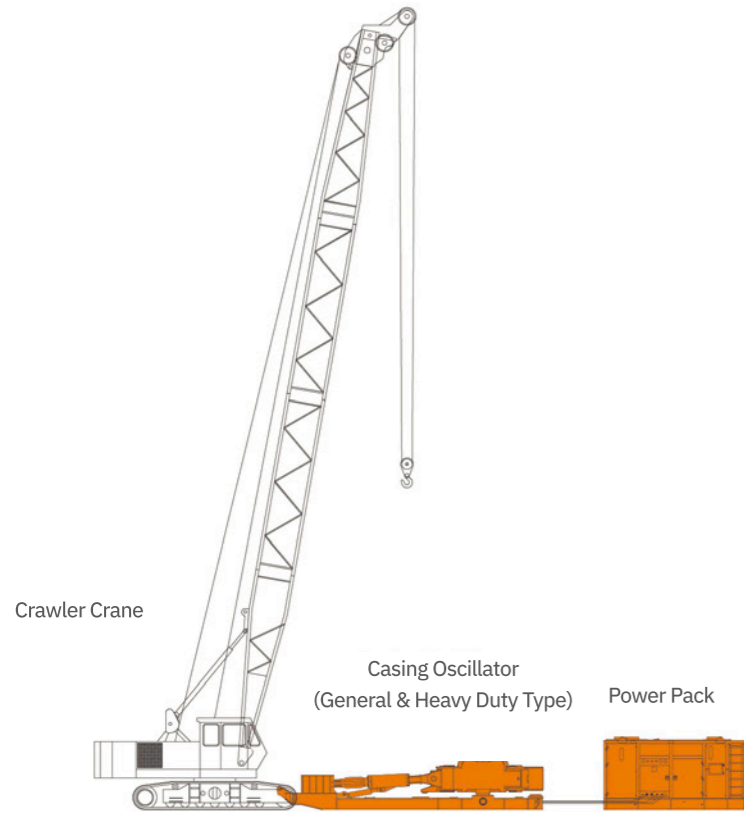
BUMA Casing Oscillator offers two types of control: hydraulic manual control and remote control. This versatility is especially beneficial in situations where the remote control malfunctions and immediate machine operation is necessary. In such cases, the hydraulic manual control can be utilized. Additionally, BUMA provides the option of wireless remote control for added convenience.



## - User-Friendly Maintenance



# General / Heavy Duty Type



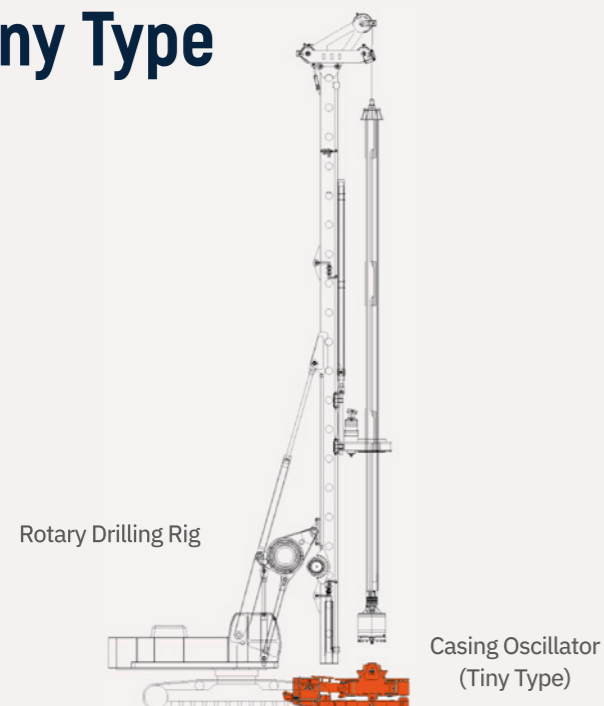
## - General Type

Model	C2000G	C2500G	C3000G	C3352G	C3600G
Max. Casing Diameter	2,000mm	2,500mm	3,000mm	3,352mm	3,600mm
Max. Oscillating Torque	451ton.m	833ton.m	1,017ton.m	1,402ton.m	1,720ton.m
Max. Lifting Force	314ton	581ton	726ton	1,018ton	1,110ton
Lifting Stroke	600mm	650mm	650mm	650mm	650mm
Max. Clamping Force	257ton	402ton	509ton	509ton	532ton
Weight(Approx.)	31ton	48ton	53ton	73.5ton	82ton
Overall Width	3,589mm	4,240mm	4,850mm	5,170mm	5,560mm
Overall Length	7,921mm	8,961mm	9,171mm	10,420mm	10,815mm
Overall Height	2,210mm	2,575mm	2,655mm	2,800mm	2,880mm
Power Pack	P2812 / P3818	P3818	P6128	P6128	P6128

## - Heavy Duty Type

Model	C2000H	C2500H	C3000H	C3600H	C4268H
Max. Casing Diameter	2,000mm	2,500mm	3,000mm	3,600mm	4,268mm
Max. Oscillating Torque	721ton.m	942ton.m	1,185ton.m	2,041ton.m	2,619ton.m
Max. Lifting Force	581ton	726ton	804ton	1,257ton	1,466ton
Lifting Stroke	600mm	650mm	650mm	650mm	650mm
Max. Clamping Force	402ton	509ton	509ton	579ton	628ton
Weight(Approx.)	42ton	54ton	58ton	87ton	115ton
Overall Width	3,827mm	4,210mm	4,700mm	5,740mm	6,400mm
Overall Length	8,431mm	9,066mm	9,171mm	10,840mm	12,553mm
Overall Height	2,525mm	2,655mm	2,655mm	2,900mm	3,090mm
PowerPack	P2812 / P3818	P3818	P6128	P6128	P7036

# Tiny Type



For the drill-mounted oscillator (Tiny Model), an oscillator kit (including hooking lugs and hydraulic ports for the oscillator) is required for operation with the drilling rig.

## - Tiny Type

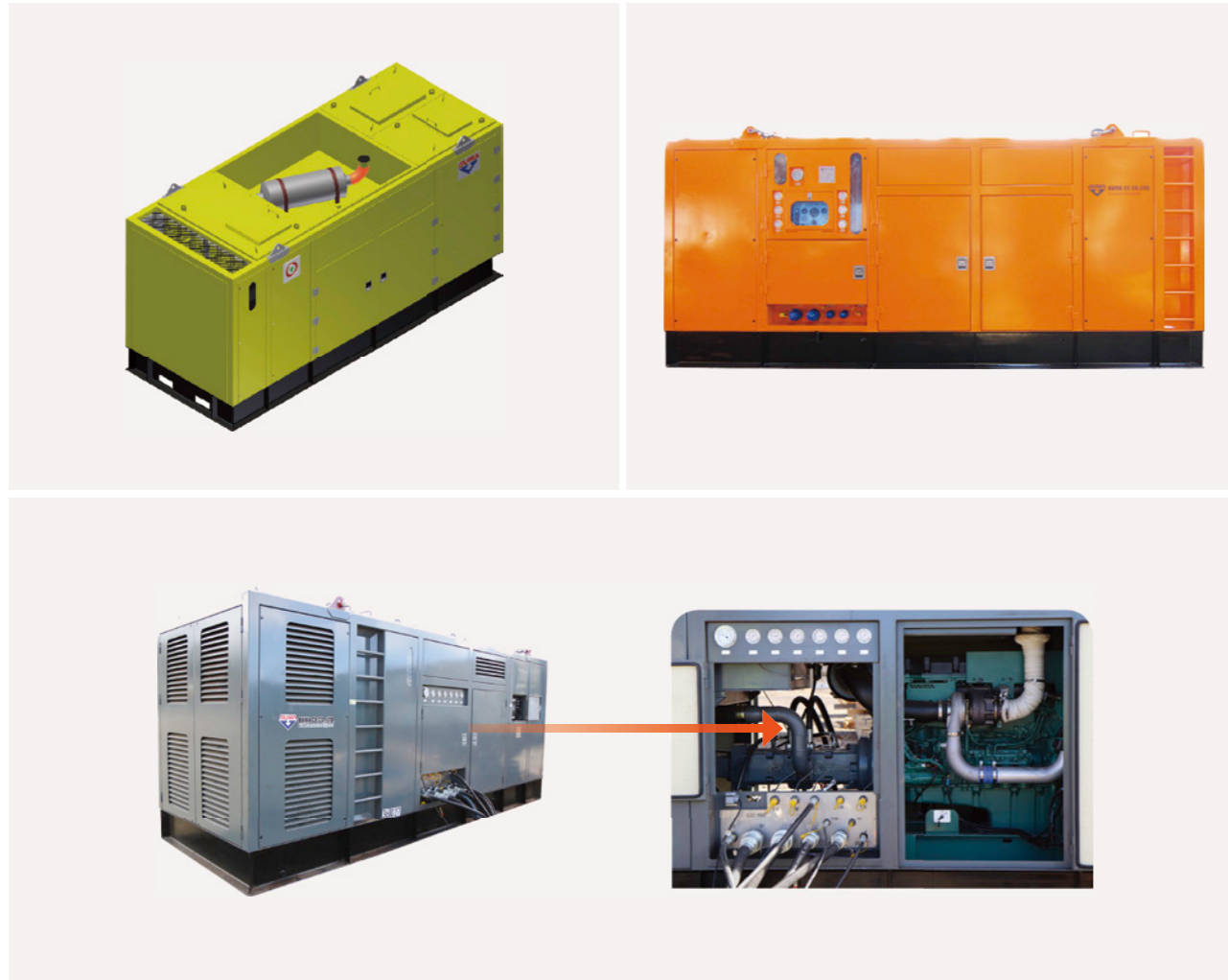
Model	C1000T	C1300T	C1500T	C2000T	C2500T
Max. Casing Diameter	1,000mm	1,300mm	1,500mm	2,000mm	2,500mm
Max. Oscillating Torque	86ton.m	206ton.m	228ton.m	306ton.m	538ton.m
Max. Lifting Force	99ton	168ton	201ton	243ton	314ton
Lifting Stroke	320mm	450mm	450mm	450mm	450mm
Max. Clamping Force	64ton	133ton	157ton	183ton	226ton
Weight(Approx.)	6ton	13ton	15.1ton	20.3ton	25ton
Overall Width	2,130mm	2,300mm	2,500mm	3,220mm	3,965mm
Overall Length	3,070mm	4,170mm	4,315mm	5,272mm	6,280mm
Overall Height	1,250mm	1,600mm	1,650mm	1,685mm	1,890mm
PowerPack	P2812 / P3818	P3818	P3818	P3818	P6128

\*\* The specifications may be subject to change to enhance performance or meet specific customer requirements.



# Power Pack

Excellent Stability, Powerful Performance



## Specification

Model	Emission Compliance	Engine Output & rpm	Hyd.Pump 250bar (Max. 350bar)	Dimension (W×L×H)	Weight
P2812	TIER 2, 3	194 kW / 260 HP / 2,200 rpm	201 ℓ/min × 2	1,912 × 4,000 × 2,283	7.5 ton
P3618	TIER 3	265 kW / 360 HP / 2,100 rpm	324 ℓ/min × 2	1,912 × 4,800 × 2,476	9 ton
P3818	TIER 4F	283 kW / 380 HP / 2,100 rpm	324 ℓ/min × 2	1,912 × 4,800 × 2,476	9 ton
P6128	TIER 3, 4F	450 kW / 612 HP / 1,800 rpm	504 ℓ/min × 2	1,912 × 5,400 × 2,562	11.5 ton
P8040	STAGE 5	585 kW / 800 HP / 1,900 rpm	760 ℓ/min × 2	2,300 × 6,500 × 3,230	14 ton

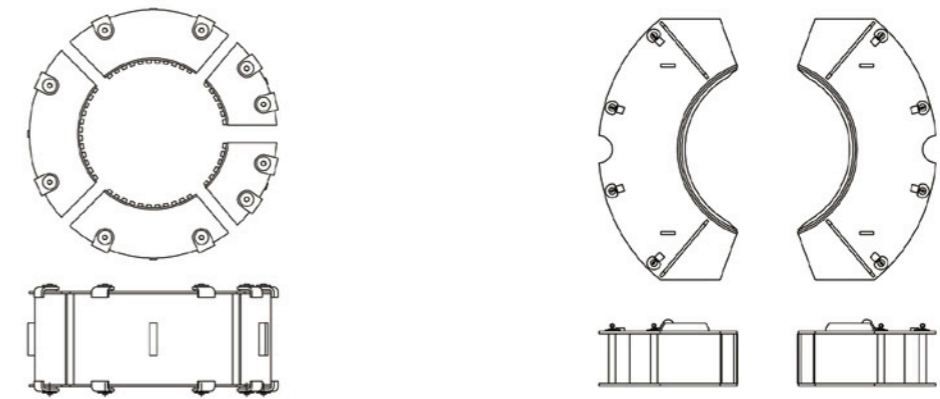
\*\* The specifications may be subject to change to enhance performance or meet specific customer requirements.

# Reducing Adapter

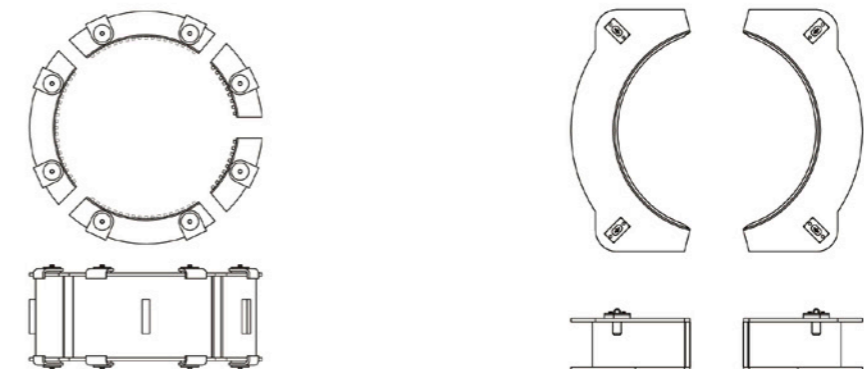
Application of smaller casing diameter than the original diameter of the Casing Oscillator is available through installation of reducing adapter. For the proper operation, it is recommended to apply for reducing size up to 500mm from the original diameter.



## General / Heavy Duty Type



## Tiny Type





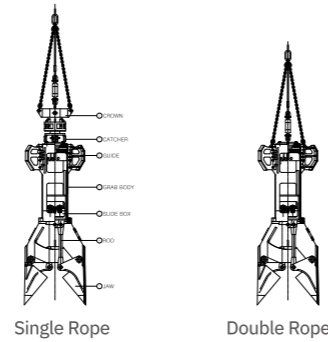
# Hammer Grab

The Hammer Grab's substantial excavation capacity, coupled with the crane's free-fall function, showcases exceptional speed and efficiency in large-diameter piling. Its wide grab opening diameter allows for efficient excavation and removal of gravel and boulders. BUMA CE's pulley sheaves, equipped with grease-filled bearings, demonstrate extended durability.



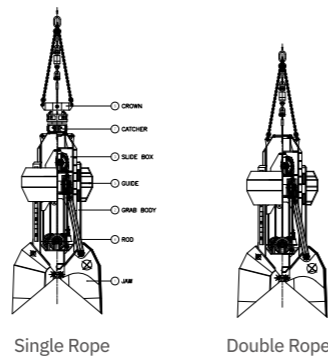
## Standard Type

Model	Casing Diameter [mm]	Jaw Capacity [t]	Length [mm]		Weight [kg]	
			Single	Double	Single	Double
H1050S	1,200 / 1,120	220	4,533	3,620	5,097	4,350
H1350S	1,500 / 1,400	500	4,753	3,840	5,697	4,950
H1600S	1,800 / 1,680	1,140	5,113	4,200	6,197	5,450
H1800S	2,000 / 1,880	1,400	5,293	4,380	6,617	5,870



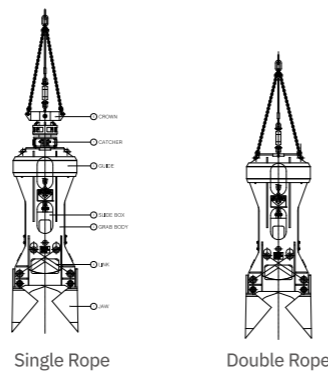
## Heavy Duty Type

Model	Casing Diameter [mm]	Jaw Capacity [t]	Length [mm]		Weight [kg]	
			Single	Double	Single	Double
H1350A	1,500 / 1,400	830	5,070	4,190	7,630	6,920
H1600A	1,800 / 1,680	1,240	5,220	4,340	8,100	7,380
H1800A	2,000 / 1,880	1,730	5,340	4,460	8,470	7,750
H1800B	2,000 / 1,880	1,730	5,970	5,100	12,530	11,700
H2250B	2,500 / 2,380	3,140	6,160	5,290	14,540	13,710
H2750B	3,000 / 2,840	5,350	6,660	5,600	17,400	16,330
H3300C	3,600 / 3,420	9,810	8,870	7,810	27,800	26,740



## X-Link Operating Type

Model	Casing Diameter [mm]	Jaw Capacity [t]	Length [mm]		Weight [kg]	
			Single	Double	Single	Double
H750R	900 / 820	120	3,840	3,010	2,130	1,730
H1350R	1,500 / 1,400	500	5,270	4,400	5,220	4,460
H1600R	1,800 / 1,680	1,100	5,570	4,700	7,660	6,900
H1800R	2,000 / 1,880	1,400	6,030	5,050	8,640	7,810
H2000R	2,500 / 2,380	1,890	6,510	5,530	9,840	9,020
H2300R	3,000 / 2,840	2,810	7,130	6,150	11,880	11,060



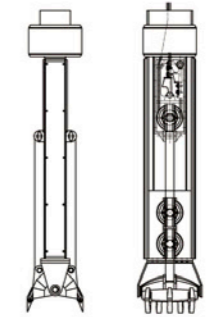
# Spherical Grab

The use of double rope operation, combined with a powerful gripping force, yields optimal performance in excavating hard soil and even soft rock.



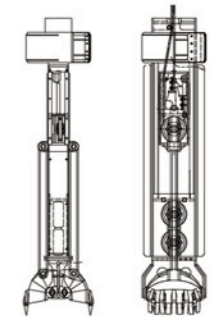
## SG0 Class

Model	Casing Diameter [mm]	Jaw Capacity [t]	Length [mm]	Weight [kg]
S780	900 / 820	170	4,290	5,750
S880	1,000 / 920	190	4,370	5,950
S1080	1,200 / 1,120	210	4,470	6,850



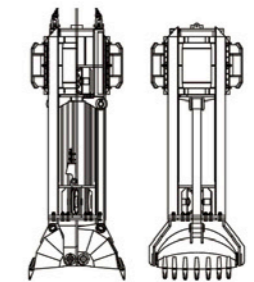
## SG1 Class

Model	Casing Diameter [mm]	Jaw Capacity [t]	Length [mm]	Weight [kg]
S1180	1,300 / 1,220	230	5,330	8,000
S1350	1,500 / 1,400	400	5,790	10,300
S1630	1,800 / 1,680	730	5,875	11,300



## SG2 Class

Model	Casing Diameter [mm]	Jaw Capacity [t]	Length [mm]	Weight [kg]
S1810	2,000 / 1,880	970	5,800	13,850
S2010	2,200 / 2,080	1,450	6,000	17,000
S2310	2,500 / 2,380	2,250	6,105	18,500
S2580	2,800 / 2,640	3,050	6,215	19,600
S2710	3,000 / 2,840	3,900	6,325	20,300



## SG3 Class

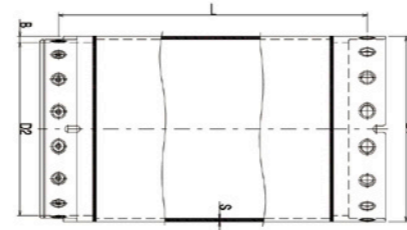
Model	Casing Diameter [mm]	Jaw Capacity [t]	Length [mm]	Weight [kg]
S2980	3,200	4,700	7,200	28,000
S3170	3,400	5,550	7,300	29,200
S3310	3,600	6,800	7,400	31,000



# Casing Tube

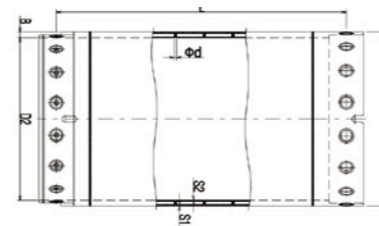
## Single Wall Casing

D1 / D2	S	B	Weight (kg) per Working Length (L)							
			[mm]							
600 / 520	20	40	380	672	993	1,255	1,546	1,838	2,421	
700 / 620	20	40	447	789	1,131	1,473	1,815	2,157	2,841	
800 / 720	20	40	514	906	1,298	1,690	2,082	2,474	3,258	
900 / 820	20	40	580	1,022	1,464	1,906	2,348	2,790	3,674	
1,000 / 920	20	40	640	1,133	1,626	2,119	2,612	3,105	4,091	
1,080 / 1,000	20	40	690	1,190	1,720	2,260	2,820	3,350	4,420	
1,200 / 1,120	25	40	860	1,600	2,340	3,080	3,820	4,560	6,030	
1,500 / 1,400	30	50	1,514	2,623	3,731	4,839	5,947	7,055	9,271	
1,800 / 1,700	30	50	1,810	3,135	4,470	5,805	7,140	8,475	11,146	
1,800 / 1,680	30	60	1,927	3,237	4,546	5,855	7,165	8,474	11,094	
2,000 / 1,880	35	60	2,389	4,107	5,826	7,544	9,264	10,983	14,421	
2,200 / 2,080	35	60	2,629	4,527	6,415	8,313	10,210	12,108	15,903	
2,500 / 2,380	35	60	2,935	5,095	7,255	9,426	11,596	13,766	18,107	
2,800 / 2,640	40	80	4,069	6,964	9,859	12,754	15,650	18,545	24,335	
3,000 / 2,840	40	80	4,292	7,217	10,136	13,056	15,977	18,896	24,736	



## Double Wall Casing

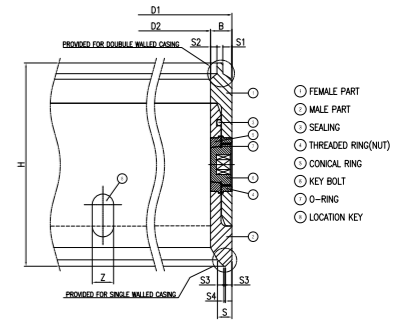
D1 / D2	S1	S2	D	B	Longitudinal Bars (Q'ty)	Weight (kg) per Working Length (L)							
						[mm]							
600 / 520	15	10	13	40	18	433	805	1,177	1,549	1,921	2,293	3,037	
700 / 620	15	10	13	40	20	509	945	1,381	1,817	2,253	2,689	3,561	
800 / 720	15	10	13	40	24	587	1,090	1,593	2,096	2,599	3,102	4,108	
900 / 820	15	10	13	40	26	653	1,206	1,759	2,312	2,865	3,418	4,524	
1,000 / 920	15	10	13	40	30	724	1,343	1,962	2,581	3,200	3,819	5,057	
1,080 / 1,000	15	10	13	40	32	790	1,440	2,155	2,845	3,530	4,210	5,570	
1,200 / 1,120	15	10	13	40	36	870	1,620	2,365	3,120	3,870	4,610	6,110	
1,500 / 1,400	20	15	13	50	45	1,485	2,520	3,555	4,590	5,625	6,660	8,735	
1,800 / 1,700	20	15	13	50	55	1,910	3,505	5,085	6,675	8,270	9,865	13,055	
1,800 / 1,680	20	20	18	60	55	2,251	4,600	6,670	9,635	11,920	14,205	18,775	
2,000 / 1,880	20	20	18	60	60	2,530	4,600	6,670	8,730	10,800	12,870	17,010	
2,200 / 2,080	20	20	18	60	66	2,785	5,065	7,350	9,635	11,920	14,205	18,775	
2,500 / 2,380	20	20	18	60	76	3,105	5,710	8,315	10,920	13,525	16,130	21,340	
2,800 / 2,640	25	25	27	80	86	4,530	8,335	12,135	15,945	19,755	23,565	31,185	
3,000 / 2,840	25	25	27	80	90	4,940	9,015	13,090	17,170	21,250	25,330	33,490	



# Casing Joint

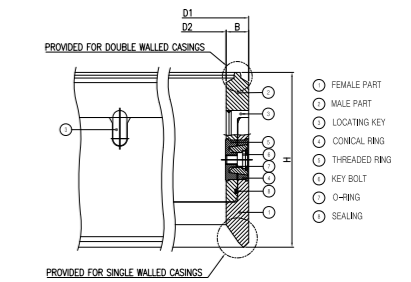
## General Type

D1 / D2	H	B	Conical Ring		Threaded Ring		Bolt		Locating Key		Sealing [mm]	Weight [kg]
			Q'ty	Type	Q'ty	Type	Q'ty	Type	Q'ty	Type		
700 / 620	380	40	8	CN60	8	TN60	8	M80	4	40	10x610	221
900 / 820	380	40	10	CN80	10	TN80	10	M80	4	40	10x785	287
1,000 / 920	380	40	10	CN80	10	TN80	10	M80	4	40	10x900	321
1,200 / 1,120	380	40	12	CN110	12	TN110	12	M80	4	40	12x1,075	388
1,300 / 1,220	380	40	12	CN110	12	TN110	12	M80	4	40	12x1,200	421
1,500 / 1,400	585	50	16	CN150	16	TN150	16	M90	4	50	12x1,370	927
1,800 / 1,700	585	50	20	CN150	20	TN150	20	M90	4	50	12x1,670	1,119
2,000 / 1,880	585	60	20	CN200	20	TN200	20	M100	4	50	12x1,860	1414

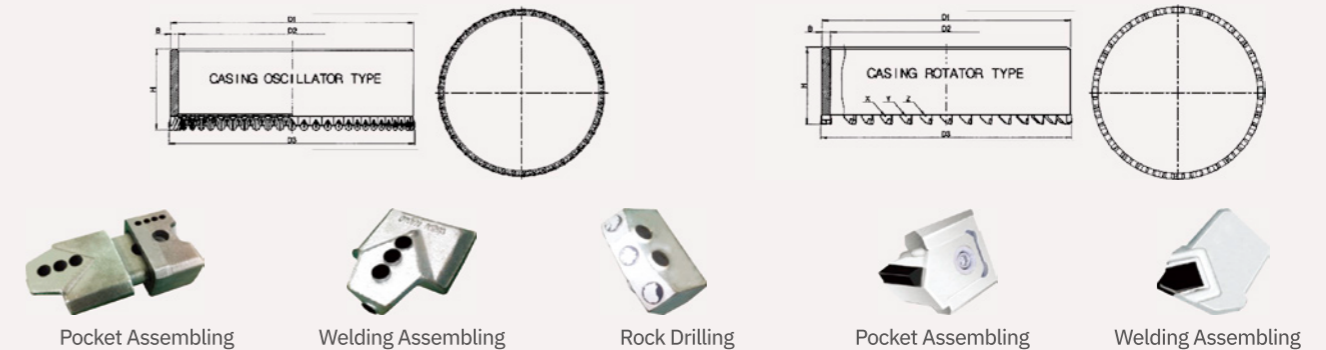


## Heavy Duty Type

D1 / D2	H	B	Conical Ring		Threaded Ring		Bolt		Locating Key		Sealing [mm]	Weight [kg]
			Q'ty	Type	Q'ty	Type	Q'ty	Type	Q'ty	Type		
1,500 / 1,400	585	50	16	165	16	T165	16	B42	4	50	10x1,370	965
1,800 / 1,700	585	50	20	165	20	T165	20	B42	4	50	10x1,670	1,185
1,800 / 1,680	585	60	20	220	20	T220	20	B48	4	50	10x1,650	1,385
2,000 / 1,880	585	60	20	220	20	T220	20	B48	4	50	12x1,860	1,540
2,200 / 2,080	585	60	20	220	20	T220	20	B48	4	50	12x2,050	1,700
2,500 / 2,380	585	60	20	220	20	T220	20	B48	4	50	12x2,300	1,885
2,800 / 2,640	625	80	24	300	24	T300	24	B65	6	50	12x2,600	2,900
3,000 / 2,840	625	80	24	C300	24	T300	24	B65	6	50	12x2,800	3,110



## Casing Shoe & Shoe Bit



## Tremie Pipe

BUMA offers a range of Tremie Pipes based on their internal diameter: NW200 (183 mm), NW250 (254 mm), and NW300 (302 mm).

In addition, we provide a complete system of tremie pipes, including hoppers, lifting eyes, suspension platforms, and tremie racks.





# Honolulu Rail Transit Project

Honolulu HI, USA

Casing Diameter : Ø 3,600 mm  
 Casing Driving : 57 m  
 Equipment : C3600H



C3600H

STG

BUMA



# The Curse of Oak Island

Oak Island Nova Scotia, Canada

Casing Diameter : Ø 1,500 mm  
Equipment : C1500T, C2200T, H1350A, H750R





**Northfield Bridge Project**  
 Gracefield Quebec, Canada

Casing Diameter : Ø 2,500 mm  
 Casing Driving Depth : 50 m  
 Equipment : C2500T







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