

Case story

Efes Pilsen improves efficiency and sustainability with VLT® OneGearDrive®

Efes Pilsen is a brand of Anadolu Efes, one of the large players in the beverage industry, with ambitious targets in operational efficiency and sustainability. Efes Pilsen breweries in Turkey have achieved energy savings of up to 63% after upgrading their conveyor lines. They replaced old gear motors with Danfoss VLT® FlexConcept®, which incorporates VLT® OneGearDrive®. The payback time of the investment is only 10 months.

Anadolu Efes aims to reduce its carbon footprint through smarter use of energy resources in all operations. To achieve this goal, Danfoss Drives Turkey has supported Anadolu Efes with the introduction of the VLT® FlexConcept®, a flexible, highly-efficient conveyor drive system, incorporating the VLT® OneGearDrive®.

So far, 26 VLT® OneGearDrive® units are installed in four Efes Pilsen plants in Turkey: Ankara, Istanbul, Izmir, Adana.

This story will focus on the upgrades at the Ankara and Adana plants. And even more projects are on the drawing board, as Anadolu Efes and Danfoss Drives work together towards creating a better tomorrow driven by drives.



**Up to
63%**

energy savings on
conveyor lines

Savings in energy and maintenance costs at the Ankara plant

At the Efes Pilsen Ankara plant, 16 old gear motors running bottling lines were replaced by VLT® OneGearDrive® units. Featuring a permanent magnet (PM) motor, which is a 3-phase synchronous non-salient motor, the VLT® OneGearDrive® achieves up to 89% efficiency. This efficiency rating exceeds the IE4 Super Premium Efficiency class. It operates at high torque, and it features a compact motor frame size.

Measurements made on the conveyor line before the retrofit project convinced Erdil Tengiz and Fehmi Can, Electrical Maintenance Engineers at Efes Pilsen Ankara, of the efficiency of the VLT® OneGearDrive®. "We made comparative measurements between the existing system and the

Danfoss VLT® OneGearDrive® on the same conveyor, in the same position and with the same loads. In the existing system, the measured current was 1.6 amps, and with the VLT® OneGearDrive® 0.6 amps. This leads to energy savings of 63%. It was easy for us to make up our minds. Once installed, the VLT® OneGearDrive® now helps us to meet our target of smarter use of energy resources," they explain.

Thanks to retrofitting, the need for maintenance and the number of drive variants needed in stock as spare parts is reduced. "Reduced maintenance and operating costs, and fewer production losses improve our overall efficiency. The VLT® OneGearDrive® also takes up less space than the old gear motors and gear boxes," Erdil Tengiz and Fehmi Can say. "We have not experienced any problems. We are already planning future installations," they conclude.

No more motor corrosion on the bottle-washing line

Corrosion is the enemy of gear motors. Corrosion increases maintenance needs leading to production losses. This is what happened at the Efes Pilsen Adana plant, where the gear motor on a washing line of empty bottles needed replacing every single year. After retrofitting the line with one VLT® OneGearDrive® unit, featuring a high protection rating of IP69K, maintenance needs and costs have decreased dramatically.

"The VLT® OneGearDrive® improves our operational efficiency, flexibility, and work safety. We have achieved 60% energy savings compared to the old system, which is impressive and provides us with competitive edge. The hygienic design of the unit helps maintain the high quality of our products", says Yuksel Koşar, Electrical Maintenance Foreman at Efes Pilsen Adana plant.

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Upper picture: After the upgrade of Efes Pilsen Adana plant, the VLT® OneGearDrive® runs this bottle-washing line.

Lower picture: Before the upgrade of the Efes Pilsen Adana plant, this gear motor caused production losses on the bottle-washing line. It needed replacement every year due to corrosion.

Benefits in a nutshell

1. Huge energy savings.
2. Short payback time of 10 months.
3. Long service life.
The VLT® OneGearDrive® decreases maintenance needs, costs, and production losses. Oil change of the gear box is required only once every 35,000 operating hours. That is approximately once every 7 years.
4. Reduced inventory costs.
The VLT® OneGearDrive® and the VLT® FlexConcept® enable maximum flexibility with a minimum number of unit variations such as motors, gear unit sizes or AC drives. VLT® FlexConcept® enables up to 70% reduction in variants.
5. Watertight construction.
The VLT® OneGearDrive® can be cleaned down quickly and easily, so the brewery saves time, and costs of water and detergents.
6. EHEDG certification.
With its high compliance level, the VLT® OneGearDrive® is eminently suitable for installation in Europe and in the USA.

- The VLT® OneGearDrive® complies with the rules of the European Hygienic Engineering & Design Group (EHEDG). EHEDG dictates strict specifications and guidelines for the comprehensive, proactive protection of food from contamination with bacteria, fungi, and yeasts during processing.
- The VLT® OneGearDrive® also complies with the rules of the Food and Drug Administration (FDA or USFDA), a federal agency of the United States Department of Health and Human Services.

Erdil Tengiz and Fehmi Can, Electrical Maintenance Engineers at Efes Pilsen Ankara: "It was easy for us to make up our minds. Once installed, the VLT® OneGearDrive® now helps us to meet our target of smarter use of energy resources."

ANADOLU EFES

About Anadolu Efes

Founded in Turkey in 1969, Anadolu Efes produces and markets beer, malt and non-alcoholic beverages to over 70 countries over a wide geographical area including Turkey, Russia, the Commonwealth of Independent States (CIS), Europe, Central Asia, and the Middle East.

Anadolu Efes has been the Turkish market leader since the 1980s and operates globally, exporting 75% of its production. In terms of sales volume, it is the 6th largest brewer in Europe, and the 11th largest in the world. Anadolu Efes is one of the key players in its region, with a total of 15 breweries, six malt production facilities and one hops processing facility. Its operations extend across Turkey, Kazakhstan, Russia, Moldova, Georgia, and Ukraine.

About VLT® FlexConcept® and VLT® OneGearDrive®

VLT® FlexConcept® is a flexible, highly-efficient conveyor drive system comprising a combination of VLT® OneGearDrive® and VLT® AutomationDrive, or VLT® Decentral Drive FCD 302. In the Ankara and Adana plants the VLT® OneGearDrive® is combined with VLT® AutomationDrive. Using VLT® FlexConcept, you can significantly reduce the number of drive variants on a line, resulting in greatly reduced inventory and operating costs. You can also easily and reliably combine components with existing solutions from other manufacturers, for both centralized and decentralized systems.

The open system architecture of the VLT® FlexConcept® means that standard, geared, and permanent magnet (PM) motors can all

be controlled and operated at high efficiency by VLT® drives. For your retrofit application that means that all VLT® FlexConcept components are compatible with existing industry standard system components, including PM motors.

VLT® OneGearDrive® comprises a high-efficiency PM motor coupled to an optimized bevel gearbox. Combined with the VLT® AutomationDrive FC 302 or the VLT® Decentral Drive FCD 302, the VLT® OneGearDrive® is equally suited to central and decentral installations, giving the plant designer complete flexibility from the outset.

In development of the VLT® OneGearDrive®, Danfoss has utilized years of experience in process and

mechanical engineering, as well as knowledge in microbiology, to create a competitive, cost-efficient solution that can easily be integrated into any production set-up.

The VLT® OneGearDrive® has no fan, which means less noise. No airborne germs and dirt particles are drawn into the motor and then expelled back into the surrounding air.

VLT® OneGearDrive® is ideal for food and beverage industries, as it complies with the high hygienic standards required. It can be mounted directly on the conveyor shaft, which is an advantage in retrofitting projects.



Danfoss Drives

Danfoss Drives is a world leader in variable speed control of electric motors. We aim to prove to you that a better tomorrow is driven by drives. It is as simple and as ambitious as that.

We offer you unparalleled competitive edge through quality, application-optimized products targeting your needs – and a comprehensive range of product lifecycle services.

You can rely on us to share your goals. Striving for the best possible performance in your applications is our focus. We achieve this by providing the innovative products and application know-how required to optimize efficiency, enhance usability, and reduce complexity.

From supplying individual drive components to planning and delivering complete drive systems; our experts are ready to support you all the way.

We draw on decades of experience within industries that include:

- Chemical
- Cranes and Hoists
- Food and Beverage
- HVAC
- Lifts and Escalators
- Marine and Offshore
- Material Handling
- Mining and Minerals
- Oil and Gas
- Packaging
- Pulp and Paper
- Refrigeration
- Water and Wastewater
- Wind

You will find it easy to do business with us. Online, and locally in more than 50 countries, our experts are never far away, reacting fast when you need them.

Since 1968, we have been pioneers in the drives business. In 2014, Vacon and Danfoss merged, forming one of the largest companies in the industry. Our AC drives can adapt to any motor technology and we supply products in a power range from 0.18 kW to 5.3 MW.