AKRON

Solutions for grain handling

Highest quality equals best results

Having delivered systems for grain handling during more than fifty years have taught us one very important truth: no two installations are identical. Every farmer's situation is unique. This means that every installation needs to be designed and built according to it's own specifications. There are many means of optimisation, and all focus on the same overall goal; the highest possible efficiency and best operational economy and functionality.

At Akron we have accumulated over half a century's worth of experience with these challenges. We have developed, manufactured and delivered systems for drying, storage and handling of grain since the 1950s. We were early promoters of the need to ensure the quality of the grain in all stages and that e g effective aeration and controlled storage and high quality drying were essential to allow farmers worldwide to provide top quality grain to their respective customers.

Today, Akron offers one of the market's widest and most comprehensive product portfolios in the area of grain handling. Thanks to fully integrated development and manufacturing operations, our optimisation and personalisation opportunities are practically limitless. No installation is too small or too big. Let us optimise according to your needs as well!

Why Akron?

Akron have delivered solutions for drying, storage and handling of grain for more than fifty years. We were pioneers in grain aeration and have always been at the forefront in regard to drying, heating and fan technology. Internal development and manufacturing allows us to optimise complete plants to every customer's needs and specifications. We have a strong environmental profile and are completely self-supporting in regard to both heat and electricity.

Akron – a safe choice

The decision to invest in a new grain handling plant is just the first step. The real process starts at this point. There are a myriad of decisions to make and choices seem endless. With Akron as your partner, you can rest assured that your plant will fulfil your every need, both in regard to capacity and quality. And best of all – your plant will be adapted to you and your unique requirements. We have one of the market's widest product ranges and more than fifty years' experience in design, construction and operation of grain handling installations.

What do you really want?

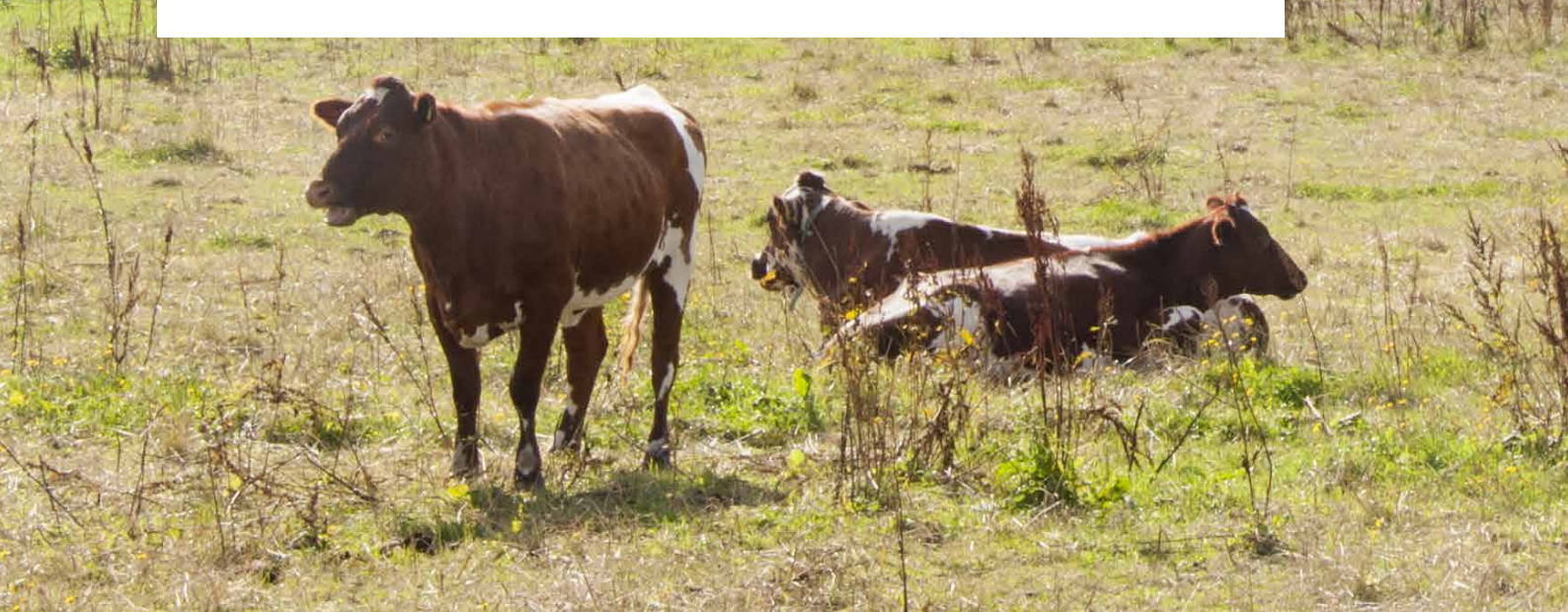
The most important background work is made at home at the kitchen table. Put some thought into where you want to go with your new plant. Is the goal to store grain for later drying somewhere else or do you want the whole process to take place in one location? Would you like a plant where all steps are automated or do you want to retain a measure of manual control? What grain types will be handled? What heat generation methods are available and preferred? Will the grain be stored indoors or outdoors?

Make it real

Once the framework has been set, it is time to start drafting. Our experienced project managers will help out in realising your vision in drawings and process charts. They will gladly assist with their experience in what allows for the most flexible functionality and efficiency. All in order to ensure the most cost effective and well structured installation possible.

Prior to any pricing we also discuss construction work, installation, commissoning and startup. Our experience is that every installation is unique also in the assembly phase. Normally our delivery scope covers all the material as well as startup of the final plant. If you want to perform installation and assembly yourself we will of course support you with drawings and assembly instructions. If your wish is for a turn-key project we can provide that as well. Or any scope of supply in between.

Regardless of whether you perform the installation yourself or if we take care of that for you, we will keep continuous contact during the whole process. We can also always perform commissioning and startup of your new plant.



Go fossil free and lower operation costs

Today, most grain driers are still heated with oil. The reasons are many: oil is easy both to use and access and the burning technology is mature and relatively safe. But since the early 21st century the oil price has been in constant increase (bar some uncharacteristic dips) and the operating economy is no longer as profitable. Increases in global oil consumption will drive demand and prices further. Oil, natural gas and LPG are fossil and thereby finite resources. Converting to a renewable fuel is not only environmentally sound – it will also lower operational costs.

Akron have manufactured oil fired air heaters for over 40 years. But we have worked with solid biofuels for at least as long; our first wood fired air heater entered the market already 1980. Today we have a wide range of solutions for fossil free grain drying and we are continuously expanding and developing our products in order to fulfil every customer need.

Wood chips

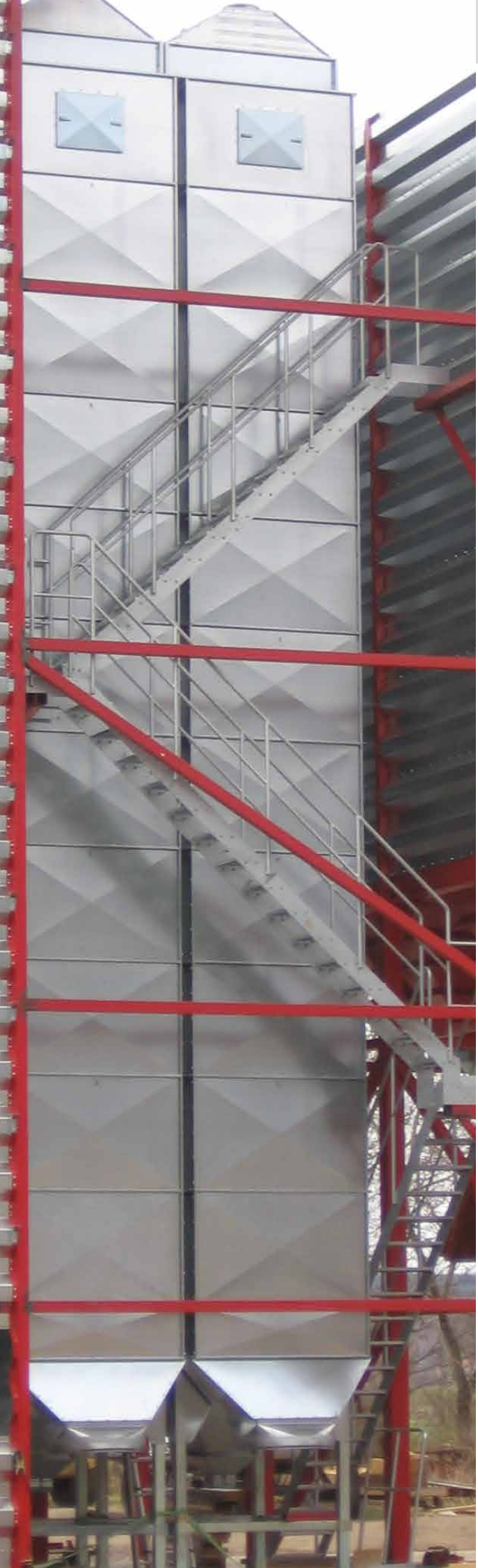
Wood chips are processed but otherwise non-refined wood fuel. Accessibility may vary depending on geographic location, but since wood chips can be produced wherever trees grow very low total fuel costs can be achieved. Wood chips need to be dried to allow for efficient combustion and safe storage without the risk of mold growth.
Akron offers wood chip fired air heaters for grain drying with outputs between 400 and 1000 kW plus a complete range of transport and storage equipment. Additionally, our patented range of wood chip driers are among the market's most effective and can also dry beans, peas, saw dust and horse manure among other materials.

Wood pellets

Wood pellets is one of the easiest-to-use solid biofuels available. It is widely available and roughly standardised. Bulk delivery and a high degree of automation in the combustion process allows for easy transition from oil-fired to pellet-fired air heaters. Akron offers pellet-fired air heaters between 200 and 1000 kW.

RME, bio oil, bio gas…

All bio fuels are not wood based. Akron has solutions fitting most of them. Tailor-made solutions for specific fuels can of course also be made available – our development department ranks among the most experienced in the business when it comes to air heating solutions for drier applications. We will gladly listen to suggestions and new ideas.



Akron batch drier 1.5-8.7 tph

The Akron type A/B batch drier is the best-selling grain drier in Sweden. Its large laterals are carefully spaced for optimum drier economy. In official tests, the Akron A drier has shown the lowest energy consumption of all times in Sweden.

Air sweep floor or hopper with integrated laterals

Akron A, AN and B type driers are fitted with airsweep floor, which means all grain is dried without any need for recirculation of grain and that the discharge functionality is unaffected by high moisture contents. Alternate versions nominated AL, ALN and BL replaces the airsweep floor with a hopper with integrated drying lateral, for secure drying of the complete batch.

Models B and BL are simpler versions without exhaust air plenum, i e the exhaust air is vented straight out from the laterals.

Patented automatic buffer section

The ”N” in the drier designation signifies that the drier is fitted with Akron’s patented automatic buffer section. This section automatically shuts off the air to those laterals which has no grain around them, i e as the grain batch decreases in size during drying, the automatic sections are automatically converted from drying sections to buffer sections. This prevents the need for adding additional grain or manually shutting of the air flow to the top of the drier.

Drier control

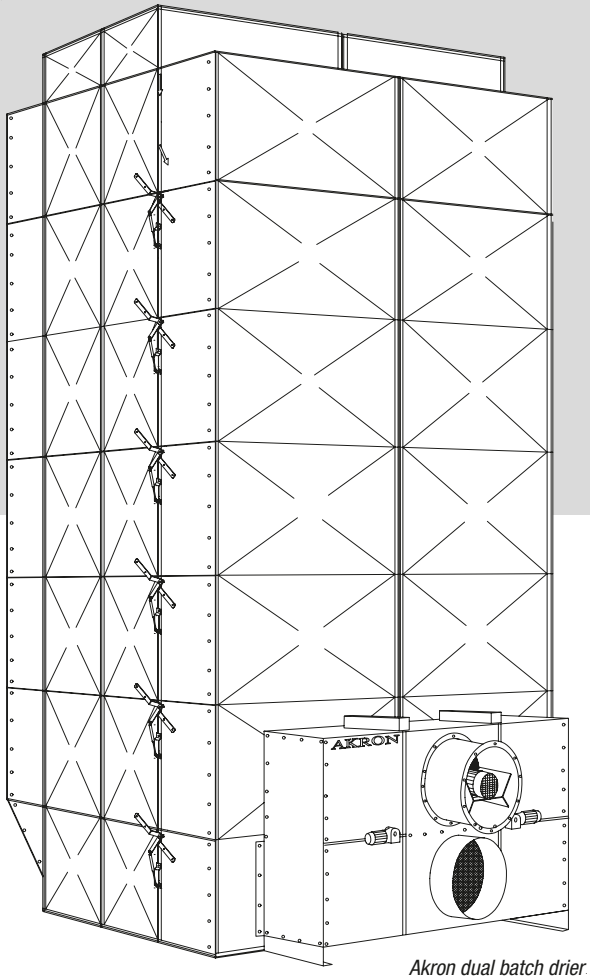
Akron batch driers can be controlled with time or weight control. The process of discharging and filling the drier can also be automated.

Single or dual batch drier

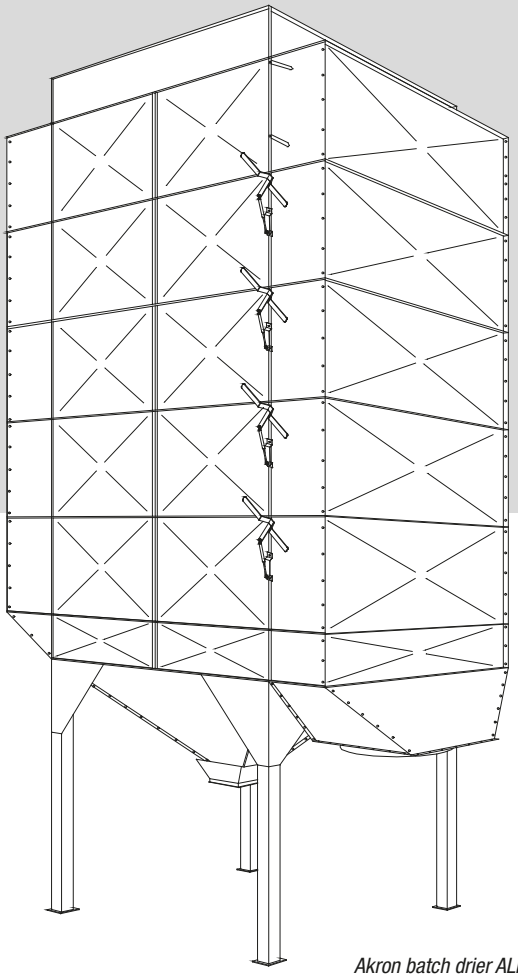
During batch drying, approximately 75 % of the time can be used for the actual drying process. The remaining 25 % is used for cooling, discharging and filling the drier. With Akron’s air distributor, two driers can be served with one source of heated air, optimising the available heater output. Shifting the air supply from one drier to the other is automatic.

Air dampers

Akron batch driers (except for B and BL variants) are fitted with air dampers at every mid-section to allow drying of smaller batches.



Akron dual batch drier 2AN



Akron batch drier ALN

AKRON batch drier ALN	Volume	Height	Capacity, max		Net heat req.
ALN - 48	4,8 m^3	3,15 m	1,2 ton/h	50 kg $H_2$0/h	58 kW
ALN - 84	8,4 m^3	4,48 m	2,0 ton/h	80 kg $H_2$0/h	93 kW
ALN - 108	10,8 m^3	5,39 m	2,7 ton/h	110 kg $H_2$0/h	128 kW
ALN - 132	13,2 m^3	6,31 m	3,5 ton/h	140 kg $H_2$0/h	163 kW
ALN - 156	15,6 m^3	7,21 m	4,2 ton/h	170 kg $H_2$0/h	198 kW
ALN - 180	18,0 m^3	8,13 m	5,0 ton/h	200 kg $H_2$0/h	233 kW
ALN - 204	20,4 m^3	9,04 m	5,7 ton/h	230 kg $H_2$0/h	268 kW
ALN - 228	22,8 m^3	9,94 m	6,5 ton/h	260 kg $H_2$0/h	303 kW
ALN - 252	25,2 m^3	10,86 m	7,2 ton/h	290 kg $H_2$0/h	338 kW
ALN - 276	27,6 m^3	11,77 m	8,0 ton/h	320 kg $H_2$0/h	373 kW
ALN - 300	30,0 m^3	12,68 m	8,7 ton/h	350 kg $H_2$0/h	408 kW

AKRON batch drier AN	Volume	Height	Capacity, max		Net heat req.
AN - 84	8,4 m^3	3,21 m	2,0 ton/h	80 kg $H_2$0/h	93 kW
AN - 108	10,8 m^3	4,12 m	2,7 ton/h	110 kg $H_2$0/h	128 kW
AN - 132	13,2 m^3	5,04 m	3,5 ton/h	140 kg $H_2$0/h	163 kW
AN - 156	15,6 m^3	5,95 m	4,2 ton/h	170 kg $H_2$0/h	198 kW
AN - 180	18,0 m^3	6,87 m	5,0 ton/h	200 kg $H_2$0/h	233 kW
AN - 204	20,4 m^3	7,78 m	5,7 ton/h	230 kg $H_2$0/h	268 kW
AN - 228	22,8 m^3	8,70 m	6,5 ton/h	260 kg $H_2$0/h	303 kW
AN - 252	25,2 m^3	9,61 m	7,2 ton/h	290 kg $H_2$0/h	338 kW
AN - 276	27,6 m^3	10,53 m	8,0 ton/h	320 kg $H_2$0/h	373 kW
AN - 300	30,0 m^3	11,44 m	8,7 ton/h	350 kg $H_2$0/h	408 kW

The stated capacity is calculated at 4 % drying based on initial weight and at 80°C drying temperature. Time for cooling, discharging and filling is not included.

Akron Svegma batch drier 2-19 tph

The Akron Svegma series of batch driers has a reputation of excellent drying evenness and good heat economy. Conical laterals secures an even airflow along the complete length of the lateral, which in turn results in a very even distribution of drying air throughout each section. Short distance inbetween laterals gives a very homogenous drying process. The high number of laterals in the drier results in a large air flow area, which in turn gives a relatively low speed of the air flowing through the material, allowing maximum saturation of the air before it is vented out into the exhaust plenum.

The discharger on Akron Svegma batch driers has smaller internal laterals and can be used for recirculating batch drying as well as traditional drying. In recirculation mode, some grain is constantly being discharged into the discharge hopper, from where it is elevated to the top of the drier and returned to the drying process. Recirculation allows for drying of very wet material in a single process step. An additional benefit is that the buffer zone can be filled to capacity since the grain is always moving through the drier.

Automation

The drying process can either be controlled with timers for drying and cooling respectively, or with weight cells that monitor the amount of water being evaporated and control the different stages accordingly. The output interval of the discharger can be separately controlled. Akron can of course deliver complete automation and monitoring solutions according to each customer's needs.

Modular with smooth insides

Akron Svegma batch driers are available in 2, 3 and 4 meter widths, where each drying section is 525 mm high. Adaption of the size to correct capacity is just a matter of adding sections.
The insides of Akron Svegma driers are completely smooth, free of ledges or "dirt traps". Cleaning of the drier internals is very seldom required.

Dual batch drying

All Akron Svegma batch driers can be used in dual drier mode for optimal use of the available time.

Air dampers for smaller batches

Sometimes drying of smaller batches than the drier is designed for is required. In these cases, the heated air supply to sections above the grain level can be shut off.

AKRON SVEGMA batch drier 2 m	Volume	Hight	Capacity, nominal		Net heat req.
2004 - 82	8,2 m^3	4,6 m	2,2 ton/h	90 kg $H_2$0/h	107 kW
2005 - 96	9,6 m^3	5,1 m	2,8 ton/h	112 kg $H_2$0/h	133 kW
2006 - 110	11,0 m^3	5,6 m	3,4 ton/h	135 kg $H_2$0/h	160 kW
2007 - 124	12,4 m^3	6,2 m	3,9 ton/h	157 kg $H_2$0/h	187 kW
2008 - 138	13,8 m^3	6,7 m	4,5 ton/h	180 kg $H_2$0/h	214 kW
2009 - 152	15,2 m^3	7,2 m	5,0 ton/h	202 kg $H_2$0/h	240 kW
2009 - 171	17,1 m^3	7,7 m	5,0 ton/h	202 kg $H_2$0/h	240 kW
2010 - 185	18,5 m^3	8,3 m	5,6 ton/h	224 kg $H_2$0/h	267 kW
2011 - 199	19,9 m^3	8,8 m	6,2 ton/h	247 kg $H_2$0/h	294 kW
2012 - 213	21,3 m^3	9,3 m	6,8 ton/h	270 kg $H_2$0/h	320 kW
2013 - 227	22,7 m^3	9,8 m	7,4 ton/h	294 kg $H_2$0/h	350 kW
2014 - 240	24,0 m^3	10,3 m	8,0 ton/h	315 kg $H_2$0/h	375 kW
2015 - 253	25,3 m^3	10,8 m	8,4 ton/h	336 kg $H_2$0/h	400 kW

AKRON SVEGMA batch drier 3 m	Volume	Hight	Capacity, nominal		Net heat req.
3004 - 120	12,0 m^3	5,1 m	3,4 ton/h	135 kg $H_2$0/h	160 kW
3005 - 140	14,0 m^3	5,6 m	4,2 ton/h	168 kg $H_2$0/h	200 kW
3006 - 160	16,0 m^3	6,1 m	5,0 ton/h	202 kg $H_2$0/h	240 kW
3007 - 180	18,0 m^3	6,7 m	5,9 ton/h	235 kg $H_2$0/h	280 kW
3008 - 200	20,0 m^3	7,2 m	6,8 ton/h	270 kg $H_2$0/h	320 kW
3009 - 220	22,0 m^3	7,7 m	7,6 ton/h	302 kg $H_2$0/h	360 kW
3009 - 248	24,8 m^3	8,2 m	7,6 ton/h	302 kg $H_2$0/h	360 kW
3010 - 268	26,8 m^3	8,8 m	8,4 ton/h	336 kg $H_2$0/h	400 kW
3011 - 288	28,8 m^3	9,3 m	9,3 ton/h	370 kg $H_2$0/h	440 kW
3012 - 308	30,8 m^3	9,8 m	10,1 ton/h	405 kg $H_2$0/h	480 kW
3013 - 328	32,8 m^3	10,3 m	10,9 ton/h	437 kg $H_2$0/h	520 kW
3014 - 348	34,8 m^3	10,8 m	11,8 ton/h	470 kg $H_2$0/h	560 kW
3015 - 368	36,8 m^3	11,3 m	12,6 ton/h	504 kg $H_2$0/h	600 kW

AKRON SVEGMA batch drier 4 m	Volume	Hight	Capacity, nominal		Net heat req.
4004 - 156	15,6 m^3	4,6 m	4,4 ton/h	180 kg $H_2$0/h	214 kW
4005 - 183	18,3 m^3	5,1 m	5,6 ton/h	224 kg $H_2$0/h	265 kW
4006 - 210	21,0 m^3	5,6 m	6,8 ton/h	270 kg $H_2$0/h	320 kW
4007 - 236	23,6 m^3	6,2 m	7,9 ton/h	315 kg $H_2$0/h	375 kW
4008 - 263	26,3 m^3	6,7 m	9,0 ton/h	360 kg $H_2$0/h	430 kW
4009 - 290	29,0 m^3	7,2 m	10,0 ton/h	405 kg $H_2$0/h	480 kW
4009 - 327	32,7 m^3	7,7 m	10,0 ton/h	405 kg $H_2$0/h	480 kW
4010 - 354	35,4 m^3	8,3 m	11,2 ton/h	450 kg $H_2$0/h	540 kW
4011 - 381	38,1 m^3	8,8 m	12,5 ton/h	500 kg $H_2$0/h	590 kW
4012 - 407	40,7 m^3	9,3 m	13,5 ton/h	540 kg $H_2$0/h	640 kW
4013 - 434	43,4 m^3	9,8 m	14,8 ton/h	590 kg $H_2$0/h	700 kW
4014 - 461	46,1 m^3	10,3 m	15,8 ton/h	630 kg $H_2$0/h	750 kW
4015 - 487	48,7 m^3	10,8 m	16,8 ton/h	670 kg $H_2$0/h	800 kW

The stated capacity is calculated at 4 % drying based on initial weight and at 80°C drying temperature. Time for cooling, discharging and filling is not included.

Akron continuous flow drier 2 - 18 ton/h

The Akron small-scale K-type continuous flow drier is a modular drier for all types of grain. The small holding volume allows for quick starts and thereby significant time savings. Drying can be commenced in a very short time after harvesting.

The grain moves vertically in two shafts. Drying and cooling air is blown horizontally at a speed optimised to maximise capacity and full saturation of the exhaust air.

The Akron K-type drier has shown the second-lowest energy consumption during official tests – beaten only by the Akron A-type batch drier.

The air channel walls are designed for the lowest possible air resistance while minimising risk of grain getting stuck. Hot and cooling air intake walls are of airsweep type while exhaust air walls have perforated slits. A common fan for both drying and cooling air minimises the risk for dust gatherings, heat leakage and condensation in the drier. The cooling zone can be adjusted for size with a simple hatch to allow for optimal drying capacity at both low and high moisture contents.

Low energy requirements

No other continuous flow drier has been able to show fuel economy results at the same levels as the Akron K drier. Official tests have shown the Akron K drier to have the lowest power consumption in Sweden.

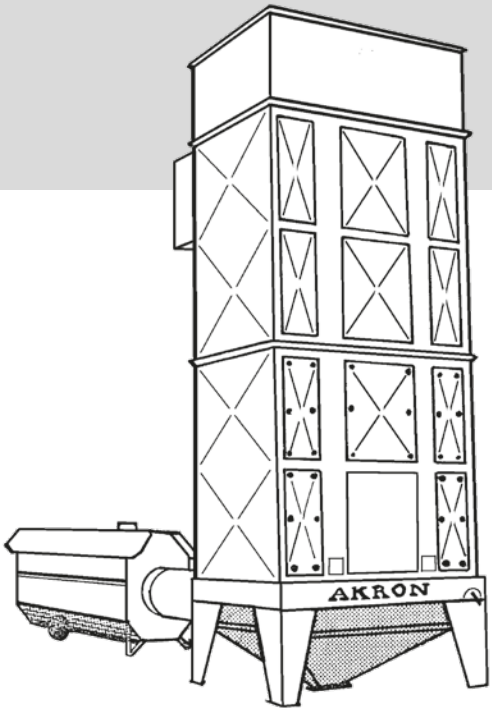
The K driers are perfectly suited for careful drying of e g seeds.

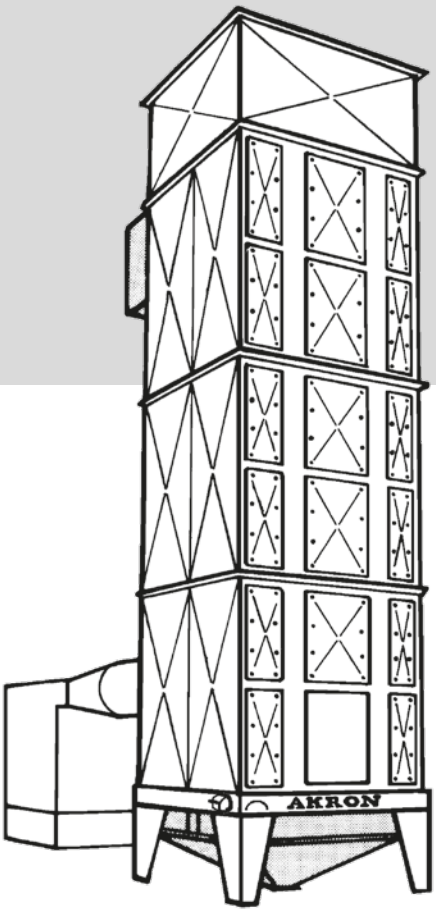
Automatic moisture content regulation

The Akron moisture content regulation system measures the exhaust temperature in the lower part of the drying zone. This temperature is dependent on the evaporation of water from the grain, which means it is directly relative to the remaining moisture content. The regulator controls the discharge speed based on the temperature.

Modular system

The Akron K driers are available in 1, 2 and 3 meter widths, with 1 and 2 meter high sections.





AKRON continuous drier K-200	Volume	Height	Capacity, max		Net heat req.
K-204	6,0 m^3	6,0 m	4,0 ton/h	160 kg H_2O/h	190 kW
K-205	7,2 m^3	7,0 m	5,0 ton/h	200 kg H_2O/h	230 kW
K-206	8,4 m^3	8,0 m	6,0 ton/h	240 kg H_2O/h	280 kW
K-207	9,6 m^3	9,0 m	7,0 ton/h	280 kg H_2O/h	330 kW
K-208	10,8 m^3	10,0 m	8,0 ton/h	320 kg H_2O/h	375 kW
K-209	12,0 m^3	11,0 m	9,0 ton/h	360 kg H_2O/h	420 kW
K-210	13,2 m^3	12,0 m	10,0 ton/h	400 kg H_2O/h	470 kW
K-211	14,4 m^3	13,0 m	11,0 ton/h	440 kg H_2O/h	515 kW

AKRON continuous drier K-300	Volume	Height	Capacity, max		Net heat req.
K-304	9,0 m^3	6,0 m	6,0 ton/h	240 kg H_2O/h	280 kW
K-305	10,8 m^3	7,0 m	7,5 ton/h	300 kg H_2O/h	350 kW
K-306	12,6 m^3	8,0 m	9,0 ton/h	360 kg H_2O/h	420 kW
K-307	14,4 m^3	9,0 m	10,5 ton/h	420 kg H_2O/h	490 kW
K-308	16,2 m^3	10,0 m	12,0 ton/h	480 kg H_2O/h	560 kW
K-309	18,0 m^3	11,0 m	13,5 ton/h	540 kg H_2O/h	630 kW
K-310	19,8 m^3	12,0 m	15,0 ton/h	600 kg H_2O/h	700 kW
K-311	21,6 m^3	13,0 m	16,5 ton/h	660 kg H_2O/h	770 kW
K-312	23,4 m^3	14,0 m	18,0 ton/h	720 kg H_2O/h	840 kW

The capacities shown are valid at 4% drying based on initial weight and at 80°C drying temperature and +15°C ambient temperature.

Akron Svegma continuous flow drier 5-125 tph

The Akron Svegma continuous flow driers are renowned for their high capacity, even drying efficiency and excellent heat economy. With tightly spaced, conical air laterals, the drying process can be carefully controlled, without risk of over- or underdrying. The exhaust air fan creates underpressure inside the drier in order to have an even air flow throughout the complete drier as well as minimising the risk of heat leakage.

Akron Svegma continuous flow driers are available with capacities from 5 to 125 tonnes per hour as standard and can be utilized for all types of grain. The drier is available in in several different widths and heights to fit all needs and installations.

Flexibility

Akron Svegma continuous flow driers are available in versions for direct heating with oil, natural gas, LPG or biogas, and for indirect heating with solid biofuels or any other energy source through water radiators. Driers can be fitted with roofs and weather protection for outdoor placement. It can also be used as a batch drier by opening the hatches between the cooling and drying zones.

Automation

The drying process can be automated to a very high degree. Normally the moisture content in the exhaust air is monitored, usually by way of measuring the temperature. The fans, heating system and discharging process are then controlled so that even moisture content in the discharged grain is achieved even though the moisture in the incoming grain might vary. Akron can deliver drier control systems according to each customer's specific needs.

Modular and easy to clean

Since the Akron Svegma driers are completely smooth inside, without ledges or "dirt traps", cleaning is rarely necessary. Grain type changing can normally be performed without intermediate cleaning.

The driers are available in 2, 3, 4, 5, 6 and 8 meter widths, with sections of 525 mm height., allowing dimensioning for a perfect fit of available space and required capacity.

AKRON SVEGMA cont drier 2 meter	Volume	Height	Capacity, nominal		Net heat req.
2107	13,0 m^3	6,3 m	5,1 ton/h	202 kg $H_2$0/h	250 kW
2108	14,3 m^3	6,8 m	6,1 ton/h	243 kg $H_2$0/h	300 kW
2109	15,7 m^3	7,3 m	7,1 ton/h	283 kg $H_2$0/h	350 kW
2110	17,0 m^3	7,9 m	8,1 ton/h	324 kg $H_2$0/h	400 kW
2111	18,3 m^3	8,4 m	8,1 ton/h	324 kg $H_2$0/h	400 kW
2112	19,7 m^3	8,9 m	9,1 ton/h	364 kg $H_2$0/h	450 kW
2113	21,0 m^3	9,4 m	10,1 ton/h	405 kg $H_2$0/h	500 kW
2114	22,3 m^3	10,0 m	10,1 ton/h	405 kg $H_2$0/h	500 kW
2115	23,7 m^3	10,5 m	11,1 ton/h	445 kg $H_2$0/h	550 kW
2116	25,0 m^3	11,0 m	12,1 ton/h	486 kg $H_2$0/h	600 kW

AKRON SVEGMA cont drier 3 meter	Volume	Height	Capacity, nominal		Net heat req.
3107	19,5 m^3	6,8 m	7,6 ton/h	304 kg $H_2$0/h	375 kW
3108	21,5 m^3	7,3 m	9,1 ton/h	364 kg $H_2$0/h	450 kW
3109	23,5 m^3	7,8 m	10,6 ton/h	425 kg $H_2$0/h	525 kW
3110	25,5 m^3	8,4 m	12,1 ton/h	486 kg $H_2$0/h	600 kW
3111	27,5 m^3	8,9 m	12,1 ton/h	486 kg $H_2$0/h	600 kW
3112	29,5 m^3	9,4 m	13,7 ton/h	546 kg $H_2$0/h	675 kW
3113	31,5 m^3	9,9 m	15,2 ton/h	607 kg $H_2$0/h	750 kW
3114	33,5 m^3	10,5 m	15,2 ton/h	607 kg $H_2$0/h	750 kW
3115	35,5 m^3	11,0 m	16,7 ton/h	668 kg $H_2$0/h	825 kW
3116	37,5 m^3	11,5 m	18,2 ton/h	728 kg $H_2$0/h	900 kW
3117	39,5 m^3	12,0 m	18,2 ton/h	728 kg $H_2$0/h	900 kW
3118	41,5 m^3	12,6 m	19,7 ton/h	789 kg $H_2$0/h	975 kW

AKRON SVEGMA cont drier 4 meter	Volume	Height	Capacity, nominal		Net heat req.
4107	26,0 m^3	6,2 m	10,1 ton/h	404 kg $H_2$0/h	500 kW
4108	28,7 m^3	6,7 m	12,1 ton/h	486 kg $H_2$0/h	600 kW
4109	31,3 m^3	7,2 m	14,1 ton/h	566 kg $H_2$0/h	700 kW
4110	34,0 m^3	7,8 m	16,2 ton/h	648 kg $H_2$0/h	800 kW
4111	36,7 m^3	8,3 m	16,2 ton/h	648 kg $H_2$0/h	800 kW
4112	39,3 m^3	8,8 m	18,2 ton/h	728 kg $H_2$0/h	900 kW
4113	42,0 m^3	9,3 m	20,2 ton/h	810 kg $H_2$0/h	1 000 kW
4114	44,7 m^3	9,9 m	20,2 ton/h	810 kg $H_2$0/h	1 000 kW
4115	47,3 m^3	10,4 m	22,2 ton/h	890 kg $H_2$0/h	1 100 kW
4116	50,0 m^3	10,9 m	24,3 ton/h	972 kg $H_2$0/h	1 200 kW
4117	52,7 m^3	11,4 m	24,3 ton/h	972 kg $H_2$0/h	1 200 kW
4118	55,3 m^3	12,0 m	26,3 ton/h	1 052 kg $H_2$0/h	1 300 kW

The capacities shown are valid at 4% drying based on initial weight and at 80°C drying temperature and +15°C ambient temperature.

Optimising grain driers

Akron offers a wide range of optimising solutions for existing and planned grain driers. The first step is often to switch fuel for heating the drying air. Following that, the highest cost savings can normally be achieved by increasing the utilisation of the air's ability to carry moisture. Control of the drying air, either by recirculation or by optimising the air speed and flow, are the most common methods. Akron has over 50 years experience in fan and advanced air control designs, and have multiple options to offer.

Akron TWIN optimisation of dual batch driers

Akron's patented TWIN concept is based on optimising the air's ability to carry moisture. Basically it is a traditional dual batch drier with an extended air distributor. The real advantage is in the control logic and the patented TWIN process, where drying air is routed to both driers when possible, and to only one during cooling and batch change on the other. This method lowers the air flow to approximately 60% in the final drying stages in order to allow the air to fully saturate. Simultaneously, the grain in the other drier is pre-dried using the remaining air instead of just waiting.

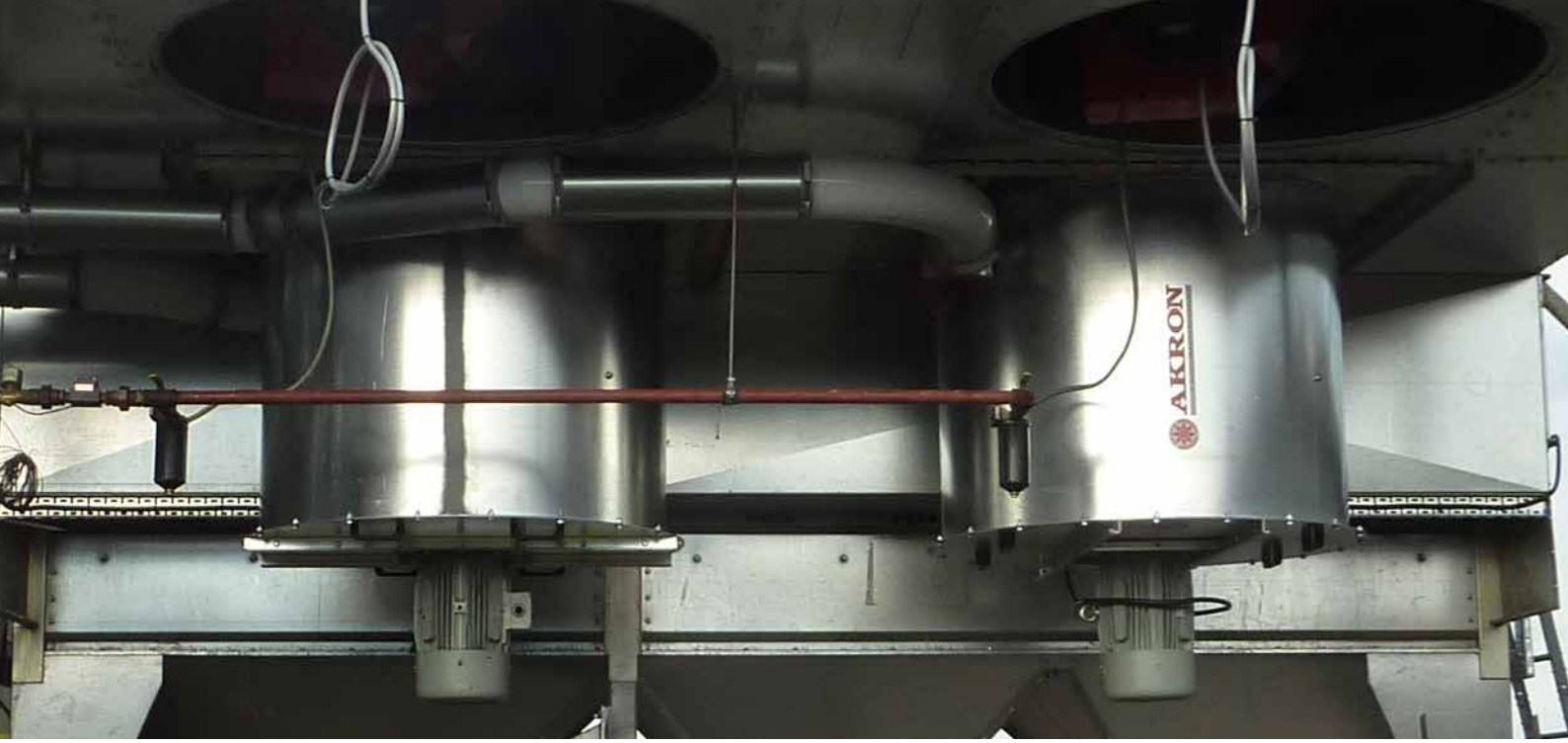
The concept allows for a reduction in drying air with up to approximately 15 percent.

Akron TWIN can be installed on both new and existing dual batch driers delivered by Akron. In some cases, the air distributor might need upgrading.

Serial drying air recirculation in dual batch driers

Serial air recirculation means that the drying air, having passed through one drier, is routed through the second drier as well. Recirculation is only done when the drying process is in the mid to last stages, when the exhaust air from the first drier still has capacity to carry moisture.

Serial recirculation normally requires extensive air piping, but thanks to Akron's highly efficient reversible axial fans, the installation complexity can be severely reduced compared to offerings from other suppliers.

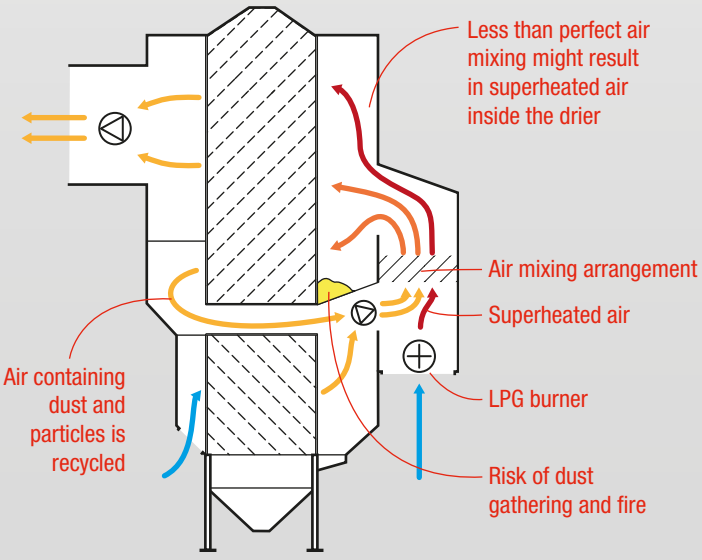


Akron Svegma RC continuous flow recirculation drier with active particle removal

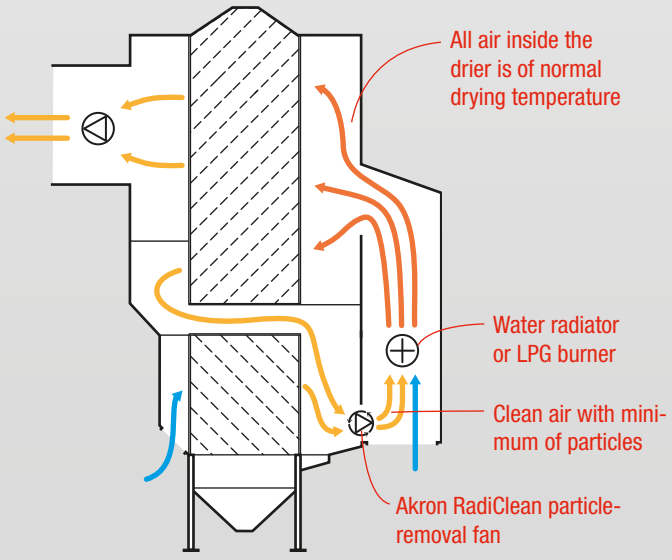
The Akron Svegma RC drier is a continued development of the traditional recirculating continuous flow drier; thanks to the integrated RadiClean fan, the recirculated air is cleaned from dust and particles in order to allow it to be returned before the heating arrangement without constituting a fire hazard. Since heating is only necessary to the required drying temperature, this extends the available heating options to also include water radiators, which means a whole range of other fuels can be used in addition to the traditional LPG or natural gas burners. The total energy requirement is decreased to a higher degree than with traditional recirculation driers.

Other benefits compared to traditional recirculation driers include cleaner environment inside and outside of the drier, lower risk of fires and decreased complexity both in construction and process since the need of air mixing arrangement inside the drier and shut-off of air movement during discharging are effectively obviated.

The Akron RC concept can be fitted also to existing Akron Svegma continuous driers without loss of capacity.



Traditional recirculation drier. *The air is recirculated after the heating arrangement. To achieve the correct drying temperature it must be mixed with superheated fresh air. Due to this, almost all traditional recirculation driers are heated with LPG. Efficient mixing of the air is required for even drying.*



Akron Svegma RC drier with active particle reduction. *With Akron's RadiClean fan, air can be recirculated before the heating arrangement. Heating only needs to be performed to the required drying temperature, which allows for other heating options. No air mixing inside the drier is necessary.*

Solid biofuel indirect heaters

Akron offers a wide range of own indirect air heaters for both wood chips and pellets. The heaters are designed for optimal production of hot air for grain drying, with high efficiency and sturdy construction.

Akron Bio400 wood chip fired heater

The Akron Bio400 is a wood chip fired heater with nominal output between 400 to 900 kW. The combustion process is based on an industrial-grade five-step moving grate. A large combustion chamber lined with ceramic blocks with integrated secondary air channels provides for almost total combustion and very high efficiency. The same heater housing is used for the complete output range.

Akron Bio400 is designed specifically for efficient, economical and environmentally friendly drying of grain.

Wood chip storage Type M

The Akron Type M wood chip storage can hold 20 m^3 and is completely integrated with the Bio400 heater for optimal functionality. Powerful, centreless augers transport the wood chips from the storage to the heater via a drop chute and rotary valve.

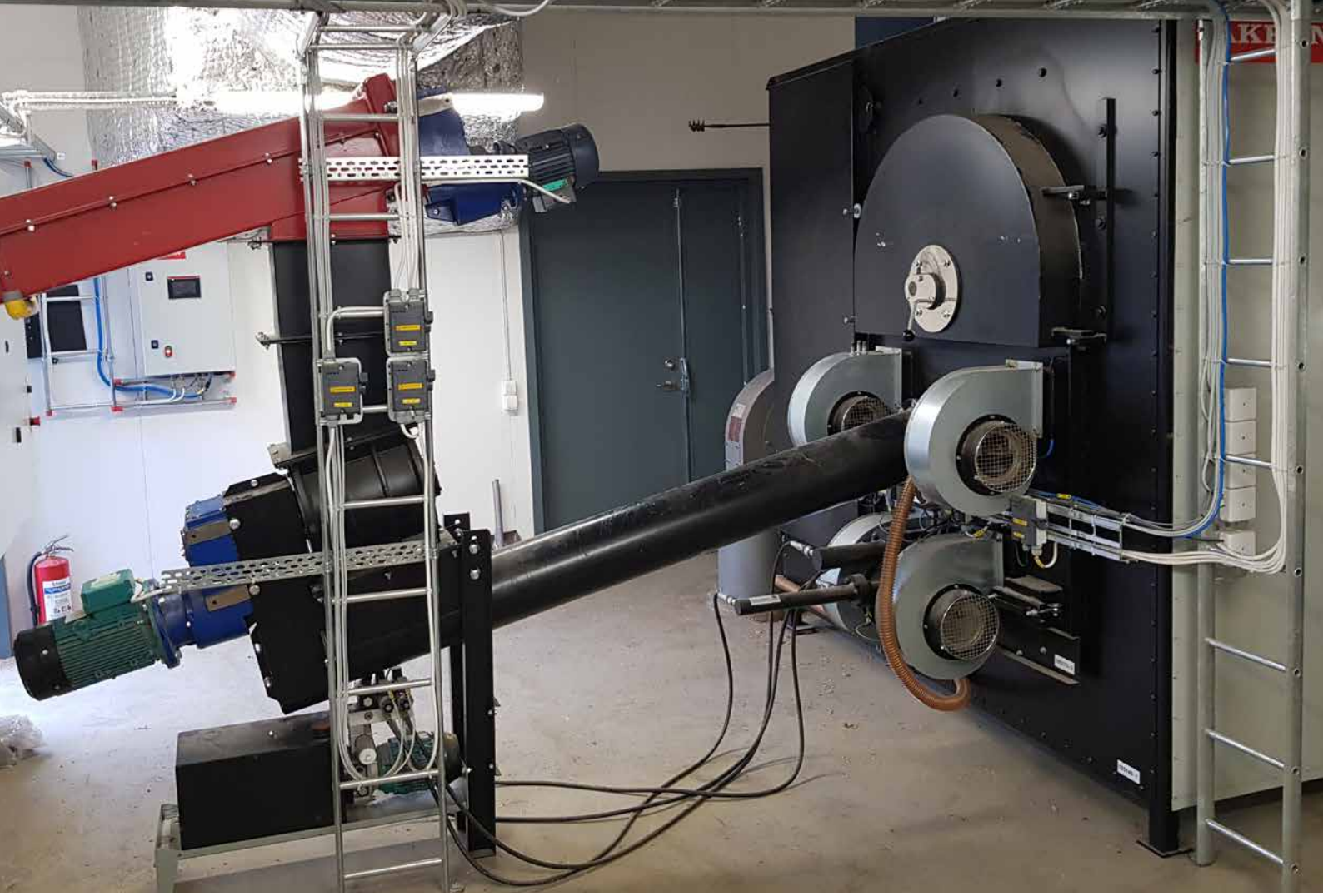
Akron pellet fired heaters

Akron pellet fired heaters are available with outputs from 300 to 900 kW. The pellet fired heater construction is based on Akron's oil heater design, with the same sturdy construction and highly efficient heat exchanger.

Akron pellet fired heaters are equipped with market-leading burners specifically designed and manufactured in Sweden for optimal combustion of wood pellets. Control and backup systems are developed and manufactured at Akron.

Fuel storage and transport solutions

For wood pellets, Akron offers a wide range of storage options, galvanised from 1 to 17 m^3 and painted and fully welded all the way up to 90 m^3. All pellet bins have filling tubes with standard connection for bulk transport. For transportation of pellets from bin to burner, our own D100P pellet augers are used.



Akron wood chip fired heaters

Type	Wood chips consumption [l/h]	Nominal output [kW_{th}]	Air volume [m^3/h]		Fan	
			Free blowing (for driers with exhaust air fan)	*Back pressure ~450 Pa (no exhaust air fan)*	Type	Power [kW]
Bio400 std	500-700	400-650	-	30 000	AKL100	15,0
Bio400 plus	700-950	650-900	-	45 000	AKL112	22,0
Bio400 F	500-950	400-900	50 000	-	AKL112	11,0

Each Akron Bio400 is configured for required output. Consumption is to be seen as approximate. Actual output and consumption depends on e g fuel quality.

Akron pellet fired heaters

Type	Max fuel consumption [kg/h]	Maximum output [kW_{th}]	Air volume [m^3/h]		Fan	
			Free blowing (for driers with exhaust air fan)	*Back pressure ~450 Pa (no exhaust air fan)*	Type	Power [kW]
1255 PE	65	300	29 000	-	AKL080	4,0
1257 PE	65	300	22 000	17 400	AKL060	5,5
1708 PE	86	400	32 000	-	AP090	5,5
1710 PE	86	400	35 000	21 000	AP100	7,5
2551 PE	120	530	34 200	-	AKL100	7,5
2552 PE	120	650	47 100	34 200	AKL100	11,0
2553 PE	140	650	54 700	39 600	AKL112	15,0
Bio400+ PE	215	900	-	45 000	AKL112	22,0
Bio400 F PE	215	900	50 000	-	AKL112	11,0

Oil fired indirect heaters

Akron oil fired heaters are available with outputs from 120 to 1160 kW and are designed for efficient heating of air for grain drying, with high efficiency and sturdy construction. All Akron oil fired heaters are tested and approved by SP, the Technical Research Institute of Sweden. Stationary oil fired heaters can also be converted for firing with wood pellets, bio oil or RME.

All heaters are equipped with Akron's own fan solutions for optimal air control. Other common benefits:

- Oil burners from Bentone/Enertech for highest efficiency and availability.
- Strategically placed inspection and cleaning hatches for easy access.
- Low emissions thanks to modern combustion and control technology.
- Highly efficient heat exchangers.
- Very high energy efficiency and availability throughout the heater lifetime.

Akron oil fired heaters

	Type	*Free blowing (for driers with exhaust air fan)*			*Back pressure ~450 Pa (no exhaust air fan)*			Fan	
		Max oil [kg/h]	Maximum output [kW_{th}]	Air volume [m3/h]	Max oil [kg/h]	Maximum output [kW_{th}]	Air volume [m3/h]	Type	Output [kW]
Mobile heaters	**715 M/F**	11,6	138	13 500	10,1	120	10 900	AP060[1]	3,0-5,5[1]
	815 M/F	17,0	202	14 300	16,5	196	12 400	AP060[1]	4,0-5,5[1]
Stationary heaters	**1255**	24,3	288	29 000				AKL080	4,0
	1257	24,1	286	22 000	22,8	270	17 400	AKL060	5,5
	1707	27,4	323	32 000	27,4	323	18 000	AP090	5,5
	1708	31,8	378	32 000				AP090	5,5
	1710	34,0	403	35 000	34,0	403	21 000	AP100	7,5
	2551	45,0	530	34 200				AKL100	7,5
	2552	54,5	647	47 100	50,0	593	34 200	AKL100	11,0
	2553	54,5	647	54 700	50,0	593	39 600	AKL112	15,0
	3025	98,0	1 160	88 000	93,0	1 100	60 000	AKL125	18,5

1) Mobile heaters are available in versions for free blowing (F) and back pressure (M). Exact fan depends on heater specification.

Water radiators

Akron offers radiators from stock for outputs between 100 and 600 kW for immediate delivery. Other sizes and outputs can be delivered on order. Connection pieces for easy connection to circular spiro air channels or Akron's AK fans are available. Special connection pieces can be provided to order.

Water radiators, standard

Type	L x W x H [mm]	Airflow		Back pressure, air [Pa]	Flow H_2O [l/s]	Water temp in = 80°, out = 60°			Water temp in = 90°, out = 70°			Connection	
		m^3/s	m^3/h			Air out [°C]	Back pressure H_2O [kPa]	Output [kW]	Air out [°C]	Back pressure H_2O [kPa]	Output [kW]	Spiro pipe [mm]	Fan type
1322	1322 x 960 x 312	1,5	5 400	23	1,28	71,5	10	**105**	-	-	-	ø 630	AK060
		2,0	7 200	38	1,65	69,5	19	**134**	79,0	19	**158**		
		3,0	10 800	75	2,32	66,2	26	**190**	75,0	35	**223**		
		4,0	14 400	123	2,92	63,4	40	**240**	72,0	53	**280**		
1796	1796 x 960 x 312	5,0	18 000	106	3,70	64,0	26	**300**	73,0	34	**356**	ø 800	AK080
		5,5	19 800	125	3,99	63,0	30	**325**	72,0	39	**385**		
2744	2744 x 960 x 312	6,0	21 600	71	4,67	66,5	26	**380**	75,0	34	**450**	ø 800	AK080
		7,0	25 200	92	5,29	65,1	33	**430**	74,0	41	**500**		
		8,0	28 800	115	5,89	63,7	40	**480**	72,0	50	**565**		

All values are nominal for Akron standard radiators with clean water and 15°C ambient temperature. Other configurations and sizes are of course possible – contact Akron for exact values for specific installations.

Direct heating with energy gas

Akron offers several solutions for direct heating with energy gases, e g natural gas or LPG. For smaller grain driers, a separate furnace with burner can be connected to the existing air inlet.

Akron storage solution Type M

Akron Type M storage is an entirely self-supporting, modular storage solution where the bins can form the support structure for the roof construction and wall cladding. Since the Type M wall elements can withstand forces from both sides, adjacent bin can be placed with adjoining middle wall. This lowers assembly costs and dirt traps between bins are effectively avoided. The bins are available with hoppers, air sweep floor, air sweep floor with reduced air flow and as flat bins placed directly on the floor.

Bin size can vary in steps of 0,5m, with wall lengths up to 6 meter. Combinations of bins with hoppers and bins with air sweep floors are possible, as well as different bin sizes in the same installation. The wall elements build 840 mm vertically and allows for total heights up to 25 meter.

Smooth insides for very wet material

Bins that contain extremely wet grain (e g directly from the field and prior to drying) can be fitted with internal, completely smooth walls inside the corrugated elements.

Welded or bolted hoppers

Hoppers can be delivered fully welded and painted or in galvanised sheet sections for assembly on site. Normal angle is 45° but certain sizes can be delivered with 60° as an option.

Easy assembly

All components are designed for easy fitting and assembly on site. The final assembly is stable enough to support the complete building.

Wall cladding mounting

Akron Type M can be delivered with mounting brackets for wooden or metal sheeting rails on the outside of the corner posts. The wall cladding is then mounted directly to the sheeting rails.

Akron storage bins Type M with air sweep floor / flat floor

No. of sections	Height [1] (m)	Volume (m^3) based on wall lengths, m x m									
		2 x 2	2 x 2,5	2 x 3	2,5 x 3	2,5 x 4	2,5 x 5	3 x 3	3 x 4	3 x 5	3 x 6
5	**4,65**	18,3	22,7	27,1	33,6	45,5	56,3	40,1	54,2	67,2	80,2
6	**5,49**	22,0	27,3	32,5	40,3	54,6	67,6	48,1	65,1	80,7	96,2
7	**6,33**	25,7	31,8	38,0	47,1	63,7	78,9	56,1	75,9	94,1	112,3
8	**7,17**	29,4	36,4	43,4	53,8	72,8	90,2	64,2	86,8	107,6	128,3
9	**8,01**	33,0	40,9	48,8	60,5	81,8	101,4	72,2	97,6	121,0	144,4
10	**8,85**	36,7	45,5	54,2	67,2	90,9	112,7	80,2	108,5	134,5	160,4
11	**9,69**	40,4	50,0	59,7	73,9	100,0	124,0	88,2	119,3	147,9	176,4
12	**10,53**	44,0	54,6	65,1	80,7	109,1	135,2	96,2	130,2	161,3	192,5

1) Includes 450 mm space for air channel under air sweep floor. Bins with flat floor are 0,40 m lower.

Akron storage bins Type M with hopper

No. of sections	Height [1] (m)	Volume (m^3) based on wall lengths, m x m									
		1,5 x 3	2 x 2	2 x 2,5	2 x 3	2,5 x 2,5	2,5 x 3	3 x 3	3 x 4	3 x 5	3 x 6
5	**4,20**	22,9	19,7	24,8	30,1	30,8	37,4	44,6	63,0	74,7	89,2
6	**5,04**	27,0	23,3	29,4	35,5	36,4	44,1	52,6	73,9	88,2	105,2
7	**5,88**	31,1	27,0	33,9	41,0	42,0	50,8	60,6	84,7	101,6	121,3
8	**6,72**	35,3	30,7	38,5	46,4	47,7	57,5	68,7	95,6	115,1	137,3
9	**7,56**	39,4	34,4	43,0	51,8	53,3	64,3	76,7	106,4	128,5	153,4
10	**8,40**	43,5	38,0	47,6	57,2	58,9	71,0	84,7	117,3	142,0	169,4
11	**9,24**	47,6	41,7	52,1	62,7	64,6	77,7	92,7	128,1	155,4	185,4
12	**10,08**	51,8	45,4	56,6	68,1	70,2	84,4	100,7	139,0	168,8	201,5
Height of hopper (m)		***1,44***	***0,94***	***1,19***	***1,44***	***1,19***	***1,44***	***1,44***	***2,00***	***1,44***	***1,44***

1) Excl hopper.

Lorry loading bin Type M

Akron Type M lorry loading bins are designed for fast loading of lorries and carriages in order to limit stop time for transport vehicles. The lorry loading bins can share posts and walls with other Type M storage bins or be mounted separately.

Stable construction

The lorry loading hopper is designed to carry very high loads. Hopper, legs and support structure and corner posts are as standard delivered painted, with galvanised wall elements. Legs and supports can optionally be delivered in galvanised finish.

Several variants

The lorry loading bin is available in different sizes up to 6 x 3 meter, which allows for a six meter wide loading lane. The outlets are 300 x 300 mm and can be motorised. Larger hoppers have four outlets, while the smaller have two. The larger versions can be divided to function as two separate bins by adding a dividing wall.

Lorry loading bins destined to store wet grain, either awaiting delivery or as extra buffer storage, can be fitted with aeration laterals and integrated radial fan.

No of sections	Total height (m)	Volume (m^3) based on wall lengths, m x m			
		4 x 3	4,5 x 3	5 x 3	6 x 3
1	6,85	18,2	20,4	23,0	28,0
2	7,69	29,1	32,6	36,5	44,0
3	8,53	39,9	44,7	49,9	60,1
4	9,37	50,8	56,9	63,4	76,2
5	10,21	61,6	69,0	76,8	92,2
6	11,05	72,4	81,1	90,2	
7	11,89	83,3	93,3	103,7	
8	12,73		105,4	117,1	
9	13,57		117,6		
10	14,41		129,7		
Lane width (m)		3,99	4,49	4,99	5,99
External width (m)		4,27	4,77	5,27	6,27
External length (m)		3,18	3,18	3,18	3,18

1) Free height under outlet damper = 4,50 m.

Akron Type S storage bins

Akron Type S storage bins are 505 mm high, smooth modular sections available in six different lengths. The bins can be fitted with aeration floor, hopper or directly on a flat floor. The Type S system are best suited to small, independent storage bins and smaller installations. The bins have painted or galvanised support structures. Wall elements are all galvanised steel.

Several variants

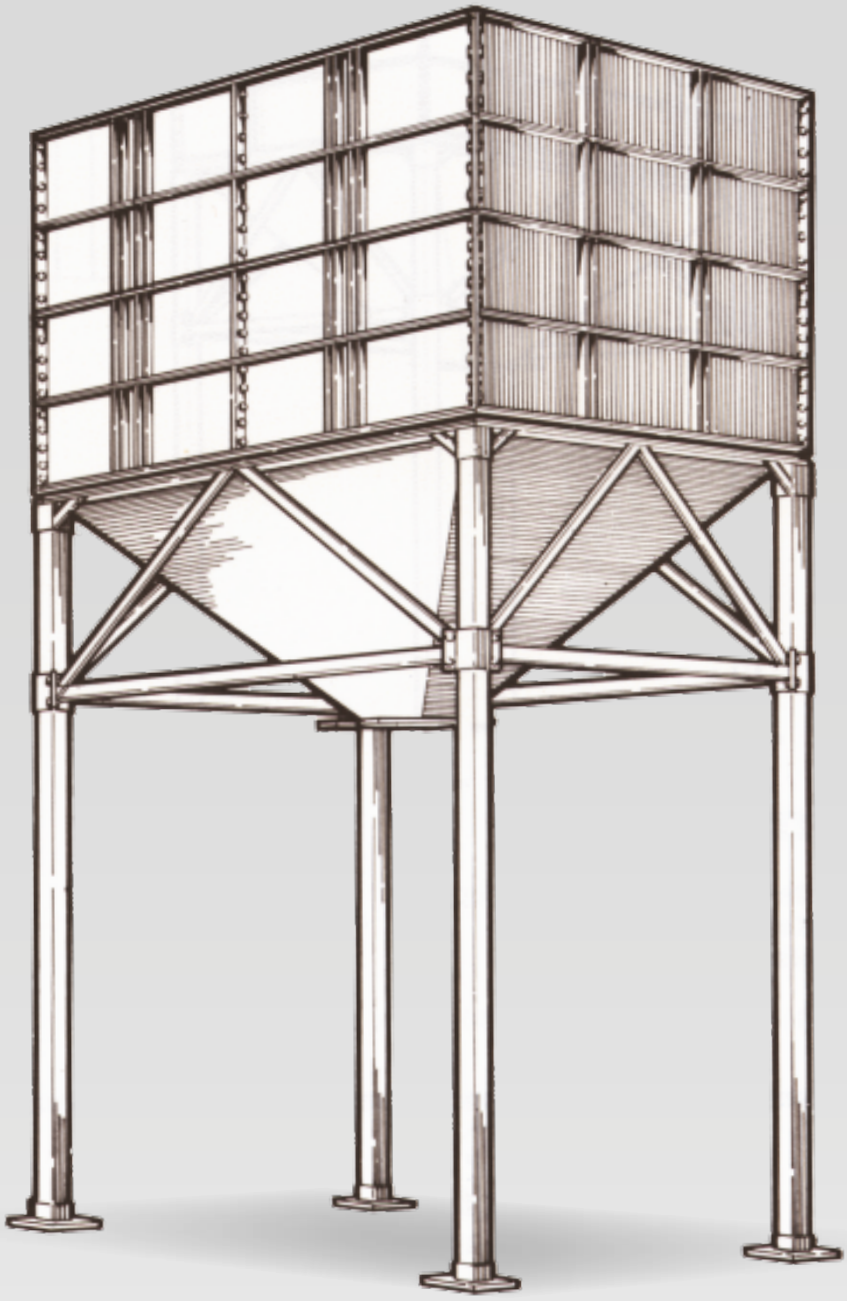
Type S bins with airsweep floors have a 1010 mm high floor section with integrated air channel.

Hopper bins use a fully-welded hopper for fast installation and safe operation, onto which the wall elements are mounted. The hopper is designed with a minimum angle of 45° in all corners and can be fitted with aeration lateral. Standard outlets are 180 x 180 mm.

Akron storage bins Type S with hopper or aeration floor

	Wall lengths (m x m)	Volume (m^3) per unit			Volume (m^3) based on no of sections (m)				
		Aeration floor (1,0 m height)	Hopper (1,85 m height)	Section (0,5 m height)	10	12	14	16	18
Hopper bins	**2,0 x 3,0**		5,4	2,8	33,4	39,0	44,6	50,2	55,8
	2,5 x 3,0		7,0	3,5	42,0	49,0	56,0	63,0	70,0
	3,0 x 3,0		8,8	4,2	50,8	59,2	67,6	76,0	84,4
				Total height[1]	*6,9 m*	*7,9 m*	*8,9 m*	*9,9 m*	*10,9 m*
Aeration bins	**2,5 x 3,0**	4,6		3,5	39,6	46,6	53,6	60,6	67,6
	2,5 x 4,0	6,4		4,6	52,4	61,6	70,8	80,0	89,2
	2,5 x 5,0	8,3		5,8	66,3	77,9	89,5	101,1	112,7
	2,5 x 6,0	10,2		7,0	80,2	94,2	108,2	122,2	136,2
	3,0 x 3,0	5,7		4,2	47,7	56,1	64,5	72,9	81,3
	3,0 x 4,0	8,1		5,7	65,1	76,5	87,9	99,3	110,7
	3,0 x 5,0	10,1		7,0	80,1	94,1	108,1	122,1	136,1
	3,0 x 6,0	12,5		8,5	97,5	114,5	131,5	148,5	165,5
				Total height	*6,0 m*	*7,0 m*	*8,0 m*	*9,0 m*	*10,0 m*

1) Exclusive of height under hopper outlet.



Lorry loading bin Type S

The Type S lorry loading bin is designed for fast loading of grain transports, but can also be used for temporary storage.

Easy to extend

The support structure is designed for a wide lane between the supports. The bin itself is based on Akron's modular Type S wall elements. The modular system allows for easy extension should the storage requirements change. The lorry loading bin can be divided into two compartments by fitting an intermediate wall in the bin and splitting the hopper internally.

The support structure is delivered in one piece. Final assembly is made on site. No welding is required to fit the legs to the support structure.

No of sections	Total height (m)	Volume (m^3) based on wall lengths (m x m) 4,0 x 3,0
0	6,0	7,2
2	7,0	18,6
4	8,0	30,0
6	9,0	41,4
8	10,0	52,8
Lane width (m)		3,6
External width (m)		4,0
External length (m)		3,0

1) Free height under outlet damper = 4,50 m.

Outdoor grain bins

Outdoor storage bins are a suitable choice for storing large amounts of grain. Although primarily designed for dry grain, bins fitted with a suitable aeration system can also be used for short-term storage of wet grain prior to drying. Akron offers outdoor storage bins of Westeel and Symaga brands. Westeel is one of the world's largest manufacturers of outdoor storage bins with products well suited for Northern European conditions. The combination of Westeel bins and Akron's renowned high-quality aeration solutions is a very powerful solutions for storing grain without loss of quality.

Westeel storage bins are available in several diameters and utilise a section height of 1150 mm. All models can be provided with aeration for low, even storage temperatures and minimal temperature deviations compared to ambient conditions. For buffer storage prior to drying, the unique Akron air sweep hopper is a perfect choice, with its combination of aeration and discharging function. A wide offering of level and temperature monitoring solutions is available for solitary use or as part of a larger monitoring system.

Flat floor bin with sweep auger

Bins with flat floor are discharged by gravity through a center mounted floor outlet. Remaining grain is moved to the outlet by a horizontal auger moving in a circular pattern around the outlet. If aeration is required, this can either be achieved by mounting an inner, perforated floor 330 mm above the bottom, or by casting air channels in the concrete foundation which are then covered by perforated sheets.

Hopper bins

Westeel grain bins can be delivered with 45° internal hoppers, a setup that works well for buffer storage prior to drying. The hopper can be fitted with aeration laterals for aeration of the grain.

Air sweep hopper bins

The unique Akron air sweep hoppers can be fitted in 21xx and 24xx bins and comprises a 30° hopper with air sweep functionality. The air sweep hoppers allows high aeration intensity for both dry and wet grain for highest quality. The air sweep openings are directed towards a center mounted outlet, through which the grain is discharged by the air flow. The hopper is available in two leg height versions; the higher version allows for a conveyor or auger underneath the outlet whereas the lower version requires a channel in the base plate.

Outdoor storage bin with flat floor for sweep auger discharge (assortment)

No of sections	Wall height (m)	Model	15xx	18xx	21xx	24xx	27xx	30xx	33xx	36xx	42xx	48xx
		Diameter (m)	4,58	5,49	6,41	7,32	8,24	9,15	10,07	10,98	12,81	14,64
4	4,52	Volume (m³)	81	118	163	217	279	351	431	521	732	985
		Total height (m)	5,76	6,02	6,28	6,55	6,81	7,07	7,22	7,48	8,00	8,53
5	5,64	Volume (m³)	99	144	199	264	338	423	519	626	874	1 171
		Total height (m)	6,88	7,14	7,40	7,66	7,92	8,19	8,33	8,60	9,12	9,65
6	6,76	Volume (m³)	117	170	235	310	397	496	607	730	1 016	1 357
		Total height (m)	7,99	8,22	8,48	8,75	9,01	9,31	9,40	9,66	10,18	10,71
7	7,87	Volume (m³)	135	196	270	357	456	568	695	835	1 159	1 543
		Total height (m)	9,11	9,33	9,59	9,86	10,12	10,42	10,51	10,77	11,29	11,82
8	8,99	Volume (m³)	153	223	306	403	515	641	782	939	1 301	1 728
		Total height (m)	10,23	10,45	10,71	10,98	11,24	11,54	11,63	11,89	12,41	12,94
9	10,11	Volume (m³)	171	249	341	449	573	714	870	1 044	1 443	1 914
		Total height (m)	11,35	11,57	11,83	12,10	12,36	12,66	12,75	13,01	13,53	14,06
10	11,23	Volume (m³)		275	377	496	632	786	958	1 149	1 586	2 100
		Total height (m)		12,69	12,95	13,22	13,48	13,78	13,87	14,13	14,65	15,18
11	12,34	Volume (m³)		301	412	542	691	859	1 046	1 253	1 728	2 286
		Total height (m)		13,8	14,06	14,33	14,59	14,89	14,98	15,24	15,76	16,29
12	13,46	Volume (m³)		327	448	589	750	932	1 134	1 358	1 870	2 472
		Total height (m)		14,92	15,18	15,45	15,71	16,01	16,10	16,36	16,88	17,41

			Outdoor 45° hopper bin			Outdoor 30° air sweep hopper bin			
		Model	15xx	18xx	21xx	21xx		24xx	
		Diameter (m)	4,58	5,49	6,41	6,41		7,32	
No of sections	Wall height (m)					low	high	low	high
5	5,64	Volume (m³)	110	164	231				
		Total height (m)	9,72	10,44	11,14				
6	6,76	Volume (m³)	128	190	267	200	164	256	210
		Total height (m)	10,84	11,56	12,25	8,48		8,75	
7	7,87	Volume (m³)	148	219	306	235	199	303	257
		Total height (m)	11,95	12,66	13,38	9,59		9,86	
8	8,99	Volume (m³)	166	245	341	271	235	349	303
		Total height (m)	13,07	13,78	14,50	10,71		10,98	
9	10,11	Volume (m³)	184	271	377	306	270	395	349
		Total height (m)	14,19	14,90	15,61	11,83		12,10	

Grain intake and transport solutions

Akron provides a wide range of internally developed solutions for intake and transport of grain. Products include intake and elevator pits, bucket elevators, tube and trough augers and belt conveyors for very wet material. To augment our own products we also provide transport equipment and accessories from other leading brands.

Intake pits

Akron intake pits are available fully welded and painted or in galvanised finish for assembly on site. Both versions come in several sizes and can be fitted with integrated adapters for common chain conveyor makes.

Standard volumes are 12, 18 and 24 m^3 for 3x4m pits and 35m^3 for 3x5.5m pits Larger pits can be manufactured to order if larger capacity is required. Standard scope of supply includes welded drive-over grating. Options include lighter grating versions and intake pit protective covers to minimise contamination of the grain in the pit. Akron can also deliver smaller, gravity discharged pits.

Akron intake pits

Volume	Width mm	Length mm		Depth excl conveyor mm	Length conveyor mm
		Open length	Total length		
12 m^3	4 000	3 000	3 400	1 160	2 500
18 m^3	4 000	3 000	3 400	1 760	2 500
24 m^3	4 000	3 000	3 400	2 260	2 500
27 m^3	5 500	3 000	3 400	1 760	4 000
35 m^3	5 500	3 000	3 400	2 260	4 000

Elevators and conveyors

Akron delivers complete transport solutions with capacities up to 300 tph. Every solution is optimised for optimal efficiency and availability. In- and outlets can be motorised or manual, depending on the required automation level. Elevators can be fitted with dust and chaff removal systems and other options.

Akron bucket elevators

Akron brand bucket elevators are available for 40, 60, 80 and 100 tph capacity. The elevator base has inlets on both sides, rotation sensor and integrated belt tensioning system. A wide assortment of inlets and round or rectangular outlets are available as options.

Elevator pits

Akron delivers several sizes of fully welded elevator pits with gravity discharge for use with Akron or other elevators. The fully welded design ensures a moisture-free operation and allows for fast installation.

Distributors

2-, 3-, 6- and 8-way distributors are available for efficient routing of the material, either motorised or manual with or without position indication.

Belt conveyors

The Akron FT range of belt conveyors are designed for safe transportation of very wet or non-homogenous material. The 500 mm wide belt can be delivered with or without flights. The standard FT range comprises lengths between 4 and 8 meters, for placement inclined up to 40° to the horisontal. Standard belt speeds are 1 or 2 m/s. Other lengths and belt speeds available upon request.

SKANDIA ELEVATOR

Long relationship with Skandia Elevator

Skandia Elevator has one of the widest grain transport equipment ranges on the market. Akron has an extensive cooperation with Skandia Elevator in terms of chain conveyors, chain- and bucket elevators, dust- and chaff removal systems, distributors and grain pipe systems. Akron intake pits as well as Akron Svegma batch and continuous driers are designed for direct integration with Skandia Elevator conveyors for optimal functionality.
The Skandia Elevator transport equipment range covers all requirements from 20 to 300 tph.

Transport augers for grain

Akron has developed and manufactured augers since the 1950s. The current range encompasses tube augers with capacities up to 100 tph and U-trough augers up to 65 tph.

Tube augers

Akron tube augers are available in diameters from 100 to 250 mm. The augers can be delivered with gearbox, direct or chain link drive for maximum cost efficiency without lowering capacity.

The drive package can be fitted in either inlet- or outlet end of the auger. Straight or angled inlets and outlets are available. Inlet hoppers, protection grids and other options are available for safe and efficient operation.

Tube augers can be inclined up to 70°. For D-100 and D-250, the inlet and outlet section are 1 meter long respectively. For D-125, D-150 and T/TO-80, the drive section is 3 meters long. 1, 2 and 3 meter extension sections are available for all auger types (for D-100 also 0,5 and 4 m extensions).

Akron tube augers D-100, D-125, D-150 and T/TO-80 are manufactured in galvanised steel. D-250 is delivered in painted steel.

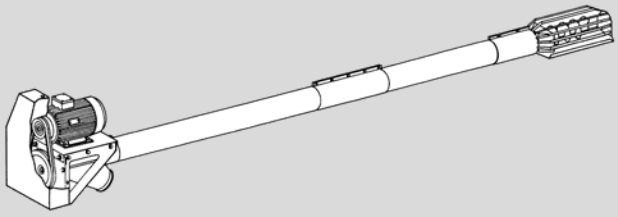
U-trough augers

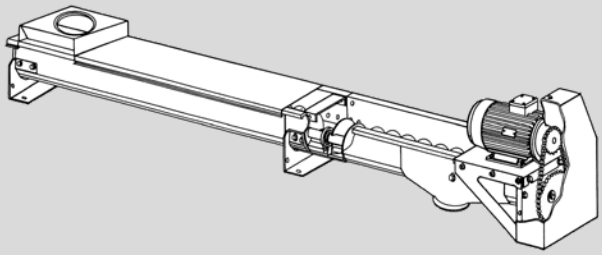
Akron U-trough augers are designed for horisontal grain transport. They require low installation height and can easily be extended to required length and number of outlets.

U-trough augers are available in four sizes, with trough widths from 107 to 236 mm. A wide range of motor and gearing arrangements allow for almost any capacity. The drive section can be fitted in either inlet- or outlet end. U-trough augers can also be delivered with reversible drive with inlet in the centre and outlets in both ends.

U-trough flights are suspended in bearings for safe and secure operation. Extensions are available in 1 and 2 meter sections, with or without outlets. The troughs are fitted with support feet and the outlet is placed in one end of the extension section.

Akron U-trough augers are delivered in galvanised steel except TU-24 which is delivered painted.





Tube augers

Type	Diameter mm	Speed		Capacity ton/h based on inclination				Recommended motor size in kW based on auger length									
		Motor	Auger	0°	10°	45°	70°	3 m	4 m	5 m	6 m	7 m	8 m	9 m	10 m	11 m	12 m
D-100	100	1400	1400	23	22	16	12	*1,1*	*1,1*	*1,5*	*2,2*	*2,2*	*2,2*	*3,0*	*3,0*	*3,0*	*3,0*
		1400	1150	22	21	15	11	*0,75*	*1,1*	*1,1*	*1,5*	*2,2*	*2,2*	*2,2*	*3,0*	*3,0*	*3,0*
		950	950	17	16	12	10	*1,1*	*1,1*	*1,5*	*2,2*	*2,2*	*2,2*	*3,0*	*3,0*	*3,0*	*3,0*
		950	790	15	14	11	9	*0,75*	*1,1*	*1,1*	*1,5*	*2,2*	*2,2*	*2,2*	*3,0*	*3,0*	*3,0*
		1400	580	13	12	9	7	*0,75*	*1,1*	*1,1*	*1,5*	*1,5*	*2,2*	*2,2*	*2,2*	*3,0*	*3,0*
		950	395	8	7	6	5	*0,75*	*1,1*	*1,1*	*1,5*	*1,5*	*2,2*	*2,2*	*2,2*	*3,0*	*3,0*
D-125	125	1400	700	30	28	20	15	*1,5*	*2,2*	*2,2*	*2,2*	*3,0*	*3,0*	*4,0*	*5,5*	*5,5*	*5,5*
		950	475	22	20	15	11	*1,5*	*2,2*	*2,2*	*2,2*	*3,0*	*3,0*	*4,0*	*5,5*	*5,5*	*5,5*
		700	350	16	15	11	8	*1,1*	*1,5*	*1,5*	*2,2*	*2,2*	*2,2*	*3,0*	*4,0*	*4,0*	*4,0*
D-150	150	1400	625	48	44	31	26	*2,2*	*3,0*	*3,0*	*3,0*	*4,0*	*4,0*	*5,5*	*5,5*	*7,5*	*7,5*
		950	425	31	28	20	17	*2,2*	*3,0*	*3,0*	*3,0*	*4,0*	*4,0*	*5,5*	*5,5*	*7,5*	*7,5*
		700	310	24	22	16	13	*2,2*	*2,2*	*2,2*	*2,2*	*3,0*	*3,0*	*4,0*	*4,0*	*5,5*	*5,5*
T-80 TO-80	200	1400	420	72	68	59	45	*3,0*	*4,0*	*4,0*	*5,5*	*5,5*	*5,5*	*7,5*	*7,5*	*11,0*	*11,0*
		950	280	48	45	39	30	*3,0*	*4,0*	*4,0*	*5,5*	*5,5*	*5,5*	*7,5*	*7,5*	*11,0*	*11,0*
		700	210	36	34	30	23	*2,2*	*3,0*	*3,0*	*4,0*	*4,0*	*4,0*	*5,5*	*5,5*	*7,5*	*7,5*
D-250	250	950	250	105		93		*7,5*	*7,5*	*11,0*	*11,0*	*11,0*	*11,0*	*15,0*	*15,0*	*15,0*	*15,0*

Capacities based on wheat 800 kg/m³ with 14% moisture content.

U-trough augers

Type	Trough width mm	Speed		Capacity ton/h	Recommended motor size in kW based on auger length								
		Motor	Auger		3 m	4 m	5 m	6 m	7 m	8 m	9 m	10 m	11-15 m	16-20 m
U-107	107	1400	580	13	*0,75*	*0,75*	*1,1*	*1,1*	*1,5*	*1,5*	*2,2*	*2,2*	*2,2*	*3,0*
		950	395	8										
		700	290	7										
U-137	137	1400	500	28	*1,1*	*1,5*	*1,5*	*2,2*	*2,2*	*3,0*	*3,0*	*3,0*	*4,0*	*5,5*
		950	340	18										
		700	250	14										
U-167	167	1400	420	45	*1,5*	*2,2*	*2,2*	*3,0*	*3,0*	*4,0*	*4,0*	*4,0*	*5,5*	*7,5*
		950	280	30										
		700	210	22										
TU-24	236	1400	420	65	*2,2*	*3,0*	*3,0*	*4,0*	*4,0*	*5,5*	*5,5*	*5,5*	*7,5*	*11,0*
		950	280	45										
		700	210	35										

Capacities based on wheat 800 kg/m³ with 14% moisture content.

NIRVANA

Akron Nirvana hammer and roller mills

Akron hammer and roller mills of Nirvana brand are proven, robust designs with high capacity and availability for milling of feed and similar granulated material.

Akron Nirvana hammer mills FH

Nirvana hammer mills are available in two sizes; FH64 and FH100. The mill rotor and fan is fitted directly to the motor axle. The fan periphery is made of a robust steel cover. The mill housing is easy to disassemble for quick sieve changes and other service. Nirvana FH hammer mills are centrally fed for even distribution of the material over the sieve surface.

The integrated fan efficiency can be varied by selecting a rotor with 2, 4 or 8 fan blades. The hammers are made of hardened steel and can be turned 4 times.

Akron Nirvana roller mills K

Nirvana K-series roller mills are available in five models with 1, 2 och 3 rollers. The third roller is only available on K600 and is designed for pre-milling of peas. All rollers are springloaded and the rolling pressure can be adjusted manually.

The mill is top-loaded with an integrated hopper. After milling, the final material is discharged into an auger connection.

Akron Nirvana K-type roller mills are delivered with metal-separating magnet, speed guard and rubber vibration dampers.

Akron Nirvana hammer mills FH

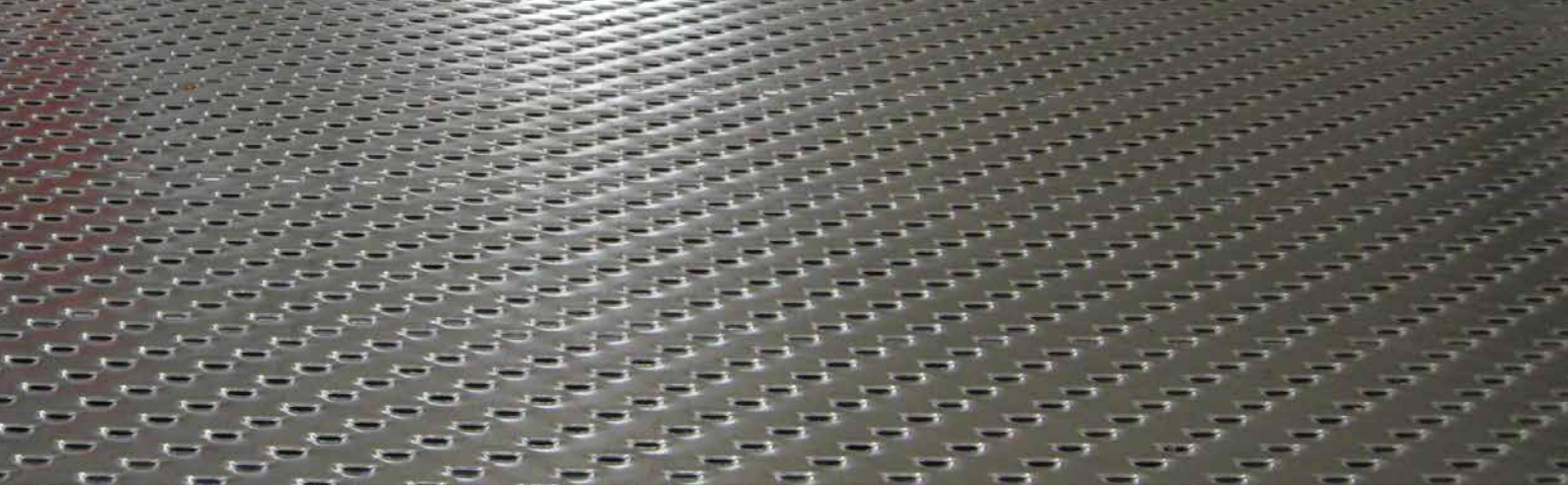
Type	Motor kW	No of hammers	Capacity* kg/h	Max pneumatic transport length, meter**		
				2 blades	4 blades	8 blades
FH 64	5,5	16	250-300	30		
	7,5	16	300-450	35	50	
FH 100	11,0	24	600-800	35	50	
	15,0	24	800-1 000	35	50	60
	18,5	28	900-1 300	35	50	60
	22,0	28	1 000-1 500	35	50	60

**) Varies depending on e g suction length, sieve dimension and material type and moisture content.*
***) Reduced by 2 m for each 1 m height difference and by 5 m for each 90° bend.*

Akron Nirvana roller mills K

Type	Motor kW	No of rollers	Capacity* kg/h	Roller diameter mm	Roller width mm
K 300	4,0	1	400-700	350	125
K 300 D	5,5	2	400-900	350	125
K 500	7,5	1	600-1 200	450	200
K 500 D	7,5	2	600-1 500	450	200
K 600	7,5	3	900-1 500	450**	200

**) Varies depending on the material type.*
***) Third (pea) roller diameter = 140 mm.*



Aeration of grain for optimal quality and capacity

Akron has been a proponent for efficient aeration of grain for more than fifty years. The airsweep floor was introduced in Sweden by the company already in the 1960s, enabling safe and efficient aeration of grain for all sizes of grain bins. Today, grain aeration is common both in smaller farms and industrial applications alike.

The main purpose of aeration is to achieve a temperature decrease in the grain and simultaneously even out temperature differences in the bin. It is recommended to try to reach a temperature below 15°C as soon as possble. For long-term storage, a temperature between 0-5°C is recommended. For optimal results, aeration should be constant and be performed when the ambient air is cool and dry. Aeration should be avoided when the relative moisture in the ambient air is above 75%.

Important to dimension properly

When dimensioning aeration bins, it is paramount to allow for sufficient air volumes. This is especially important if wet grain is to be stored in the bin. Higher moisture contents require increased air volumes to prevent heat occurrence. The table below shows the lowest recommended air amount and approximate pressures at different moisture levels and storage heights. As a rule of thumb, 100 m^3 air/ton grain/hour is normally sufficient. At moisture contents exceeding 24% the storage height should be restricted.

Pressure in mmH_2O during aeration of grain						
Storage height m	Grain moisture content					
	13%	15%	17%	20%	24%	30%
15	14	110	540			
12	9	64	312			
10	5	40	200	560		
8	3	23	116	320		
6	2	11	57	156	336	
5	1	8	37	101	215	400
4	1	5	21	58	122	225
3	1	2	11	29	60	110
2	1	1	4	11	23	40
1	1	1	1	2	4	7
Air volume m^3 / ton / h	*2,5*	*10*	*30*	*60*	*100*	*150*

The fan capacity is extremely important. The pressure that the fan must overcome increases proportionally to the storage height, and additionally in proportion to $V^{1.5}$, where V = air speed. A doubling of the storage height requires a fan dimensioned for pressures 5-6 times higher. At high aeration requirements, the pressure increases dramatically if the storage height is increased.

Fan solutions

Akron has long experience in advanced development, testing and manufacturing of fans for agricultural as well as industrial use. The product range covers a wide range of air flows, speeds and pressure lifts, using single or multistage axial fans and radial fans. The impeller and motor on axial fans can be optimised for exact customer requirements.

AFC, AFR and AKL

The AFC, AFR and AK fans are single stage fans with high efficiency and availability and are well suited for drying and aeration solutions. Single stage axial fans are suitable when large air flows are required, e g during aeration of grain with low moisture content. AFC fans are mounted in circular openings and AFR in a square frame. AKL fans have circular chassis that form part of the air channel.

AKD

The AKD fan is a dual stage axial fans with counter-rotating impellers. The AKD gives twice the pressure with high efficiency over a wide pressure range. The fan is therefore suited for use in aeration of grain where the back pressure varies due to storage height or volume of grain.

RFL

The Akron RFL centrifugal fans work in pressure areas up to 250 mmH_2O with high efficiency and silent operation. The RFL fans are suited for aeration of grain at high pressures, e g moist grain or high storage heights.

Turboclean

The Akron Turboclean is a combined fan and particle separation system specifically designed for use in grain drying, where the exhaust air can contain quite large amounts of dust. The Turboclean fan is perfectly suited for use in environments where clean air is required.

Akron Svegma continuous drier with Turboclean fans

Akron axial fan AFC / AFR / AKL (examples)

Type	Power kW	Speed rpm	Air volume m^3/h at static pressure mmH_2O							
			10	20	30	40	55	60	75	100
AFC/AFR/AKL 50	2,2	2 900	12 200	11 500	10 800	10 000	7 900	6 400	4 900	3 000
AFC/AFR/AKL 60	4,0	2 900	19 400	18 500	17 600	16 500	15 000	14 200	9 800	6 400
AFC/AFR/AKL 60	5,5	2 900	21 600	20 900	20 000	19 200	17 900	17 500	15 800	8 600
AFC/AFR/AKL 80	4,0	1 450	26 700	25 000	23 400	21 300	13 200	12 000	8 600	
AFC/AFR/AKL 90	5,5	1 450	35 000	32 600	30 400	27 700	21 200	17 200	10 800	
AFC/AFR/AKL 100	7,5	1 450	46 300	43 800	41 100	38 000	32 800	30 600	19 800	
AFC/AFR/AKL 112	11,0	1 450	62 500	59 400	56 000	52 300	45 700	43 400	31 000	11 300
AFC/AFR/AKL 125	18,5	1 450	95 000	91 500	88 000	83 500	73 500	69 500	52 000	26 500

Akron dual stage axial fan AKD

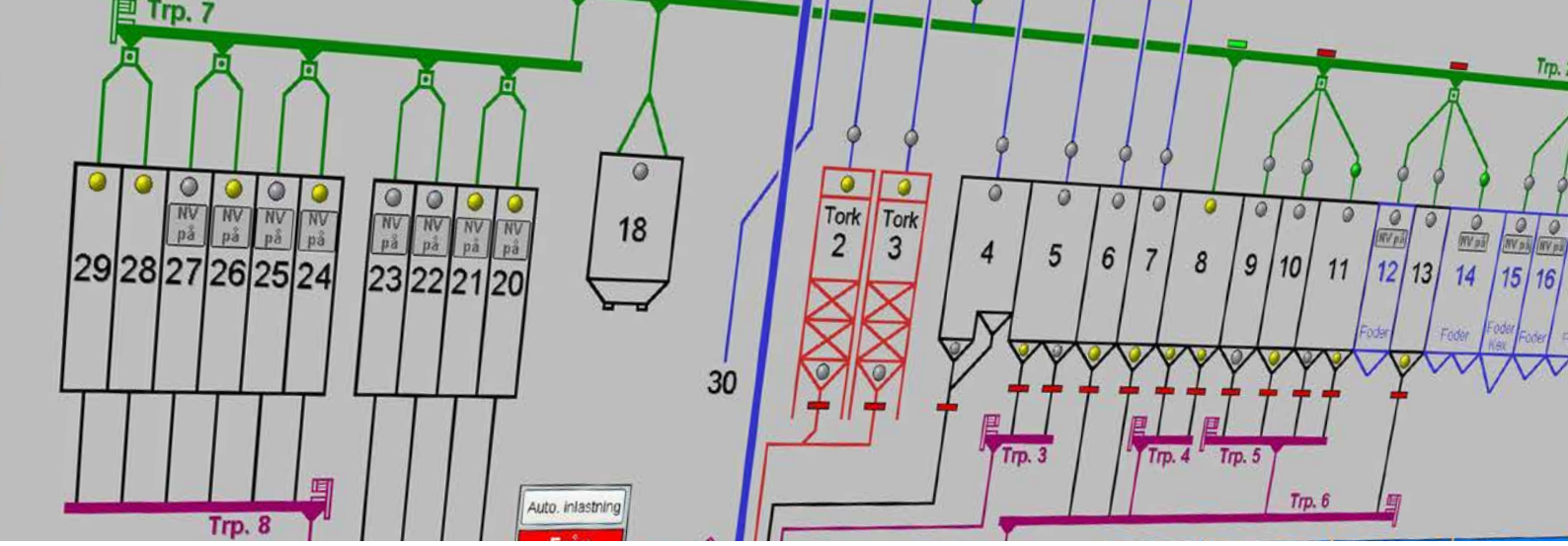
Type	Power kW	Speed rpm	Air volume m^3/h at static pressure mmH_2O					
			55	75	100	125	150	200
AKD 31	2x0,37	2 800	2 800	1 400	600			
AKD 40	2x1,5	2 860	8 100	7 800	7 300	6 800	3 500	
AKD 50	2x3,0	2 900	13 100	12 700	12 000	11 300	10 600	8 700
AKD 60	2x5,5	2 900	22 200	21 400	20 500	19 500	18 500	16 000
AKD 80	2x4,0	1 450	26 500	24 100	20 600	9 000		
AKD 90	2x5,5	1 450	31 000	28 700	26 000	23 100	20 200	11 000
AKD 100	2x7,5	1 450	41 700	39 000	35 600	32 200	29 000	20 000
AKD 112	2x11,0	1 450	57 000	53 800	50 000	45 800	41 300	32 200
AKD 125	2x18,5	1 450	86 300	82 300	77 000	71 200	64 700	50 600

Akron centrifugal fan RFL

Type	Power kW	Speed rpm	Air volume m^3/h at static pressure mmH_2O					
			55	75	100	125	150	200
RFL 40	2,2	2 850	5 500	5 200	4 800	4 100	3 550	
RFL 40	3,0	2 890	6 850	6 500	6 200	5 750	5 300	4 250
RFL 45	4,0	2 890	7 550	7 200	6 700	6 300	5 950	5 000
RFL 45	5,5	2890	10 650	10 150	9 650	9 000	8 350	6 950
RFL 63	4,0	1 450	13 500	12 500	11 400	9 450		
RFL 71	5,5	1 460	16 550	15 500	14 200	13 150	10 800	
RFL 71	7,5	1 460	20 900	19 400	17 450	15 500	13 300	
RFL 80	11,0	1 470	27 350	25 200	23 200	21 400	19 800	15 300
RFL 80	15,0	1 470	31 300	28 800	26 450	24 500	22 500	17 650
RFL 90	18,5	1 475	35 200	34 900	34 700	31 800	29 600	24 800
RFL 90	22,0	1 475	43 200	41 750	38 900	36 000	33 850	30 050
RFL 100	30,0	1 480	48 000	47 400	45 600	43 800	41 700	39 100
RFL 100	37,0	1 480	55 900	55 200	54 700	53 000	51 100	48 000

Akron Turboclean particle separation fan

Type	Power kW	Speed rpm	Air volume m^3/h at static pressure mmH_2O				
			55	75	100	125	150
TC 15	15,0	1 450	38 000	35 000	31 000	25 000	
TC 22	22,0	1 450	46 000	42 000	38 000	33 000	27 000
TC 30	30,0	1 450	56 000	53 000	48 000	43 000	34 000



Automation according to your requirements

A grain process plant can today be fully automated according to each customer's needs and requirements. Most functions can be motorised and monitored remotely. Control of the drying process and the heat source are integrated as components in the main system. The HMI (Human-Machine Interface) is normally based on a graphical representation of the plant, either on a local screen mounted on the control cabinet or in a separate control room, or remotely via laptop, smartphone or tablet. The limits are most often set by imagination or economic feasability rather than technical factors. We can of course deliver manual dampers and outlets instead should you so require.

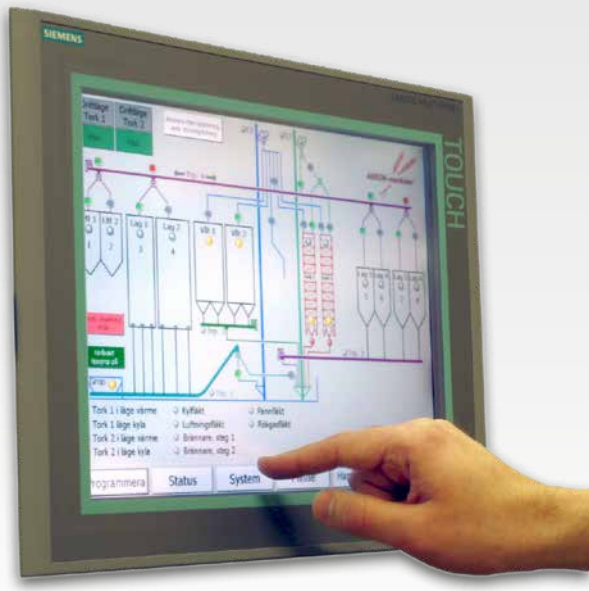
At Akron, all development and design of plant and drier control and monitoring systems are made internally by personnel with many years of experience of grain handling and process plants. We build the automation functions, transport queues, monitoring functions and interfaces you require, in order to simplify your operation to allow for highest efficiency with minimal manual labour involved. In short this can mean that you initialise the system by telling it which bins contain wet grain and which should store the dried product, and then just let it get on with it. You get time to do other things, and above all peace of mind to allow for sound sleep at night.

Efficient drier control - DCC and DC2

Akron has developed drying logic for decades. Control of the drying process can today be based on one or more measurable parameters, e g time, temperature, weight and moisture content. In addition to large, customer adapted automation systems, Akron also delivers scalable, standardised drying control solutions for fast installation and simple operation. Akron DC2 for dual batch driers and Akron DCC for continuous driers are based on the same PLC as our large-scale systems and includes a wide array of functions in addition to the central drying control core. Examples of such additional functions are advanced trending, recipes for storage of common parameters, alarm and status updates via email or SMS to computer, tablet or smartphone and much more.

Prepared for the future

Both DCC and DC2 control systems are prepared for future upgrades and logic expansions. DC2 systems based on time can easily be updated to temperature or weight control without major changes in the electrical cabinet. DC2 systems also incorporate functions for simultaneous drying as well as Akron's patented Twin drying optimisation.



AKRON

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AKRON is Sweden's leading grain handling solutions provider, serving agricultural and industrial customers globally since 1935. Our trademarks Akron and Svegma guarantee the highest quality, availability and functionality. Our product range is internally developed and covers all agricultural and industrial grain handling needs, from transportation and loading solutions to drying, storage and state-of-the-art operational control.
Our head office and manufacturing plant is located in Järpås, Sweden. Our products are used all over the world.

akron.se