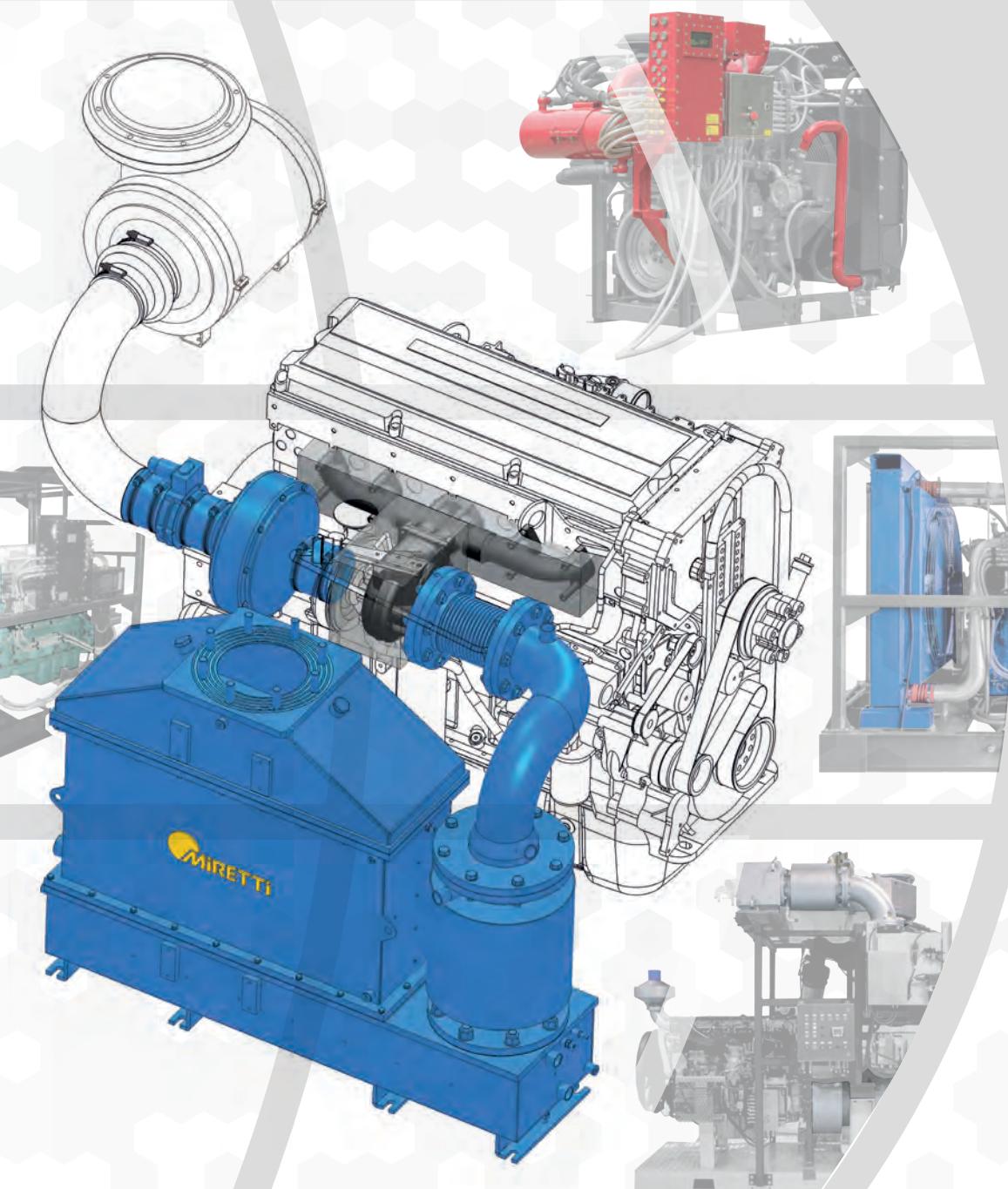




Miretti Engine Explosion Protection Systems

Zone 2 (ATEX) Kits
Class I Div. 1-2 (US)
TIER 4 Engines
IECEx



Ex Engine Kits
and Ex Engine Powerpacks
for Explosive Environments

Ex Engine Power Systems

Diesel engines, working in potentially flammable atmospheres, can be an explosive mix that places workers and businesses at serious risk and could result in untold damage to the environment.

History has taught us the lesson that such risks are very real and the impact is often catastrophic.

Our priority is to protect people and the environment by providing safe, affordable and internationally compliant explosion protection systems; a requirement which cannot be compromised.



THE PRIORITY IS TO ENSURE SAFETY FOR THE ENVIRONMENT AND HUMAN BEINGS

Dangerous ignition sources of unprotected diesel engines such as: electrical, mechanical, or static sparks, overspeed or flame from inlet or exhaust, and hot surfaces that could cause an auto-ignition of a flammable gas or vapour.

Flammable gases in the atmosphere can be sucked in through the air intake along with air for combustion. This results in backfires in the inlet and exhaust or engine overspeed situation whereby the engine runs out of control. Different surfaces on a diesel engine can become hot and therefore sources of ignition. These surfaces need to be protected to avoid the danger of explosion.

Miretti can provide Ex Conversions for Marine and Industrial Engines with multi-years expertise in:

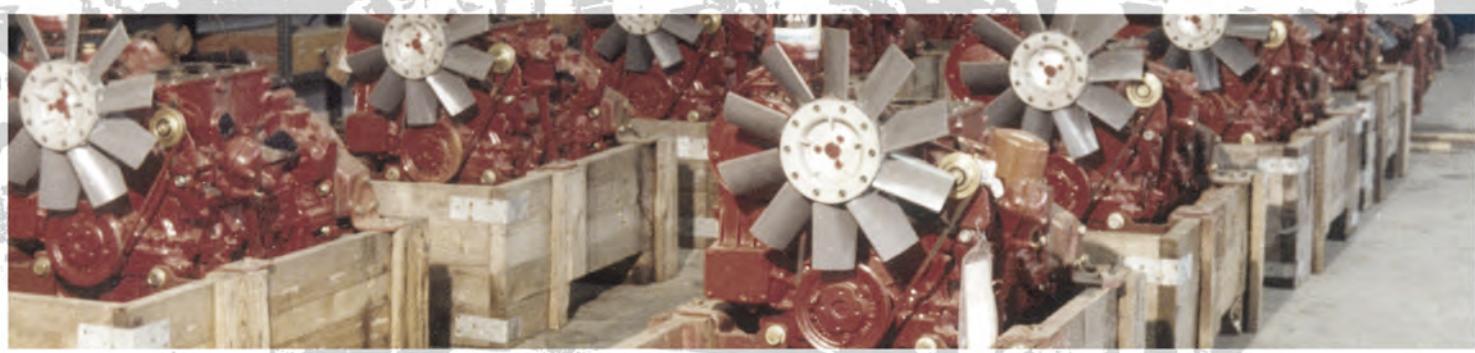
- Ex Kits for Local Installations
- Innovative and Fully certified Systems for Oilfield equipment
- Ex Engine Packages Full Conversions

Ex Certificated Solutions:

- Zone 2 ATEX compliant kits
- Class I Division 1-2 (US) Explosion Protection Solutions Electrical System
- TIER 4 Engines Explosion Proof Technology
- IECEx



SINCE 1973 WORKING FOR EXCELLENCE AND INNOVATION



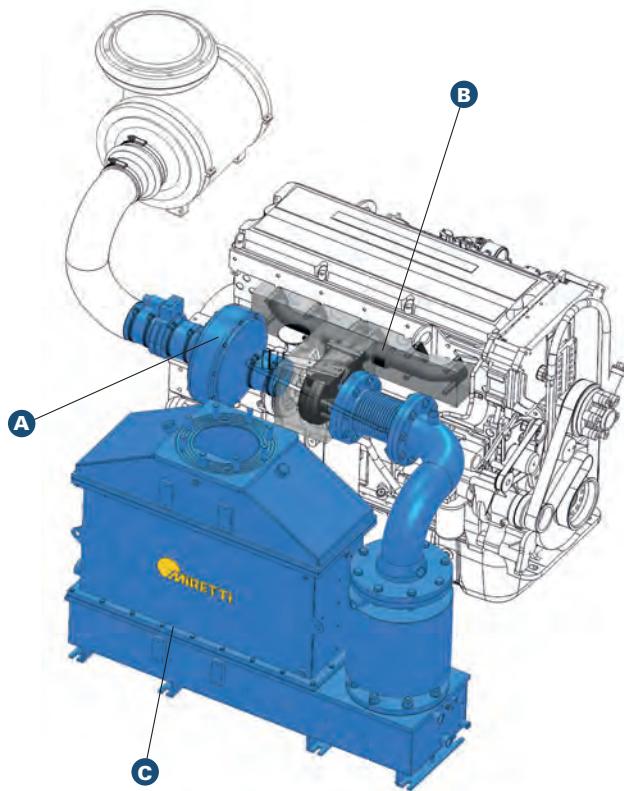
Miretti Zone 2 (ATEX) Kits

include features designed to prevent an ignition source causing an explosion



**Protect. Convert.
Work safely.
Scan and watch
the 3D video**

Miretti Zone 2 (ATEX) Kits also include:
Battery and electrics Ex Protection
Charge Air Pipe
Automated shut-down system
ECM Ex Protection



our Certifications, your Safety

All Miretti Ex Solutions Diesel Engine Hazardous Packages are certified, with some having tri-certification to ATEX 2014/34/EU, IECEx and NEC 500.

Miretti Diesel Engine Explosion Protection Systems are designed, tested and certified to support the equipments of our clients, thanks to high quality know-how of our specialist engineers.



After Sales Service and Training

The Miretti after-sales service, present in most countries, ensures fast response times, dedicated assistance, telephone and on-site support and the availability of specific spare parts for more than ten years to help maintain constant productivity for customers.

Conversions are studied and implemented using solutions that simplify and speed up machinery maintenance. Maintenance interventions are carried out by skilled personnel, authorised and trained for the purpose in our head offices.

The Miretti After-Sales Service and the availability of local technical support through training courses for service engineers (carried out at the Milan HQ or locally when available) will support the client step by step in ensuring continuous uptime and protection of their environment.

Annual and/or three yearly Safety Audits for the Ex protection system are available on request.



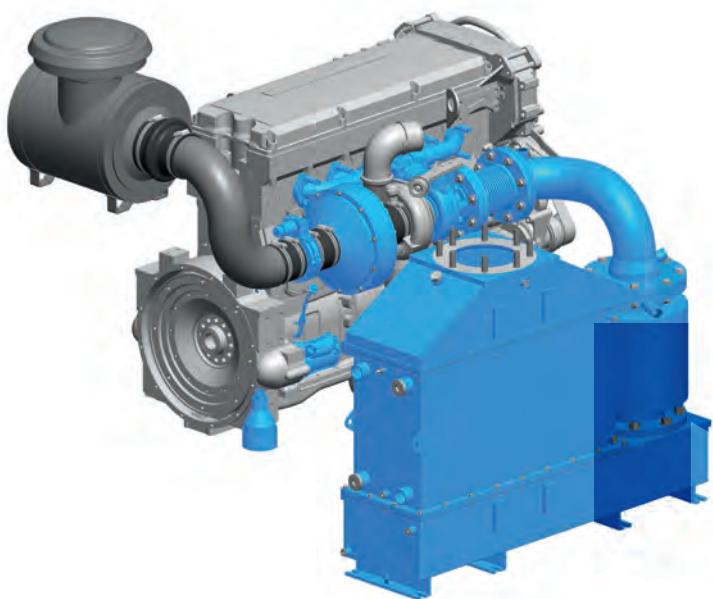
Miretti Zone

FilterEx



FilterEx Manicooler

< 90 kw



FilterEx

size 60-120 kw

size 121-250 kw

size 251-499 kw



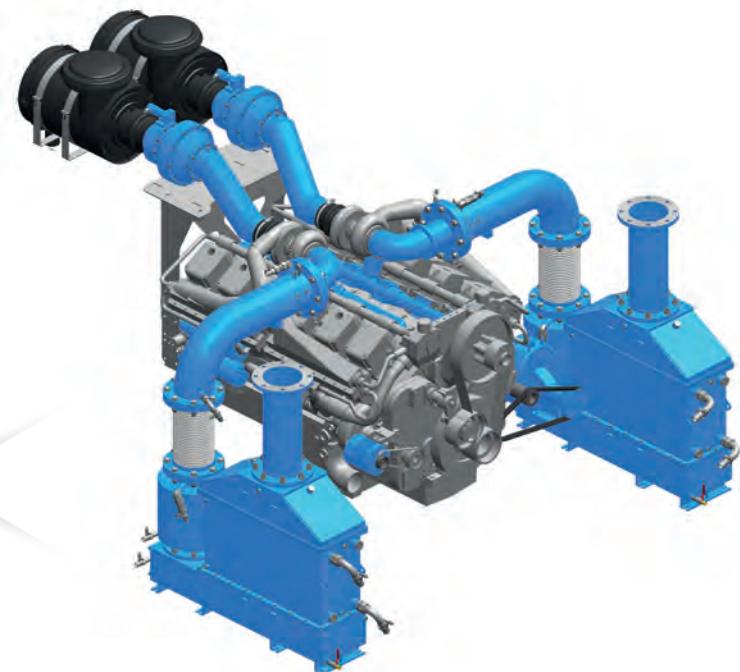
3D video



2 (ATEX) Kits

Models

FilterEx
500-800 kw



Protect. Convert. Work safely.
Scan and watch the 3D video

FilterEx
> 800 kw



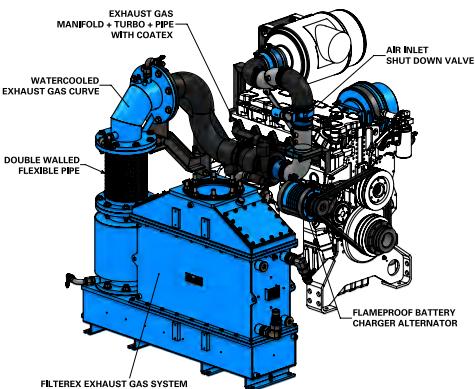
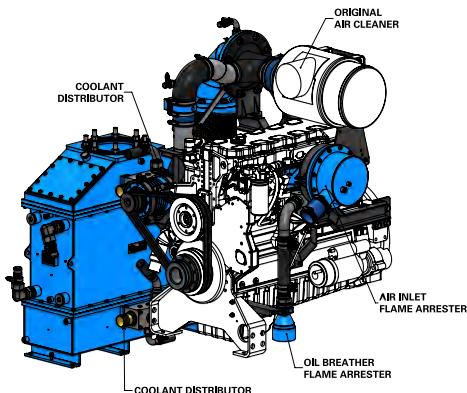
The images are indicative of a standard engine package. Options are available. Please contact us for more information!



Miretti Ex Solutions are available for Atlas Copco, MTU, Cummins, Caterpillar, Volvo, Perkins, JCB, FPT, Deutz, Man, Doosan etc...

Ex Engine Packages Full Conversions

Ex Engine Packages Full Conversions certified for use in hazardous locations are available. The Ex Engine Powerpacks could be available reasonably after a feasibility analysis by our Technical Office and by our Research & Development Dept.



Integrated Ex Solutions and Components

Miretti FilterEx

FilterEx is a certified system that is compact, ergonomic, and self-cleaning. It is a single component that reduces exhaust gas temperature, extinguishes the flame and spark, and reduces pollution. It is the evolution of the dry flame arrester, which also includes a heat exchanger. Approximately 1,000 hours before inspection | Easy to install and clean | IIA, IIB certified | Compact exhaust cooling system with an embedded self-cleaning exhaust Flame and Spark arrestors.



Tamb=20 +130°C



Miretti CoatEx

The patented CoatEx system provides a thermal barrier between the hot surfaces of the engine and the external atmosphere.

It plays a crucial role in controlling heat release and limiting surface temperatures.

Original engine OEM turbocharger enabling to be retained, reducing risk of failure when replacement water-cooled turbochargers are fitted. Non-toxic solution. Resistant to many chemical and corrosive atmospheric agents.



Tamb-20°C +60°C



Miretti Class I Division 1

Explosion Protection Electrical Only

NTRL certified and labeled electrical components. Complete Electrical System Certification available.



Miretti Class I Division 2

Explosion Protection Electrical Only

NTRL certified and labeled electrical components.
Complete Electrical System Certification available.

Miretti Division 2 / Zone 2

Tri-certification Explosion Protection

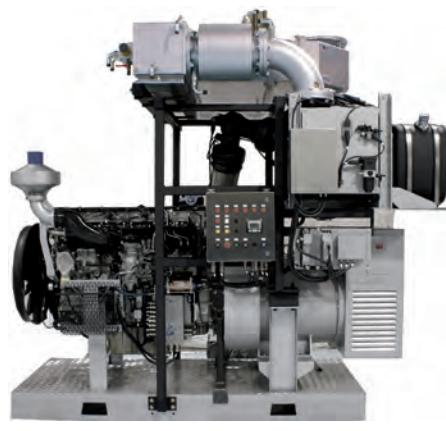
ATEX Zone 2, IECEx Zone 2, NEC Class I Div. 2 certificates.



Miretti TIER 4 Engines

Explosion Protection ATEX Zone 1-2 / Div. 1-2 (US)

Miretti explosion proof diesel conversions are designed not to have an impact on the functionality and compliance standards of the original diesel engine. Here is an example of Tier 4 Explosion Protected Diesel Engine with tri-certification to NEC 500, ATEX 2014/34/EU, IECEx.



Innovation, Quality, Reliability in Ex Solutions and Services for Engines, globally



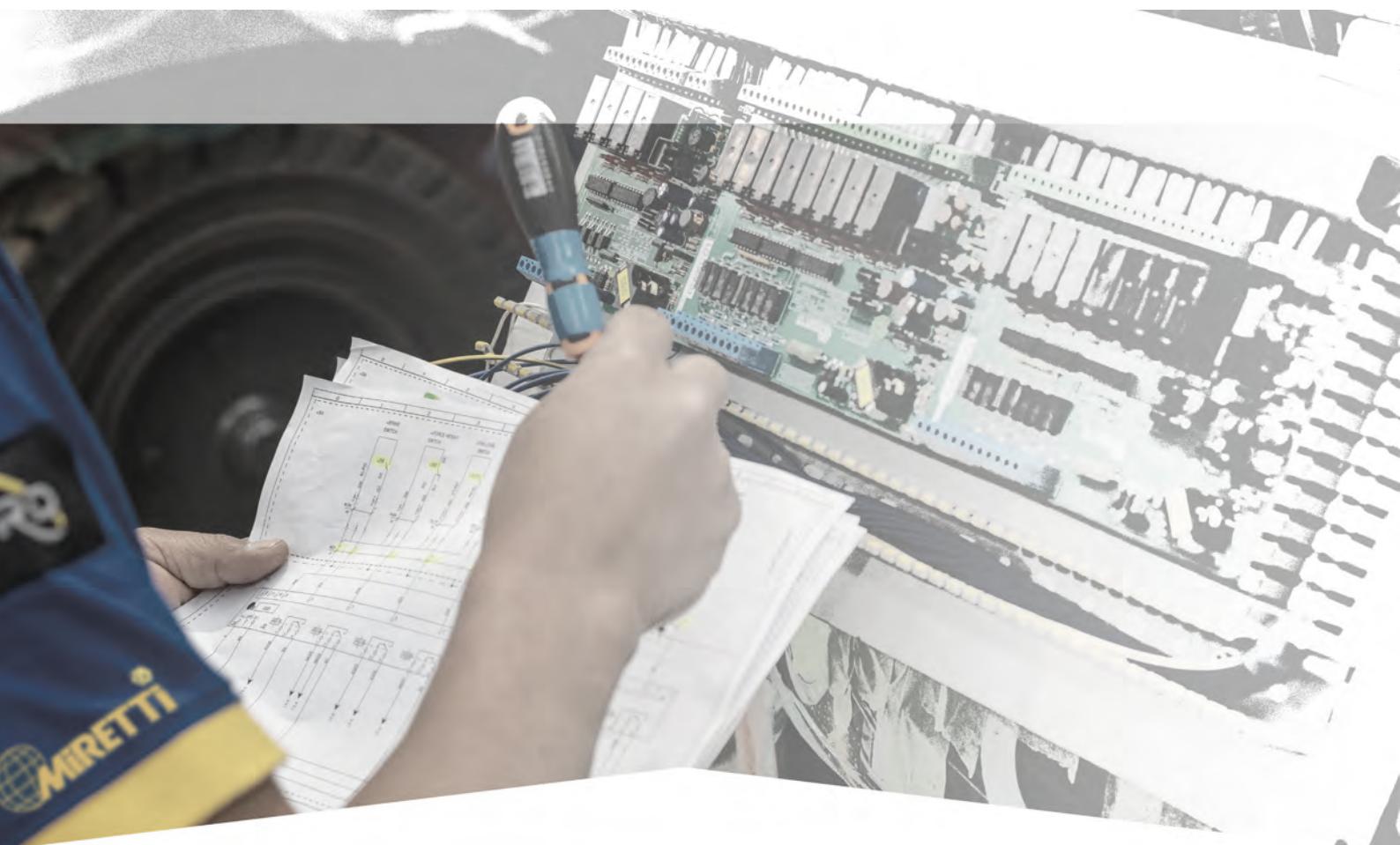


Miretti has been leader since 1973 in the **Explosion Proof Protection** of mobile vehicles and industrial equipment and boasts impressive experience in the field. The company operates all over the world with branches in Italy (head office), USA, Singapore, China, Germany, UK, France, Spain, Hungary, Benelux, Middle East, Algeria, Israel, Australia.

Miretti is ISO 9001, ISO14001 and ISO 45001 certified and is an approved supplier for the most important world producers. Constant research focuses on new technologies and innovative solutions. All explosion proof conversions are developed and implemented in agreement with OEM Original Equipment Manufacturers to maintain original safety levels and ergonomics in conformity with local standards and regulations.

Miretti ensures a reliable after-sales service, qualified technicians, quality and fast maintenance. Miretti Group has also been on the market since 1973 as a supplier of SCR DeNOx Systems and Catalysts thanks to many years of experience also in the field of Exhaust Cleaning Solutions reducing exhaust pollution. *"Explosion Protection Safety and Green Environment"*.

over 50 years dedicated to the Environment Protection and Workers' Safety



Worldwide Action

⟨ **Forward Thinking** ⟩

Quality & Reliability

⟨ **Safety Culture** ⟩

Customized Solutions

⟨ **Working for Excellence & Innovation** ⟩

Certifications & Testing



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