

REOFLEX Multiuse-Frame
Support-frame system NTT TK U/D

REOFLEX Multiuse-Frame

The flexible support frame system

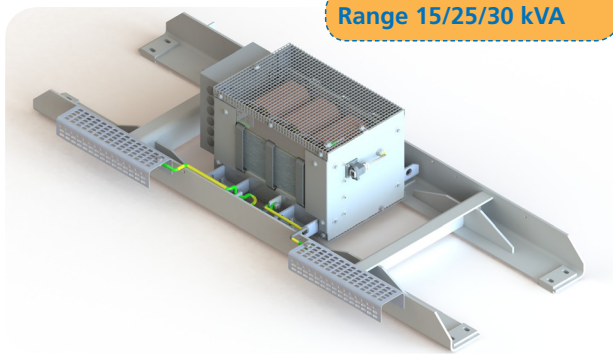
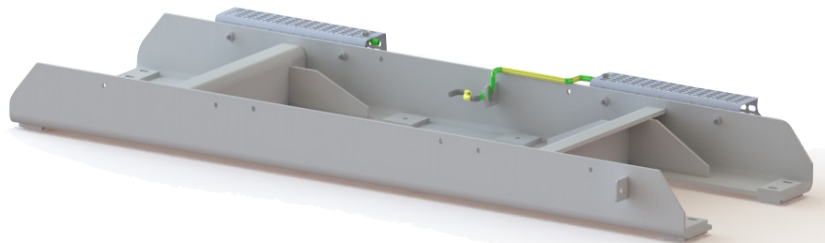
The REOFLEX Multiuse frame support frame system is a fixing system for transformers, reactors and braking resistors.

This standardized support frame from REO enables fast and rather variable assembly of train components. To ensure safe absorption and suspension shock absorbers may be integrated into the device as needed.

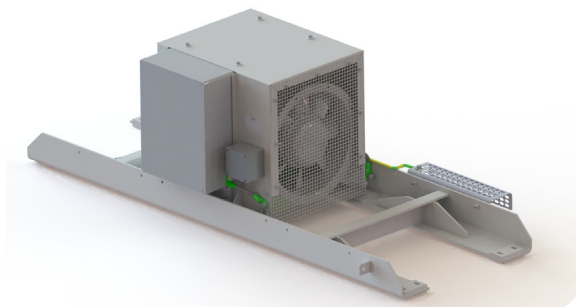
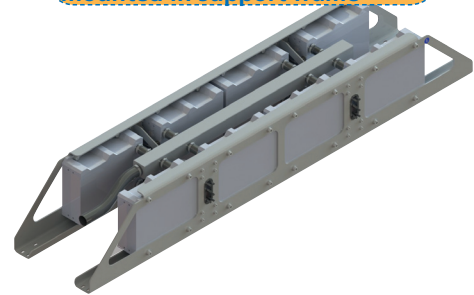
The assembly is made under the roof construction (REOFLEX NTT TK D) or underfloor (REOFLEX NTT TK U) of trains. The support frame offers a variety of use: for example with mining trucks. The compact unity offers a stable device which withstands even extreme stress conditions.

Benefits:

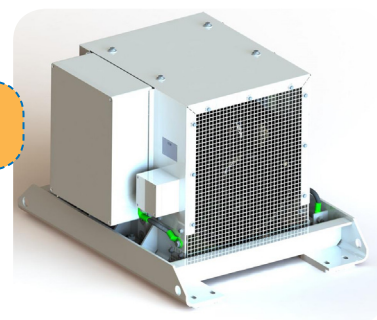
- Compact solution
- Available as roof or underfloor construction
- One frame for almost all components



Water-cooled resistors BWD 330 mounted in support frame

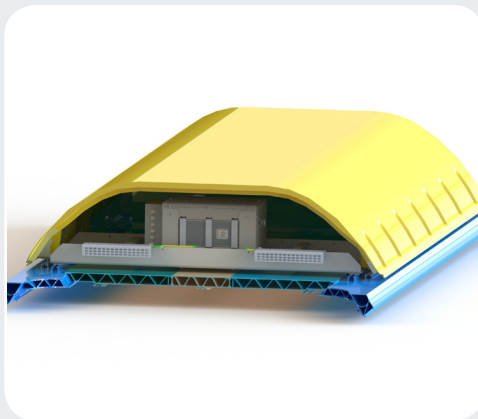
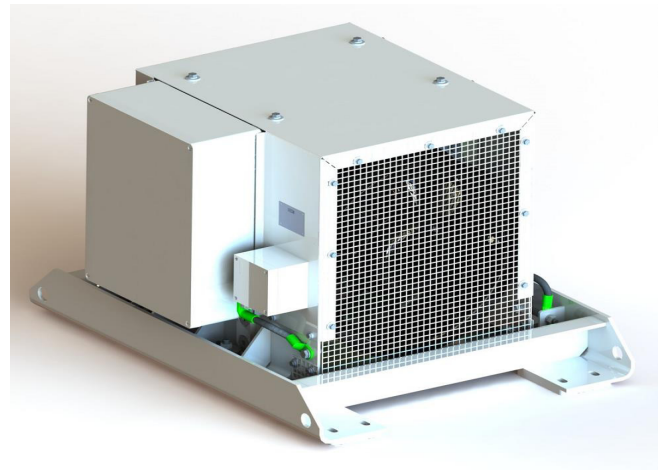


Air choke-fan-combination

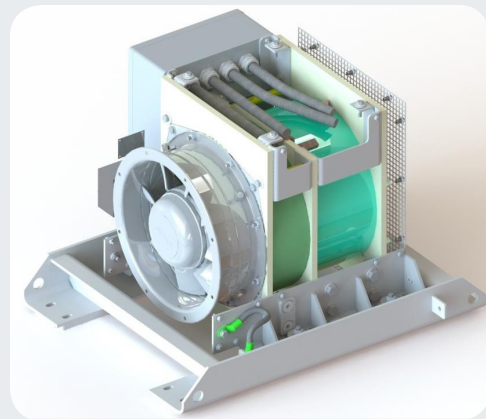


Typical applications

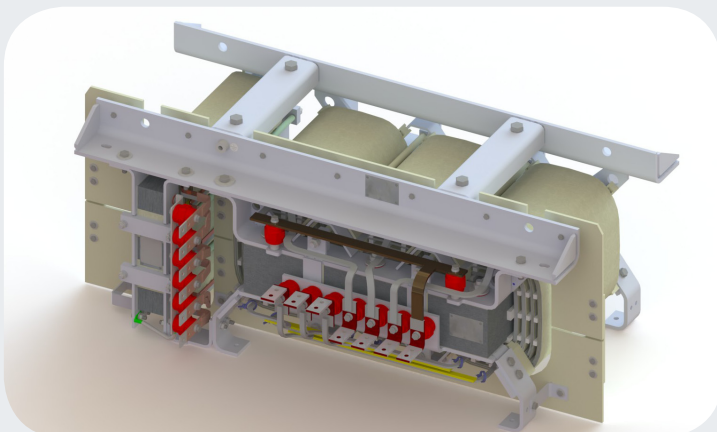
- Trains
- Mining trucks
- Ship building
- Busses
- Industry



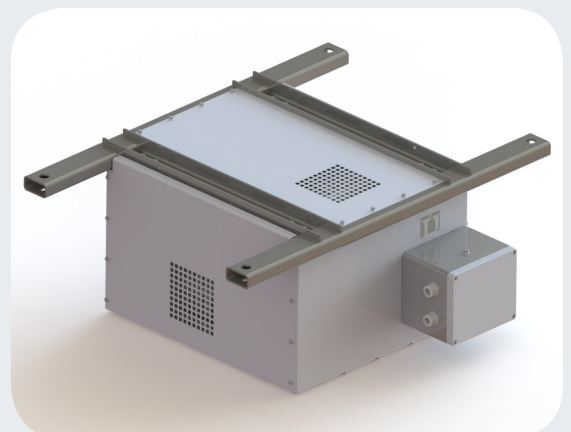
Example of assembly of a transformer underneath the roof construction of a high-speed train



Support frame with fan and connection box for extreme mechanical stresses

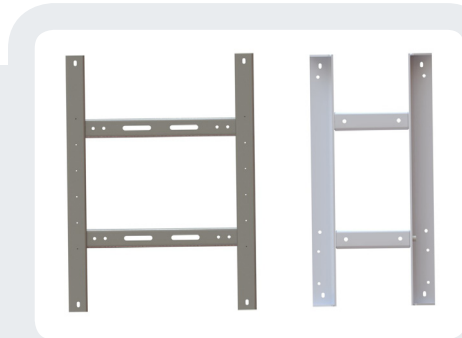
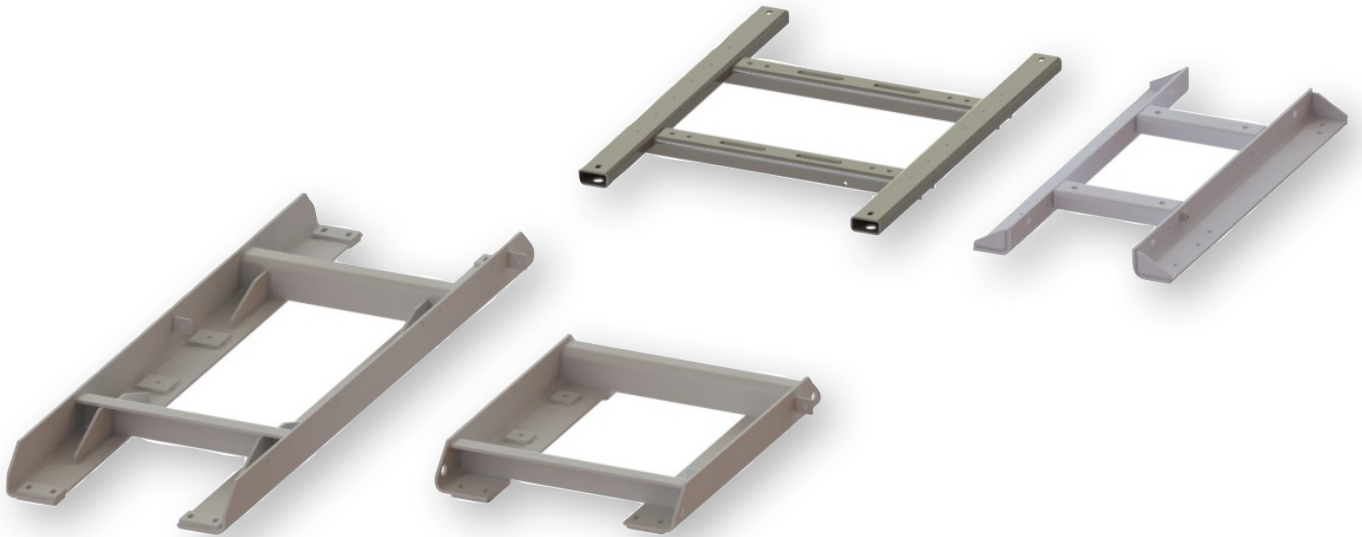


Support frame underfloor assembly with reactor/transformer application



Support frame underfloor application with reactor

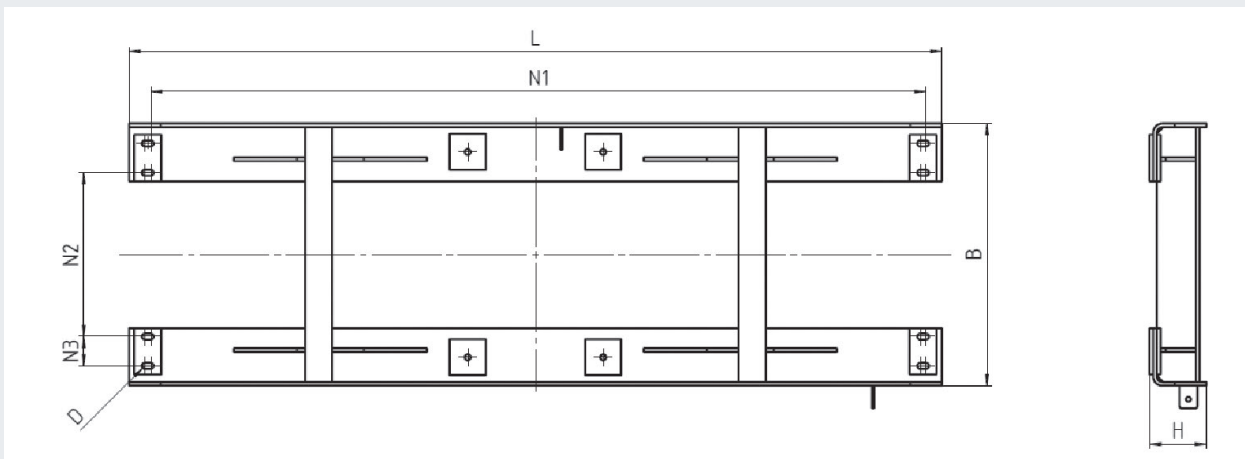
Mechanical construction



Technical Data - Other sizes upon request

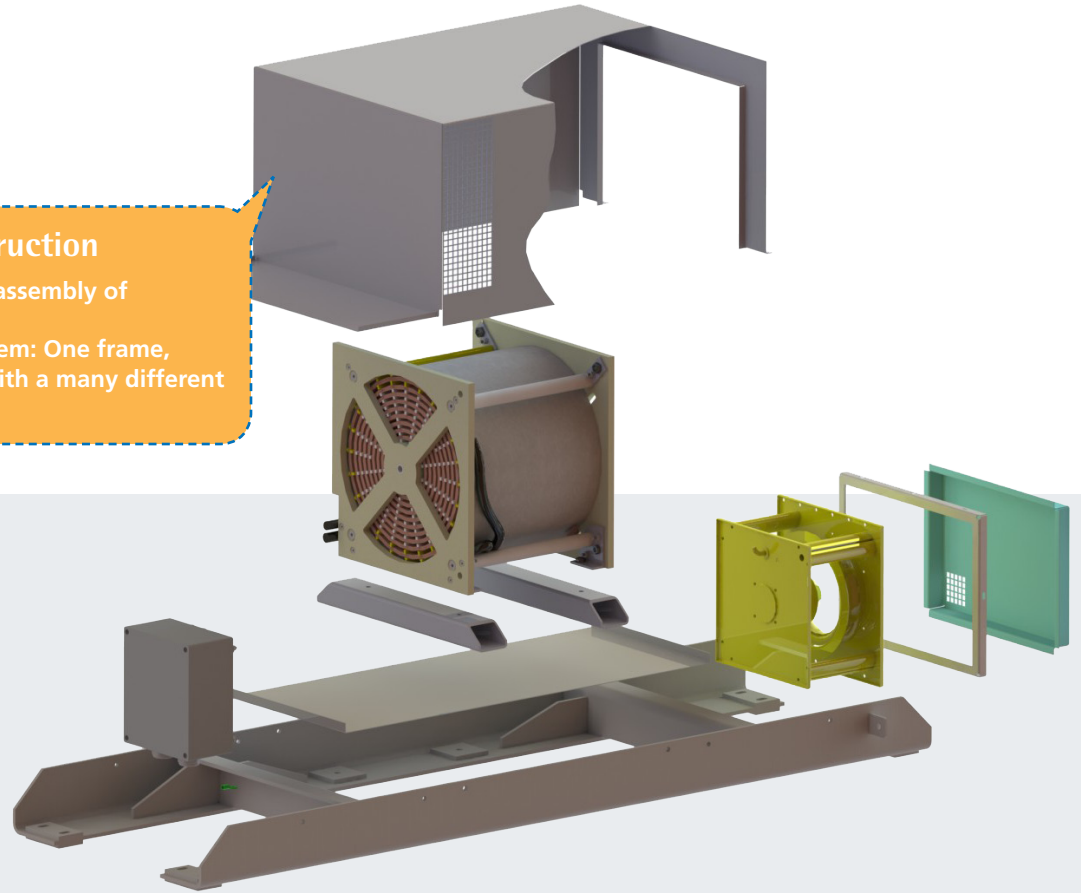
Type	L [mm]	B [mm]	H [mm]	N1 [mm]	N2 [mm]	N3 [mm]	Weight [kg]	Load [kg]
REOFLEX NTT TK 850 D	850	636	120	767	398	65	40	>196
REOFLEXNTT TK 1800 D	1800	581	136	1717	363	65	72	196
REOFLEXNTT TK 1066 U	1066	518	77	970	430	–	27	325*
REOFLEXNTT TK 1085 U	1085	796	55	1020	715	–	27	330*

* Designed according to EN12663 Pi



Modular Construction

- Easy and flexible assembly of components
- Standardized system: One frame, suitable for use with a many different components



Inspection methods/Quality

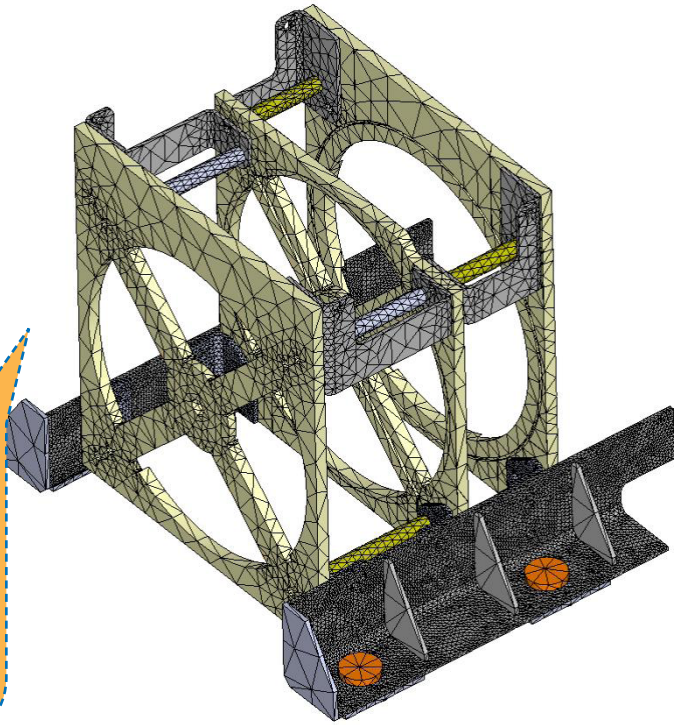


Extensive checks by incoming goods department, production with its individual divisions up to final inspection ensure the optimum quality of the product. The DIN EN 15085 standards and the IRIS are decisive. A documented final inspection (Routine check test report) which includes dimensional accuracy, welding quality, material test certificates as well as inspection of electrical equipment (reactor/transformer/resistor).

FEM-Simulation:

- Simulation technology - such as mechanical stress and deformation - based on the 3D modell constructed in Solid Works provides information on physical values. Thus, already before prototypes are built, problems are recognized and solved.

= Cost saving for you



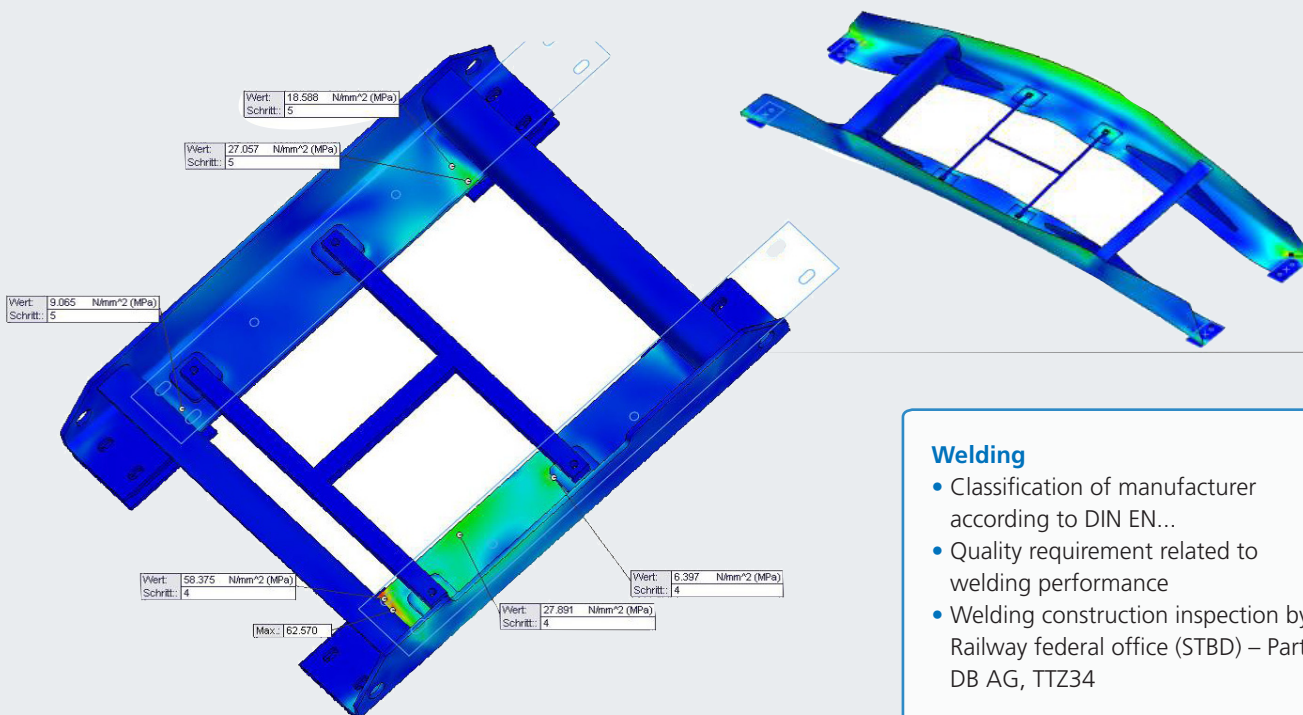
Simulated strength with stress values higher than defined 12663 standard in the EN.

Static loading conditions

Lastfall LF 01 : $a_x = +5,75g$ $a_y = +5,75g$ $a_z = +5,75g$
 Lastfall LF 02 : $a_x = +5,75g$ $a_y = +5,75g$ $a_z = -5,75g$
 Lastfall LF 03 : $a_x = +5,75g$ $a_y = -5,75g$ $a_z = -5,75g$
 Lastfall LF 04 : $a_x = -5,75g$ $a_y = -5,75g$ $a_z = -5,75g$
 Lastfall LF 05 : $a_x = -5,75g$ $a_y = +5,75g$ $a_z = +5,75g$
 Lastfall LF 06 : $a_x = -5,75g$ $a_y = -5,75g$ $a_z = +5,75g$
 Lastfall LF 07 : $a_x = +5,75g$ $a_y = -5,75g$ $a_z = +5,75g$
 Lastfall LF 08 : $a_x = -5,75g$ $a_y = +5,75g$ $a_z = -5,75g$

Dynamic loading conditions

Lastfall LF 01 : $a_x = +0,255g$ $a_y = +0,2g$ $a_z = (1+0,25)g$
 Lastfall LF 02 : $a_x = +0,255g$ $a_y = +0,2g$ $a_z = (1-0,25)g$
 Lastfall LF 03 : $a_x = +0,255g$ $a_y = -0,2g$ $a_z = (1-0,25)g$
 Lastfall LF 04 : $a_x = -0,255g$ $a_y = -0,2g$ $a_z = (1-0,25)g$
 Lastfall LF 05 : $a_x = -0,255g$ $a_y = +0,2g$ $a_z = (1+0,25)g$
 Lastfall LF 06 : $a_x = -0,255g$ $a_y = -0,2g$ $a_z = (1+0,25)g$
 Lastfall LF 07 : $a_x = +0,255g$ $a_y = -0,2g$ $a_z = (1+0,25)g$
 Lastfall LF 08 : $a_x = -0,255g$ $a_y = +0,2g$ $a_z = (1+0,25)g$



Welding

- Classification of manufacturer according to DIN EN...
- Quality requirement related to welding performance
- Welding construction inspection by Railway federal office (STBD) – Part 1: DB AG, TTZ34

Environmental conditions

The REO support frame is treated with a multi-layer wet coating in order to provide corrosion resistance. In addition to the FEM simulations, the mechanical stresses according to EN 61737 Cat. 1 Class B are approved by an accredited lab. The use of fine-grained steel ensures sufficient notch impact strength even with temperature below -50 °C.

The underfloor frames are designed in stainless steel in order to ensure durable corrosion protection independent of varnish.

Shock and vibration stress	Shock resistance: EN 61373 with 5g in all directions Vibration resistance: EN 61373 Kategorie 1 – Class B
Environmental influence	Anforderung
Ambient temperature with normal operation	min -50°C
Classification according to EN 60721-3-5	
Climatic class	5K2
Biologically active ingredients	5B2
Chemically active ingredients	5C2
Contamination means	5F2
Mechanically active ingredients	5S2
Pollution according to EN 50124	PD 4
Air temperature class EN 50125-1	T1
Class height range	AX up to 1500 m



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