

## THE STORY BEHIND

We delve into Norway's implement manufacturers

### Optimism at Duun in Trøndelag

# From the village forge to high tech manufacturer

The year was 1952. 29-year-old Even Duun moved to the agricultural village of Åsen to become a partner in the small blacksmith's workshop. A few years later, most of it was about tractor. Many ideas of Duun became known over the whole country. Today, the family continues to build a high-tech company.

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Most people with an interest in Norwegian tractor history nod in recognition to the driver protection Duun protective arch, with its characteristic and stylish shape. The driver's protection became a very original product from Duun. But there is much more to the story. At the 50th anniversary in 2006, Even Duun (1923-2014) stated that "The development in society, and the smithy in step with it, has simply been almost improbable".

Repeated changes and different product directions were characteristic of Duun's development for a long time. In our own millennium, the company has followed a pure and consistent line, namely the production of self-developed implements and machines for tractors, under its own brand name. At the turn of the millennium, the foundation was proclaimed as the "hillside building of the century". The inhabitants of Åsen undoubtedly greatly appreciated the importance of Duun to the village. Today the company has 55 employees and manufactures 35 products. The slogan may be a bit unusual: "We do ordinary things extraordinarily well".



**A safe haven:** Duun-Smia held in these premises for twelve years. This is where the Duun protective arch was born.

- After almost 40 years in the company, my thoughts are primarily about the human factor. The fact that many employees with different backgrounds and different talents achieved something together. Together we stood and worked to create something, in both, good and less good times. That is what has made the deepest impression on me, co-owner and retired general manager, John Erik Duun, tells to the Traktor. He experienced several rounds of drama during the decades while was responsible for leading the company.

#### Smed is looking for a business partner

The founder, Even Duun, was actually a noble boy on the Øver-Dun farm on Jøa in Namdalen. Today, the farm is a public attraction, because the famous writer Olav Duun, Even's uncle, also grew up there. Even graduated from the Mære

Agricultural School, which had a tool workshop that seemed inspiring. With his abilities and aptitude for the technical, he was very enthusiastic to continue on this path. From 1950 he took a job as a workshop worker at Bergs Maskin in Trondheim, later better known as Landteknikk and Skala Fabrikk. The following year, blacksmith Emil Holte, the owner of Holtesmia in Åsen, announced a new partner. Even decided to strike. Holte and Duun came to an agreement, and in 1952 the duo established the company Hodu Verksted. Everything from steering sleds to barn equipment were made there.

Duun was interested in the mechanization of agricultural ditches. Already in 1950, he had constructed a ditching machine on the home farm in Namdalen. In 1954 he built a far more advanced machine.

<b>1956</b> Duun-Smia is founded on 18 April	<b>1957</b> Semi-automatic potato harvester	<b>1960</b> Closed cabin prototype	<b>1962</b> Simple driver protection	<b>1964</b> The Duun protective arch in production	<b>1969</b> New factory opened
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**Versatile:** Duun's product range is divided into several market areas. The company is the country's only manufacturer of mulchers for agricultural tractors.

This time a tractor-driven chain digger with hydraulic drive. Part of the digger was taken from the rear axle of an American Twin City tractor from the 1920s, which he bought from a farmer in the village. Building this marvel of a ditching machine was quite a complicated piece of work, but it worked well. A public demonstration caused both, attention and great excitement. Then, he took up ditching contracts in the region, which in 1955 resulted in sales of a total of NOK 75,000. Duun's machine gained a reputation as the best in Norway. He took over Holte's share in the smithy, and the following year the company was renamed Duun-Smia. In the late autumn of 1956, he bought the community hall Tryggvang in Åsen, where the German occupying power had run a cannon workshop during the war. The conditions were in place to develop the company further.

**Duun-Smia takes shape and grows**

His wife Lilly, who was a dairy farmer by profession, joined the business to manage the administration. In this way, the couple built the company together, and continued like that for three decades.

Even embarked on more product development for agriculture, for example potato planters and concentrated fodder trolleys. In the autumn of 1957, he demonstrated a new semi-automatic potato harvester. In the same year, he also built a monster of a self-propelled ditching machine, which weighed ten tons. Among other things, it was used in large ditch projects on Ørlandet. Duun-Smia was still a small workshop, that was available for repairs and other things. The founder took up something that really occupied him, precisely the protection for tractor drivers.

In 1960, he launched a rollover-proof driver's cabin. The cabin was completely enclosed and, according to the designer, adapted to all types of tractors. It was padded on the inside and equipped with details such as turn signals, windscreen wipers, side mirrors and work light holders. Maybe it was released too soon, it never worked out for series production. In 1962, he developed a much simpler driver's protection, which also did not work out. However, the experience still came in very handy when the Norwegian authorities finally made it mandatory for

new tractors to protect the driver from overturning.



**Built the company:** Lilly (1914-2000) and Even Duun(1923-2014) carried the load together.

**The protective arch becomes a huge success**

The order entered into force on September 1, 1964. By that time, Duun had developed what was to become the small company's first major success product, called the Duun protective arch, which led to approval by the Agricultural Technology Institute at Ås.

<b>1974</b> Car trailers in solid steel	<b>1975</b> Truck cabin	<b>1976</b> Duun Cabin	<b>1978</b> 40 employees	<b>1979</b> Production area doubled	<b>1981</b> Duun Cabin terminate
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**Good results:** Even Duun (right) together with his friend Olav R. Fiskvik. Both were delighted that the protective arch was a success.



**Winter-ready:** Fully enclosed Duun protective arch for BM 400 Buster. This tractor model became important in the 1960s.

A central part of this development era was the work to build production equipment that could make production as efficient as possible. Even constructed a hydraulic pipe bending machine, a 250-ton workshop press and an automatic

painting system. Duun protective arch was initially approved for the Volvo Krabat/BM 425 Terrier, BM Volvo 320 Buster and no less than the newly released Buster 400. Later, it was approved for several other tractor

models. In addition to BM Volvo, the protective arch ended up at McCormick (IH) and David Brown. Later, the importers of John Deere and Zetor also came, who became large and important customers. Delivery to Ford was more sporadic. Duun protective arch could be delivered open, semi-covered and completely uncovered. In 1968, Duun-Smia had over 20 employees. Eight Norwegian companies were involved in the production of driver protection, but Duun, by far, was the largest with a total of 15,000 units.



**Ditch machine from 1954:** Duun's efficient ditching services provided income to further develop the forge.

### Builds a modern factory

The development was good, but the old community centre was not suitable for modern industrial production. In the years of 1968/69, Duun built a new and modern factory in the centre of the village, right next to Nordlandsbanen railroad and the E6. At the time of the opening, the company had 2,400 square meters of space under the roof. A siding allowed loading and also unloading from goods wagons directly from a ramp outside the factory wall. Ten years later, the facility was expanded to an area of 5,500 square meters.

Duun protective arch was the main product, but the company launched more products also. In 1970, the Duun D500 industrial cabin with sliding doors was introduced, which was used on construction tractors, backhoe loaders and forestry tractors with half tracks. All-steel car trailers were also developed, launched in the mid-Norwegian market in 1974. Within a few years, Duun became the market leader in its own part of the country and also was the largest trailer manufacturer north of Mjøsa. The trailer era ended in 1989. The quality of Duun's vehicle trailers has subsequently been branded as legendary.

<b>1983</b> Generational change, John Eri Duun takes over the management	<b>1983</b> Duun-Smia becomes a limited liability company	<b>1984</b> Tractor scraper blade and insulated fertilizer gate	<b>1985</b> Cabins and other items for Moxy	<b>1986</b> First welding robot	<b>1991</b> Rod slurry pumps for tractor operation
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**Driver protection:** The earliest version of the Duun protective arch could be supplied with a fabric roof. Note the winter draft on the engine, which directed hot air backwards.

During the 1970s, a development came where many tractor models were delivered with original comfort cabins or with driver's cabins from, among others, Danish Sekura. Duun refined its protective arch by launching a closed Duun Cabin, adapted to John Deere, International and Zetor. Supply contracts with Norwegian distributors lasted from 1976 until 1981, but then they also definitely ended. Duun Cabin had played its role. In the 1970s, there were less protection for the tractor driver, which was partly compensated by the development of forklift cabs.

Agreements were successively concluded with the importers of Toyota, TCM, Mitsubishi and Linde. The most curious part of this story was stainless steel cabins, especially intended for corrosive conditions in the fishing industry. Crane cabins were also produced for several years.

#### Tractor scraper blade and fertilizer gate



**With sliding doors:** Duun D500 for construction and forest.

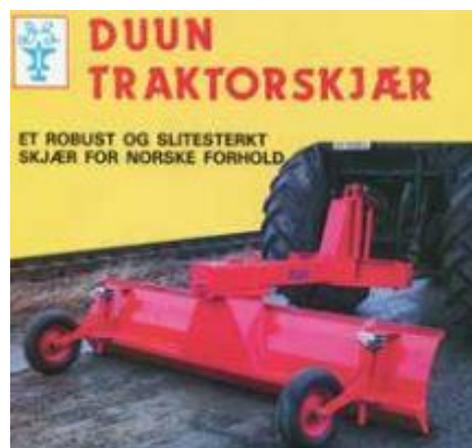


**Finished in series:** Duun Cabin was produced for John Deere, International and Zetor.

In 1983, the founder passed the helm to the next generation. The sons John Erik (b.1951) became general manager, and Roald (b.1952) took over the position as technical manager. The company initiated intensive product development in completely new areas. The first result was a rear scraper blade for tractors and an insulated steel gate for slurry storage, both products introduced in 1984. Felleskjøpet was the distributor. The scraper blade was the start of the products range that Duun has today. The scraper blade was exceptional because it was produced in high-strength steel and had a design that satisfied new and more critical user requirements. Both, the scraper and the gate hit the market well. The scraper blades were also exported in significant quantities to Sweden, and

after a short time Duun was the largest scraper blades company in the Nordics. The connection with the truck importers resulted in the development of the liftable Contrail container wagon, but the rights to this were sold.

In 1985 the company signed a gold-plated contract with the Moxy factory in Romsdal, making Duun the company's sole supplier of cabs for articulated haulers. Until then, Moxy had manufactured the cabins themselves. The agreement became very important in the latter half of the 1980s, until the major customer was declared bankrupt in October 1990. The incident was dramatic for Duun as a subcontractor, because up to 40 percent of the turnover was attributed to the Moxy.



**Revolution:** Duun scraper blade represented new times, both for the user and the company.

<b>1998</b> Duun Industrier AS	<b>2000</b> 60 employees	<b>2002</b> First snow blower	<b>2003</b> The first two-stage snow blower	<b>2005</b> Firewood processor VM 100 and sand spreader	<b>2009</b> Firewood processors VM420 and VM360
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**By Nordlandsbanen:** This year marks 50 years since Duun-Smia moved to its current home by the railway and E6 in Åsen. The plot of land was a meadow that belonged to the farm Vedul Søndre.

**Launches slurry pumps**

The number of orders for Moxy never returned to the old heights of the late 1980s. The bankruptcy experience with the customer made Duun make an effort to expand the portfolio with its own products. In 1991, the first tractor-driven inclined pump for natural fertilizers appeared. This product was also adapted to a new user requirements for greater capacity. Within a short time, Duun's slurry pumps, sold by Felleskjøpet (FK), took about half of the Norwegian market!

In 1997, FK entered into a partnership agreement with DeLaval, where the Swedes demanded exclusivity for their own slurry pumps. The event was dramatic for Duun. A-K machines competed with FK to win the contract with DeLaval. Duun turned to A-K machines to find a new distributor for the fertilizer program. To Duun's relief, it turned out that A-K would be happy to sell the Duun slurry pumps that retained their market share.



*Sole sourcing: Duun manufactured cabs for Moxy in the period 1985-2002.*

Duun had stopped trailer production the year before. The dumper factory was revived with a new owner during 1991,

and Duun returned as a subcontractor for cabs and other components for Moxy.

<p><b>2011</b> Record turnover: 84.7 million Norwegian kroner</p>	<p><b>2013</b> Pallet-based welding robotics</p>	<p><b>2016</b> Launches mulchers</p>	<p><b>2016</b> Karl Martin Eggen takes over the management</p>	<p><b>2019</b> Compact two-stage snow blower TFP240, slurry pump SP200 EL and a full range of mulchers</p>
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**Betting on firewood:** The company currently offers the widest range of Norwegian-made firewood processors.

The agreement was the beginning of what has become a long-term and fruitful collaboration with A-K.

- We had attractive products, which fortunately meant that we got a quick solution to the crisis. We are dependent on the market access that the largest retailers can offer, explains John Erik Duun, who is also convinced that further growth must come through greater export sales.

In the late 1990s, Duun was involved in the development of a completely new generation of Moxy dump trucks. In 2002, Moxy decided to abandon the production of cabs, so Duun's participation in the dump truck factory ended. In 1998, the owner family chose to reorganize values and activities in several limited companies. The employees of Duun-Smia AS were employed by Duun Industrier AS, which has since been the main company.

#### Continue to focus on own products

There were several reasons why the company was willing to enter new product areas. One of the most important was the connection to A-K, which was interested in a wider



**Most important product area:** Two-stage snow blowers weigh heavily at Duun. This year, the company has released a "city snow blower"; the compact TFP240.

collaboration. The results came like pearls on a string. In 2002, Duun launched its very first snow blower, first V-type snow blower and then two-stage snow blower. The ball kept rolling. In 2005, the company came up with the hydraulic firewood processor VM100, which was the start of a wide range of firewood processors. The sand spreader for the road market was also put into production this year. The main directions of Duun's new strategy were determined. The rest was involved in active further development and adaptation of the market, constantly fighting for market shares.

- We want to balance our activities not to become too dependent on snowy winter seasons in the domestic market. For example, we have good faith in the possibilities in firewood processors, where we currently export firewood processors to Sweden, Germany, Great

Britain and Ireland. At Lantmännen in Sweden, we are the number one brand of snow blowers, and in the long term we will sell even more to the neighboring country. The objective is that we will gradually increase the export share, from 15 percent in 2018, to a much higher share in the long term. To become stronger, we will focus on giving the products better properties, adapted to the users' future needs, says general manager Karl Martin Eggen, who is optimistic on behalf of Duun's possibilities for the future. The company has several products that will be kept secret until further notice.

Due to the demand for efficient production in high-cost Norway, Duun has boldly invested in a high-tech production facility. A new robotic welding facility was inaugurated in 2013, allowing the welding department to operate continuously. The facility is pallet-based, with laser-cut steel components erected in a welding jig on a pallet. Rigging is done during the day and the rest of the operation, pallet handling, and welding is automated via 11-axis robots. When staff arrives the next day, the machine bodies are welded on the pallet, ready for the next stage of production. The facility's project manager, Rolf Even Duun (b. 1981), who is the grandson of Even Duun and technical manager.

- Automation is something we have made significant progress on. Moreover, we are proud to use a fully circular powder coating system with zero emissions, says Eggen, acknowledging the importance of environmental sustainability.



**Slurry pumps:** Duun came late, but good. Since their introduction in 1991, Duun pumps have been the market leader in Norway.

### **More summer products**

In 2016, Duun gained attention for being the first and only Norwegian manufacturer to release a self-developed mulcher. Most of the brands on the market are manufactured in Italy.

-Our mulchers intervene in the most demanding part of the market, both for farms and for contractors. Some of our reference users have already implemented Duun mulchers for professional scraper blades and firewood processors. These users have given us

very good feedback, says CEO Karl Martin Eggen, who emphasizes that the entire range is available only from 2019, after several years of product development.