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RTX Revolutionary Technology - Rosenbauer



# **Revolutionary Technology**

## Pioneering spirit. 100%.

For many manufacturers, a new product is just the sum of its new individual parts – in most cases, this means the renewing of components and further development of existing ideas. Not so with Rosenbauer. For the RTX, its developers not only improved what was already there, but they reconsidered the entire firefighting vehicle concept. The requirement was clear – this model had to represent the future of firefighting vehicles.

#### The RTX – a game changer

Yes, the RTX is electric. But that's not its only revolutionary quality. The electric drive is just the starting point of a long series of unique design features that offer important advantages: for deployment, the operations management system, the scene surroundings - and above all for the emergency crews.

The RTX was not just designed to be state of the art in terms of technology. The goal was to meet the future requirements of today's fire services. This makes the RTX not just a game changer for Rosenbauer, but also for the entire firefighting industry.

#### One name, one promise: Rosenbauer

For over 150 years, Rosenbauer has been a pioneer and a partner for emergency personnel. We are the only company to specialize in providing practical solutions during all fire and disaster events.

For Rosenbauer, perfection means staying out in front. For example, we set new standards in fire and disaster protection with technologically advanced innovations. Through intensive discussions with our customers, we develop the right solution and are on location when needed. We leave no stone unturned to ensure that you are optimally equipped when it matters.

# Revolutionary.

In every way.



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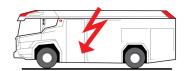
# Revolutionary agility.

## Unprecedented driving dynamics and driving safety.

The RTX product line isn't just a simple exchange from the combustion engine to an electric one. Instead, a completely new drive concept is revolutionizing the architecture of the rescue pumper firefighting vehicle, with numerous positive effects.

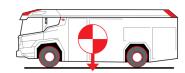
#### High torque right from the start

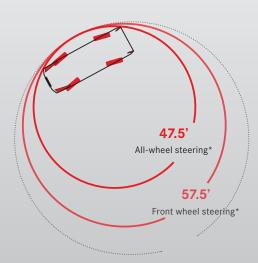
The two electric motors with a total peak output of 360 kW / 490 HP (260 kW / 350 HP continuous) and up to 37,000-foot pounds of torque ensure unprecedented longitudinal dynamics for a fire truck enabling rapid acceleration, especially in heavy city traffic.



# Low center of gravity, even axle load distribution

The drive concept enables a lower center of gravity and a more balanced axle load distribution giving unprecedented cornering stability and thus reducing the risk of accidents.





\* RTX with 173" wheelbase (wall-to-wall)

#### Significantly improved turning radius

The suspension developed by Rosenbauer enables a significantly broader steering angle - even with all-wheel drive. The turning radius of the RTX is significantly smaller than that of conventional vehicles of the same size. Thanks to all-wheel steering, maneuverability is increased dramatically.



Parallel positioning of the wheels on both axles for maneuvers in confined spaces.

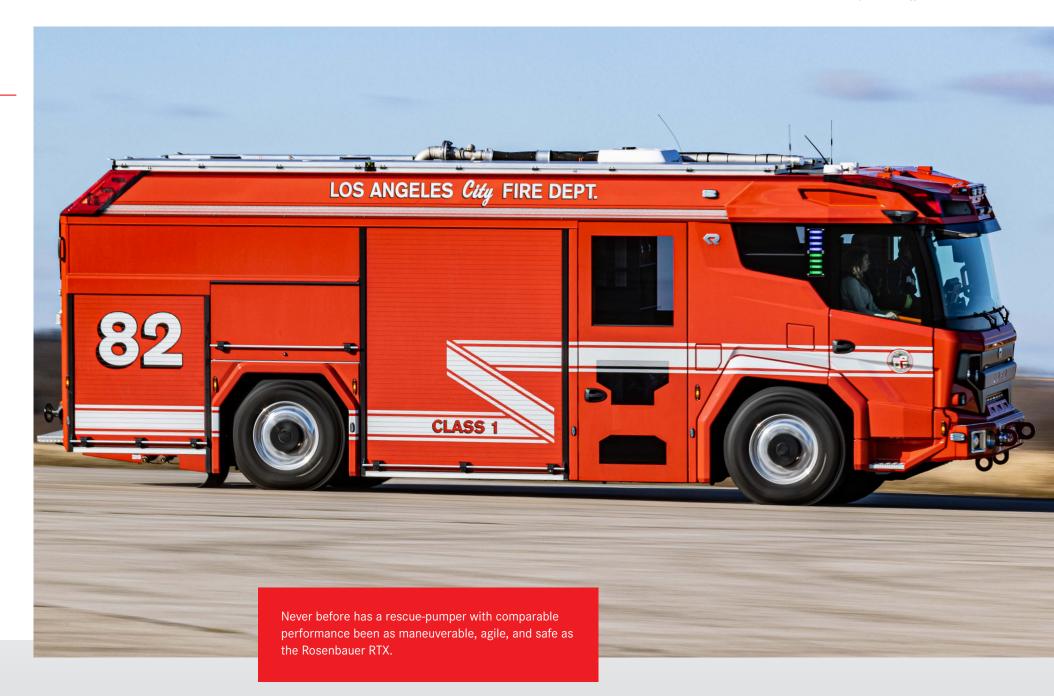
# Despite its spaciousness, the RTX is only 92.5 inches wide, ensuring that the destination can be reached quickly, even when traveling on narrow streets or through tight passages.

Thanks to its innovative compactness and the optional electronic exterior mirrors, even the tightest alleys are no problem for the RTX.

#### Rear axle steering

Narrow superstructure

As an option, the RTX can be configured with switchable rear axle steering. This both reduces the turning radius even more and optimises manueverability through so-called 'crab steering'.



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# Revolutionary ergonomics.

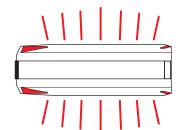
## Functionality with the emergency crews in mind.

The revolutionary vehicle concept of the RTX offers both ergonomic and tactical advantages – for less physical strain on the emergency crews and for greater operational success.

For the RTX product line, it was possible to reduce the equipment access height significantly, minimizing the physical strain on the emergency crews. LOS ANGELES City FIRE DEPT.

#### **Outstanding ambient lighting**

The integrated high-performance LED strips, with their powerful luminosity, ensure shadowless illumination of the operating environment and, in many scenarios, eliminates the need for a light tower on the apparatus.



#### Improved in-cab communication

The cockpit and crew cabin were also redesigned to improve interaction between the crew members:

- The cockpit has rotatable driver and officer seats.
- The crew cab is not spatially isolated from the cockpit.
- Both features enable an oval seating arrangement for improved communication



#### Convenient entry and reduced lifting strain

The driveshaft-free vehicle concept allows the equipment compartments to be extended downward. With level regulation, in operation mode the body can also be lowered to an entry height of just 10 inches. This enables easy access to the crew cabin. This improvement in ergonomics significantly reduces the long-term strain on the emergency crews.



Entry height only 10 inches

#### Optimized ergonomics and efficiency

Emergency crews are exposed to high levels of physical strain. Much of this stems from the transportation of equipment. An emergency vehicle designed with this in mind from the outset can provide noticeable relief. And this is the case with the Rosenbauer RTX.

#### Step in instead of step up

With a distance of just 10 inches between the road surface and the cab floor (in operation mode), it has never been easier to enter or exit a firefighting vehicle reducing the risk of injury and long-term stresses on emergency personnel.

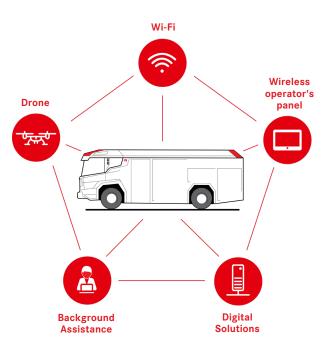
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# Revolutionary operation.

## Intuitive. Digital. Connected.

With the RTX, Rosenbauer is breaking new ground in order to make the vehicle's controls and firefighting equipment even safer and easier to use, as well as to improve the coordination of the emergency crews.





#### **Fully connected**

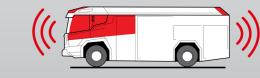
The RTX is at the center of its communication system, including an autonomous Wi-Fi network, optional Relational Database Service (RDS) Connected Command which provides a connection to the operations control center and the data center, and even the integration of drones for aerial photo-based analysis of an incident.

#### **Advanced sensor technology**

The driver of the RTX is supported by an optional electronic mirror system, including a blind spot warning and rearview cameras. Optionally, distance warning sensors that detect obstacles can be provided.

#### **Easiest operation**

The RTX features intuitive, easy-to-use touchscreens. In addition to conventional switches, a customizable actuation button ensures maximum simplification.





## Reduced emissions.

## Minimal emission of pollutants. Less noise.

An emergency vehicle that aims to meet the highest requirements must also be able to impress when it comes to protecting the environment and reducing noise pollution. Thanks to its innovative drive concept and the choice of materials used, the RTX masters this with ease.

#### Low noise and exhaust emissions

With the drive motors, lighting, and equipment powered directly from the batteries, the RTX is nearly silent. This greatly reduces the noise level at the scene of the emergency, making work easier for rescue workers, reducing stress, and benefiting nearby residents. Furthermore, no exhaust gases are emitted when extended pumping operations are not required. This greatly improves the air quality in the vehicle's immediate surroundings.

#### **Emission-free driving**

The RTX's electric drive is not only powerful, but also emission-free. The batteries ensure that no fuel has to be burned while driving. In addition, regenerative braking via the electric motors reduces brake wear, and thus the creation of fine dust particles. This is of significant benefit to people and the environment, especially in urban areas with many emergency incidents, high traffic volumes, and a high building density.

#### Sustainable materials

The plastics used in the RTX are made from advanced materials for extreme durability, but also making them easier to recycle for sustainability reasons. We have removed all fiberglass-reinforced plastic from the fire apparatus because the fibers of fiberglass-reinforced plastic can be inadvertently inhaled by individuals, resulting in health issues and fiberglass-reinforced plastic is not recyclable.



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# Safety first.

### Safe drive. Safe operation.

The safety of the crews and all those involved in an operation takes top priority. And the RTX uses an unprecedented set of measures to guarantee this.

#### Extremely high driving stability

The design of the drive concept incorporates a low center of gravity, making the RTX much more stable than conventional fire trucks during fast cornering. This facilitates a high degree of driving safety.



The electronic rearview mirror.

#### **Active safety - the assistance systems**

Those diving the RTX are supported by assistance systems that help avoid accidents under challenging situations.

These systems include:

- Electronic rearview mirrors with a significantly increased field of vision eliminating blind spots including a night vision function to provides a better view of the surrounding night-time traffic.
- Full rear view integrated camera.
- Automatic object recognition that assists in avoiding collisions with people and objects (coming soon).



#### Reduced risk of injury and health hazards

Due to the basic ergonomic specifications of the RTX with its generous headroom, its low entry, and the easily accessible equipment compartments, the risk of injury to emergency crews is significantly reduced. In addition, the vehicle's emissions are reduced to a minimum, as no exhaust gases are emitted during battery-powered operations.

#### **Perfect illumination**

A clear view around the fire truck during a deployment is essential for a successful, safe operation. The RTX's integrated LED lighting system ensures optimal brightness that could previously only be achieved through the use of powerful light towers.

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# **Electrical.** And lasting.

## The Rosenbauer hybrid system.

The RTX has the ability to take up to a 150 kW at once which means that the batteries can reach full efficiency in almost no time. This means that purely electric and therefore emission-free, short-range operations are not a problem, even when used very frequently in big cities. Due to the onboard range extender, the RTX can also run on diesel for extended operations, without any limitations

#### Flexible charging

The batteries of the RTX can also supply external devices with electrical energy through an optional power supply unit. The range extender guarantees endurance during extended operations.

With full power input of 150 kW, charging for just 15 minutes is enough to raise the level of the 132 kWh energy storage device from 50% to 80%.

The batteries of the RTX can also supply external devices with electrical energy. A range extender guarantees endurance during longer operations.

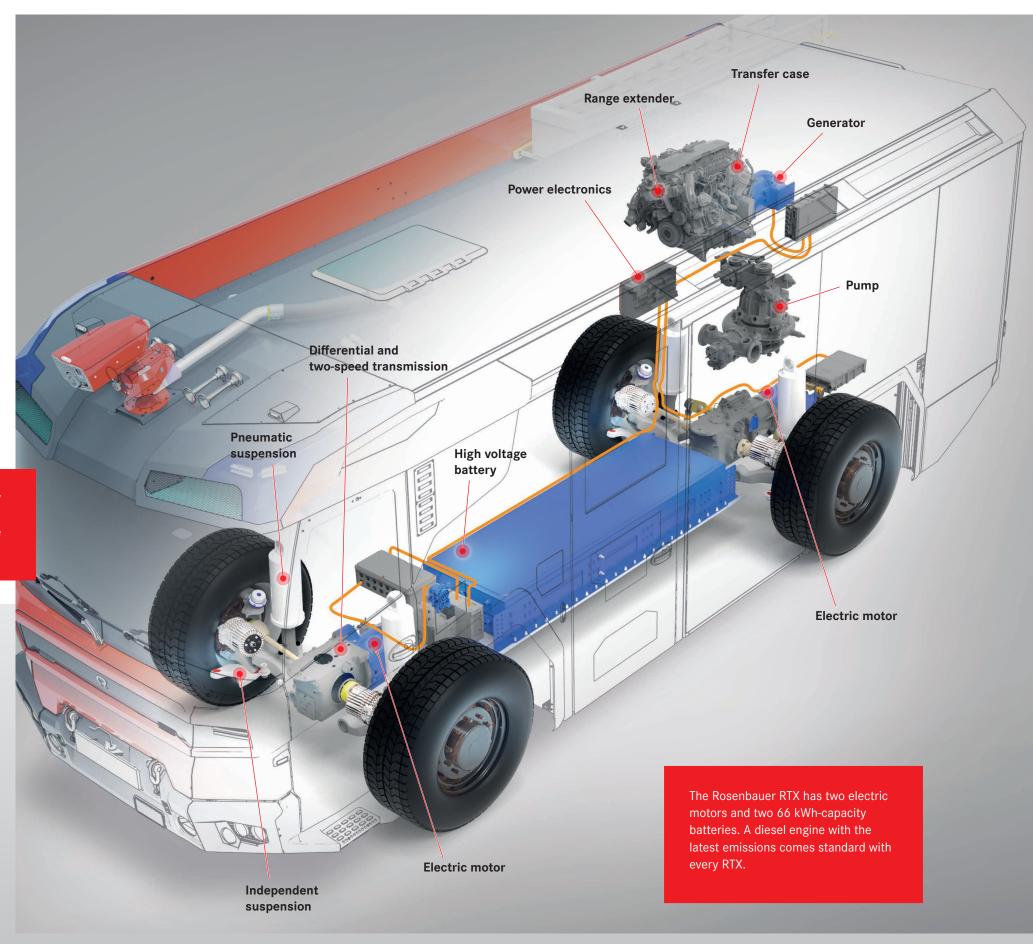
Thanks to its rechargeable batteries, the RTX functions as its own power generator for equipment and auxiliary devices. All without any local emissions. The vehicle has a second engine - the range extender - so that the supply of energy is guaranteed even during longer deployments.

#### The power reserve: The range extender

The range extender consists of a state-of-the-art six-cylinder 300HP diesel engine and an electric generator. When more energy gets consumed than stored in the battery, the range extender automatically recharges it. The operating times of the RTX thus far exceed the requirements of NFPA standards.

#### Function as emergency power generator

The high-performance, high-voltage batteries of the RTX also provide sufficient output for external consumers. Several external devices with a combined power consumption of up to 6 kW can be operated simultaneously via the optional power supply system.



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# **Enormous variety.**

## Extinguishing technology in a multitude of ways.

The RTX is a vehicle that looks as though it has been cast in one piece, but Rosenbauer offers many configuration options. Especially in terms of firefighting equipment, each RTX model can customized for which it is intended – with 500-750 gallon water tanks, as well as 20-30 gallon foam tanks available. A wide variety of foam proportioning systems and roof/bumper turrets are also available.

#### Fully electric pump operation possible

The pump can operate either purely utilizing the battery-powered electric motor or, especially in the case of extended operations, using the diesel-powered range extender.

RESPOND AT SCENE ATTACK CANCEL ALL

STOP

PAINT
15 DET

START

FRAM PERMIN 298.

START

FRAM PER

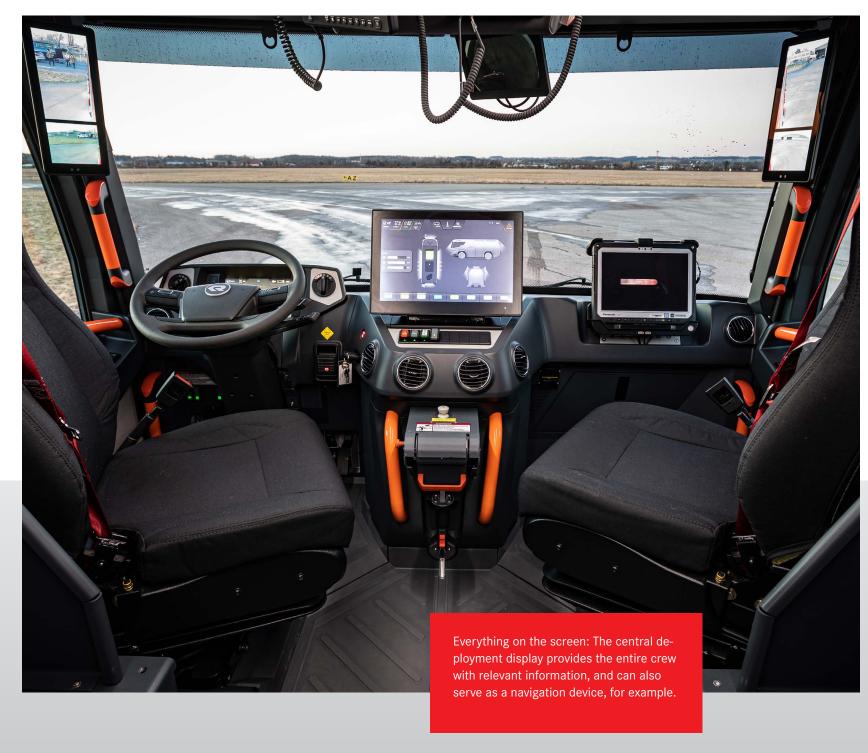
Rapid understanding of the operational situation thanks to the visualisation.



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## Embedded and networked.

The center point of the operational environment.



The coordination of operations is a complex undertaking. The RTX is where all threads come together using state-of-the-art hardware and revolutionary software. As a result, the emergency crews are optimally informed and equipped for tasks unrelated to firefighting.

#### **Digital solutions**

This is what information technology is for – thanks to the optional RDS Connected Command system, the emergency crews are continuously fed the necessary data, such as incident reports, building plans, camera images, and much more. In addition, the emergency crews can communicate both with one another and with the operations center.

#### **Constant updates**

Rosenbauer customers benefit from constant innovations, even for existing vehicles. The RTX will get even better with every software update.

#### IT security

For Rosenbauer, safety is a top priority
– in every area. Therefore, special
attention was paid to ensuring that, as
a fully networked vehicle, the RTX also
functions reliably in digital terms.



Embedded in the Rosenbauer Digital Solutions environment.





Rosenbauer ensures that emergency crews can depend 100% on their vehicles and equipment. To this end, the company provides its customers with maintenance, customer service, and refurbishment through a service network consisting of our own branches and internationally present service partners in more than 100 countries around the world.

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