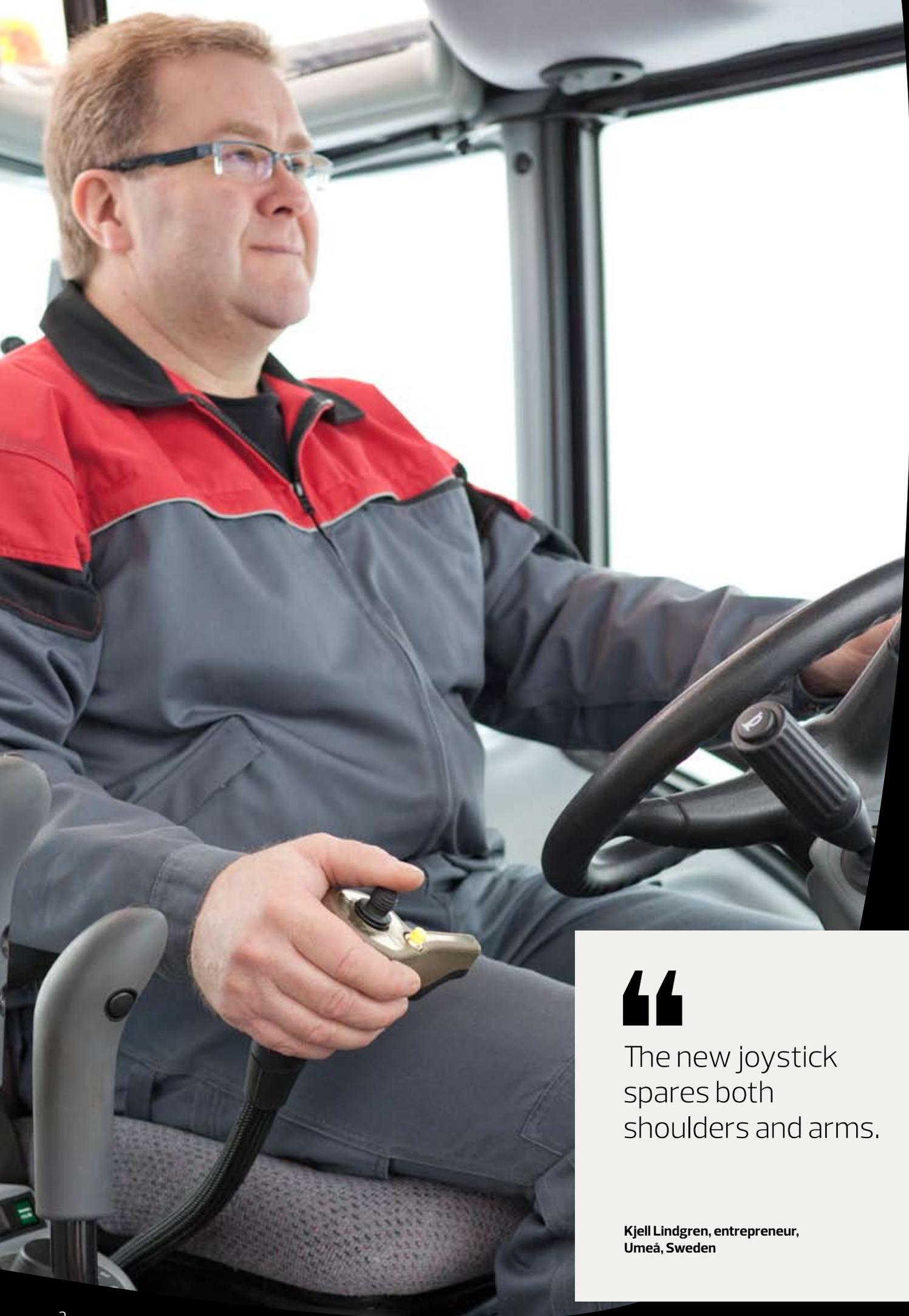


Ultimate Front Loader Control

LCS™ – a revolutionary control system for your front loader.
Your tractor has never been so efficient.





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The new joystick
spares both
shoulders and arms.

**Kjell Lindgren, entrepreneur,
Umeå, Sweden**

A technical breakthrough, giving you unsurpassed user-friendliness

The Loader Control System strengthens Älö's position as the world-leading manufacturer of high quality front loaders. LCS™ brings together many technical innovations in one system:

- **An entirely new type of valve. The unique LCS valve program has been specially developed for the requirements and functions of the front loaders of today and tomorrow, giving a level of control that no other manufacturer can provide.**
- **An integrated multi-coupler* which saves time and also protects the environment.**
- **An entirely new, thumb-controlled joystick which further improves ergonomics and driving characteristics.**

* optional

Each one of these innovations provides significant advantages for you and your tractor. Together, they enable entirely new levels of loader control, user-friendliness, efficiency and safety. LCS™ will be standard on all new Quicke and Trima loaders during autumn 2010. There is also the opportunity to upgrade existing loaders and tractors with the new system.

Welcome to the future.



The new way to handle the loader with just your thumb – making your day to day work playfully simple.

**Serge Mazon, cattle farmer,
Biollet, France**



The new control system offers a wide variety of functions that I didn't know about before.

**Poller Josef, biogas plant,
Oberbayern, Tyskland**

One system. Hundreds of advantages.

Valve program



Optimises control and driving characteristics

At the "heart" of LCS™ is a unique valve program; the only valves in the world that have been specially developed for the specific functions and requirements of front loaders. This uncompromising attitude offers you many advantages: outstanding control, direct response and drivability through optimally-adapted flow – for every occasion and regardless of load weight. The valve is also energy efficient and therefore enables lower fuel consumption.

Many advantages:

- Complete control of heavy loads thanks to the load-independent oil flow. This means that the loader speed is always the same, no matter what load is carried in the implement.
- Easier to perform multiple functions, such as lowering and crowding.
- Ålö LCS™ Open Centre – the valve has the same properties as the Ålö LCS™ Load Sensing-valve. Both valves are based on the same load sensing principle.
- Energy-saving low pressure regeneration.
- The cylinders are always filled with oil, which eliminates waiting time and cavitation.
- Both lift and implement circuits feature a float position. In addition to improved driving benefits, this also enables easy connection and disconnection of the loader and implement.
- The compact design means that the valve is ideally placed, whilst maintaining the driver's vision.

Multi-coupler



Smart and easy to handle with integrated electrical connector

The new unique flat-face multi-coupler with integrated electrical connector is the heart of LCS™, which, through its ingenious construction, saves time and also protects the environment. The compact design with swivel connections makes it very simple to use with a single hand. The construction of the multi-coupler means that it can be connected and disconnected even when pressurised. All quick connections are flat-face style and spill-free, making them simple to clean and maintain.

Many advantages:

- Both valves and hose kits have flat-face connections
- The multi-coupler is connected simply, with a single lever incorporating a locking catch.

Technical data

Max system pressure:	250 bar
Max tank pressure:	20 bar
Servo pressure:	23 bar
Max recommended flow, fixed pump:	120 l/min
Max recommended flow, variable pump:	150 l/min
Regulated flow to loader:	Max 90 l/min

Joystick



Electronic, thumb-controlled user-friendliness

Topping the range, is the **ElectroDrive LCS™ Professional** – a thumb-controlled joystick which improves ergonomics and drivability. You will see that it offers considerably greater control as well as a more relaxed manner of working, with minimal physical exertion. The joystick has a very flexible mount; called the 'swan neck', which – in a completely new way – enables the driver to find the best position to operate the loader. The joystick's ergonomic shape and flexible mount also minimises the vibrations and movement caused by driving over uneven and rough terrain. Other significant advantages are the ideally-located display with a user-friendly menu system, giving an overview and quick access to all loader functions.

Many advantages:

- New, unique control of the electronic joystick. Choose between controlling the loader with your thumb and index finger, or just your thumb
- Optimal ergonomic shaped hand grip. Particularly advantageous when used for lengthy jobs
- Easy to use display with backlighting. Information just as visible when used at night as during the day
- The electronic joystick is available in two different types – the ElectroDrive LCS™ Professional and the EasyDrive LCS™**, enabling you to adapt your LCS™ entirely to your own needs
- An alternative is the mechanical, cable-guided single lever control ErgoDrive LCS™

** EasyDrive LCS™ to be introduced in 2011

Which joystick meets your requirements best?

Electronic joystick or traditional cable control – you choose what suits you and your tractor best. Below you will find an overview of the functions of each joystick:



ElectroDrive LCS™ Professional



EasyDrive LCS™**



ErgoDrive LCS™

- Electronic joystick, thumb-controlled
- Mechanical joystick, cable operated
- Backlit display
- Fully proportional lifting and lowering of loader
- Fully proportional tilting and crowding of implement
- Float position on lowering movement
- Float position on tilt movement
- Lowering movement with regenerative function
- Tilt movement with regenerative function
- 3rd hydraulic function*
- 4th hydraulic function*
- Soft shifting between implement movement and 3rd hydraulic function
- Hydraulic implement lock*

Quick menu

- Shock absorber, on/off*
- Tortoise mode
- Shake function
- Visual AAC function
- Transport mode with shock absorber*
- Pressure relief function
- On/off 3rd hydraulic function*
- Locked 3rd hydraulic function*
- Continuous flow 3rd hydraulic function, configurable*
- On/off configuration of 4th hydraulic function*
- Hare function

Configuration menu

- Setup of 3rd hydraulic function
- Setup of 3rd hydraulic function on/off, (+/-) direction
- Programmable Quick Selection button
- Adjustable shake function in 9 steps
- Configuration of tortoise mode in 3 steps
- Setup of tortoise speed lift and lowering
- Setup of tortoise speed tilt and crowd
- Setup of display contrast
- Diagnostics menu
- Factory setting
- Service menu
- Non leakage flat-face quick couplers
- Multi-coupler with integrated electrical connection*
- Integrated accumulator
- Automatic charging of accumulator
- Dust cover
- Valve that does not effect the tractor system pressure
- Load sensing valve with heating function

	ElectroDrive LCS™ Professional	EasyDrive LCS™**	ErgoDrive LCS™
Electronic joystick, thumb-controlled	Yellow	Green	Red
Mechanical joystick, cable operated			Red
Backlit display	Yellow	Green	
Fully proportional lifting and lowering of loader	Yellow	Green	Red
Fully proportional tilting and crowding of implement	Yellow	Green	Red
Float position on lowering movement	Yellow	Green	Red
Float position on tilt movement	Yellow	Green	Red
Lowering movement with regenerative function	Yellow	Green	Red
Tilt movement with regenerative function	Yellow	Green	Red
3rd hydraulic function*	Yellow	Green	Red
4th hydraulic function*	Yellow	Green	Red
Soft shifting between implement movement and 3rd hydraulic function	Yellow	Green	Red
Hydraulic implement lock*	Yellow	Green	Red
Quick menu			
Shock absorber, on/off*	Yellow	Green	Red
Tortoise mode	Yellow		
Shake function	Yellow		
Visual AAC function	Yellow		
Transport mode with shock absorber*	Yellow	Green	Red
Pressure relief function	Yellow	Green	Red
On/off 3rd hydraulic function*	Yellow		
Locked 3rd hydraulic function*	Yellow		
Continuous flow 3rd hydraulic function, configurable*	Yellow		
On/off configuration of 4th hydraulic function*	Yellow	Green	
Hare function	Yellow		
Configuration menu			
Setup of 3rd hydraulic function	Yellow		
Setup of 3rd hydraulic function on/off, (+/-) direction	Yellow		
Programmable Quick Selection button	Yellow		
Adjustable shake function in 9 steps	Yellow		
Configuration of tortoise mode in 3 steps	Yellow		
Setup of tortoise speed lift and lowering	Yellow		
Setup of tortoise speed tilt and crowd	Yellow		
Setup of display contrast	Yellow	Green	
Diagnostics menu	Yellow	Green	
Factory setting	Yellow	Green	
Service menu	Yellow	Green	
Non leakage flat-face quick couplers	Yellow	Green	Red
Multi-coupler with integrated electrical connection*	Yellow	Green	Red
Integrated accumulator	Yellow	Green	
Automatic charging of accumulator	Yellow	Green	
Dust cover	Yellow	Green	Red
Valve that does not effect the tractor system pressure	Yellow	Green	Red
Load sensing valve with heating function	Yellow	Green	Red

* depending on the loader configuration



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We've had a fantastic response, not least in terms of how much LCS improves loader control...

Anders Lundgren,
Product Development Manager at Ålö AB



The LCS™ was first unveiled to the public in November 2009, at the world's largest agricultural machinery exhibition, Agritechnica. LCS™ received a lot of attention, and there were lengthy queues for the simulator, where visitors could experience the control system for themselves. In the beginning of 2010 LCS™ also received an American AE50 award and the Grand Prix at Techagro in the Czech Republic.

Direct success with industry accreditation and overwhelming user feedback. But how did this unique LCS™ control system come to fruition? Ålö's Product Development Manager Anders Lundgren explains how the LCS™ developed from concept to finished product.

LCS™ raises the bar for the entire front loader industry

What was the idea for LCS™, how did it start?

There were a number of linked reasons. Firstly, we wanted to create an entirely new, improved joystick for our professional customers. Secondly, we wanted to produce a simpler electronic joystick as an alternative to our traditional, mechanical single lever control. And thirdly, we wanted to produce a new, compact and easy to handle multi-coupler. When going through the wish list with our partner, creating an entirely new valve was suggested – the first ever produced for front loaders. If we had pursued this, the project would have grown considerably – not least in terms of costs. At the same time, we realised that an entirely new control system would offer our customers several advantages. We therefore took the decision to take the risk and use as many resources and as much time as necessary.

How has the timeframe shaped up for LCS™?

We started the LCS™ project in 2006. The first year was mainly taken up with discussions and brain storming for the LCS™ components, and later, how exactly the product would look. In 2008, we had all the pieces of the puzzle in place, including investments in constructing an entirely new valve. Our goal was then to showcase LCS™ at Agritechnica 2009, and launch the product in 2010 – in which we were also successful.

Were there any key issues during the project?

A large challenge was the work in adapting and optimising LCS™ to all the various tractor manufacturers' hydraulic systems. This included the construction of a test unit which could simulate each of these hydraulic systems. I would like to thank the hydraulic experts in the project group who solved this problem! Another issue was how the new, thumb-controlled joystick should be shaped. To be able to drive and hold the joystick using only your thumb whilst maneuvering the loader was something entirely unique and therefore an alien concept to the users. At the same time, we saw that it gave entirely new levels of control, for example, when driving over rough and uneven ground. This is thanks to the fact that you can hold the joystick constantly, without the risk of unintended maneuvers.

How did you test the system and the joystick?

To begin with, we worked extensively with ergonomic experts in order to find an optimal design. The next stage was sending around 40 test units to professional farmers in North America and Europe. The test users closely followed a pre-prepared program where all possible maneuvers and functions were tested – so that we could obtain as comprehensive a result as possible.

How was LCS™ received by the test customers?

We had a fantastic response, not least in terms of the improved control. This was partly thanks to the joystick, but also because the system constantly ensures the cylinders are filled with oil, meaning that the loader always reacts without any delay.

So, a success with the users then. How would you yourselves judge LCS™ compared with other Ålö innovations?

LCS™ is very similar to the 2004–2005 launch of our loader range Trima Plus and Quicke Dimension. And you should remember that we built an entirely new factory in order to achieve that. LCS™ is just as innovative, as there just hasn't been anything like it before. LCS™ raises the bar for the entire front loader industry. Above all, it offers new opportunities to users all over the world to gain maximum use from their tractor.

We maximise the use of your tractor. Every day.

Ålö's aim has been the same for over half a century: that our customers can clearly gain from choosing us as their supplier; be it in terms of time, money or other important customer advantages. Thanks to our focus on use, Ålö is today the world's leading front loader manufacturer within the field of agricultural tractors over 50 hp.

Ålö is characterised by rapid product development and systematic quality control, both when we introduce new products and in our daily production. We are currently represented in over 40 countries with a leading position in over 15 of those. Around 90% of our total production is exported.



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