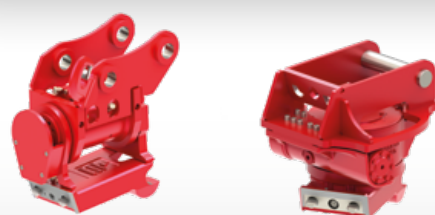
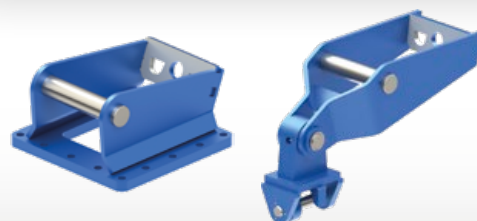
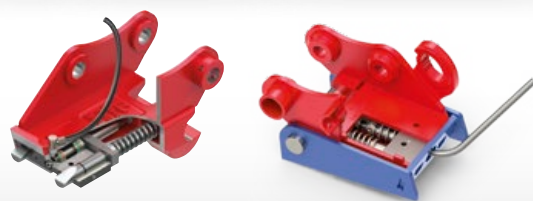


Quickcoupler for mini excavators



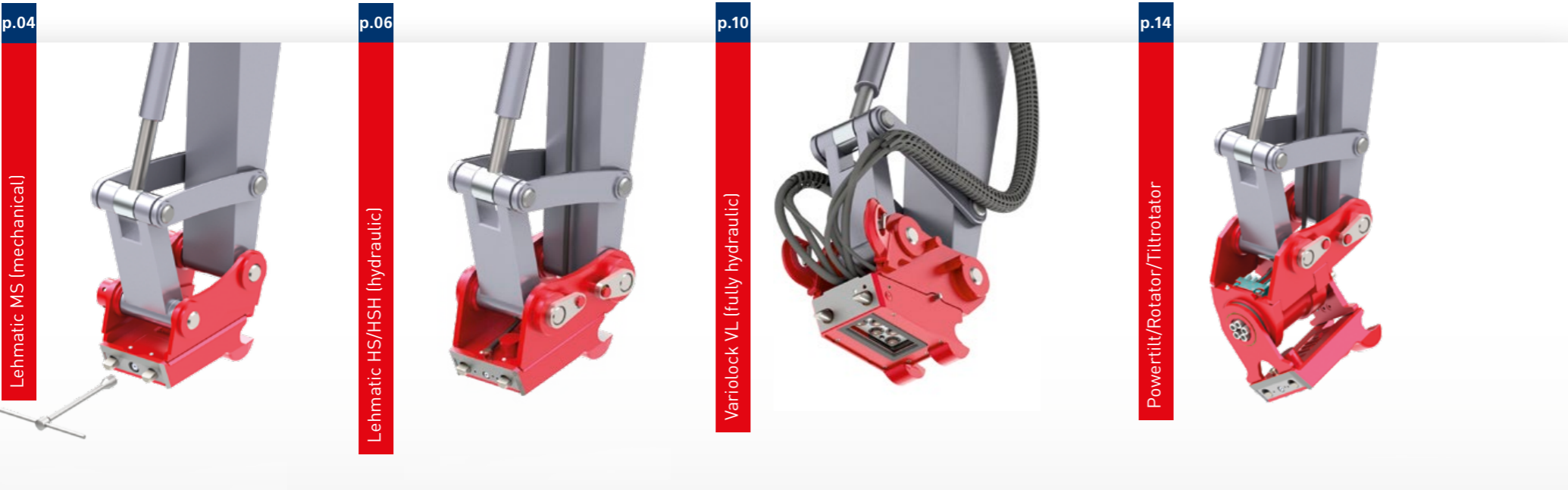
 1 - 6 t



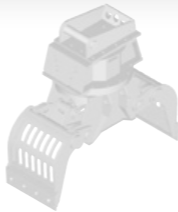
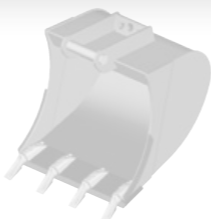
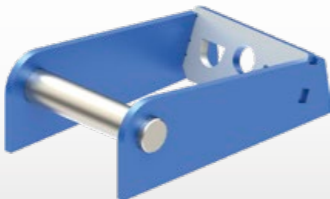
Mini quickcoupler for excavators from 1 to 6 t



One system concept - two components.
 An idea born over 25 years ago has since become standard equipment in over 140,000 excavators.
 With the quickcoupler on excavators and the adapter on the attachments, Lehnhoff has created a universal interface which allows the use of all attachments on different excavator makes.



p.08
Adapter



The mini excavator as multifunctional device

Lehnhoff quickcoupler systems significantly extend the usage range of excavators. Mini excavators are transformed into multifunctional equipment carriers for all buckets, grapples or demolition tools which are available for its class.
 The quick tool change of all attachments, including the hydraulic ones, allows a new, optimised way of working on construction sites. Lehnhoff quickcoupler systems are available for all excavator makes.



Since 2010, all Lehnhoff quickcoupler systems are Eurotest-certified by BG Bau.

Adapter for a stable partnership

It's the counterpart to the quickcoupler with excavator-specific mounting: the adapter. All Lehnhoff attachments for mini excavators are equipped with the suitable adapter as standard. In addition, the Lehnhoff adapter is available for all attachments on the market – advantages which make the universal Lehmatic adapter system a cost-efficient and future-proof investment.

p.16
LSC



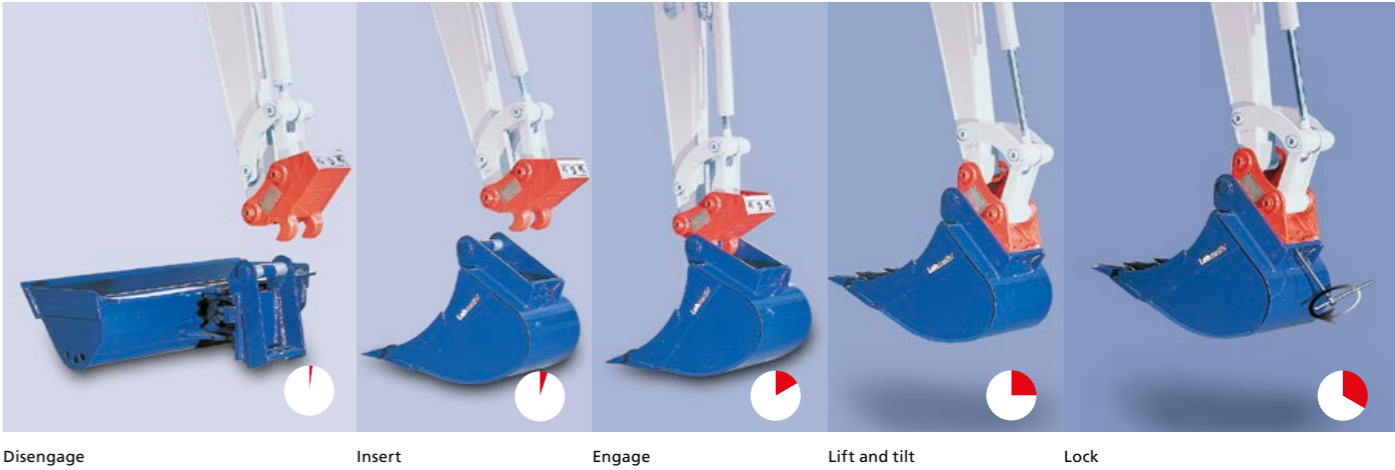
Lehmatic Safety Control LSC, optional for all hydraulic Lehnhoff quickcoupler systems

Lehmatic quickcoupler systems for solid connections

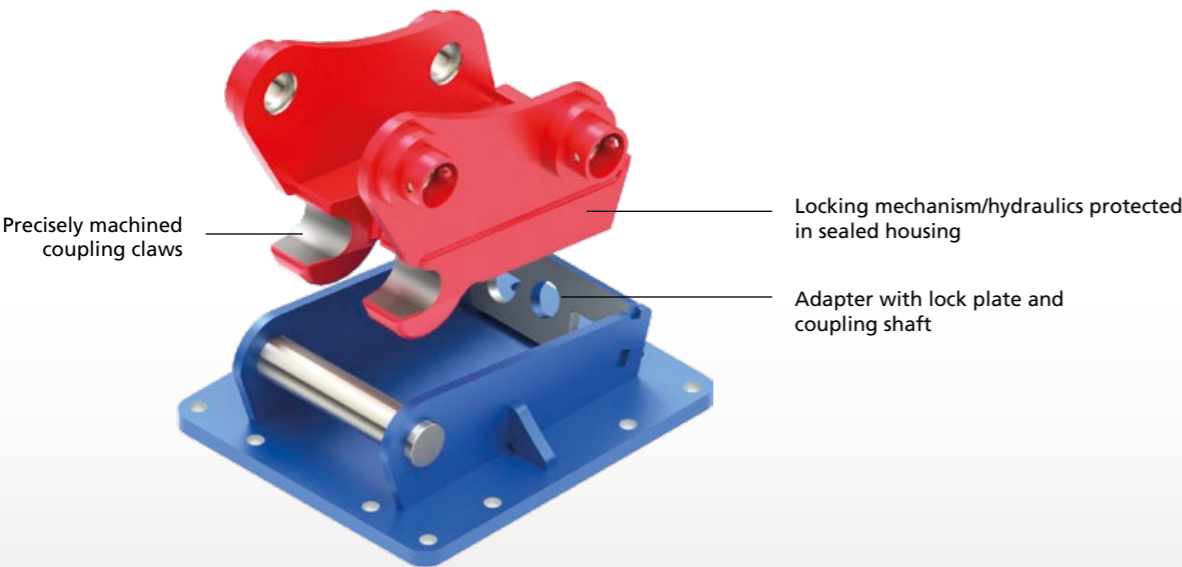


Solid connection:
Lehmatic quickcoupler and adapter

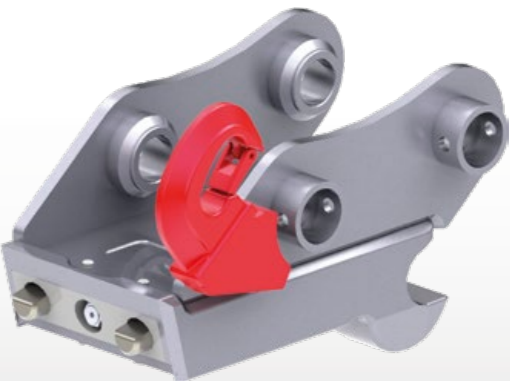
- Long service life thanks to robust cast steel housing, all contact surfaces precisely CNC-machined
- Secure, playfree connection between quickcoupler and adapter through patented locking system with automatic adjustment of the locking bolts
- Minimum frictional force loss through low build height
- Long service life and low maintenance thanks to sealed locking mechanism
- Available for all excavator makes and all suspensions



With the Lehmatic quickcoupler systems, the excavator driver can refit their hydraulic excavator by themselves in less than 1 minute, from one attachment to another, with hydraulic actuation, even directly from the driver's cab.



All Lehmatic quickcouplers are optionally available with load hooks.

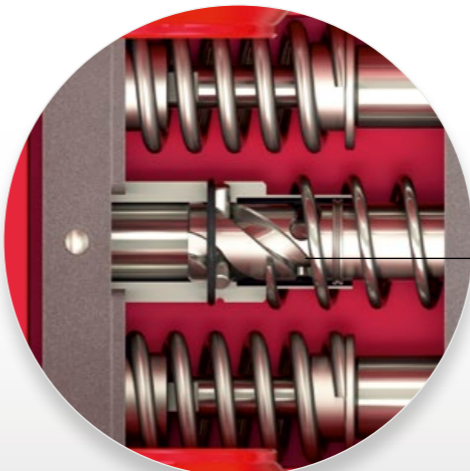


MS mechanical quickcoupler with new 180° locking mechanism

- Quick, easy and secure locking with a socket wrench and only 180° switching distance
- Adjusting and readjusting the connection is not necessary
- Self-locking dead-center locking mechanism, sealed in housing
- Also available with load hook (2-3 t)



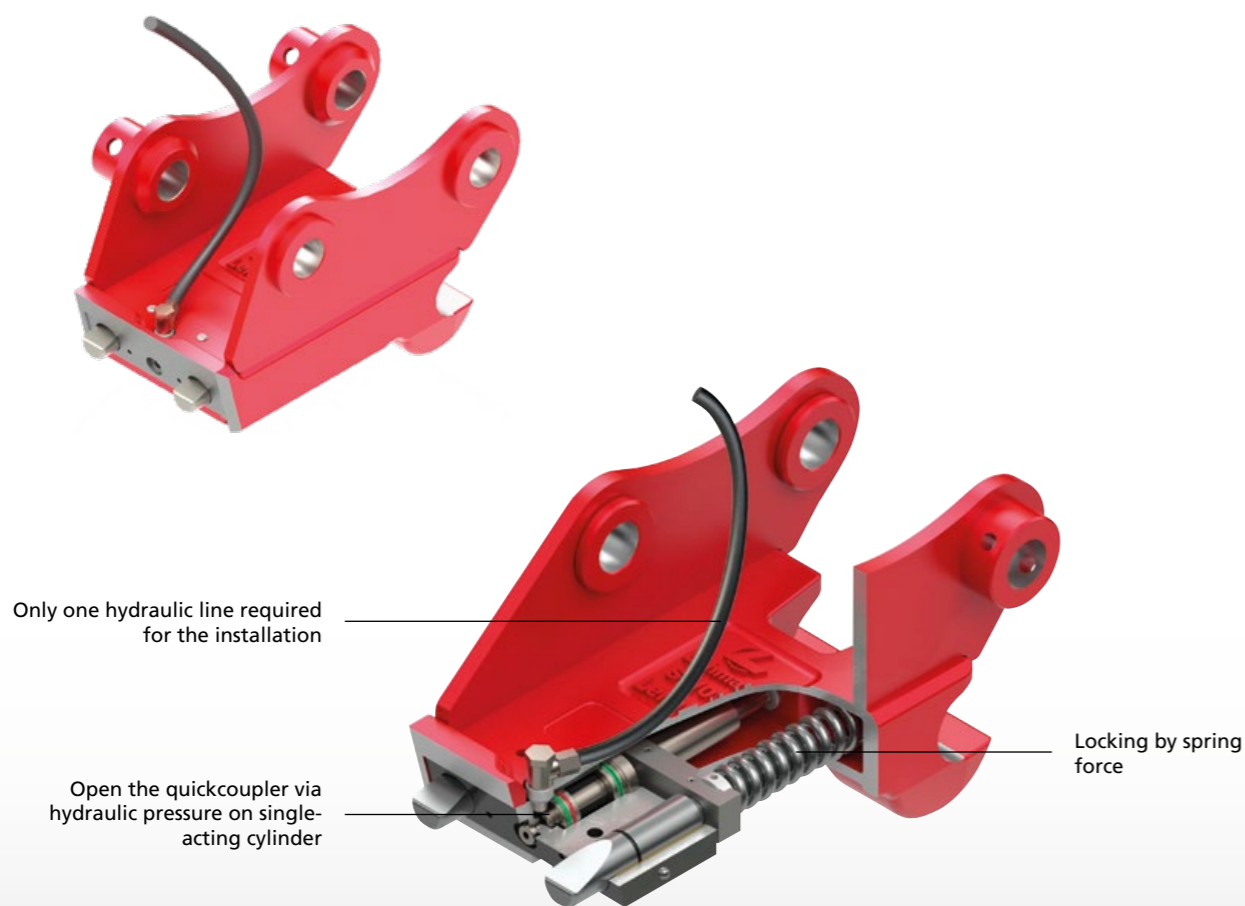
Unique locking mechanism with new 180° lock



easy and secure locking through three-gear threaded spindle with dynamic and dead center

MS mechanical quickcoupler

	MS 01-2	MS 03-2
Excavator class	0.5 - 1.9 t	2.0 - 6 t
Length (mm)	235	295
Width (mm)	180	200
Weight approx. (kg)	15	30
Adapter	SW 01	SW 03
Coupling shaft diameter (mm)	40	50
Load hook load capacity (t)	1	3



HS hydraulic quickcoupler

- Convenient attachment changes from the driver's cab
- Driver activates the control valve and unlock/locks the quickcoupler at the touch of a button via lockable toggle switch
- The quickcoupler is always secure and locked playfree through permanent spring-force actuation
- Hydraulic unlocking via single-acting cylinder
- Optional Lehmatic Safety Control (LSC) safety assistant system



Lockable push button for actuation, protected against accidental unlocking. Locking control via indicator pin on quickcoupler

HS hydraulic quickcoupler

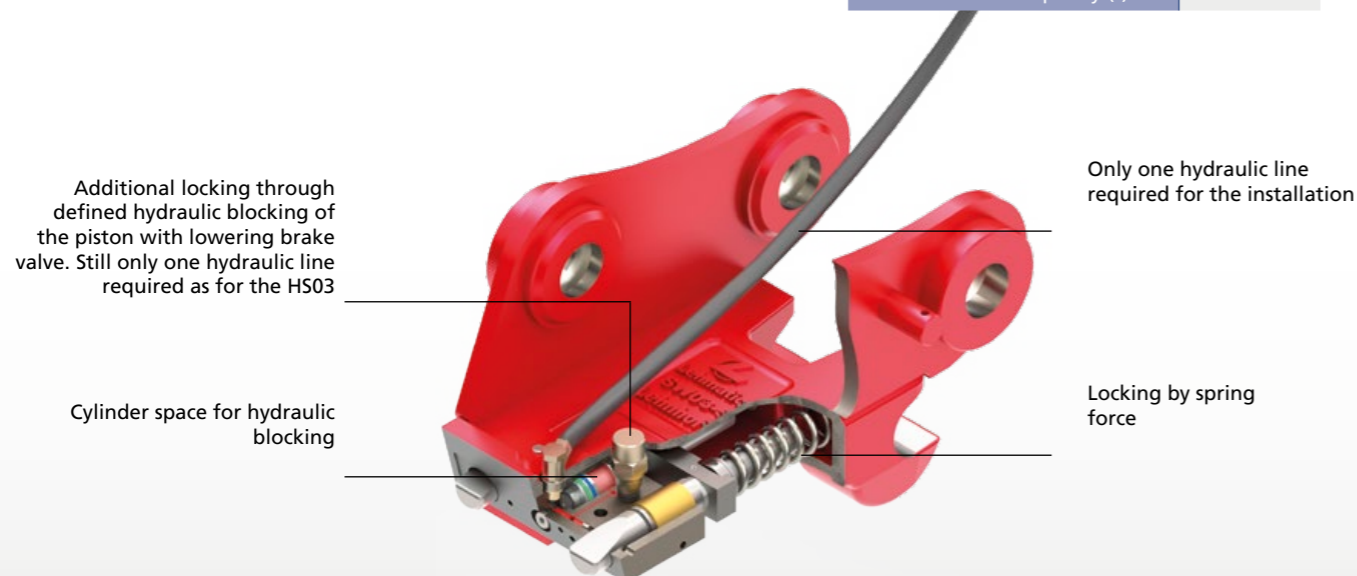
	HS 01	HS 03
Excavator class (t)	0.5 - 1.9 t	2.0 - 4.7 t
Length (mm)	235	295
Width (mm)	180	200
Weight approx. (kg)	15	30
Adapter	SW 01	SW 03
Coupling shaft diameter (mm)	40	50
Load hook load capacity (t)	1	3

HSH Hydro-Block quickcoupler

- Convenient attachment changes from the driver's cab
- Always secure locking due to permanent spring force – with **additional hydraulic blocking** of the locking bolts for tougher mini excavators from 4.8 t and high-demand tools, such as hydraulic hammers
- Hydraulic unlocking via single-acting cylinder
- Optional Lehmatic Safety Control (LSC) safety assistant system

HSH Hydro-Block quickcoupler

	HS 03 H
Excavator class (t)	4.8 - 6.0 t
Length (mm)	295
Width (mm)	200
Weight approx. (kg)	30
Adapter	SW 03
Coupling shaft diameter (mm)	50
Load hook load capacity (t)	3



HS-Plus the hydraulic quickcoupler with the plus for safety

- A release plunger makes sure that locking is only possible when the quickcoupler sits correctly inside the adaptation
- Safety cams provide additional protection against falling down of the unlocked attachment
- Available as HS01-Plus, HS03-Plus and HS03H-Plus



Lehmatic adapter for all attachments



Adapter frame for backhoe buckets and bucket conversion



Weld adapter for welding onto attachments



Screw adapter for demolition tools, such as hammers, etc.



Screw adapter for special hole patterns/hose laying



Grapple adapter to accommodate all sorts of grapples



Special adapter, e.g. for load hooks

This ensures that attachments of all makes fit

No matter which brand of attachment you want to connect to your excavator: the Lehmatic adapter brings them together. Lehnhoff offers a suitable Lehmatic adapter for all current tools and attachments.

- Front: coupling shaft for the coupling claws of the quickcoupler
- Rear: highly precise lock plate with the two characteristic holes
- Guaranteed secure connection

Lehmatic adapter for all attachments

	SW 01	SW 03
Excavator class (t)	0.5 - 1.9 t	2.0 - 6.0 t
suitable for all Lehmatic quickcouplers	MS 01	MS 03
	HS 01	HS 03
		HS 03
		VL 30

Symlock, the adapter with added value



Backhoe bucket with Symlock adapter in normal backhoe use is simply rotated by 180° for shovel bucket use

* 5-year warranty on clearance-free fit of the quickcoupler in the Symlock adapter. Only applies for the use of original Lehnhoff quickcoupler components.

Simple conversion of the backhoe bucket into a shovel bucket

Using the Symlock adapter, you can turn a backhoe bucket into a shovel bucket in a flash and vice versa – by rotating the bucket by 180°. The characteristic lock plate and the coupling shaft on the adapter are replaced by two symmetrically arranged coupling shafts with flat surfaces for the lock plate and locking bolts of the quickcoupler. This enables both the conventional position in the adapter as well as a fit rotated by 180°.

- All advantages of the Lehmatic quickcoupler system are retained
- Ideal for limited range
- for material loading or for filling in front of walls
- when digging ditches
- for obstacles

Symlock adapter for many attachments

	SY 01	SY 03
Excavator class (t)	0.5 - 1.9 t	2.0 - 6.0 t
suitable for all Lehmatic quickcouplers	MS 01	MS 03
	HS 01	HS 03
		VL 30



Variolock VL 30 - the fully hydraulic quickcoupler for mini excavators

2 load hooks as standard

Quickcoupler with integrated valve block (S- block)

Seal protects the valves from dirt when using non-hydraulic attachments

Valve block in the adapter of the attachment (A-block)

Locking process

When locking the quickcoupler with the adapter, the valves are opened automatically. The extremely short stroke of 0 - 3.5 mm allows a full flow of oil immediately. The quickcoupler is always safe and locked without backlash through permanent pressurisation.

Each attachment safely in use, in just seconds

The fully hydraulic Variolock energy circuit coupling system makes changing all attachments easy, safe and quick. The driver can comfortably change all tools including the hydraulic connection at the press of a button from the cab, without having to leave the cab and without having to depend on other personnel.

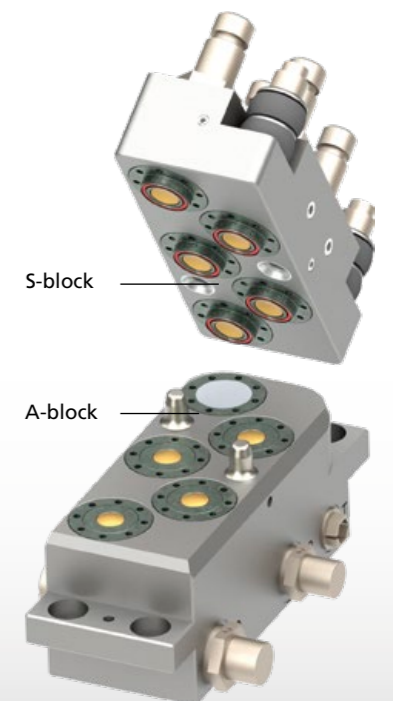
Very economical thanks to time and cost savings

- More effective working: tool change makes sense also with short work cycles
- More safety and convenience for the driver
- Cost reduction due to preservation of machine and attachments
- Prevention of hose ruptures
- Less contamination of the hydraulic system, environmentally friendly



S-block: valve block in quickcoupler

- Flexibly and centrally stored on the underside in the quickcoupler
- With five short stroke valves
- Including leakage oil lines
- Integrated hydraulic tension support ensures a solid hydraulic connection between S-block and A-block



A-block: valve block in the attachment

- Mounted in the attachment adapter
- Short stroke valves are flush with the block surface and thus easy to maintain
- Valves optimally adapted to the respective tool:
 - Two valves: e.g. tilt bucket, hammer
 - Three valves: e.g. drum cutter, rigid compactor
 - Four valves: e.g. rotatable grapple
 - Five valves: e.g. rotatable compactor

Five short stroke valves enable all functions of all tools, including the leakage oil line



Tilt bucket: 2 valves

Sorting grab: 4 valves

Hammer: 2 valves

Drum cutter: 3 valves

Rotatable attachment compactor: 5 valves

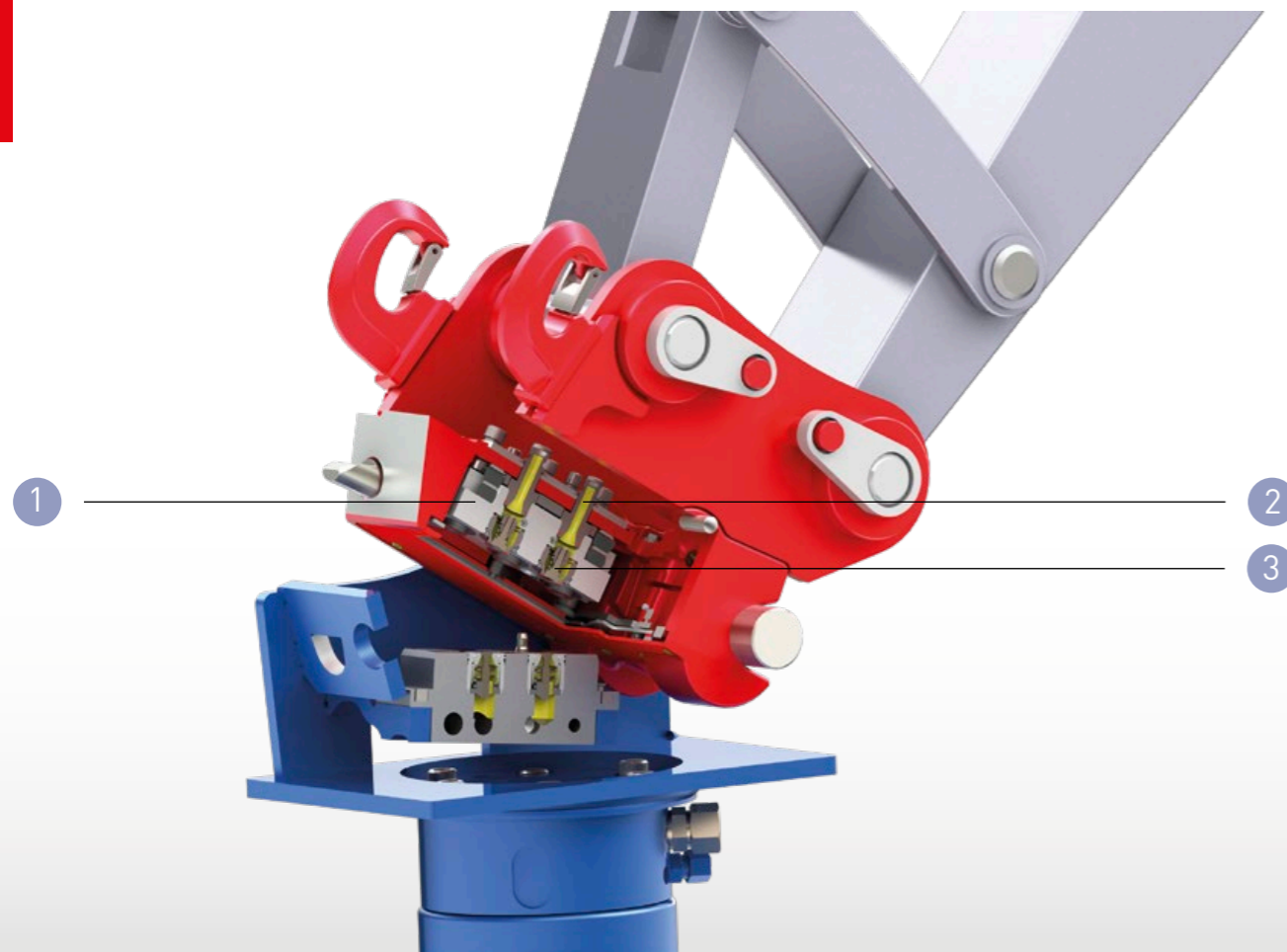
Cobble stone grapple: 4 valves

Cone wood splitter: 3 valves

Backhoe bucket on Powertilt Variolock: no valves

Stump cutter: 3 valves

Variolock VL 30 – Technical highlights



Variolock VL 30

	VL 30
Excavator class (t)	2.0 - 6.0 t
Length (mm)	284
Width (mm)	200
Weight approx. (kg)	50
compatible with adapter	SW 03
Load hook load capacity	2 x 3 t

Proven technology for the highest productivity

- Compatible with all Lehmatic attachments, such as backhoe buckets, ripper teeth, etc.
- Functionally-safely integrated into Lehnhoff quickcoupler system
- Precise hydraulic connection through patented valve tensioning technology
- Minimum pressure loss and low heating from large oil flow
- Robust, easy to clean and service

1 Internal block depressurisation unit

- The work line and the grapple rotary line are depressurised for the unlocking process
- Increased service life of the valves
- Integrated into valve block, thus making costly and time-intensive installation on excavator unnecessary
- The installation effort thus corresponds to that of a conventional hydraulic quickcoupler

2 Secure locking/bracing (HTD)

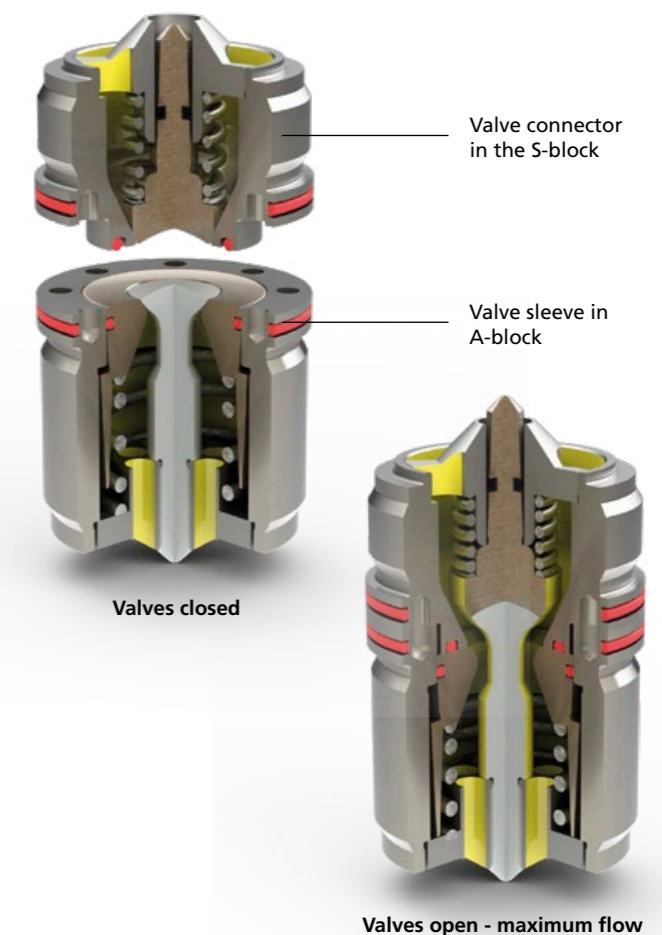
- The short stroke valves are mechanically opened for the locking process
- Extremely short stroke of 0 to 3.5 mm immediately enables a full flow of oil
- Safe, backlash-free locking at all times through permanent pressurisation
- Hydraulic tensioning support ensures that the valve blocks are kept firmly pressed together

3 Patented short stroke valves

- Connect attachments to working hydraulics safely and leak-free
- Optimally designed for excavator and attachments with maximum oil flow
 - ✓ Minimum dynamic pressure
 - ✓ Low heating
 - ✓ Less fuel consumption
 - ✓ Higher efficiency
- Easy to clean and service

Lehnhoff short stroke valves

			VL 30
Excavator class (t)			2.0 - 6.0 t
Des.	Size	Flow (l/min)	Number of valves
KV1	> DN12 \triangleq ½	110	5



Internal block depressurisation unit (BID)

Pressure is dissipated via the leakage oil line

Controller for depressurisation valve for QC unlocking

All four working valves are depressurised via this line when opening the quickcoupler

Quickcoupler with
Lehnhoff tilt motor

Proven classic with
protected hose
routing for the
quickcoupler
hydraulics,
maintenance-free
with high retention
forces, optionally
with load hook.

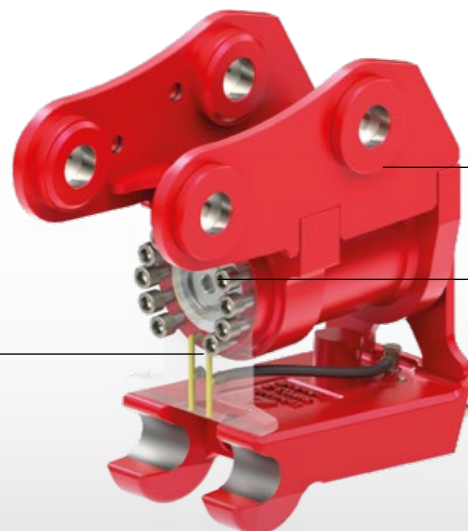


Lehnhoff Tilt: Quickcoupler with tilt motor

Combines all benefits of a quickcoupler with a tilt motor.
Works flexibly with all sorts of buckets and can also accommodate narrow buckets, in particular. The Lehnhoff tilt quickcoupler is the ideal solution for, e.g.:

- Pipe-lining construction
- Targeted material filling

Quickcoupler with Powertilt motor



Large swivel angle of 2 x 90°,
high retention forces,
low-maintenance

Rotary feedthrough for two
hydraulic lines. Simplest installation,
compact design, protected hydraulic
line, as it is no longer installed above
the rotary axis

Here one line is used for opening
the quickcoupler (HS 03H)

Advantages:

- Huge work range:
Up to 2 x 90° swivel range on both sides (180°)
- Including rotary feedthrough for hydraulics (NG)
- Tilt motor sealed and protected against damage
- High retention forces and robust design for toughest applications
- Can be combined with all Lehnhoff quickcouplers

Lehnhoff-Tilt

	LTS 1.8	LTS 3.8	LTS 5.5	LTS 6.8
Excavator class (t)	1 - 1.8 t	1.8 - 3.8 t	3.0 - 4.8 t	4.8 - 6.0 t
Lehmatic or Variolock	MS/HS 01	MS/HS 03 VL 30	MS/HS 03 VL 30	MS/HS 03 VL 30
Weight approx. (kg)	45-55	75-85	95-105	130-140
Swivel angle	2x87°	2x87°	2x87°	2x87°
Operating pressure (bar)	210	210	210	210

Powertilt

	PTS 4.5	PTS 030	PTS 050	PTS 070
Excavator class (t)	1 - 1.8 t	1.8 - 3 t	3 - 5 t	5 - 6 t
Lehmatic or Variolock	MS/HS 01	MS/HS 03 VL 30	MS/HS 03 VL 30	MS/HS 03 VL 30
Weight approx. (kg)	40-50	60-70	80-90	115-125
Swivel angle	2x90°	2x90°	2x90°	2x90°
Operating pressure (bar)	210	210	210	210



Rotator with
QC suspension
(sandwich) one
excavator side



Lehmatic Rotator

Extends the action radius of the attachments by 360° through continuous left/right rotation. By simply rotating by 180°, a backhoe bucket quickly becomes a shovel bucket, for example.

- More flexibility thanks to more working positions
- Low build height of the rotary drive, therefore more breakout force
- Optional oil feed-through
- Optionally with direct suspension of quickcoupler suspension on excavator side

Lehmaticrotator

	RB 20	RB 35	RB 60
Excavator class (t)	2 - 2.5 t	2.4 - 3.5 t	3 - 6 t
Lehmatic or Variolock	MS/HS03 VL 30	MS/HS03 VL 30	MS/HS03 VL 30
Weight approx. (kg)	from 90	from 90	from 125
Operating pressure (bar)	175	175	175

Tiltrotator with
direct suspension
on excavator side



Lehmatic Tiltrotator

Compact Tiltrotator with grab rotating motor for quick and precise spatial positioning and therefore larger action radius and movement of the attachments.

- 360° endlessly rotatable, can be swivelled 55° to both sides
- Precise working through proportional control system
- Ideal for digging out especially narrow pits
- With direct suspension or quickcoupler suspension

Lehmatic Tiltrotator

	TR 20	TR 35	TR 60
Excavator class (t)	2 - 2.5 t	2.4 - 3.5 t	3 - 6 t
Lehmatic or Variolock	MS/HS03 VL 30	MS/HS03 VL 30	MS/HS03 VL 30
Weight approx. (kg)	120	130	180
Operating pressure (bar)	210	210	210

LSC Safety Assistance System

Full control at all times over all operating states of the quickcoupler from the driver's cab. Faulty locking of the quickcoupler is immediately detected and displayed. The driver can react immediately.

- Permanent monitoring of the operating condition via integrated sensors
- Illuminated optical display and acoustic signals
- Control of the operating states via operating and display unit in driver's cab
- Safe two-finger operation of the unlocking function
- Optional for all new hydraulic Lehmatic and Variolock quickcoupler systems



Surpasses the safety requirements of SUVA from Jan. 2016

Corresponds to
 - Machinery Directive 2006/42/EC
 - Safety Product Standard EN 474-1 Appendix B
 - ISO/DIS 13031/2015 edition



Quickcoupler unlocked, not yet fully in adapter

Quickcoupler correctly and completely in adapter, locking bolts still retracted

Quickcoupler correctly locked

Quickcoupler incorrectly locked



Detailed info in video:
www.goo.gl/SUdaGJ

* Assistance systems only work within system boundaries and support the driver. The responsibility and needed attention during the process of changing an attachment and during works remains with the driver.

www.lehnhoff.com



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