CFRP Pre-stressing System

The CFRP pre-stressing system includes carbon fiber plate, rigid anchorages and adhesive.
The anchorage system includes fixed-end (dead-end) and stressing-end (live-end) anchorages,
which are fixed (bolted) to the surface of the concrete structure.
The CFRP plate is held at each anchorage with clamping jaws, tensioned with hydraulic jacks, and then bonded to the concrete surface.
This system is effective is carrying portion of the load that exists on the structure during the installation of the CFRP system.

▲▲ Advantage of Pre-stressed Carbon Fiber Plate

→→ Patent Technology, a full mechanical clamping system. Anchorage does not need adhesive,
no fatigue damage of the adhesive under long term strain. Minimize strain loss, eliminate potential safety problems.

→→ Wide application scopes, e.g. bridges, commercial buildings, steel structures etc.

→→ Unique design, comparing with other prestressing systems, 75% less cutting length,
53% less cutting depth on the concrete surface, shorter application time, easier application, 4.5 times higher efficiency.

→→ High strain, carbon fiber plate tensile force can reach 40 tons. The ultimate tensile force of the anchor can reach 96T.

→→ Anchorage has slot fixing holes. Such slot holes make application easier, faster, and more exactly, leading to increase efficiency.

→→ The system has been successful used on 17 expressways of 57 national projects, and on 14 international projects in 5 countries.
Proven quality, advanced technology, and guaranteed high performance.

▲▲ Characteristics of the Pre-stressed Carbon Fiber Plate Reinforcement System

→→ High strength carbon fiber plate, increase loading carrying capacity significantly.

→→ Achieve high forces in carbon fiber plates, by prestressing.

→→ Active loading by prestressing, no strain lagging.

→→ Achieve reverse bending moment, offset part of existing loading, increase stiffness, reduce deformation and deflection of members.

→→ Reduce cracks, close and stop cracking.

▲▲ Application Range

Long span structures on highways, expressways, railways bridges, commercial buildings etc.
Ideal for structures where portion of the dead load needs be carried by the CFRP strengthened members.
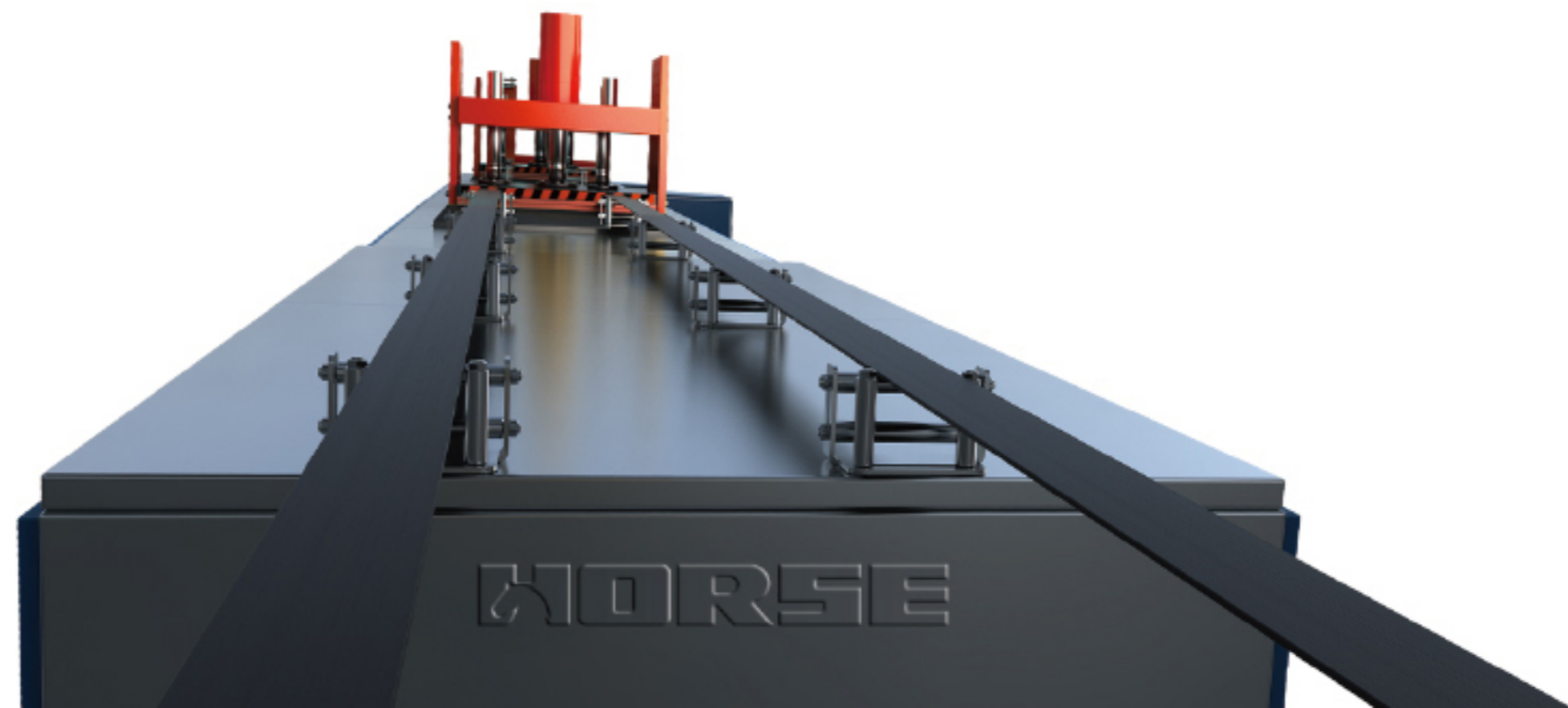
▲▲ Technical Parameters

Self Lock Pre-stress Strengthening System (Patent Number:ZL.2014.2.0115709.1)

Product Description	Specification	Size	
Pre-stress Carbon Fiber Plate	HM-1.4P	Thickness	1.4mm
		Width	50mm/100mm
		Length	100m/roll
	HM-2.0P	Thickness	2.0mm
		Width	50mm/100mm
		Length	100m/roll
	HM-3.0P	Thickness	3.0mm
		Width	20mm/50mm
		Length	100m/roll
Self Lock Anchorage	HM-MJ100		
	HM-MJ50		
	HM-MJ20		
	HM-MJ-G50		

Description	Test Items	Test Result
Carbon Fiber Plate	Standard Tensile Strength (ASTM D3039) (MPa)	2800
	Tensile Modulus (ASTM D3039) (MPa)	1.6×10^5
	Elongation at Break (ASTM D3039) (%)	1.6
	Shear Strength (ASTM D2344) (MPa)	80
	Flexural Strength (ASTM D7264) (MPa)	1600
	Carbon Fiber Content(%)	⩾65
Anchorage	Steel Tensile Strength(MPa)	⩾345
	Stress Amplitude Difference(MPa)	160
	2 million cycles fatigue testing $_{Fmin}$(MPa)	1120
	2 million cycles fatigue testing $_{Fmax}$(MPa)	1280

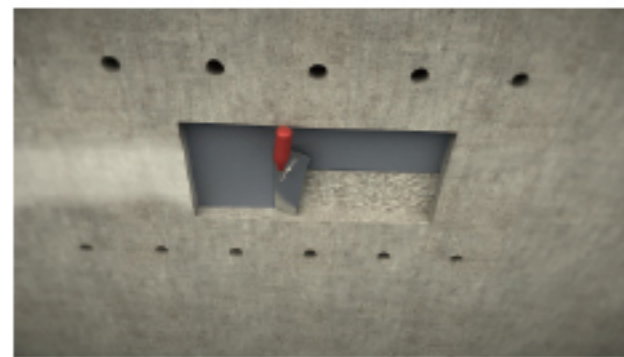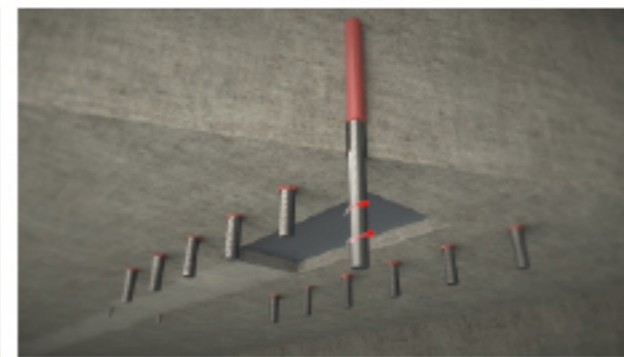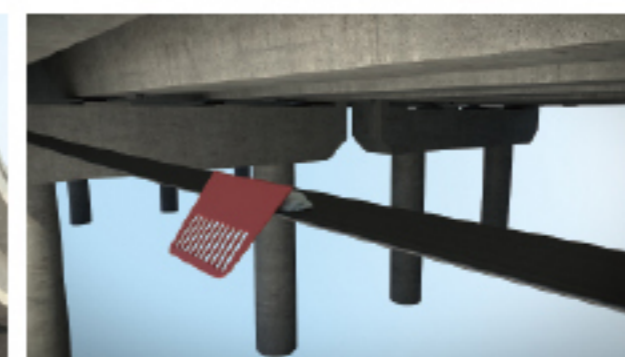|			
setting out	polishing	drilling hole	grooving
repairing and levelling	planting	installing anchor box	installing anchor block
fixing carbon fiber laminate	fixing jack and anchor bolt	prestretching	applying epoxy resin adhesive
formal stretching	removing the rod	tablet fixing	protecting

HORSE 14

▲▲ Storage and Transportation

→→ This product should be stored in a cool, dry and well-ventilated environment. It should not be stored under direct sunlight and/or rain.
It also should not be hit with sharp objects.

→→ This product should not be squeezed or compressed during storage, handling, and transportation.

▲▲ Package

100 meters carbon fiber plate roll per carton.

▲▲ Points of Attention

→→ High safety measures should be taken during the prestressing operation.

→→ Keep site clean, and well-ventilated.

→→ Keep concrete surface dry, clean and sound prior and during the prestressing operation.

→→ Working temperature should be above -5 ℃, and relative humidity should be less than 85%.

→→ Outdoor prestressing operation under direct rain is not permitted.