

# Unicrane Machinery Co., Ltd

Advantages of Unicrane's segment mould for mega tunneling project

## Why UNICrane?



- Unicrane is not just a Mould manufacturer;
- Only Segment mould Factory who can provide a full production monitoring;
- Concrete precast experience for over 60 years;
- Challenge for all different tasks for underground work;
- Never delate client's schedule;
- Professional partners with professional support;

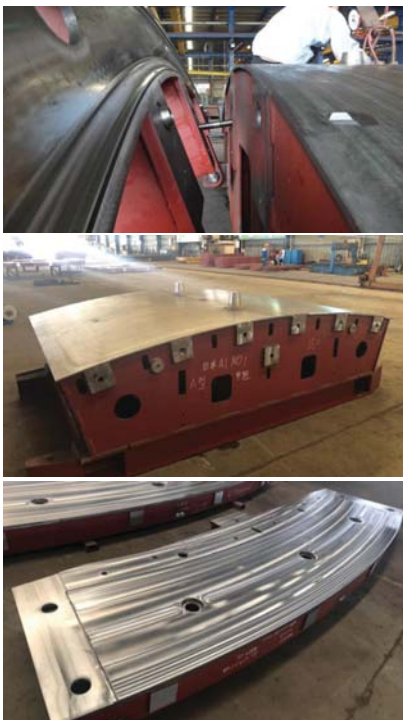




## Worldwide Experience



## Design Criteria of Unicrane's steel segment mould:



### Main Design criteria:

- Face to face contact;
- Unique design to suit different vibration method.
- CNC Machining quality on main/base mould (all edges & curve);
- Steel Chamfer on intrados of segment (better finishing);
- Simple rubber seal;
- Longer lifespan design;
- Integration of both western & Japanese design philosophy.





## Vibration is critical for segment mould production:



Experience in all different kind of vibration design:

- Pneumatic (air vibrator)
- Electrical vibrator;
- Vibration table;

**EXJX** MADE BY JAPANESE TECHNOLOGY

**High Frequency External Vibrators**

Right form can be adjustable by concrete weight.

Power Source

Features

- Quick mount design using built-in form and simple change tool.
- High frequency vibrator for excellent surface finishing.
- Totally sealed design for various working environment.

**EXJX** MADE BY JAPANESE TECHNOLOGY

**High Frequency Internal Vibrator**

Used for all types of concrete construction: Civil engineering works, general construction and precast concrete secondary products.

High Frequency vibrator HBM series have the advantages as follows:

- 1)Specially designed six fan.
- 2)Comfortable operation design and less vibration transmission to operator's hand.
- 3)Simple design, excellent durability and Easy maintenance.

Specifications:

**HBM Electric type**

Model	Power (kW)	Weight (kg)	Dimensions (mm)
HBM100	100	100	1000x1000x1000
HBM150	150	150	1500x1500x1500
HBM200	200	200	2000x2000x2000
HBM250	250	250	2500x2500x2500
HBM300	300	300	3000x3000x3000

OR Pneumatic type

**HBM High Frequency Vibrator**

Model	Power (kW)	Weight (kg)	Dimensions (mm)
HBM100	100	100	1000x1000x1000
HBM150	150	150	1500x1500x1500
HBM200	200	200	2000x2000x2000
HBM250	250	250	2500x2500x2500
HBM300	300	300	3000x3000x3000

**EXJX** MADE BY JAPANESE TECHNOLOGY

**Inverter/Converter for High Frequency Vibrator**

Inverter H4150NT(L) H460NT(L) H460(L)

- Output frequency (100 to 240 Hz) can be adjusted.
- Output frequency is displayed in digital.
- Overload/short circuit protection function is equipped.

Converter EFC4B

Totally enclosed fan cool design (TEFC) to prevent invasion of the foreign substance to generator unit.

Specifications:

Model	Power (kW)	Weight (kg)	Dimensions (mm)
H4150NT(L)	150	150	1500x1500x1500
H460NT(L)	240	240	2400x2400x2400
H460(L)	240	240	2400x2400x2400
H4150(L)	150	150	1500x1500x1500

HV Pendulum Internal Vibrator

The unique HV pendulum design allows for maximum torque to produce great under load vs conventional type like shaft design.

- Quick Dismount 15min design.
- Simple design, excellent durability and easy maintenance.

Specifications:

Model	Power (kW)	Weight (kg)	Dimensions (mm)
HV100	100	100	1000x1000x1000
HV150	150	150	1500x1500x1500
HV200	200	200	2000x2000x2000
HV250	250	250	2500x2500x2500
HV300	300	300	3000x3000x3000



## Experience & track record for all size tunnel segment mould





## Capability to design different kind of mould to suit the need.

**China- CRCC 14<sup>th</sup> Group Cable tunnel D11.6m**  
- Cover with springs (Full size)



**China- CRCC subsea tunnel D11.3m**  
- Casting cover (universal cover for all mould)



**Japan Hazama- Maglev tunnel OD14m (13+1pcs)**  
- Casting cover + sliding open for mould panels.



**Hong Kong Dragages & Bouygues JV- TMCKL subsea tunnel tunnel D17m**  
- Foldable 2 stages covers with spring



**Japan Ando-Hazama Road tunnel D12.4m**  
- Casting cover + sliding open for mould panels+ Vibration table



**China CRTG- Subsea tunnel MetroD11.3m**  
-Small spring covers ( half size)



## Carrousel production system in worldwide:



Individual curing carousel for China, Zhengzhou Fifth construction Precast



Double layers of Steam curing Chambers for China, Shanghai CCC



Japan-Carrousel for segment production: Nippon Hume Concrete factory.



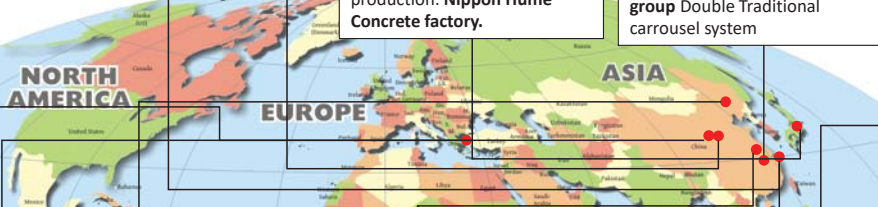
China Hangzhou Chinarail 1<sup>st</sup> group Double Traditional carrousel system



Individual Curing Carrousel- in China Hanzghou Metro



Individual Curing carrousel production line in Turkey Izmir LRT



Individual curing carrousel with Vibration table Thailand Bangkok City Metro



Traditional Carrousel- Water tunnel in China Henan Hydro construction



China Changchun- Mega large carrousel for precast station



China Nanjing, Double Individual curing carrousel



China Shanghai- Shanghai Pudong precast factory; Individual curing carrousel

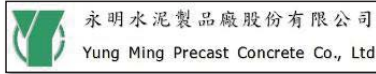


Semi-Auto Segment production line with Vibration table for Vietnam HoChiMinh City Metro



## Professional partners for tunnelling field

### Precast technology:



### Equipment partners:



### TBM Cooperation:



## Our Contractor clients around the world:

