

# UD TRUCKS Stories

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# Going THE Extra Mile

Welcome to the world of UD Trucks!

In this book you will discover how UD's heritage was forged. Our passion to create Ultimate Dependability, to build the truck the world needs today, and our *gemba* spirit were all present at the very beginning of our company's foundation. You will discover the innovations and technical advancements - the milestones of our history - that made our trucks the champions of efficiency and reliability they are today.

You will trace the emergence of the smart and modern UD Trucks you see today. By combining our Japanese heritage with global technology and resources, we have moved into the era of smart logistics. At UD Trucks, we innovate for the future so that we are always ready to meet the demands of today – and tomorrow.

You will also meet the UD people behind the scenes. Their passion and dedication in the *gemba* to build our trucks and keep them running wherever they are and in whatever condition they operate. And finally we hear from some of our customers around the world who depend on UD Trucks to keep their operations running efficiently every day.


We hope you enjoy the reading!

**You can find us on**

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Over 85 years of the UD DNA in products and engines

Since its earliest days, UD Trucks has focused on the essentials: durability, reliability, fuel efficiency and transport effectiveness. Here we introduce some of the leading trucks and engines.

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Quality from factory floor to frontline

It is passionate people, dependable technology and professional service that generate the high quality found at UD Trucks. We go the extra mile in everything we do to deliver ultimate dependability to our customers.

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## Going the **Extra** Mile

We engineer, produce and support each UD truck to run further with a minimum of energy consumption, just like a long distance runner.



# Going the Extra Distance

UD Trucks is committed to ensuring that our trucks go the “extra distance”. This means they can go an extra distance on each liter of fuel. It’s about more than just enabling exceptional fuel efficiency. We develop and deliver products with world class durability and reliability which meet the high safety and environmental demands of today. In combination with the built-in ease of maintenance and our professional services and dependable parts our trucks run further providing extra uptime for our customers.

These excellent features are made possible through our relentless focus on ultimate dependability and through the global state-of-the-art driveline solutions, combined with the best of UD Trucks’ heritage of developing pioneering engines and transmissions.



Right from our earliest days, people working for UD Trucks have had a spirit of always seeking to go the “extra mile,” or make the extra effort.

From sales representatives to workshop mechanics, all UD Trucks employees on the frontline stay in close contact with customers so they can identify potential challenges. Their professional and passionate approach coupled with a willingness to make the extra effort ensure that customers have the tools to take their business to the next level.

All the while, people engaged in design, development, manufacturing, engineering and other functions make the extra effort to support those on the frontline in their quest to deliver ultimate dependability.

We call this the UD gemba spirit.

**Making the**  
**Extra**  
Effort

# UD Trucks - for Better Life

For over 85 years, UD Trucks has continued to make the trucks the world needs today. Now the logistics industry is facing an array of challenges, from a shortage of truck drivers, higher demand for deliveries driven by the growth in e-commerce, increasing costs of energy, to environmental impacts such as climate change and resource depletion.

To us, at UD, providing the trucks and services the world needs today, means committing to making life better - for people and the planet. This is our purpose, and we call it Better Life.

## 1 Better for Logistics

*Pursuing smarter logistics to overcome any challenge*

With innovations that help maximize vehicle efficiency, drivability, and driver comfort, UD Trucks is addressing the challenges facing logistics industry. And to become a leader in sustainability, UD Trucks is developing next-generation technologies in the fields of connectivity, electromobility, and autonomous driving, while offering solutions to partners and customers to enhance their business.

## 2 Better for the Planet

*Reducing emissions and waste*

UD Trucks is taking steps to significantly reduce CO<sup>2</sup> emissions and eliminate waste across its products and operations. Accordingly, the company is exploring the use of renewable energy and reducing the CO<sup>2</sup> footprint of its products and sites, while collaborating with suppliers to reduce environmental impacts across the entire value chain.

## 3 Better for People

*Creating better workplaces, supporting communities*

People and communities are a core part of our sustainability strategy. UD Trucks continues to improve the well-being of its employees, fostering a workplace culture that values diversity, personal development and a strong work-life balance. In addition, UD Trucks works closely with communities, from disaster relief to traffic safety programs for children.

## 4 Better for Business

*Building a foundation for sustainable growth*

Pursuing a sustainability strategy that is Better for Logistics, Better for the Planet and Better for People helps secure the fourth area of sustainability: Better for Business. In short, performance and profitability. UD Trucks invests profits back into its businesses, laying a path for the company to grow to benefit all stakeholders.



## Our core value

# Ultimate Dependability

Our founder's dedication to reliability and durability, which has been with us from the very beginning. The quest for ultimate dependability in UD products, services and people to provide our customers with ultimate peace of mind.



## Excel on the essentials

Our relentless focus to excel on the essentials to make our customers profitable—fuel economy, reliability, uptime, payload, parts and services. We strive to create the optimum balance of features, cost and efficiency. All you need, but not more than you want.

## Smart and modern

The smart value solutions that make UD the customers' smart choice. The unique UD experience with soul. Bold design. Impactful communication. A modern caring retail environment. The little extra that evokes emotion at every touch point.



## UD Gemba Spirit

*Gemba* is a Japanese word, which describes where the action takes place and the value is created, from the factory floor to the dealerships and customer sites. It's the professional, passionate, and dependable spirit of the UD people. It's being close to the ground to identify the essentials, and the driving force that allows us to excel on them.

# UD TRUCKS Stories



# Going the Extra Mile

**World's first**  
(for medium & heavy duty trucks)

**Japan's first**  
(for medium & heavy duty trucks)



Kenzo Adachi

1935

1935 –  
Founding of the company  
by Kenzo Adachi (Nihon  
Diesel Industries, Ltd.)

It all started with  
his vision “to make  
the truck the world  
needs today”.

1939

1939 –  
The LD1 completed  
the legendary  
test drive



Completed the 13  
day and 3,000km  
test drive without  
a single fault or  
breakdown.

**UD6 engine**  
1955  
Japan's first engine in the  
200-horsepower class



1955

1955 – The birth  
of the original  
UD engines

First appearance  
of UD's logo – symbol of a  
high-performing engine.



1958 –  
The popular 6TW

6TW was put  
to use in tough  
conditions such as  
the construction  
of the Kurobe  
dam in addition  
to long-distance  
transportation to  
boost the country's  
infrastructure  
development.



**6TW**  
1958  
Japan's first 10-ton truck

1960

1960 –  
Name change to  
Nissan Diesel Co., Ltd.



1968

1968 –  
UD exports engines  
to Chrysler  
Chrysler signs a contract  
to import UD engines  
to the United States,  
acknowledging the superior  
qualities of UD engines.  
A first for Japanese truck  
makers at the time.

**PD6T engine**  
1971  
Japan's first  
turbocharged  
diesel engine with  
direct injection



1975

1975 –  
Debut of mid-  
size Condor

since 1935...

1989

**Traffic Eye**  
World's first  
commercialized  
radar laser  
collision  
prevention  
system



**VNT 1989**  
World's first closed-loop  
controlled variable nozzle  
turbocharger



1990

1990 –  
The revolutionary  
Big Thumb

**EBS**  
1997  
Japan's first Electric  
Braking System for  
heavy-duty trucks



**CNG Condor**  
1996  
Japan's first medium  
duty CNG truck



**ESCOT-II**  
1995  
Japan's first electrically  
controlled automated  
manual transmission



**GE13 engine**  
1998  
Japan's first engine with  
electronically controlled  
unit injectors



**CNG Big Thumb**  
2002  
Japan's first heavy-duty  
CNG truck



**Capacitor Hybrid  
Truck** 2002  
World's first capacitor  
hybrid truck



2004 - The flagship Quon  
Designed to be the new reference  
in its segment, Quon addressed  
concerns such as running  
costs, environmental concerns,  
handling, comfort & safety.

2004

**Quon**  
2004  
World's first truck with  
the urea SCR system



**Quon**  
2004  
World's first truck  
with knee airbag  
and knee protector



2007

**VOLVO**

2007 –  
UD Trucks  
joined Volvo  
Group

2010

**UD TRUCKS**

2010 –  
Innovative GH  
engine series  
and ESCOT-V



2010 –  
Name change to  
UD Trucks  
Corporation

**UD Information  
Service** 2010  
Japan's first remote  
diagnostic service



2011

2011 –  
Renewal of Condor



2013

2013 –  
Launch of Quester  
for global growth  
markets



2014

2014 –  
Launch of  
light-duty Kazet



2017

2017 –  
Launch of light-duty Kuzer  
for global growth markets



2017

2017 –  
Launch of  
new Condor



2017

2017 –  
Launch of All New Quon  
The new heavy-duty flagship  
truck takes fuel efficiency,  
uptime, safety, payload and  
drivability to new levels. By  
combining All New Quon's  
advanced technology with the  
unique UD Extra mile support,  
customers significantly  
decrease their costs.



2017 –  
Launch of Croner

The brand-new  
mid-duty truck for  
global emerging  
markets comes as a  
breakthrough offer in  
the mid-duty segment  
with unmatched  
drivability, reliability,  
and durability.

2017 –  
Launch of  
ESCOT-VI

Capable of predicting the road ahead,  
ESCOT-VI features a new Foretrack function,  
turning inexperienced drivers into skilled  
ones with optimized fuel efficiency.



2023

2023 –  
Launch of Quon GW tractor  
New 13L engine delivers unrivaled  
power and fuel efficiency



2021

**ISUZU**

2021 –  
UD Trucks joins  
Isuzu Motors

**2018 - Fujin &  
Raijin Vision 2030**

Launch of UD innovation  
roadmap, followed a year later  
by Japan's first heavy-duty L4  
automation trial.



202X –  
UD Trucks re-imagines smart logistics  
UD 202X concept truck demonstrates how  
innovation in automation, connectivity and  
electromobility (ACE) provides society with  
smart and sustainable logistics.

2018

202X

## CHAPTER 1

# The pursuit of Ultimate Dependability

— Over 85 years of the UD DNA in our products



Kenzo Adachi,  
the founder of Nihon Diesel Industries, Ltd.

# Passing down UD Trucks DNA

Diesel vehicles were developed in Europe in the 1920s, and it was this type of vehicle that really caught the eye of founder Kenzo Adachi when he went on an industry tour to the continent in 1927.

Compared with the gasoline engine, Adachi noted that the diesel engine was superior in many respects, including horsepower per liter, fuel consumption and quality. "The diesel engine uses low-priced light oil rather than valuable gasoline and that makes it perfect for resource-poor Japan," he remarked.

Adachi always dreamed of building vehicles in his own right, and with this in mind, he began negotiating with Germany-based Friedrich Krupp AG (Krupp) for permission to use its patent rights. At the same time, he set about establishing a corporate entity, and in December 1935, Nihon Diesel Industries (now evolved into UD Trucks) was born.

The following year he started building what was to become the Kawaguchi Plant on the outskirts of Tokyo. As part of this endeavor, he sent engineers to Europe to learn European technologies and took on two German engineers to assist with operations. He introduced the latest in processing machinery and in 1937 he took on the challenge of producing a diesel engine. This was to be the start of great things to come.

Over a two-year period, the Japanese staff not only learned about production technology but also a very fundamental philosophy on quality. This eventually led the company toward the successful manufacture of top-quality, highly durable parts.

Finally, in November 1938, the

first diesel engine was completed – the two-cylinder 60-horsepower ND1. The finished product was then put through its paces with a 100-hour endurance test. The results were excellent across the board, confirming levels of performance and quality equivalent to its European counterpart.

## The DNA coursing through UD Trucks

Development of the ND1 engine and LD1 truck was the realization of a dream for Kenzo Adachi.

Through the production of its first engines and trucks, UD Trucks learned several key requirements to ensure transportation capacity that could support society, industry and lifestyles. In his book, Adachi summarized the philosophy, "To make the trucks the world needs today."

- **Make it durable**  
Boost the quality of each and every part and build a long-lasting truck that can handle even the toughest roads.
- **Contribute to a reduction in vehicle-related costs for users**  
Minimize the consumption of fuel and lubricant and make vehicles that are easy to maintain.
- **Produce a truck that never breaks down**  
Employ a simple structure and continue improving parts that have the potential to cause a problem.
- **Enable decent carrying capacity**  
Make trucks with excellent traction that can stably transport a variety of different cargo and in large quantity.

Adachi's development ethos has been passed down to the present day as the DNA of UD Trucks.

# 1938

## Completion of the first diesel

Nihon Diesel Industries, Ltd. (currently UD Trucks Corporation) opened its doors in Tokyo in December 1935. Early on, the company brought in technologies from Europe and constructed a new plant in pursuit of its goal to create the first diesel engine. But this was not going to be an easy task. First of all, both the factory and the processing technology lacked sophistication, which made even the simple production of parts that satisfied the required levels of precision and quality a daunting challenge. Beyond that, the company was struggling to get the required funding to stay afloat.

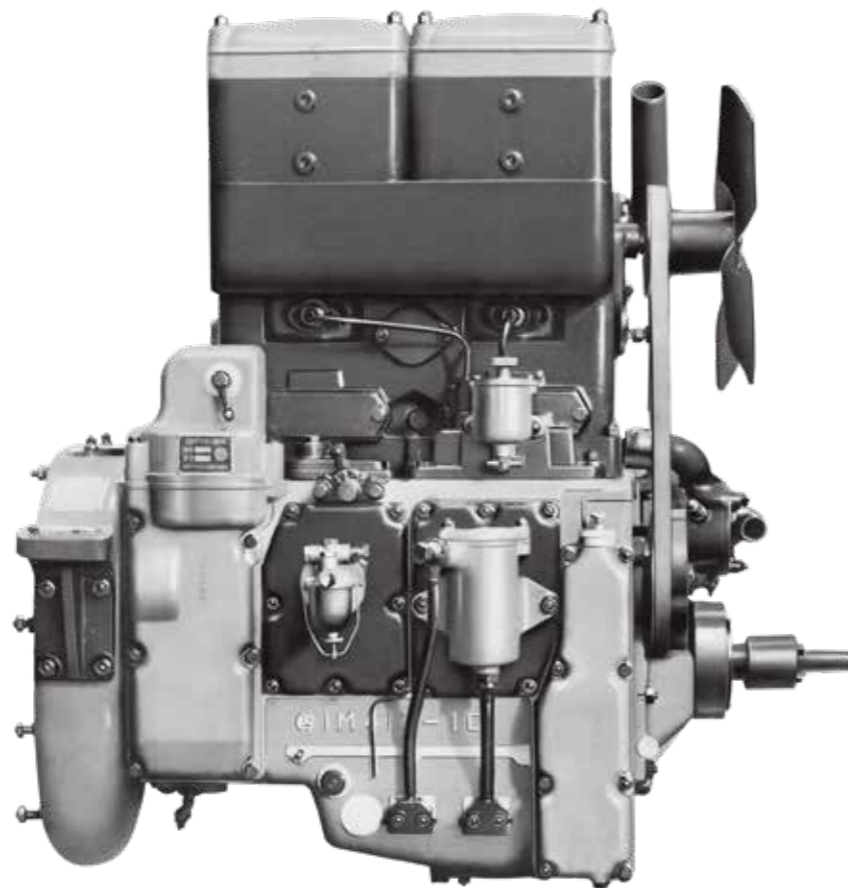
This may have deterred even the most determined of entrepreneurs—but not Kenzo Adachi, the founder

of Nihon Diesel Industries. Instead, he and his team took on a never-give-up attitude. They faced each challenge head on and poured their heart and soul into advancing their technologies and capabilities. They came up against a number of issues while developing the engine parts that included a deficiency in processing technology. Their commitment and passion finally paid off in November 1938, close to three years

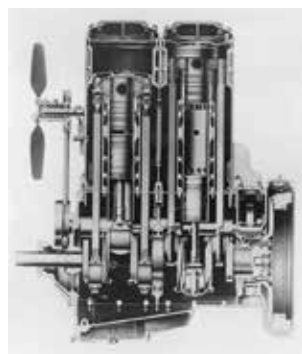
after the company was founded, with the completion of the first diesel engine: the ND1.

Adachi and his team took great pride in this technical achievement: the two-cylinder 60-horsepower ND1 utilized an opposed-piston uniflow engine and was unique in that it had no cylinder heads or air release valves.

Successful completion of the ND1 engine in November 1938 had



The ND1 was an opposed-piston uniflow engine with a revolutionary design featuring no cylinder heads or air release valves



# 1939

## engine and first diesel truck

provided the necessary impetus to continue with the manufacture of automobile chassis parts toward the creation of the first diesel truck.

A year later in November 1939, a 3.5-ton payload diesel truck equipped with an ND1 engine, known as the LD1 truck, was completed. Four years after the foundation of the company, Kenzo Adachi's dream to build a diesel vehicle in his own right had finally been realized. Employees working under President Adachi stood around the finished product, locked arms and shared in the joy, and then immediately decided to put the new machine to

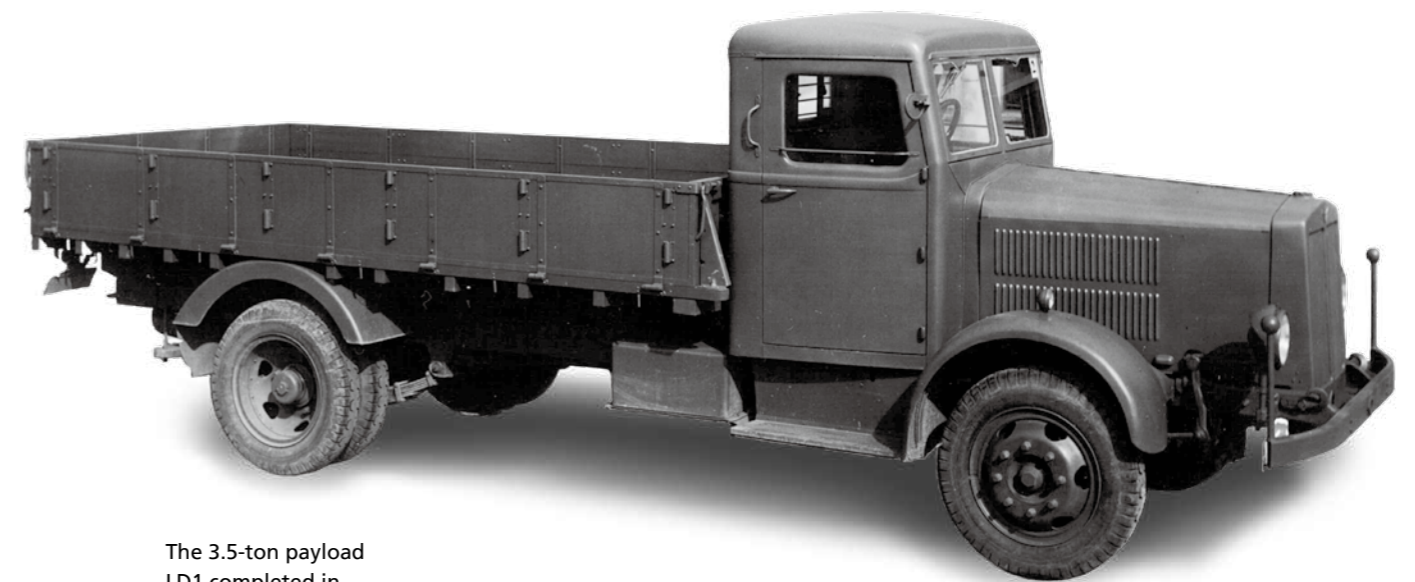
the test with a 3,000km expedition on Japan's toughest roads. Their twin aims were to test their new prototype and to track any potential reliability issues (see next page).

Galvanized by this first technical success, put through its paces in real life conditions, Nihon Diesel Industries set about expanding and enhancing the ND engine series by gradually increasing the number of cylinders.

The development of the three-cylinder ND2 engine (90 horsepower) was completed in the same year. In 1941, following a great deal of effort, they found success by

producing a fuel injection pump that was totally Japanese made. With this accomplishment, the ND engine series now ranged from 30 horsepower to 165 horsepower. The next endeavor saw the development of the 2.5-ton LD3 truck and 4.5-ton LD4 truck.

The success of ND engines, and the critical acclaim they received, ensured their extensive use as the core engines in Japan's trucks and buses until around 1958. ND engines played a significant role in laying the foundations for UD Trucks to take its place as the global leader in truck engines it is today.



The 3.5-ton payload LD1 completed in November 1939 was the first diesel truck produced by Adachi and his team (The photo is LD3 truck)



# 1939

## The legendary 3,000km test drive

The first LD1 diesel truck was completed in November 1939. But it was the test drive shortly after that really got people talking.

The majority of Japan's roads at the time were unpaved and the country was full of narrow roads and bridges that were barely wide enough to fit a horse and cart. The course selected for the test drive was riddled with steep slopes and curves traversing perilous mountain passes. With the entire journey clocking in at a distance of 3,000km, or 1.5 times the length of the Japanese archipelago, it marked an endurance test the likes of which the nation had never seen.

Some people were of the opinion that the test could easily be conducted in urban areas instead of going to such extremes. President Adachi had other ideas. "What we want is a truck that can handle any road, no questions asked," he explained to the development team. "If the truck doesn't clear this

test, we can't expect our customers to feel confident in it. I know everyone has put a lot of hard work into this first model, but it's crucial that we test the truck out in trying conditions, even if that means it gets wrecked."

The truck departed the Kawaguchi Plant with President Adachi on board just a week after it was completed. The accompanying team envisioned a host of troubles along the way and as a matter of fact prepared various repair tools and replacement parts.

The roads turned out to be much worse than expected. The mountain passes twisted and turned, flanked by perilous cliff faces. It felt more like an adventure that was not for the faint-hearted than an endurance test. The truck could barely even squeeze along many of the roads. The team looked for an alternative route, but each time to no avail. It was only their strong will and determination that got them through and they arrived back to the



Powered by the ND1 engine, the LD1 had a 3.5-ton payload

plant safe and sound after 13 grueling days on November 20.

In addition to merely completing the 3,000km journey unscathed, the results were superb. Not a single bolt came loose and not a single spring broke on the LD1 the entire time. What's more, the ND1 remained in tip-top condition right up until the very end. The repair tools and replacement parts brought along were totally unnecessary.

The milestone test was solid proof of the company's exceptional production technology. This was something to be proud of, and when the truck successfully arrived back at the plant, everyone shared in the satisfaction.

Four years had passed since the company first tried its hand at making a diesel truck in 1935. It was a time wrought with trials and tribulations. Through it all, each person learned the importance of quality and worked as a team to boost production capabilities, and that's what saw them through such a treacherous test without trouble.

The company had succeeded in producing a diesel truck that possessed some of the most advanced technologies that Japan, and the world, had ever seen. This achievement instilled confidence and solidarity in the company's employees and drove them toward the next endeavor—the mass production of diesel trucks.



# 1946

## Trucks and buses for a new era

After World War II most production had ceased due to damage inflicted during air raids. The company recognized the need for trucks in post-war reconstruction, however, and set about to restart production as quickly as possible.

Despite this determination, arranging the necessary materials and parts would prove to be difficult while a more pressing issue was the lack of food for employees and their families. It was then that the decision was made to make and sell frying pans and pots using the steel and aluminum in stock with the objective of providing employees with a salary.

Never losing sight of the vision to produce trucks, the company started making plans to make trucks and bulldozers in November, three months after the war had ended. Employees went wherever they could to obtain the necessary parts and started repairs and maintenance of production machinery at the Kawaguchi Plant. Production resumed in January 1946 with the 6-ton TT9 model truck, the company's first post-war vehicle, and engine production recommenced in March.



The TT9 was the first truck completed following the war in January 1946. It was equipped with a small, strong ND2 engine that was developed in 1939. The TT9 became a hit in the market at a time in Japan when increasing transportation capacity was vital. Orders for the TT9 flooded in from all over the country.

Fortifying transportation capacity was a priority issue to drive resurgence in Japan, and it was recognized that diesel vehicles were more economical to run than their gasoline counterparts. Buyers came from all over Japan despite the poor traveling conditions to obtain the TT9, which had been critically acclaimed particularly for its compact, powerful engine.

Once the post-war turmoil had settled, the company developed a

sales system and completed production of medium-duty 4-ton TS21 and 6-ton TN95 model trucks in 1948 and 1951, respectively. Recognizing the importance of buses as a popular mode of transport among the people, the company started production of a diesel bus in 1947. This bus was rated highly for its outstanding fuel efficiency and was quickly taken up by the Tokyo Metropolitan Government and other areas.



The bus employed by Tokyu Bus (T.K.K.) in Tokyo

# 1955

## Birth of the UD engines

Upon entering the 1950s, Japan had emerged from a period of recovery and in preparation for new economic growth was busy constructing infrastructure that included power sources, roads, railways, ports and large-scale plants. A deficiency in transportation capacity came under close scrutiny, however, due to its importance in driving infrastructure development.

As a result, demand for large, high-horsepower trucks rose.



At the time, no Japanese company made large trucks with engines in the 200-horsepower class required for the long-distance transportation industry. In light of this need, the company sought to develop its own large diesel engine in 1953. Two-cycle engines in those days were noisy and the height was high. This prompted the introduction of uniflow scavenging, in which air enters at the lower end of the engine cylinder and exits through an outlet at the top, thereby enabling an improvement in scavenging efficiency as well as low noise and light weight, while maximizing the high power of

the two-cycle engine.

In January 1955, the company released two new diesel UD engines: the three-cylinder 110-horsepower UD3 and the four-cylinder 150-horsepower UD4. The six-cylinder 230-horsepower UD6 was subsequently launched in June. Of particular note, it was 40% lighter than the company's conventional engines in terms of weight per horsepower, making this highly acclaimed engine one of the world's lightest per horsepower. The brand status of UD engines was immediately enhanced.

### Restoration of the very first UD6 engine

This unique project gathered younger and more experienced UD engineers and technicians around the revival of the very first engine of a revolutionary lineage, which defined UD and inspired generations of engineers, and customers, from the post-war years to today.



Watch the restoration of UD6 engine

### UD internationally recognized trademark



"UD" originally stands for the abbreviation of uniflow scavenging diesel engine. Since a variety of different engines were being developed at the time, the company decided to stamp the UD mark on its design drawings to differentiate it from the competition.

Thereafter, in order to appeal the high engine performance of trucks equipped with a UD engine, the UD mark was put on the body of the vehicle. This mark became the international trademark for our company and led to its current name.



The UD engine, a newly designed diesel engine, was released in January 1955. While maximizing the high power of a two-cycle engine, the UD engine employs uniflow scavenging to bolster scavenging efficiency and at the same time minimize noise and enable compact, lightweight design.



The popular 6TW was presented in 1957 as a new type of truck boasting a 10-ton capacity, a first in Japan, and a maximum speed of 90km/hr. The tough, dual rear-axle drive 6TW, powered by the strong UD engine was put to use in tough conditions such as dam construction sites in addition to long-distance transportation.

# 1958

## 6TW Japan's most powerful truck

Powered by the six-cylinder 230-horsepower diesel UD6 engine, the heavy-duty 6TW proved invaluable in contributing to the development of Japan's infrastructure. It brought sophistication to the fledgling logistics industry and was highly noted for its outstanding performance as a long-distance transportation truck running on Japan's main arterial highways.

Prior to developing the 6TW, the design and development teams had questioned whether there really was sufficient demand in Japan for a 10-ton payload heavy-duty truck, given that most of the roads at that time were unpaved, even the arterial routes.

Fortunately, they were not to be deterred. The new UD6 diesel engine was extremely robust, providing the opportunity to produce a top performance truck that would make maximum use of its capacity. Their idea was to put 'the truck before the market': to build the truck and use it to develop a market that did not yet exist in Japan.

In 1957, five prototype trucks with a load capacity of over 10 tons, a first in Japan, and able to travel at a maximum speed of 90km/h, were developed. This led to the market release, in February 1958, of the 6TW: a large 10.5-ton payload truck.

The 6TW was a new type of truck featuring two propeller shafts. Splitting the torque of the powerful UD6 engine into two propeller shafts reduced the burden on the driving force transmission mechanism and heightened durability, as well as extending tire life.

The new road giant was ready. Opportunity was just around the corner.

### A convincing victory against all odds

Around that time, reports started to filter in that foreign-made trucks were to be used in the construction of the Kurobe Dam; set to be the country's largest hydroelectric power facility. A huge amount of materials would have to be transported to build a structure of this magnitude.

This was the ideal stage for the 6TW's debut, and the UD team was fully confident that it could easily compete with its overseas counterparts.



But the construction of the dam was to take place at the headwaters of the Kurobe River where the surrounding mountains soar to 3,000m. If the trucks were to break down, the project would fall behind schedule. At that time, no one believed there was a Japanese-made vehicle capable of handling such an extremely difficult job. Undaunted, the UD team grabbed the chance to test the truck against their foreign competitors.

Amazed at the results, an official from the construction company remarked, "Japan is now able to produce trucks with performance and reliability rivaling those from abroad." And with that, the 6TW was officially selected for the construction of the Kurobe Dam.

The 6TW trucks, soon upgraded to an 11-ton payload, hauled huge steel beams and massive deliveries of cement and other materials to the site with minimal breakdowns throughout the construction project. In this way, UD Trucks played a vital role in one of Japan's biggest infrastructure projects to date.

### Supporting Japan's leap forward in logistics

As news spread of the superb performance and reliability of the 6TW at the Kurobe Dam site, orders flooded in from all over Japan.

With the 1964 Tokyo Olympics on the horizon, plans were set in motion to construct a variety of infrastructure projects that ranged from high-speed expressways to the ultra-fast bullet train, or shinkansen, as well as high-rise hotels. The 6TW once again proved to be invaluable, transporting construction materials in a diverse array of settings, even the shinkansen carriages.

The Tokyo Olympics ushered in an era of rapid economic development for Japan, which came to be known as the "Miracle of Asia." Progress in the construction of Japan's expressways nationwide triggered a rapid shift from an era of rail freight to one of truck transportation.

And leading the way was the 6TW.

The series has since grown to include the 12-ton payload 6TW12, the 6TW12 dump truck and the 6TW tractor truck, making it perfectly suited to meet high-speed, mass transportation needs in the industrial and logistics fields.

In addition, the T80 two-axle rigid truck found solid support in overseas markets with exports extending to Brazil, Spain, the Philippines and other countries, and played a role in the development of infrastructure and logistics systems around the world.



The company's first cab-over truck, the TC80G, was released in November 1960. It included a 165-horsepower UD4 engine and realized enhanced visibility via a large front window. Also, the incorporation of a ventilator and other pioneering features greatly boosted interior comfort.



Our first cab-over-truck had a characteristic hexagonal grille. We comprehend it as our design heritage and decide to apply it to our product. Therefore, the hexagon has a special meaning for us. It is the inspiration for today's product design identity at UD Trucks.

# 1960

## The first heavy-duty cab-over truck



Export expanded during this era enabling UD trucks to run throughout the world.

In 1960, the company changed its name to Nissan Diesel Motor Co., Ltd. following its acquisition by Nissan Motor Co., Ltd.

The company's first cab-over truck, the large 8-ton TC80G, made its debut at the All Japan Motor Show in 1960, with the sleek, original cab design housing a 165-horsepower UD4 engine creating quite a sensation.

Around the same time, Japan was pushing full steam ahead with the construction of an expressway linking Tokyo and Osaka, thereby driving up demand in the transportation industry for trucks with exceptional long-distance and high-speed capabilities as a key alternative to

rail. While the loading platform on cab-over type trucks could be extended to increase cargo volume, engine vibration presented a problem, plus it was necessary to enhance interior comfort so that drivers remained alert on long hauls.

With this in mind, the company set about developing the TC80G cab-over type truck fitted with a highly durable chassis previously proven in the T80 bonnet truck. The new version enabled steady operability as well as small radius turns without altering the wheel-base or engine position even after extending the loading platform from 5m to 6.3m.

The three-person cab all but

eliminated vibration while a large-size front window enhanced visibility. Other features included tinted heatproof glass and a ventilator for increased comfort. In terms of maintenance, further innovations simplified engine inspection and overhaul.

Following its success with the TC80G, the company launched the 6TWC12 cab-over truck as part of the 6TW series in 1961 and the TC80G equipped with a new style of cab in 1963. Following this, cab-over type trucks became the core models of the company and ended up playing a leading role in the long-distance, mass transportation of the time.



The launch of the Condor series in 1975 marked the company's first foray into the mid-size truck market. The advanced design of the trucks, including an ED6 in-line four-cycle, six-cylinder diesel engine for enhanced efficiency and horsepower as well as a cab with a wide front window and non-triangular side window, garnered high praise from the industry.

# 1975

## The evolution of the mid-duty Condor

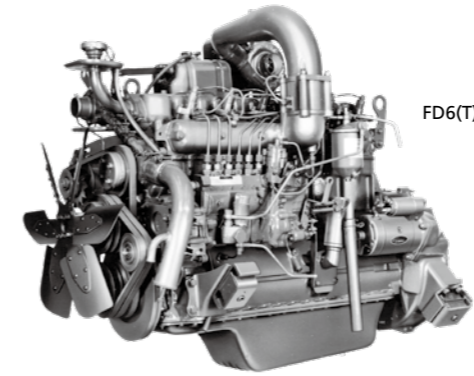
In Japan's fast-developing economy of the mid-70's, trucks became key to logistics as needs in the transportation industry diversified. This was being driven by a shift from the mass production of single products to a high-mix, low-volume production coupled with the expansion of cold chain logistics for trans-

porting fresh produce and frozen foods in the food distribution industry. Consequently, there was greater demand for mid-size trucks capable of economical and efficient transportation over short and medium distances.

When the oil shock hit in 1973, calls grew for fuel-efficient mid-duty

trucks. Ready to respond, the company developed a series of mid-size 4-ton to 4.5-ton payload trucks, which culminated in the launch of the Condor brand in May 1975.

Condor trucks incorporated an in-line six-cylinder four-stroke diesel engine, with a swirl chamber adapted from the two-stroke UD



FD6(T)

engine, which ensured greater efficiency and exceptional power. In 1977, the company equipped the Condor with an FD6T engine capable of 170-horsepower achieved through a direct injection and a turbocharger, which was a first in Japan among mid-size trucks.

Meanwhile, the cab featured a wide front window as well as a non-triangular side window for enhanced visibility, which drew critical acclaim from users because it made the truck feel more like a passenger car on the road.

After a full model change, the all-new Fine Condor truck with a sleek aeroform design was unveiled in 1993. Besides boasting exceptional driving performance, this latest generation reduced exhaust gas emissions and touted a number of safety features such as an Anti-lock Brake System (ABS) and airbag. This pioneering model received high praise as a truck befitting the new era.

In 2002, the company took another step forward with the launch of the world's first capacitor hybrid truck that ran on a diesel engine and motor.

### The evolution continues

In 2007, the company joined Volvo Group. The first achievement of this union, reflecting a deep and strong collaboration, materialized as a full-model change of the Condor series.

In 2010, new Condor trucks adopted a completely overhauled cab design. While boosting a spacious interior, the cab contributed to outstanding fuel efficiency thanks to

advanced aerodynamic performance. Besides various interior comfort improvements, special effort was put on the safety of occupants in the event of a collision, with the adoption of highly rigid cab construction as well as knee protectors as standard equipment.

Mechanically, Condor trucks were thoroughly redesigned and received the new GH5TA engines that incorporated a newly developed common rail injection. As with the Quon series, Condors are also fitted with an exhaust gas after-treatment system that combines a urea selective catalytic reduction (SCR) system with UD Particulate Cleaning (UDPC) system to reduce both NOx and PM emissions. This helps boost the engine's combustion efficiency while also raising fuel economy, power and torque, thereby achieving improved environmental performance. As a result, all Condor trucks are ahead of emission regulations as well as the 2015 fuel economy regulation standards for heavy-duty vehicles.

The Condor comes in a range of models to meet diverse needs, led by the 8-ton GVW (gross vehicle weight) MK series and including the 10-ton to 11-ton GVW LK series, the



1983



1993



2011



2017

14-15 ton GVW PK series, and a 20-ton GVW PW model.

In 2016, the Condor range was expanded with a 6x4 PW 24 280 model, designed for the specific topography and needs of the Australian and New Zealand markets. The new model is a brilliant example of UD Trucks' ability to combine local knowledge with international expertise and quality, with impressive speed to market.

In 2017, a new Condor model was introduced in Japan, offering the customers a wider range of configurations to meet their transportation needs.



6x4 PW 24 280 model



The Big Thumb was released in 1990. The design of a cabin with flush surfaces that fitted in perfectly with the urban surroundings while also enabling slick aerodynamic performance proved a hit with the market. Also, the new low-emission, low-fuel-consumption engine cleared all Japanese exhaust gas regulations, which were the strictest in the world at the time.

# 1990

## Low-emission, comfortable, safe Big Thumb carves the way to a new era

Environmental issues such as air pollution and global warming came under close scrutiny at the beginning of the 1980s, after a decade of oil crises in the 1970s. Since then, regulatory values have become stricter every year with the enactment of various automotive exhaust regulations in Europe and the United States, coupled with the

strictest one yet worldwide brought into effect in Japan.

UD Trucks has cleared all of these tough regulations with the advance development of low-emission engines while at the same time enhancing the fuel efficiency and engine performance of its trucks. With the heavy-duty Big Thumb truck released in 1990, develop-

ment focused on boosting comfort and safety as well as ensuring a modern design that blended in with the surroundings based on the concept "Kind to people and in harmony with the urban setting".

The new cabin of the Big Thumb significantly raised aerodynamic performance via flush surfaces based on 3D curves. The

newly developed NF6 turbo engine enabled low emissions and greater fuel economy. Meanwhile, the Variable Nozzle Turbo (VNT) was designed to allow the nozzle opening to be continuously controlled with a closed-loop system.

The Big Thumb series led the industry in terms of enhanced comfort and safety, achieved with the latest state-of-the-art electronic technology. The world's first commercialized radar laser collision prevention system was made available as an option in 1989, and a couple of years later in 1991, electronic controlled automatic transmission (E-MATIC) was installed. In 1992, an Anti-lock Brake System (ABS) and Anti-slip Regulation (ASR) were introduced as options (later as standard) in an effort to further bolster operability and safety.

### The launch of the ESCOT gearbox

The ESCOT-II, the first semi-automatic transmission in Japan, was built into the truck in 1995, giving the driver a choice of either automatic or manual drive, starting a prestigious lineage of ESCOT gearboxes, destined to become an automatic gearbox benchmark in the heavy-duty segment.

UD research and development engineers developed the ESCOT-I, which needed the clutch to switch

The ESCOT-II marked the start of the ESCOT lineage with superior drivability. Unlike a classic automatic gearbox, the ESCOT driver didn't experience any hydraulic converter slippage, allowing him total control over his truck, for an unequaled confidence and peace of mind, which would become the ESCOT trademark.

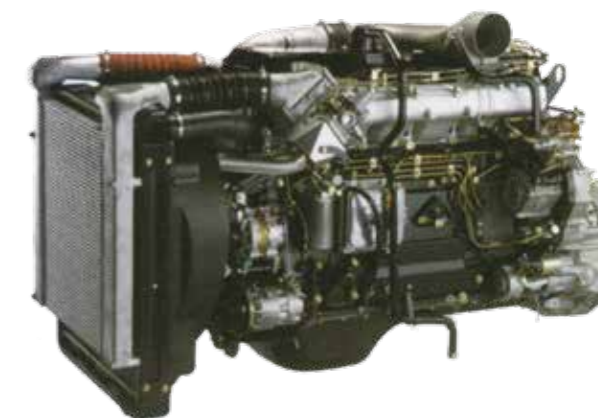
gears, but as the robotized clutch ESCOT-II was judged mature and reliable after successfully passing a series of tough tests, the ESCOT-II was launched directly.

The ESCOT-II was already a big step forward from the rare automatic transmissions on offer at that time. It was not exactly automatic - the driver had to change gears himself - but without the hassle of clutching, he only had to shift the gear stick up and down. It brought palpable benefits on a daily basis, driving pleasure afforded by

better control and driving ease in every road situation, whether in heavy rush hour traffic or on a twisty mountain road.

In 1998, the GE13 engine was mounted on the Big Thumb. This engine employed an electronically controlled unit injector, the first in Japan, to realize maximum output of 440 horsepower.

Innovations continued to be integrated into the Big Thumb to produce a truck that carved the way to a new era in the 21st century.



GE13 engine





The heavy-duty Quon was developed as the flagship vehicle for UD Trucks. While integrating engine technologies, electronic technologies and eco-friendly technologies accumulated by the company, it also significantly boosted environmental performance and fuel economy via the world's first selective catalytic reduction (SCR) system called FLENDs (Final Low Emission New Diesel System).

# 2004

## Birth of the flagship Quon

Redesigned from a blank page, while capitalizing on the qualities of its highly praised predecessor Big Thumb, the heavy-duty Quon hit the market in 2004 and became the company's flagship vehicle. At its launch, Quon integrated the most advanced technologies - some world-first innovations - in electronics, safety and the environment.

Quon's eco-friendly technologies were singled out for particular praise. Although many around the world believed meeting the rigorous long-term emission regulations set to go into effect in Japan in 2005

was an impossible task, the company succeeded one year ahead of schedule, introducing a top-level urea selective catalytic reduction (SCR) system called FLENDs (Final Low Emission New Diesel System) in the exhaust gas after-treatment system. This marked a first in the industry and resulted in a substantial boost in environmental performance and fuel economy.

Among its other distinguishing features, the GE13 engine mounted on Quon adopted a unit injector, with the top-end model realizing up to 520 horsepower. In terms of

design innovation, repeated wind tunnel testing resulted in a new cab with vastly improved aerodynamic performance.

Other ingenious additions demonstrated the company's incredible attention to detail spurred on by a desire to fully meet customer needs. Engineers from the company took rides in customers' trucks to experience travelling over long distances, and based on this analysis, designed a round cockpit characterized by enhanced comfort and superior operability. The new cab design aimed to diminish fatigue on long



GH11

hauls and improve driver use in other areas such as installing a front passenger seat that flips up, to allow drivers to stand up and get changed inside the cab.

In terms of safety, Quon introduced a new structure that included a highly rigid cab construction and the world's first knee airbag, as well as new brake standards to reduce damage in the event of a collision.

A number of IT-driven features such as a voice-assist function and an internet-based remote checking function transformed the heavy-duty truck into a smart vehicle for the next generation.

### A new start at UD Trucks, a new step forward for Quon

After joining the Volvo Group in 2007, the company name was changed in 2010 to UD Trucks Corporation. Adopting UD Trucks as the unified brand name - the UD trade-

mark had been a symbol of the company and its products since the 1950s - meant building on the strong UD heritage and consolidating its identity as a modern global truck brand with worldwide presence. Signifying the company's strong determination to expand its truck business, this strategic move further advanced the platform for UD Trucks to develop and supply trucks befitting the new era through synergies with the unrivalled technologies of the Volvo Group.

Like the mid-duty Condor, Quon also benefitted considerably from the new joined forces, with the implementation of the highly performing and fuel efficient GH11 engines.

One major innovation was the launch of the new version of UD's world leading automatic gearbox, the famous ESCOT-V. Offering unequaled drivability and greater fuel economy, the 2-pedal robot-



The ESCOT-V - the star in a long and prestigious line of innovative predecessors - has earned its name as the most technologically advanced automatic gearbox in its segment. Mated to the highly praised GH11 engine, ESCOT-V combines state-of-the-art mechanical and electronic technologies, to provide the driver with a pleasant and responsive drive, and fleet managers with lower operating costs and better fuel efficiency.

2014



ized-clutch gearbox allows a more relaxing drive, a benefit for both safety and driving pleasure.

In 2014, ESCOT-V was upgraded with improved software and an Eco mode to maximize fuel efficiency, offering an acceleration limiter for gradual speed increase and a Soft Cruise Control function. It teamed up brilliantly with GH engines to offer unequaled drivability, low running costs and reliability.

Constantly looking ahead, Quon launched in 2014, received a new major overhaul, with a range of improvements leading to even better drivability, higher payload and lower fuel consumption.

Active safety was also enhanced by the implementation of a Lane Departure System, and an Advanced Emergency Braking System, with front radar sensors making Quon capable of braking by itself, when the truck detects a risk of collision.

The truck was also fitted with UD Telematics Services in some markets, to optimize running costs and improve uptime even further.

All these qualities have made of Quon a lasting reference in the heavy-duty segment; it demonstrates its strength and cost efficiency every day around the world, as well as its outstanding reliability on the planet's toughest roads.



Quester is the first truck developed by UD Trucks produced outside of Japan specifically for the global growth markets. Customers can choose one of two different cabs equipped with either an 8-liter or 11-liter engine and customize other parts of the truck to perfectly fit their needs.

# 2013

## Quester

Made to go the extra mile

### The first UD truck designed for global growth markets

A culmination of 1.5 million engineering hours spent ... 65,000 hours of testing or 400 test rigs ... 650 components and trucks produced ... 3.5 years from concept to serial production ... a 100%-committed project team comprised of hundreds of specialists with different in knowledge, experience, age and gender all came together to develop and manufacture Quester, which embodies the UD heritage of Ultimate Dependability - the first UD truck specifically made for growth markets.

### Dependability is key

Specified with local requirements in mind and designed for global growth markets, Quester is fully localized and assembled in Asia. Quester focuses on the features and benefits that deliver operational cost efficiency, peace of mind and that make our customers' operations grow. Benefits such as high durability, maintainability, top-class fuel efficiency, extended uptime, modern smart efficiency and reliability backed up by advanced Volvo Group

proven technology and UD Trucks manufacturing quality assurance and outstanding design.

### Spec Quester to your own needs

With the Quester, UD Trucks has the widest offer ever proposed. This dynamic and powerful truck features 8 of axle configurations for every usage from long haulage to distribution and heavy construction applications. The world-class 8-liter and 11-liter engines and durable driveline provide the highest and widest torque with low rev, the engine horsepower ranges from 220 to 420 horsepower, the robust construction chassis has excellent ground clearance, approach angle and hub reduction for tough usage. Two types of cabin (versatile day and sleeper versions) boast a bold and strong aerodynamic design, light and spacious interior and high-end cab paint.

### Increased profitability

Quester excels on bringing profitability to owners—a sure winner on the bottom line. It's a heavy-duty hero on the road and a champion on saving money for the



business owners.

In today's fast-growing emerging markets, customers are demanding great fuel efficiency and uptime while looking for reliable and durable products at an affordable price as well as complete aftermarket support. The right truck at the right price with great service. With Quester, UD Trucks promises to meet and exceed these demands.



Watch Quester in action





Watch Croner in action

**2017**

# Croner

Make every moment count

Croner is designed with a host of features - adding up minutes, hours and days saved to keep our customers' business running.

Developed for the specific needs of global growth markets, the new mid-duty Croner comes with built-in UD dependability, low running costs, and comprehensive UD aftermarket service solutions, to help tackle the demands of modern day logistics.

**Maximize operating hours with increased fuel efficiency**

This latest addition to the UD mid-duty range offers outstanding fuel efficiency achieved through its aerodynamic cab design, fuel-efficient engines and automatic transmission. Croner hosts a

## Ultimate Dependability

A result of years of development and testing

*Croner upholds the UD tradition of Ultimate Dependability in every aspect. Each component is the result of years of experience and harsh stress-testing to create the ultimate medium-duty platform.*

**1,700,000**

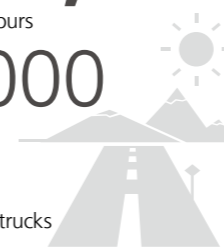
engineering hours

**30,000**

testing hours

90 test rigs

100+ test trucks



**3 million km**

durability testing, in the toughest weather conditions and terrains around the world

**1.4 million km**

field-tests in actual customer operations

Across **6** countries

**3** continents  
over a period of **18** months

The result is a vehicle that is ahead of its class in robustness, reliability and durability.



**Digital Driver's Information Display**

An easy-to-read instrument cluster is backed up by the digital multi-function display (MFD). The Croner is one of the few medium-duty trucks to have this as a standard feature in all models.

**CRONER: INSPIRED BY TIME**

Croner is named after Chronos, the god of time in Greek mythology, because it saves you time - and that saves you money.

batch of standard features aimed at offering higher fuel efficiency, such as cruise control and speed limiter, as well as other exclusive UD features like Fuel Coach system and UD Telematics Services, to increase productivity and minimize costs.

At the heart of Croner is a set of new engines: the 5-liter GH5E and 8-liter GH8E. These UD engines feature state-of-the-art technology with high torque and fuel efficiency as key strengths to provide optimal performance.

The full electric controlled high pressure common rail fuel injection system, means outstanding fuel consumption and low emissions.

With maximum torque delivered from low revs and in the "green band" - that is, a flat torque curve with a wider max-torque band - the GH engine operates efficiently and effortlessly, without excessive revving. This means better pulling power with less fuel consumed and less component wear.

**Robust manual and automatic transmissions**

All models of Croner come with a choice of reliable and durable manual and automatic transmissions. The manual 6-speed and 9-speed transmissions are robust and durable, and able to cope with the toughest demands in various operating conditions. The highly reliable automatic transmissions, optimized for on-road logistics and garbage compactors, are factory installed and available for all models.

**Useful PTO options for all drivelines**

Also available on every driveline, Power Take-Off Engine and Transmission deliver even more

torque than before, boosting every job productivity.

**Reliable components**

The Japanese quality philosophy permeates every component in this latest UD model; every part is the result of years of experience and extensive quality control tests by UD experts.

Robustness has always been a key trait of the dependable UD trucks. With its chassis frame made from upgraded high-tensile strength steel, Croner offers class-leading axle loads. With payloads from 11 to 17 tons and eight available wheelbases ranging from 3,750 to 6,500 mm, there is a Croner for every activity.

Adding to its versatility, Croner comes with two rear axle multi-leaf spring options, and an air suspension option. Air suspension is also available with mechanical height control valve and dump switch. The improved stability and cushioning is perfect for sensitive cargo freight.

Maintenance-wise, extended oil change intervals up to three times longer than current medium-duty truck models contribute to extended uptime and productivity.

**More space, comfort and convenience for drivers at all times**

The cabin has been designed to be the perfect "office" for drivers, with a pleasant overall appearance, logical control scheme and numerous features for driver comfort and convenience.

The cab boasts adjustable ergonomic seats and steering column to allow for a perfect driving position, with an optional air suspension driver seat offering even more cushioning. The upgraded cabin, with its reduced noise, vibration and harshness, delivers improved overall driver comfort. For drivers using the truck for long-haul operations, a sleeper cab configuration is also available.

Croner will keep our customers' business moving on time, every time. With maximized productivity and minimized downtime, it'll deliver satisfaction to them, their drivers - and customers - for years to come, no matter what the task.



# 2017

## All New Quon

Innovation that puts people first.

The brand new version of UD Trucks' flagship moves the bar forward again, with innovations designed for the actual needs of the customers, showing the path to a new era of smart logistics.



Watch All New Quon in action



### Smart drivability

The cockpit has been completely redesigned with the user's comfort in mind, for improved operability and visibility, allowing the driver to concentrate on driving.

- The new color LCD multi-display mounted in the center of the instrument panel provides a large variety of information, accessible through switches conveniently placed on the new 4-spoke steering wheel.
- The new easy-to-use I-shaped shift lever commands the latest version of the famous ESCOT automated manual transmission. ESCOT-VI performs better on snowy or slippery roads.
- Mated with the new GH11 engine – with more power and torque – ESCOT-VI provides the best drivability, with the same ease of control and driving comfort as a passenger car.

### Smart fuel efficiency and respect for the environment

- GH11 engine: even more fuel-efficient, powerful and clean. Thanks to a high combustion efficiency and further improvements, the GH11 engine provides improved power and torque, while meeting the strict new emission regulations in Japan and exceeding the 2015 fuel economy regulation standards for heavy duty vehicles by 5%.
- Foretrack: predicting the road ahead. The new Foretrack function on the ESCOT-VI operates when using cruise control in ECO mode. Road gradients are scanned and saved through the GPS. When driving the same road the next time, gear shift and vehicle speed are optimized to improve fuel efficiency.
- Nenpi\* Coach: real-time fuel efficiency advisor. Nenpi Coach constantly analyzes and evaluates driving trends based on fuel efficiency. By providing real-time feedback through the display, it coaches drivers to deliver the best fuel efficiency.

\* "Nenpi" is Japanese for "Fuel economy".



### Smart safety

The new Quon safety features have been improved with the cutting-edge technologies.

- Standard disk brakes. All models are fitted with disc brakes. They offer high resistance to fading and a progressive feel in the brake pedal.
- Traffic Eye Brake. The Traffic Eye Brake (Advanced Emergency Braking System) permanently monitors the road ahead through radar and a camera, automatically applying brakes in the event of a potential collision.
- Driver fatigue alerts. A Driver Alert System uses a camera monitoring the outside environment to detect irregular or jerky steering to estimate the driver's fatigue, and alerts the driver with an alarm and a message when concentration levels are indicated to drop.
- Lane departure warning. A lane departure warning system also warns the driver if the vehicle drifts across the lane without reason on the highway.
- Improved lighting for night drives. All New Quon comes fitted with long-lasting LED lamps for low beam, which provide bright and clear lighting, improving nighttime visibility.

### Smart productivity

- Increased payload, reduced vehicle weight. Use of disc brakes and high tensile steel plates for the main frame means a reduction in the total vehicle weight and thereby increased payload.
- Uneven load adjustment function to improve cargo handling. The uneven load adjustment function automatically adjusts any lateral height differences using the air suspension, improving cargo handling when loading with a forklift from the side of the truck and also while driving.
- New air suspension with increased height adjustment range. The adjustment range has been improved on the 6x2 and 6x4 cargo beds, to offer improved cargo handling, and to allow optimal height adjustment.
- Various options to get the "Perfect Quon" for the business. A range of options are available, including enhanced dry wing body variations and direct-coupled refrigeration wing bodies.

### Smart quality thorough extra mile testing

As a UD truck, All New Quon embodies the idea of Ultimate Dependability. The concept permeates the entire cycle, from the design of the truck to the final manufacturing. To ensure the reliability of All New Quon, the truck has been submitted to extreme tests. UD's quality assurance program includes tests of safety, performance, reliability and durability. Every detail was thoroughly checked through sophisticated processes, leading to countless modifications, improvements and optimizations, to reach the quality and durability every UD truck owner should expect. Below are some examples of how UD went the extra mile in testing All New Quon.

#### Durability bench tests



Cabin and chassis durability was tested using accurate simulations of very tough road surfaces.



Over **2.5 million** engineering hours

More than **6 million km** test drive

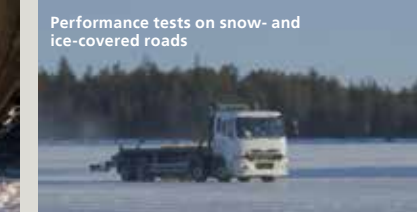
**82** points of control

**92** testing vehicles

**15,858** hours of bench tests

#### Cold tests

Long-term tests were conducted in the northern Japanese island of Hokkaido and in northern Sweden. Reliability, drivability and safety were lengthily tested by Japanese and European engineers in extremely cold temperatures.



#### Collision tests



Collision tests simulate all kinds of accidents to ensure that both driver and passenger are protected.

\* Perfect Quon options are available in selected markets.  
\* FORETRACK is available in selected markets.

### Smart uptime

- All New Quon has been designed to further optimize uptime, with superior reliability and increased maintenance intervals.
- Sensors monitor the wear on brake pads, and alert the driver via the multi-display when the need for replacement arises. Maintenance is made easier with new shield type hub bearing units.
- The frame has received an even stronger corrosion prevention treatment for even greater durability in cold climates.
- Thanks to the UD-TRUST program, maintenance can be planned ahead according to the customer's needs.
- UD information service (UD Telematics Services) contributes uptime and fuel efficiency. "Reliable Operation Support" provides a remote breakdown diagnosis, to maximize operation rates. In the event of a breakdown, a diagnosis is done remotely, to reduce repair time. It also provides "Fuel Efficiency Reports", with fuel consumption analysis and driving advice to reduce consumption.





# 2021

## Steering so advanced, you'll never go back

UD Active Steering is a breakthrough technology that offers a safer, more comfortable experience for the driver.



### The Giant Masterpiece Illustrating the prowess of UD Active Steering



In collaboration with renown calligrapher, Gyouyou Suzuki, the world's largest KANJI was created to demonstrate the drivability, precision and stability of UD Active Steering. On Suzuki's direction, a Quon equipped with UD Active Steering drew the character, stroke by stroke, with mastery akin to the delicate and deliberate hand and brush movements of the calligrapher himself.



Watch the Giant Masterpiece



Designed to make trucks less tiring and easier to drive, UD Active Steering uses inputs from sensors throughout the truck constantly monitoring the driving environment and the driver's own actions, to add appropriate torque to the weight of the steering wheel, providing **precise and stable steering** irrespective of speed, cargo, and road conditions. The ease and precision of steering helps reduce driver fatigue and make roads safer.

## 5 benefits of UD Active Steering



### 1. Low Speed Agility

When turning at low speeds and reversing in tight spaces, additional steering torque automatically feeds into the system to allow the driver to maneuver with a light touch.



### 2. High Speed Stability

When driving at higher speeds, the weight of the steering wheel adjusts to provide superior stability.

### 3. Rough Road Dampening

UD Active Steering dampens vibrations from rough roads. Minute directional adjustments keeps the driver on a course.



### 4. Cross Wind Correction

UD Active Steering virtually eliminates the steering corrections needed in crosswinds, keeping the driver on a straight course.



### 5. Return to Center

Whether turning at an intersection or reversing, the steering wheel will return to center when released, saving driving effort and bringing the vehicle into a straight line quickly and easily.



On top of these benefits to driving precision and comfort, Quon with UD Active Steering comes also equipped with the Lane Departure Prevention, further enhancing safety on long-haul drives.

UD Active Steering is a revolutionary technology that was designed to have a positive impact on the health of drivers and the safety on the road. It makes the drive more relaxing and comfortable for veteran drivers, while allowing new or inexperienced drivers to enter the truck driving profession with confidence.



Watch UD Active Steering's 5 benefits

2021

# EURO 5

Drive for better

Quester and Croner are now equipped with the UD Selective Catalytic Reduction (SCR) system, making them compliant to Euro 5 regulations. Because a better life is only possible with sustainable logistics.

### SCR - Simple, clean and reliable

SCR is an emissions treatment system that reduces harmful pollutants such as nitrogen oxides and particulate matters that are produced during combustion. SCR works in conjunction with AdBlue, a colorless, odorless, non-toxic fluid, available in 20-liter jerry cans at all UD authorized dealers. The SCR system injects AdBlue on the exhaust gas from the engine, resulting in harmless nitrogen and water vapor.

### SCR - For a better life

UD vows to play its part for cleaner air that allows a sustainable environment for everyone. With Euro 5 SCR, nitrogen oxides are now 60% less, and particulate matter emissions 80% less, than current Euro 3 levels. Compared with Euro 4 levels, nitrogen oxides are 43% less.

### SCR - Optimizing your TCO

SCR implementation on Quester and Croner is accompanied by various improvements which contribute to improve your total cost of ownership.

#### Better efficiency

An optimized combustion process results in even higher power and torque, while also improving fuel efficiency.

#### Better uptime

SCR allows longer service intervals, for even better uptime.

To make Adblue refills seamless, UD has secured a guaranteed supply through UD dealers and network. AdBlue can also be found at fuel stations, workshops and online.

#### Better durability

A more robust engine configuration with lower sensitivity to sulfur content in fuel, leads to longer engine life.



Watch the benefits of SCR

## Euro 5 Quester

Aside from featuring the Euro 5-compliant UD SCR technology, with the reduced costs resulting from engine combustion optimization, the new range of Quester also features a new instrument cluster with real-time fuel coaching. This enhancement provides drivers with real-time feedback and recommendations on driving techniques to make the best of the engine's fuel efficiency.

A new connected and business-ready innovative UD Telematics allows transportation companies to maximize efficiency with real-time vehicle tracking and geofencing.

Added to the Quester's improvements received in 2019, such as the renowned ESCOT automated manual transmission, lighter tare weight and optimized driveline, these innovations combine to provide an outstanding fuel efficiency, as well as a safe and relaxed driving experience.



Watch Euro 5 Quester



## Euro 5 Croner

On top of the UD SCR system and the improved powertrain, UD's medium-duty truck receives the same new instrument cluster as Quester, to coach drivers in real-time for optimized eco-driving. Moreover, the aerodynamic cab design reduces the drag coefficient by 5% compared to previous models, contributing to improved fuel efficiency.

Combined together, all these improvements lead to a significantly reduced total cost of ownership for Euro 5 Croner.



Watch Euro 5 Croner



# 2023



# Quon GW

## LEADING POWER

### Unrivaled power

The Quon GW tractor, with its new 13L engine, delivers overwhelming power and torque. Combining superior fuel efficiency and maneuverability, coupled with braking power, it hauls heavy loads effortlessly. The Quon GW puts people and cargo first.



Watch the Hero Video

### On the road

#### 13L engine delivers unrivalled power and a smooth ride

The Quon GW delivers raw power and torque thanks to the GH13 engine and is equipped with the next generation ESCOT-VII transmission.

The 12-speed electronically controlled automatic transmission has evolved beyond ESCOT-VI, with the new ESCOT-VII enabling quicker and smoother shifting.



### Turning

#### UD Active Steering reduces driver fatigue and makes roads safer



- ❶ Low Speed Agility
- ❷ High Speed Stability
- ❸ Rough Road Dampening
- ❹ Cross Wind Correction
- ❺ Return to Center

UD Active Steering features an electric motor mounted above the hydraulic steering gear to provide additional torque when necessary.

This system control adds appropriate torque to the weight of the steering wheel, providing precise and stable steering irrespective of speed, cargo, and road conditions.

### Stopping

#### Auxiliary braking performance for excellent stopping power

The combination of industry-leading auxiliary brakes, engine brakes, and disc brakes provides reliable, smooth and powerful braking. The large-capacity hydraulic retarder achieves superior braking force even when transporting heavy loads downhill.

By combining the engine brake with the disc brakes, reliable and excellent braking is ensured.



Disc brakes

### Coupling

#### Rear air suspension provides increased efficiency and comfort

The 16-ton and 18-ton class 5th wheel is the first among Japanese manufacturers to be equipped with rear air suspension. The trucks are also ideal for transporting precision equipment and even with heavy load items such as steel, the lashing wire fits tight.

It also provides a comfortable ride when the vehicle is not towing a load, greatly reducing driver fatigue.



Rear Air Suspension



## **Kazet**

A light-duty truck with advanced on-board technologies to meet the challenges of modern logistics.



## **Condor**

A proven medium-duty truck, now has an even wider range of configurations available.



## **Quon**

The quintessence of UD technologies, with human-centric innovations built for the age of smart logistics. UD Active Steering model introduced in 2021.



## **Quester**

Designed to meet the needs of thriving economies around the world, this heavy-duty truck has models that are equipped with ESCOT transmission and are Euro 5 compliant.



## **Croner**

Make Every Moment Count

A new medium-duty truck designed for fast-growing economies, engineered to save time in your operations. Euro 5 compliant models available.



## **Kuzer**

Made To Deliver Extra

By matching a powerful engine with a comfortable cab in a compact format, Kuzer created a totally new category. Its own.

# UD engines

## An evolution of fuel efficiency innovation

Since its inception until the present time, fuel efficiency innovation has always been central to UD Trucks' competitiveness.

From the company's first Japan-made engine produced in late 1938—the milestone 60 horsepower **ND1**—the focus on delivering fuel efficiency innovation remains a competitive hallmark.

Durability, reliability and efficiency are at the heart of every UD engine. These keywords, which today are central to the UD Trucks DNA, have continued to drive the company's success.

In early 1955 came the iconic two-stroke UD engine. The race for horsepower had begun, and in Japan and overseas, trucks were traveling farther and bus passengers wanted to go faster. Engines capable of 150–200 horsepower were in huge demand.

The Uniflow scavenging Diesel engine—the origin of the UD name—was the first produced by a Japanese company to reach this level. The industry-first 150 horsepower version was followed by the **UD6** engine,

which further delivered 230 horsepower at a weight 40% lower than conventional models, making it one of the world's lightest per horsepower. For truck owners, this meant lower vehicle weight and in turn less fuel used for a given distance and payload.

At this time, engine power rather than fuel efficiency guided innovation, resulting in the turbocharged engine in 1971, a Japan first, and two world firsts, the continuously controlled variable nozzle turbo-charger engine in 1990, and the ceramic tappets for a 4-valve medium-duty engine in 1993.

With ever-stricter environmental regulations in the latter half of the 1990s, fuel efficiency became a key sales driver of UD Trucks. Founder Kenzo Adachi's spirit continued to lead the way, spurring innovation focused on combining efficient engines with multi-speed transmissions to deliver the best possible torque at all times.



GH5E Engine



GH8E Engine



Quon GH11 Engine



Quon GW GH13 Engine

The ESCOT-II, Japan's first electronically controlled semi-automatic multi-speed transmission for heavy-duty trucks, made its debut in 1995. The **GE13** engine produced in 1998 was the first in the world to include a ball-bearing turbocharger for better mechanical efficiency, stronger throttle response and less oil needed for lubrication. Together, these engines delivered superb mileage and solidified the company's reputation for excellent fuel efficiency.

In 2004, complying ahead of schedule with Japan's 2005 emissions regulations—world's strictest at the time—Quon set a global benchmark for fuel efficiency and environmental performance. Built from the ground up for lower fuel consumption, the heavy-duty truck touted an aerodynamic cab and body parts, a lightweight chassis, a new type of ultra-high-pressure fuel injection that drastically improved fuel combustion and the world-first urea SCR technol-

ogy for breaking down NOx and CO2 in the exhaust. Such technologies were successively applied to the latest **GH11** engines and its series, as well as Quon and Condor in which those engines are mounted.

With its eco-mode and ESCOT-Roll functions, the ESCOT-V electronically controlled automatic transmission, in tandem with these technologies, provide our customers with superb fuel efficiency.

Launched In 2013, Quester, developed for global growth markets, featured built-in fuel efficiency and a specifically developed powertrain at its heart. This ensured that the heavy-duty truck's **8-liter** and **11-liter** engines operate within their peak efficiency power band at all times while giving customers the flexibility to select the powertrain combination that best suits their needs. Other components, including the 6-, 9- and 12-speed gearbox and added oil-cooler, are calculated to cut fuel costs

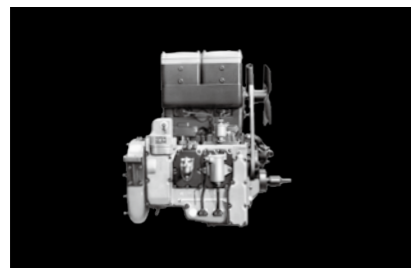
without compromising on performance and durability.

The 2017 All New Quon is moved by a more fuel-efficient, greener, and torquier version of the GH11 engine, which can be mated to the electronically controlled ESCOT-VI gearbox. Adding to the qualities of the renowned ESCOT-V, this gearbox adds other fuel-saving functions, such as Foretrack.

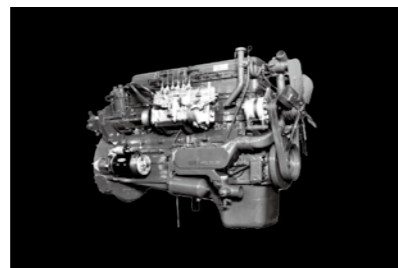
In 2023, the Quon GW tractor was equipped with a new **GH13** engine, which provides overwhelming power and a smooth ride.

It is also equipped with new ESCOT-VII, a 12-speed electronically controlled automatic transmission tuned specifically for the **GH13** engine. Extremely fuel efficient, the Quon GW meets the new fuel efficiency standards for heavy-duty vehicles set for FY2025 in Japan.

Fuel efficiency has definitely become a core quality of UD trucks, besides their legendary dependability.



ND1



UD6



GE13

# ESCOT transmission

## Story of a revolution

### ESCOT Easy Safe Controlled Transmission

From its first version, the ESCOT gearbox aimed to simplify the driving of heavy-duty trucks; with the stress of gear changing removed, drivers were able to concentrate fully on the road to the benefit of safety. Probably the most palpable, unsung benefits on a daily basis, were the driving pleasure afforded by total control and the driving ease in every road situation, whether in heavy rush hour traffic or on a twisty mountain road.

#### ESCOT-II

Proposed on the heavy-duty Big Thumb tractor, the ESCOT-II was already a big step forward from the rare automatic transmissions on offer at that time.

Focused on making the driving of heavy-duty trucks easier - and therefore safer - ESCOT-II was a mechanical gearbox with a robotized clutch, featuring three pedals and a sequential gear stick, with the clutch only needed to start driving from a full stop. The gearbox was not exactly automatic as the driver had to change gears himself, but without the hassle of clutching, he only had to shift the gear stick up and down. UD research and development engineers had also developed the ESCOT-I, which needed the clutch to switch gears, but as the robotized clutch ESCOT-II was judged mature and reliable after successfully passing a series of tough tests, the ESCOT-II

was launched directly.

The ESCOT-II marked the start of the ESCOT lineage with superior drivability. Unlike a classic automatic gearbox, the ESCOT driver didn't experience any hydraulic converter slippage, allowing him total control over his truck, for an unequalled confidence and peace of mind which would become the ESCOT trademark.

#### ESCOT-III

ESCOT-III was a move towards a more automatic mode. After manually taking off in first gear, the driver could let the gearbox change gear by itself or use the manual mode to change gear himself through the sequential shifter.

In 1998, the ESCOT concept added a fuel economy dimension, adding more gears to optimize the use of the engine in the most efficient torque range.

#### ESCOT-AT IV

ESCOT-AT IV was the first fully automatic version of the ESCOT gearbox, with no clutching required to accelerate from idle, except when reversing.

In 2004, ESCOT-AT IV became the first ESCOT gearbox to be exported outside of Japan, with sales starting in South Africa.

In 2007, a switch for light load was added. In this mode, shift changes were programmed to happen earlier than in normal mode, to allow better fuel economy when the truck carried no or only a light payload.

#### ESCOT-V

The ESCOT-V was again a technological breakthrough, featuring numerous innovations. With only two pedals, the gearbox operates totally automatically, or manually through the shifter.



ESCOT-VI

Further strengthening the ease-of-use and safety features which have been the trademark of ESCOT gearboxes, ESCOT-V brought in innovative features to maximize drivability, fuel economy and safety such as Hill Start Assist, ESCOT Roll, and Cruise Control. Gearshifts are made even quicker and smoother thanks to computer-controlled mesh synchronizing, and gear changes programing is refined to adapt to various payloads and optimize fuel economy.

ESCOT-V has seen successful international expansion; and is now available in South Africa, Oceania and South East Asia.

In 2014, ESCOT-V was upgraded with improved software and an Eco mode, to maximize fuel efficiency, offering an acceleration limiter for gradual speed increase and a Soft Cruise Control function.

#### ESCOT-VI

The new ESCOT-VI builds once again on the ESCOT qualities. A new shift lever is adopted, replacing H gate with I gate, making it easier to operate. Its Foretrack uses GPS to predict the road ahead, and it performs optimum gear changes choosing automatically among the 12 ratios available, according to driving conditions such as road gradient, corners, and payload.

This reduces the burden and stress on the driver, allowing an inexperienced driver to achieve



ESCOT-VI

smooth progression with excellent fuel economy, equivalent to a skilled driver. Moreover, the ECO mode is set by default, allowing optimum fuel saving anytime.

Another impressive innovation is the Escape function, optimizing clutch engaging/disengaging to get past a ditch in snowy/muddy conditions, by swinging the truck back and forth.



ESCOT-VII

#### ESCOT-VII

ESCOT-VII is a 12-speed electronically controlled automatic transmission tuned specifically for the GH13 engine. It has further evolved to achieve improved fuel-efficiency with quicker and smoother shifting.

It meets the new fuel efficiency standards for heavy-duty vehicles set for FY2025 in Japan.

EASY / SAFE

1995  
ESCOT-II  
12 speed for tractor



1997  
ESCOT-III  
7 speed for rigid

FUEL ECO

1998  
ESCOT-III  
12 speed for rigid

2003  
ESCOT-AT IV  
12 speed for rigid/tractor

SMART ECO

2010  
ESCOT-V  
12 speed for rigid/tractor

2017  
ESCOT-VI  
12 speed for rigid/tractor



Foretrack

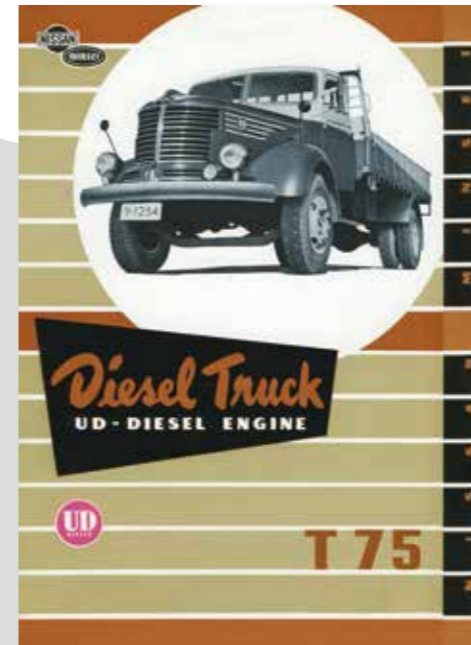
2023  
ESCOT-VII  
12 speed tractor



Quicker and smoother

Quester adds ESCOT

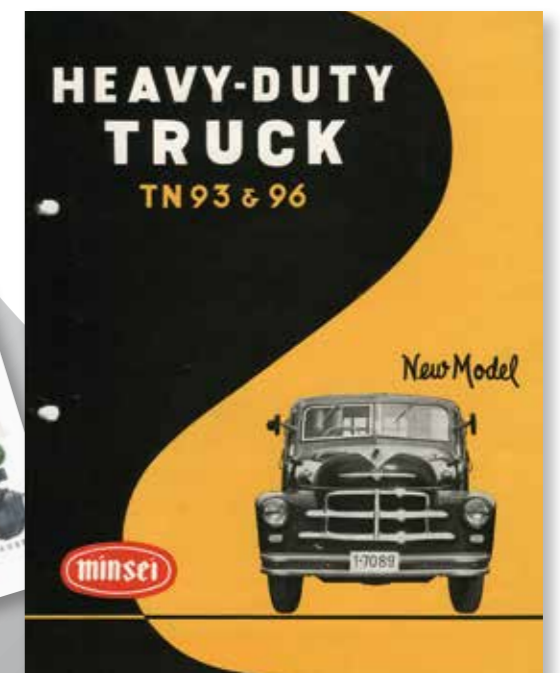
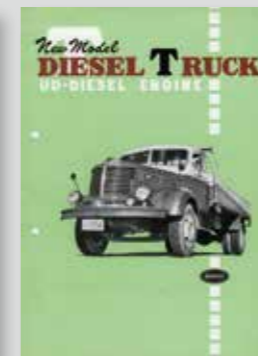
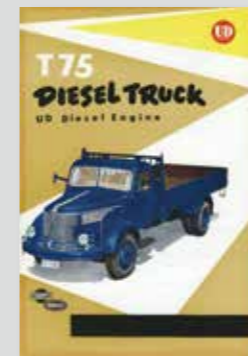




# Japan

## 1950s

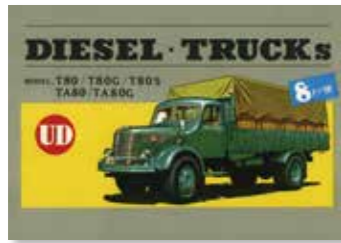
Emerging from the postwar years of recovery, this period signaled a time of new economic growth. Key colors and impressive design methods were effectively used to advance along to the next era.



# UD Museum

The shape and form of trucks have changed over the years in line with changing needs. The design of the catalogs also gives a good insight into the characteristics and trends of the time .

At the time, the company name was Minsei Diesel Industries, Ltd. and used "Minsei" for the brand logo.

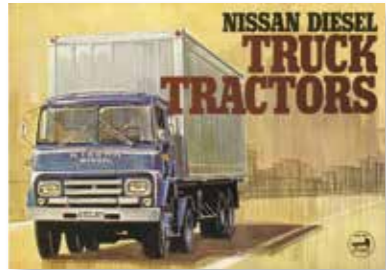


# Japan

## 1960s

Trucks became more diversified to satisfy changing needs triggered by advanced economic growth. It was easy to see the distinct personality of each truck especially through the colors and way the background was used. Pictures showcasing the length of the trucks were included to advertise transportation capabilities.

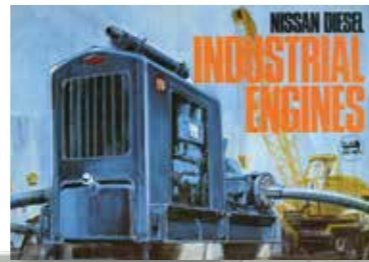




# Overseas

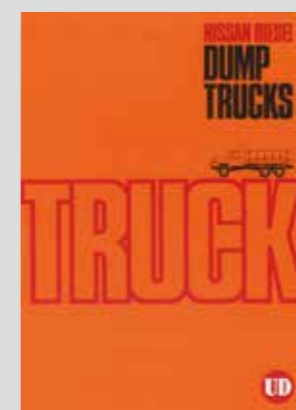
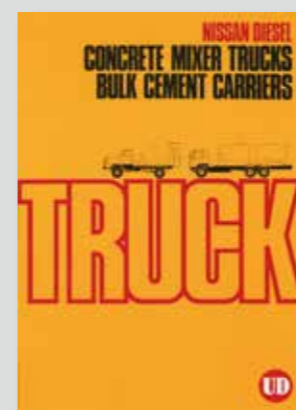
## 1960s

The images used here added a dramatic touch to show how tough and powerful the trucks were, with the background showing trucks on rough terrain or snowy roads to appeal to the overseas market.



## 1970s

Cab-over trucks were common during this decade. This style made users feel like they were driving a passenger car. A new design using photos was employed across all catalogs, thus producing the most realistic images yet.



## 1980s

UD Trucks expanded its line-up in the 1980s and became a general commercial vehicle manufacturer. The bold use of color as well as font selection were key features that succeeded in leaving a stronger impression than before.

## CHAPTER 2

# The UD gemba spirit in practice

— Quality from factory floor to frontline

Everything we do is for the success of our customers' business worldwide.

Exceptional durability, fuel economy and environmental performance combined with unrivaled uptime—that's UD Trucks' commitment to you.

That can only be reached thanks to the professional, passionate and dependable spirit of UD people. Their will to roll up their sleeves and deliver a solution. That's what we call the UD gemba spirit. The spirit to deliver dependable trucks and extra mile support to our customers across the world so they are free to focus on growing their business.



## Gemba Spirit

# UD Gemba Spirit

### What is Gemba?

Gemba is a Japanese word that describes where action takes place and value is created, from the factory floor to dealerships to customer facilities. Wherever it is, gemba is a place to listen and understand, to seek out opportunities for improvement.

### What is UD Gemba Spirit?

At UD Trucks, we are driven by the “UD Gemba Spirit”. It is the professional, passionate and dependable spirit of the UD people. It is the will to roll up sleeves and provide a solution. It is being close to the ground to identify the essentials and the driving force to excel at them.

### Embedded in UD's DNA

The UD Gemba Spirit has always been with UD Trucks. In 1939, founder Kenzo Adachi took the company's first diesel engine and truck on a 3,000km test-drive on the toughest roads in Japan to ensure it

had ultimate dependability.

Kenzo put himself behind the wheel of this prototype truck to gather first-hand information. This is typical of the UD Gemba Spirit and it has lived on until this very day.

Guided by the pioneering example set by our founder, UD Trucks took the lead in the industry several times throughout the history. Having successfully designed, built and tested Japan's first 10-ton diesel truck, the 6TW, the company pioneered the first electrically controlled automated manual transmission – the ESCOT gearbox, and then the revolutionary Urea SCR system to beat the emissions regulations.

### Going the extra mile in gemba

Today, the UD Gemba Spirit continues to inspire a hands-on attitude, a desire to share knowledge and information. Teamwork and open communication are what UD people value most in their daily work. In fact, when UD needed to

rethink its offices to allow for expansion, it decided to position its new headquarters and design studio at the heart of the Ageo manufacturing plant. This way, everybody working at UD's headquarters is within walking distance of the factory. It makes constant feedback easier to collect, and constant improvement easier to implement.

They go the extra mile in their gemba to support customers, by tirelessly pursuing efficiency on the factory floor; by creating competitive training programs, such as Gemba Challenge, to improve quality and timely delivery at workshops; by designing driving competitions for customers that echo modern day logistic demands; and by innovating comprehensive aftermarket services combined with new technologies. UD's gemba-driven pursuit of excellence continues the legacy of its founder: to design and make the trucks that the world needs today.

# Japan Quon Testimonial

Safety Oil Transport, which operates in Japan, added Quon equipped with UD Active Steering to their fleet, with benefits that surpass all expectations.

**Mitsuya Sugaya**  
Head of the Saitama office  
at Safety Oil Transport



**Satoshi Sekine**  
Sales manager at Safety Oil Transport



## Other Quon features

### ESCOT-VI quick gear changes

**Sugaya:** We train our drivers to respect speed limits and not exceed 1,500 rpm.

**Sekine:** ESCOT-VI is very clever and quick, making even new drivers drive like professionals. It optimally changes the gears at the right time.

**Sugaya:** It also relieves some stress from the truck driver because there is no risk of stalling.

### LDP reduces the burden of long-distance drives

**Sugaya:** I'm also glad that the latest Quon added the LDP (Lane Departure Prevention) function. It is sometimes very difficult during long-distance driving to maintain concentration. LDP helps significantly during these long-haul drives.

### A truck that redefines drivability

**Sugaya:** Nowadays, being able to deliver goods in a safe and secure manner is far more important than being skilled at driving. To me, that's what being a professional driver really means.

**Sekine:** We want to ensure all cargo is delivered fully intact and on time, to earn the trust of our shippers and clients. The new features on Quon help us, by making inexperienced truck drivers feel comfortable and confident.



## UD Active Steering

### Light touch steering and smoother handling

**Sekine:** When I test drove our Quon with UD Active Steering soon after the delivery, I was amazed by its light touch steering. I really enjoyed this next level in drivability: steering is so light that it's almost effortless. Driving trucks usually requires a certain effort when steering, especially driving around town. But the Quon with UD Active Steering changed the driving experience and made every action easier. In short, Quon significantly reduced driving fatigue.

**Sugaya:** The active steering made driving the truck a lot easier, especially in narrow spaces. It really helps since we occasionally encounter difficulty when loading and unloading goods at some sites where space is very limited.

### Higher stability at high speeds

**Sekine:** The steering is light and smooth when driving at low speeds, but it offers higher stability at speeds over 70 km/h, and on the highway. The steering is so stable that it can stay straight over ruts in the road.



### Stability in crosswinds

**Sugaya:** As a truck driver, what I dislike the most is that we constantly adjust the steering during long-haul runs. If there is a rut, you have to move your vehicle to avoid it, and if it's windy, you also have to constantly adjust, depending in the intensity of the wind.

**Sekine:** When a heavy-duty truck passes on the right lane, the crosswind sometimes pushes the vehicle to the left, but this does not happen with UD Active Steering. I was genuinely surprised.

**Sugaya:** I think this will lead to a significant reduction in fatigue for long haul drivers. The UD Active Steering equipped Quon is the best truck I have ever driven.

# Nyati Cross Border with New Quester

New Quester has been integrated into the fleet of Nyati Cross Border, which has been operating long haul transportation in South Africa and neighboring countries for the past 20 years. Friedel Kirstein, Danie Groenewald and John Chijumba share how they drive efficiency.



**John Chijumba**  
New Quester driver at Nyati Cross Border

**John Chijumba:** I have worked for Nyati for 8 years now. I love driving this New Quester truck. The space inside is huge, I can even rest my arm, I feel very free, and it's easy to drive. I love it!



**Friedel Kirstein**  
Co-owner, Managing director of Nyati Cross Border

**Friedel Kirstein:** We operate cross border into countries such as Zambia and DRC, carrying mainly products such as ammonium nitrate that is used for explosives in the mines.

It's been a dream since my childhood to own my own vehicles. Although I studied law, as soon as I finished, I got into transport because it's a passion that I have.

“ I got into transport because it's a dream of mine and it's a passion I have. ”

When I purchase a truck, it needs to be reliable (a tough cab that can take the punch up in Africa), cost-competitive, from a brand that offers the back-up service.

The New Quester definitely gives us the package that we are looking for. Good reliability, and a bit more space in the cab for the drivers. Which is something that is important for guys operating long days, long hours in the cab.



**Friedel Kirstein:** The ESCOT is definitely something that we can't operate without. With ESCOT, drivers are driving mostly in the green band, it saves a lot of maintenance, it saves a lot of fuel consumption, and it adds to the driver's comfort, resulting in less fatigue when driving the vehicles.



**Danie Groenewald**  
Operations Manager at Nyati Cross Border

**Danie Groenewald:** Fuel efficiency is very important for us because it is a big part of our cost. One of the challenges we have, is getting accurate information from our vehicles. UD Telematics really helps us with regards to that. I can see online where the truck is standing anywhere in Africa, and I could see exactly its fuel efficiency at that point, the driver's behavior, and that makes a huge difference to our fleet.

**Friedel Kirstein:** UD to me is, being Japanese, it's people who are very dedicated to what they do. They like to listen, they like to produce what you need. We are not just a customer: they come to us, they find out what we need, they go back, they provide what we need in our specific market: that is something very important for me from UD.

# Customer service for uptime and satisfaction

Doing whatever we can to support our customers' logistics operations



## An enhanced and expanded support system

UD Trucks provides full support to customers, from daily inspections to responding to an emergency, through a service framework that boosts safety and improves their logistics operations.

In getting the job done, we make sure we are in close communication with the customers at all times. That way we can truly grasp the situation and think together about the logistics challenges they face. Providing top-level advice helps us retain relationships of trust with everyone we assist.

Underpinning this service is our vehicle maintenance history database. This is like the "medical chart" of a vehicle with the data used to enable speedy and accurate service. Vehicles are always on the move. That means there's a reasonable chance you'll need urgent maintenance at one time or another. At UD Trucks, all of our service bases are connected via an information network that shares this maintenance history, culminating in precise identification of vehicle condition from any base and then quick, decisive support.

Of course this is only possible thanks to a high-level service system

at each base as well as accomplished engineers with sophisticated technologies and a wealth of experience under their belt. These factors provide us with a huge advantage.

## Keeping customer satisfaction at the forefront

Staff at each service base engaged in sales, parts supply, service work as a team to identify in details the operating condition of our customers' vehicles and any automotive-related issues.

And service staff always keep customer satisfaction foremost in mind. Rather than mere vehicle

maintenance, they are committed as consummate professionals to making suggestions and recommendations about issues the customers may not even have noticed.

These professionals understand exactly what the our customers need, convey the details of the maintenance in clear terms and make a complete report as a matter of course. On top of this, they voluntarily check areas beyond the scope of what they were asked to do and recommend maintenance if they discover a problem such as a slipping clutch or low amount of clutch or brake oil remaining. Based

on an extensive background, the professionals can spot issues that our customers might miss on a daily inspection and give sound advice. The key is to prevent breakdowns on the road before they happen so that drivers feel at ease at all times.

In order to further guarantee our customers' safety and security, we do whatever it takes to avoid errors in the work process through a number of rigorous checks in the maintenance flow. Each member of the team makes efforts toward kaizen (improvement) following a PDCA (Plan, Do, Check, Act) cycle too and makes it their mission to

enhance the flow and bolster customer service.

As an example, our engineers reduce loss in the time taken to provide maintenance by keeping tools neat and tidy, which also helps prevent work errors. Returning the vehicle to the customers as quickly as possible minimizes disruption to logistics operations and increases satisfaction. UD Trucks staff are happiest when customers come back the next time they need something done.

Customer satisfaction continues to be a key part of service for personnel on the frontline around the world today.



# Extra mile support Maximize uptime and fuel economy

At UD Trucks, we remain fully committed to providing optimum maintenance and service solutions to our customers, to ensure their trucks are always running in optimum condition. Our complete aftermarket support delivers the ultimate in quality and value so that customers are free to concentrate on their core operations and grow their business.



UD Genuine Service

## Maintain your truck on the road

**UD Genuine Service and UD Genuine Parts** are carefully designed to keep our customers' vehicle on the road, allowing them to go the extra mile for their customers. UD Genuine Service is performed by authorized UD dealers that have access to the most up-to-date tools and diagnostic equipment coupled with the availability and top quality of UD Genuine Parts. Our

investment in and commitment to parts availability is second to none. Engaging UD Genuine Service allows customers to reduce unplanned stops, increase vehicle uptime and protect their investment. Through extensive training programs, UD Trucks service technicians know customer vehicles inside out to guarantee the best service around.



UD Trust

## Improve your truck's life cycle profitability

**UD Trust** is UD's comprehensive service agreement designed to support customers to maintain their trucks in optimum condition and effectively lower the total cost of ownership during the lifecycle of their trucks.

The customers are in complete control over the cost, as every service plan is tailored specifically for each business, based on their operations and trucks, and divided in monthly payments.

UD Trust covers regular preventive check-ups, which then helps to pre-empt any major issues and it guarantees the expertise of UD Genuine Service, and the quality of UD Genuine Parts.

The knowledge that costs are strictly controlled and that their trucks are in the best hands with a pre-defined and optimized service schedule keeps our customers' mind at ease and free to focus on their core operations.

Each UD Trust package is tailor-made and consist of all or some of these five services



Periodic Inspection



Lubrication



Maintenance Parts



Wear & Tear



Repairs



UD Mobile Workshop

## We go where you are

Preventive maintenance is key to keeping a fleet running. For greater convenience and uptime, our **UD Mobile Workshop** comes right to

the customers' doorstep. Customers can call UD Trucks to pre-book an appointment for selected services on a date and at a location of their choice.



UD Road Support

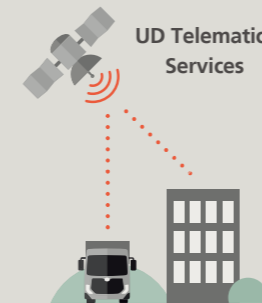
If you are out on the road and you need help, **UD Road Support** is just a phone call away. Once we've established the location of the truck

and the nature of the problem, our nearest service van and technician will be on-site to help get it back on the road as soon as possible.



## UD Telematics Services

### Smart technology to maximize uptime and fuel efficiency



The UD Telematics Services available on Croner and Qvester, and the UD Information Service (UDIS) offered on All New Quon both aim at providing the

aftermarket support that customers need to get ahead in the modern logistics era.

Both services operate through the UD Telematics system fitted on the trucks. This is a high-tech wireless communications system designed to help customers optimize uptime and fuel efficiency. Activated upon customers' requests, the UD Telematics Services and UDIS allow fuel consumption reports to be provided to the customer.

With these systems, the truck

collects and sends real-time information while it is on the road, allowing UD Trucks to assist customer with a variety of services, including breakdown assistance, preventive maintenance analysis and corrective service scheduling. It also can support driver training by using feedback from the eco driving report of each trip.

UD Telematics Services and UDIS are the results of UD's consistent efforts to reduce fuel consumption and optimize uptime.

## Assisting drivers to optimize fuel efficiency

### Real-time onboard "driving coach"

Driver skill matters a great deal in terms of fuel efficiency, but it takes time to train a fuel-efficient driver. In these times of global driver shortage there is a pressing need for solutions that could expedite driver training as well as help them to continuously improve their driving skills while out in their trucks. The Fuel Coaching System, already available on Qvester and Croner, provides the answer. All New Quon also has a similar function called Nenpi Coaching. Both systems give drivers suggestions in real-time as if they had a real driving coach on board with them. By following lights on the dashboard, telling the driver when to accelerate, ease up or change gear, the driver can quickly learn eco-driving habits and save on fuel consumption.

### UD Driver Training program

UD aftermarket service also includes a driver-training program to help build driver capabilities. The courses cover handover and operation, fuel-efficiency and safe driving, and securing cargo, which is customizable to each customer's operation.

Service offers vary in different markets and on different models. Please consult your local dealer to find out more.

# Going the Extra Mile Optimizing fuel economy

## Powertrain realizes greater fuel economy

For UD Trucks, a key goal is to boost fuel economy and environmental performance simultaneously.

Development of an engine to clear the then long-term exhaust gas regulations by 2005 aimed to enhance fuel economy by boosting combustion efficiency and reducing particulate matter (PM).

Quon underwent a model change in 2010 with the incorporation of GH11 and GH13 engines featuring a variable geometry turbo-charger and a unit injector. In addition to being 10% lighter than the previous engines, the turbo generated a maximum of 480 horsepower all the while raising the fuel efficiency. UD designers and engineers continued to evolve the engine in 2014 and entered a new phase in 2017, when the engine cleared the new Japanese emission rules (PPNLT), currently the most restrictive on the planet.

The GH engine series has been thoroughly reengineered with, for example, a highly sophisticated computer controlled high-pressure injection and a redesign of the combustion chamber, which together produce the most complete combustion. The result is lower fuel consumption and lower emissions and yet the engine delivers more power and torque.

The mid-duty Condor series was

also given a complete overhaul in 2010. GH5 and GH7 engines used for the new models had a new common rail boasting up to 2,000 bars. These engines had both powerful torque and excellent fuel efficiency for considerably improved environmental performance.

In terms of transmission, which conveys engine power to the drive mechanism, the fully automatic, mechanized ESCOT contributes to better fuel economy. ESCOT not only enhances transmission precision but also enables speed to be controlled simply by applying the brake, making it possible to drive in super slow speed with low fuel consumption on congested roads. Also, the trucks feature an economy mode for superior fuel-efficient driving through a low number of engine revolutions. ESCOT ROLL reduces necessary fuel for reacceleration by minimizing the decline in speed when coasting. These and other features greatly boost fuel economy when driving.

A new ESCOT gearbox is available on All New Quon. ESCOT-VI proposes a number of breakthrough features, such as the Foretrack function, able to recognize a road that the truck has already driven, and pick the most efficient gear by anticipating the road ahead, with its corners, inclines and declines.

Foretrack and other ESCOT-VI features actively contribute to reduc-



ESCOT-VI transmission



ing consumption, and to turning an inexperienced driver into a fuel-efficient driver.

## SAFES CABIN pursues the ultimate in aerodynamic performance

Since the shape of the cabin directly impacts fuel efficiency, UD Trucks is always looking to create the best form possible through 3D CAD analysis and wind tunnel testing of prototype models. This has led to industry-leading aerodynamic performance in Japan.

The catalyst for this was the SAFES CABIN featured in the Quon series following a full model change in 2004. The enhanced curvature of the corners coupled with a sleek front shape means air simply glides off the surface. The rear of the side panels juts out slightly enabling wind to pass smoothly around the loading platform while the trucks also employ an aero bumper with superior aerodynamic performance. As a result, the oncoming wind flows smoothly past the cab in all directions. These features cut air resistance by 13% relative to other trucks developed by UD Trucks in addition to securing a wider, more comfortable interior space.

The SAFES CABIN was further refined and enhanced for the new Quon series and the Condor series released in 2010 to bring greater aerodynamic performance.

UD Trucks is always looking to develop technologies to boost fuel efficiency so that the UD trucks keep on "Going the Extra Mile". To this end, efforts are being made to integrate advanced technology for developing a new style of truck with fuel efficiency that is truly hard to beat.

Now All New Quon, Croner and Quester are benefitting from this technology by integrating the SAFES concept, with very controlled airflows around the cabin to reduce turbulence.



# Maximizing safety and comfort

## Active safety

At UD Trucks we give priority to safety. Within this policy are the ideas of active safety and passive safety.

With active safety, UD Trucks strives to prevent accidents from occurring to ensure driver safety and that cargo is delivered safely.

An electronic stability control system is installed on models for the Japanese market to prevent the vehicle from skidding and overturning. Meanwhile, the driver is alerted in case information from sensors deems the vehicle to be in an unstable condition. Also, electronic control of engine output and braking force provides extra stability.

Trucks equipped with ESCOT-V and ESCOT-VI automated mechanical transmissions are installed with an Electronic Brake System (EBS), which shortens the distance required for braking and enhances the braking sensation. An Anti-lock Brake System (ABS) prevents the wheels from locking up even when braking suddenly on slippery roads in the rain or snow. Anti-Slip Regulation (ASR) features a computer for optimal control of driving force to suit the road conditions to prevent the wheels from slipping. This gives the truck greater maneuverability. In 2017, disc brakes were fitted on all models of All New Quon as stan-

dard. Combined with the advanced brake systems, such as brake blending, they are more powerful, more accurate, and less prone to fade, while requiring less frequent maintenance, which contributes to both safety and uptime.

UD Trucks was the first in the world to succeed with the practical application of Traffic Eye (forward vehicle collision warning system "Traffic Eye" in 1989. New Quon uses high-precision millimeter-wave radar and a camera to measure distance from the vehicle in front and a warning light and sound urges driver caution when the distance is too close. If the system determines a

high risk of collision, an automatic brake is activated to limit damage in the event of a crash.

UD Trucks seeks to develop and equip its trucks with a variety of systems that analyze all conditions and lead to safe driving.

## Passive safety

Passive safety on the other hand aims to minimize damage and injury in the event of an accident.

UD Trucks used 3D CAD

collision simulation and implemented extreme crash tests in the development of the highly robust SAFES CABIN. Side door beams, an impact-absorbing steering wheel, seat belts with pre-tensioners and other features enhance safety in a collision.

Since the revamped Big Thumb series in 1997, UD Trucks has installed SRS (Supplemental Restraint System) airbags on models for the Japanese market. In 2004, Quon introduced an SRS knee

airbag for the driver's seat, a world-first for trucks.

Also, trucks have been equipped with Front Underrun Protective Devices (FUPD) to stop the front of a car being buried underneath the truck in the event of a collision. These and other features aim to improve passive safety.

## Enhancing comfort and maneuverability

The pursuit of comfort and maneuverability leads to safe driving.

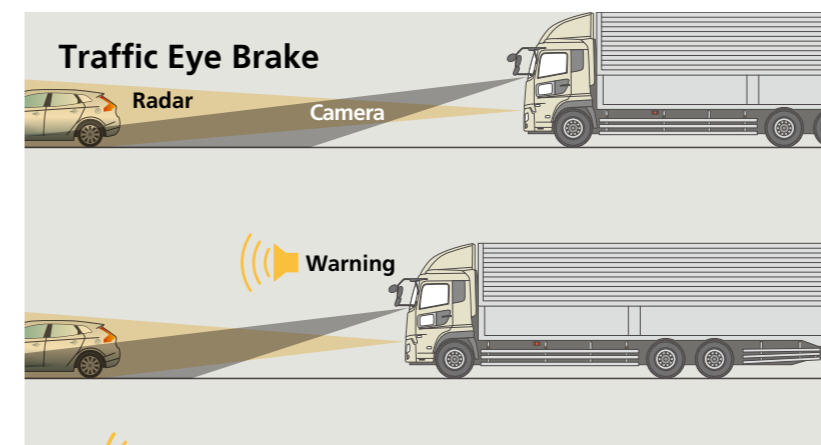
UD Trucks sends its developers and designers to ride in the trucks of customers to check first-hand on driving conditions and feed opinions back into the design and development process. This has enabled the conception of ingenious ways to increase comfort and safety on long-haul trips. For example, UD Trucks envisioned different driving positions to provide better visibility, enhanced maneuverability through a cockpit design based on human ergonomics and developed a passenger seat and seat back that can be used in multiple ways for added convenience in addition to enhancing the comfort of the driver's seat.

Special attention has been focused on the ergonomics of the driving environment. The dashboards of all UD trucks have a clear and intuitive layout, the fruit of relentless research and experience gathering quests.

Excellent drivability provided by GH engines and the ESCOT gearbox is also a key safety factor by providing a stress-free driving experience, leading to less fatigue for the driver, and therefore more attention on the road.

Here as in other areas, UD Trucks goes the extra mile so that their customers and drivers can go the extra mile—safely and comfortably.

*Please consult your owner's manual or your local authorized UD Trucks dealer for more details.*





# The world's first urea SCR system

## Over 40 years of innovation in environmental technology

Vehicular pollution in urban centers across the globe has been a social issue since the 1960s, prompting the enactment of a raft of exhaust regulations over the years. Japan introduced regulations for gas-powered vehicles in 1966, with regulations for diesel vehicles – with particularly tough nitrogen oxide (NOx) reductions targets – being issued in 1974.

Beginning in the late 1960s, UD Trucks had started work on the development of a new four-stroke engine with exceptional fuel efficiency and minimal NOx emissions. Using technology amassed in the

development of the UD engine, UD succeeded, against industry opinion, in developing a direct injection four-stroke engine, the PD6, in 1969.

## Redoubling efforts to keep up with regulations

Although exhaust regulations for diesel vehicles kept getting tougher, it didn't deter UD Trucks. Instead, efforts were redoubled to develop a sophisticated low-pollution engine with excellent fuel efficiency through a high-pressure fuel injection system, a high efficiency combustion chamber and an electronic governor. The combination of this high-level engine with an exhaust gas after-treatment system slashed NOx and

PM (particulate matter) so that even the toughest regulations, including those issued in 1974, were no longer an issue.



PD6 engine

## NOx and PM: a balancing act

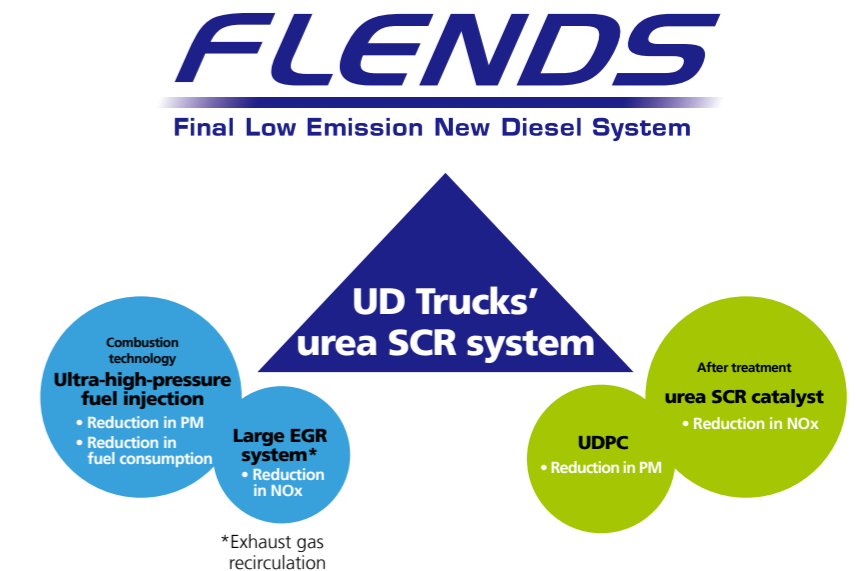
Following the Earth Summit held in Rio De Janeiro, Brazil, in 1992, which recognized environmental preservation as a priority global issue, Japan introduced the world's toughest emission regulations for diesel vehicles sold in or after 2005.

This posed a serious challenge, especially since reducing PM through high-pressure, high-temperature combustion leads to an increase in NOx, and conversely, reducing NOx leads to an increase in PM. Up until then, manufacturers typically reduced NOx by suppressing the combustion temperature of the engine and removing the PM that had increased as a result through a filter and an oxidative catalyst. This method was insufficient to clear the new regulations; moreover, fuel economy would be greatly compromised. The company realized that the only solution would come via a new breakthrough.

## Birth of the world's first urea SCR system for trucks

Working with typical passion, UD engineers set about developing a new exhaust gas after-treatment system that would cut PM without compromising engine performance by way of high-pressure, high-temperature combustion and remove the NOx generated via a highly sophisticated catalyst. The development of ultra-high-pressure fuel injection (2,400 bar) that boosted combustion efficiency had ensured a significant reduction of PM, but consequently, had increased NOx.

A SCR catalyst used in the emission processing system of thermal electric power plants had caught the eye of the UD research team. After two years of further research and evaluation, the team proved that this type of catalyst was superior in effectively reducing NOx. The next challenge lay in adapting a system that had only worked in big power



stations to perform in vehicles. The first issue was to test whether the system could endure different conditions such as sudden changes in temperature or vibration.

With almost no time left before the new regulations took effect, the research team resolved to take on the challenge and the world's first urea selective catalytic reduction (SCR) system was born.

Tests on the prototype demonstrated stable performance in varying conditions – including heavy traffic – and UD swiftly stepped up efforts to commercialize it from 2003 onwards. The new supply network of urea solution for SCR system was also swiftly made available at approximately 1,300 supply points nationwide.

## Unveiling at the Tokyo Motor Show

The first urea SCR system for trucks, known as FLENDs (Final Low Emission New Diesel System), was fitted in Quon and was unveiled at the Tokyo Motor Show in 2004. Many in the industry thought it was



impossible to clear the new long-term exhaust gas regulations before the deadline, so there was more than a measure of surprise and applause for UD Trucks for pulling off the feat a year in advance. UD Trucks continued working to boost the performance of FLENDs, which was also introduced to the Condor series, and this meant all trucks cleared the revised regulations enacted in 2009 and 2017.

The urea SCR system is currently being applied by automakers around the world and is widely used among Japanese truck makers, becoming a global standard in exhaust gas after-treatment systems.

# UD Trucks plants in Japan and South East Asia

UD Trucks prides itself on consistently producing products of the highest quality based on decades of continuous improvements combined with state-of-the-art production technologies and systems. The company's main production sites are based in Asia. In Japan, the main plant is located at UD headquarters in Ageo. In 2013, with a view to meeting customer demand, UD Trucks opened its first overseas plant in Bangkok.

## UD Ageo Plant

Established in 1962, the Ageo Plant was the first of the company's heavy-duty truck facilities in Japan to attain ISO9002 quality management certification in 1997 and ISO14001 environmental management certification in 1999.

### Production custom-specified heavy-duty trucks

The Ageo Plant produces up to 100 types of truck frames and 1,000 types of cabins as well as a staggering 6,300 attachment parts per truck. In addition, the plant has access to a palette of close to 3,900 different colors so that a truck can be painted in the style that suits any customers' desire. The plant has also set up a flexible computerized

production system so that different component kits for each vehicle can be fed onto the production line. Meanwhile, advanced industrial robots make sure the trucks conform to the highest levels of efficiency and reliability possible.

### Truck assembly line

Vehicle production begins with the introduction of the frame, which has been flipped upside down. Parts making up the chassis such as the axle plus parts for under the floor are attached first. Then the frame is turned upright so the powertrain, which has been made on the engine assembly line, can be mounted. The axle and powertrain, after undergoing rigorous checks and inspections,

are assembled onto the frame.

The cabin is put on next before loading the various operating systems and other fittings. Once the wheels are mounted, the truck is taken off the line and sent for inspection. Throughout the assembly process, UD quality standards are assured by automated as well as manual quality assurance systems.

### Top-class, pure baked-on finish

For the cabin, an automated welding robot is used on the production line to ensure the ultimate in precision welding at up to 1,900 spots, culminating in a cabin that is hard to beat for durability.

UD Trucks is particularly proud of its pure custom paint service. Paint is

baked onto each individual truck and tailored to the customers' order via a new system that is a first among Japanese manufacturers. Prior to assembling the body, top-quality paint is applied no less than five times in order to reach all those hard-to-get corners, particularly on the inside of the door. Measuring devices are employed to manage appearance to ensure the

color is identical to trucks that are already on the market. The ability to produce exactly the same color has been highly acclaimed by customers.

This attention to detail and precise control of the entire manufacturing process ensure UD Trucks deliver their highly reputed dependability. This is what customers expect.



Painting process



## UD Bangkok Plant

The Bangkok Plant in Thailand functions as a hub, assembling both Volvo Trucks and UD Trucks. The plant, opened in the 1970s, has produced both Volvo cars and trucks. The truck manufacturing part of the plant underwent a major reconversion to transform it from a CKD workshop to a factory delivering world-class quality products. In 2013, the new CBU Plant was inaugurated to produce the brand-new UD Quester. Experienced engineers and assembly line workers were assigned to the UD project, strengthening the manufacturing footprint of UD Trucks in Asia. There were also many talent exchanges between the Ageo and Bangkok plants to make sure the UD Trucks' manufacturing philosophies were successfully implemented. To further ensure quality, large investments were made in a brand new testing line for the UD products. The Bangkok Plant has continued to evolve, to increase on-site integration and to prepare for the production of the new Croner. A semi-automatic Body in White assembly line was installed, as well as laser cutting technology. Environmental concerns are a priority at the Bangkok Plant, and this for each step of the manufacturing process. A significant example is the shift from high temperature baking paint sealing at 200+ °C to a low-temperature process at less than 100 °C, saving energy and reducing pollution.



# Low-emission engines produced in a clean environment

## State-of-the-art

UD Trucks started operation of a new engine production line in 2010 in order to build on its proud heritage and make state-of-the-art engines infused with world-class technology and quality. The new engine production line, capable of 40,000 units a year, integrates a production process featuring UD Trucks' traditional just-in-time approach with a long-standing

system of continuous improvement, or *kaizen*. This style of production has been incorporated in the state-of-the-art UD Production System (UDPS). The system is now 40% automated.

## Production in a clean work environment

The new engine production line is sealed with a fire protection wall and shutters with the air

pressure inside set slightly higher than outside to prevent the infiltration of micro particles and dust. Heat and humidity are also minutely controlled to make sure the environment remains as clean as possible.

Besides this, a motorized bolt fastener is used to tighten each bolt with exceptional precision. These fasteners make less noise than conventional air pressure types,



The AGV (yellow vehicle) picks up the engine block and moves it slowly over the line. It rotates the engine to certain angles to make it easier to complete the assembly work. In addition to boosting work efficiency, the ergonomics effect for workers is carefully considered. Such as avoiding workers squatting down and bending down to assemble parts.

which helps realize a more comfortable work environment.

## Precision engine assembly line

The new engine production line comprises a basic line and a final line.

The basic line makes extensive use of assembly robots to embed the crank shaft, piston and various internal engine parts like the connecting rod onto the engine

block and to attach valve and injection parts to the cylinder head.

On the final line, exterior components are attached as the vehicle approaches the finished product. At this time, an Automated Guided Vehicle (AGV) is used to lift the heavy engine up and down and rotate it in order to enable easier component attachment, which boosts productivity.

## A cutting-edge production system

Our policy is to establish world-class quality in which we guarantee the same high level of quality and durability in our trucks no matter where they are produced worldwide.

Using a cutting-edge production system for the next era through the integration of outstanding quality built up over decades.

# Going the extra mile in testing

## In pursuit of sophisticated next-generation products

Trucks play a key role in logistics for both society and industry and must therefore guarantee safe and secure transportation at all times.

UD Trucks puts its vehicles through a series of grueling tests that cover all types of road surfaces and weather conditions to make sure they fulfill this social mission. By literally going the extra mile in testing, this ensures that the engines and trucks developed and produced attain an unparalleled level of sophistication, not

just in terms of fuel efficiency but also durability and reliability.

### Test course linked to development and production

UD Trucks uses mainly two test courses. The first is located within the premises of the Ageo Plant. This site is mainly used to test drivelines including engine and chassis components that are still in the research and development stage as well as prototype vehicles. The plant is equipped with an HDT chassis dynamo and EMC test facility (EMC: Electric

Magnetic Compatibility), enabling test results to be integrated in the development. Having a test course inside the plant makes it easier to conduct random inspections of vehicles that have been produced there as well.



Watch Quon quality testing in action

### Real-world test

After being put through their paces on the test tracks, trucks are taken out for intensive testing in rough conditions in various countries. This allows the trucks to be tested in the harshest of conditions – harsher than those encountered in their normal use with customers. UD engineers and experts clock up millions of kilometers on rugged roads and in extreme weather conditions – in the deserts of Middle East or the arctic conditions of Scandinavia – to accumulate knowledge on aging and points of fragility. The feedback from these tests is crucial to the engineering and manufacturing teams; testing continues until every last weakness has been eliminated. It is only at the

end of this relentless process that a new truck is deemed ultra dependable and worthy of the UD name.

### Customer tests in overseas markets

To be absolutely sure that a new model really does operate as it should, UD goes the extra mile by cross monitoring on initial production trucks with sometimes data gathering to be used in their normal daily operations and/or regular visit to customers. Held mostly in extremely tough conditions, or in intensive operations, these real-world tests, thanks to thorough feedback from UD customers, help to validate certain technical choices and fine-tune any remaining issues.



Engine bench setup is used for testing and evaluating next-generation engines with a focus on reducing exhaust gas, enhancing fuel efficiency and boosting quality



Agthia Group, a leading food and beverage company in the Middle East, tested Croner under high temperatures



Vital Distribution Solution from South Africa tested Croner. They run a fleet of approximately 500 vehicles, delivering throughout South Africa and also across the borders



All New Quon's Cabin and chassis durability was tested using accurate simulations of very tough road surfaces



Braking tests on All New Quon on icy surfaces



All New Quon's performance tests on snow- and ice-covered roads



## UD Headquarters

Inaugurated in 2015, the new headquarters for UD Trucks in Ageo is more than just an impressive looking building. We like to think it's a physical embodiment of the spirit of the company.



### Smart and modern

With its sleek elegant exterior, the new headquarters appears functional, reliable and solid. The architects have integrated subtle touches to celebrate the brand and the trucking industry.

If you look carefully, you'll notice the southeast corner of the façade subtly mimics the front grill of a truck. While inside the lobby, a flying arc and red decor echo features of the UD brand identity.

The vast high-ceilinged lobby is literally big enough to drive a truck into; customers are brought nose to grille with our latest models as soon as they enter.



### UD Gemba Spirit

UD Trucks is a great believer in *gemba*, a Japanese word describing the place where action happens and value is created. The UD Gemba Spirit is important for UD as a work ethic, and it's important in our new HQ. The architectural features are designed to help us realize that.

In this new 10-story building, the office areas are situated in large open spaces from the third floor and up. Each UD department can design their own layout and change it easily when the need arises. This flexibility allows each department to maximize the flow of personnel and information according to their needs. Meeting and communication spaces are included on every floor. In just a few steps staff can connect with colleagues inside the building or with customers around the world. There is also an indoor gym on the first floor, where everyone can exercise to get an energy boost and keep a sharp mind.

One striking architectural feature

is the space created by the staggered stairwells, which form a unifying visual connection between the different departments.

### Excel on the essentials

Our motto when building a truck is to "Excel on the essentials" – and that applies to every activity in UD, including the design of our HQ.

The lighting system allows flexible changes of office layout and uses energy efficient fittings. The glass façade is specially designed to reflect heat from the sun; ensuring a bright working environment but reduced air-conditioning costs.

State-of-the-art earthquake isolation systems are in place - it is essential that our building still stands and our trucks still run in a crisis, and our headquarters is designed to make sure that can happen.

In everything we do, we believe in "Going the Extra Mile": the design of our new HQ celebrates our heritage and demonstrates our commitment to a bright, sustainable future.

## UD Experience Center

On the site of the UD Headquarters, with the test track looping around it, the two-floored UD Experience Center (UDEC) and its friendly staff welcome visitors from around the world. An imposing fleet of full-range UD trucks lined up outside the center awaits anyone with a driving license looking for a first-hand truck driving experience. Once inside, the visitor is taken on a journey back through the long and rich history of UD Trucks. At every stop there is something to savor, a close-up of the legendary 6TW, an insight into the ESCOT gearbox design, or an introduction to Quon Vision – the concept truck featured at the 2015 Tokyo Motor Show and the embodiment of UD Trucks' "Smart Logistics". On the spacious

second floor, UD shares its industry knowledge and skills with visitors: getting the most out of their truck, how to improve business operations or even address logistics issues.

The Experience Center is on the same site as the UD Ageo Plant, with a factory tour included in the visit program.

UDEC was opened to the public in 2015, as part of the celebrations of the company's 80th anniversary. There had been an Experience Center from April 2013 onwards and this proved to be so popular that UD Trucks decided to upgrade it and house it in its own purpose-built facility. In its new 3,300 square meter space – five times larger than its first setting – the new UDEC rivals modern-day

museums in terms of visitor experience and user friendliness.

Aside from customer tours, UDEC plays an important internal training role that ensures the company's more than 80-year plus history as well as the latest product and service offerings are familiar to new UD generations, what is immediately clear is how much staff take pride in the company's pioneering heritage. By combining a clear understanding of where the company has come from with the latest in modern technology and know-how, new members of staff are all set to continue UD's great tradition and aim of "Providing the trucks and services that the world needs today."

The UD Experience Center looks forward to welcoming you!



# Gemba Challenge

Competing to serve customers at the highest level

## What is the UD Gemba Challenge?

At UD Trucks, the Gemba Spirit is not only a word; it's a daily philosophy at the service of each customer. And since 2014, it's also the focus of an international competition in which UD after-sales teams from all around the world challenge their knowledge, skills and talents, as well as their ability to satisfy their customers in the timeliest manner. The UD Gemba Challenge is also compelling proof of the involvement and professional, passionate and dependable spirit of the people at UD Trucks.

Several hundred of UD after-market teams worldwide first take part in their local selection, and the best teams are united for the final phase held at the UD Experience Center, located in the UD manufacturing plant in Ageo, Japan. The finalists then face a set of tough challenges, covering fields as varied as diagnosis, electrical, engine, driveline, brakes, and commercial.

The competition does not only focus on know-how around the truck, but also on how to better

service the customer. The commercial task in the competition tests just that. Teams try to understand a request from a customer, who very often not being a mechanic himself, has difficulties in explaining his problem.

Since the first edition, the Gemba Challenge has had a positive impact in UD workshops around the world. "Gemba Challenge is one of my everyday motivations to better myself," said Shinichiro Fukuda, member of the 2014 and 2016 runner-up team.

The training manager from the 2014 champion team BB Trucks & Tractor Polokwane, who was also a contestant in the 2016 edition, put it well, "As the person responsible for training for South Africa, I can really see the utility of this kind of competition, and it makes a big difference to the mechanics who have the opportunity to take part."

This biennial competition encourages best practices and rewards outstanding, rapid, problem-solving skills. Because this is what our customers expect every day!



## GEMBA CHALLENGE



"We decided to join the competition to make sure that our company is following UD principles; we wanted to compare our way and knowhow with other UD teams from different countries."

**Beruang Madu (Indonesia)**



"The gemba for us means the improvement of service quality, as gemba is where we are in contact with customers. And when we achieve quality of service, we grow ourselves."

**Dream (Japan)**



"This is a great opportunity to be able to show our professionalism as well as to learn new things from other teams."

**Quizee Rascals (Singapore)**



"We work well as a team, trained hard as a team. We are great communicators and that is why we are here today."

**Kyle Buys (South Africa)**



"Good communication cultivated through our daily work helps us compete in this challenge. We'd like to compete in this competition again, but it's also important to turn the challenge over to junior colleagues and let them continue the legacy, and in so doing, raise the level of the entire workshop."

**Kurume (Japan)**



# UD Extra Mile Challenge

UD Trucks' global driving competition for UD customers

UD Extra Mile Challenge consists of 3 parts

**Training:**

- Driver training and trial rounds

**Competition:**

- Pre-drive inspections
- Fuel efficient and safe driving
- Parking and maneuvering skills

**Results:**

- Scores in transport cost calculation - highest profit wins

Like any good competition, the UD Extra Mile Challenge spurs competitors to do their best yet. What is unusual about this particular challenge is that, by design, it echoes real-world situations. Through a series of challenges, drivers face the same issues they tackle on a daily basis (namely how to respond to the constant demands of supply chains while optimizing their company's resources).

**A real-world competition**

The competition starts with a sense of familiarity, as if the driver were setting out on a regular workday morning, only there is more adrenaline this time. As they walk to their trucks to do their pre-drive checks, they know that this day is different – this time they are competing against fellow truckers from around the world. So far, customers from Australia, South Africa, Malaysia, Indonesia, Thailand and Japan have brought their champion drivers to pit their strengths in challenges focused on pre-drive inspection checks, driving skills, as well as delivery and fuel consumption optimization.

At the UD Experience Center test track – on the site of the UD head-

quarters and the Ageo Plant - the ultimate championship title awaits.

To compete in this grand final, the contestants need to keep their minds crisp. "The contest was quite like my daily driving back in Thailand, only here I'm more excited than usual," Chukiat Klinthavorn, a Quester driver from Banchakij Co., Ltd, Thailand said. The seasoned truck driver executed his round with calm, and took home the Best Fuel Efficient Driving title in the 2016 Edition.

**Going the extra mile for customer support**

The Extra Mile Challenge is not only a great opportunity to celebrate and reward the talented drivers and

team leaders; it's also a global platform to exchange experiences with international counterparts and to rub shoulders with the experts at UD. Besides the heated competition, there are also different side activities planned for the finalists and guests so they can make the most out of their trip to the very home of UD Trucks.

Beguiled by the brand promise "Going the Extra Mile", the Extra Mile Challenge is another way for UD Trucks to further its aftermarket support. As the name of the challenge states, it aims to encourage customers who operate daily with UD trucks to go the extra mile. "Truckers need this sort of competition to keep their skills sharp. I've become more aware of being a professional in terms of the skills required. I'm resolved to be more serious about driver training on my return," said Peter Sprague, who teamed up with his father to win the very first Extra Mile Challenge in 2014.

**Going the extra mile despite the pandemic**

When the COVID pandemic spread across the world in 2020, The Global Final in Tokyo could not take place, but it was important for all people at UD to pursue the celebration of the UD trucks drivers worldwide, who had once more proven so critical in supporting our lives during this difficult period. So instead, the winners of the local country competitions gathered online. The virtual celebration carried a profound meaning to our UD trucks community. Every national champion was crowned the Ultimate Drivers title – a worthy designation to them and their teams, and an important expression of our gratefulness to all drivers that continue to go the extra mile in challenging times.

The UD Extra Mile Challenge returns in 2022, with 12 countries carrying out national competitions. We will meet in Tokyo again!



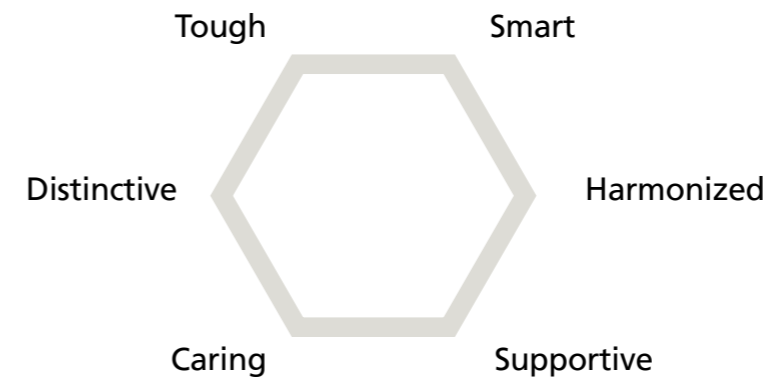
# UD Design Room



### The Hexagon concept: "Dependable Tools with Soul"

The shape of Hexagon which is from our first Cab-over truck is applied to the front face of vehicles as our design identity. The hexagon represents an aspect of UD Trucks' product design philosophy, "Dependable Tools with Soul."

The six corners express the ideas of Tough, Smart, Distinctive, Harmonized, Caring and Supportive, which embody the areas that UD Trucks focuses on in the design of its vehicles.



1960 TC80G

Designing a truck is all about bringing shape to functions demanded by the market. Our design team is dedicated to bringing trucks to market based on all-new design concepts.

Besides the pursuit of aero-

dynamics for the cab to boost fuel efficiency, the cockpit is designed to enable exceptional operability through ergonomics while energy is poured into maximizing comfort and safety such as by enhancing visibility.

We pay close attention to diverse customer opinions gathered by our staff in the frontline and devise ingenious ways to meet their needs and deliver trucks that are appreciated by people around the world.





# Quester

Quester's design is based on the concept "Dependable tools with soul."

The bold design features a strong masculine exterior inspired by today's modern skyscrapers and the dynamic, powerful image they project.

Although UD unveiled Quester in 2013, the roots of the design remained the same: It adhered fundamentally to UD Trucks' inherited "hexagon concept," expressed in the front grill. The characteristic shape of the headlamps is another bold design feature, which makes Quester stand out on the road.

The interior is light and spacious with enough room for storage while also offering walk-through capability. The full sleeper-cab version is the most spacious standard cabin any Japanese maker has ever made. Ergonomic seats and the dashboard combine with other features to bring the ultimate in comfort and to support the most efficient driving possible.



In the medium-duty segment, the brand new Croner embodies the same philosophy as the heavy-duty Quester. The front displays a strong presence, projecting power and robustness. The characterful headlights amplify these traits, together with the typical hexagonal grille.

Inside, comfort has been the focus of the designers and engineers, with great visibility, excellent ergonomics, comfortable seats and amenities, and an optional single bunk for long-haul operations. Like other UD trucks, Croner has been designed for the driver, with logical and intuitive controls to help concentration and safety on the road.

# Croner





# ALL NEW *Quon*

The latest Quon brings to the fore the new design language inaugurated with the groundbreaking Quester. UD's flagship truck displays power, sleekness and beauty, while embodying the ideas of harmony with society and environmental friendliness suggested by its name in Japanese – "eternal flow of time".

The striking face is enlightened by the sleek new headlamps and the superb integration of the characteristic hexagonal grille. The exterior is built on the idea of "smart and powerful" with a focus on maximum aerodynamic performance and fuel efficiency, while subtle attention to details express the harmony and confidence of a masterful truck.

Aiming to be exceptionally smart and comfortable, the interior has been redesigned with an emphasis on putting people first, focusing on comfort and ease-of-use. The new 4-spoke steering wheel is ergonomically designed for a better grip, and provides conveniently placed switches for easy access to various functions and information. The fully redesigned surrounding cockpit provides excellent operability.

With its exterior and interior matching its mechanical prowess, the brand new UD flagship effortlessly carries the renowned Quon heritage and summons the essence of UD values.





A man and a woman are running on a paved road. The man is on the left, wearing an orange tank top and black shorts. The woman is on the right, wearing a blue tank top and black leggings. They are running towards the camera. In the background, there are mountains and a yellow and black striped guardrail. A truck is partially visible on the right side of the road.

# Running the Extra Mile Together

UD Trucks is already racing its way to the future. And collaboration is one of the keys to this success. We work together with our customers to bring you that next vehicle—the one that is beyond all others and that is sure to get you where your business needs to go.