

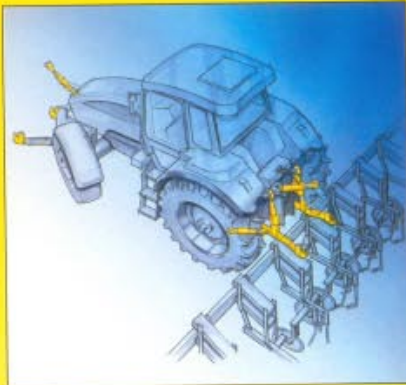
## Tractor Attachment System TAS

- *Coupling*
- *Adjusting*
- *Stabilising*



GKN Walterscheid GmbH

# Walterscheid – The original!



## We take agriculture forwards!

Operating an entire machine from the driver's seat? Thirty years ago, that was a vision – one that has since become reality thanks to Walterscheid. The Walterscheid Tractor Attachment System TAS has radically changed farming. It is today part of the standard equipment used by all the leading tractor manufacturers.

Walterscheid is familiar with the challenges facing farming. We talk to farmers throughout the world in our constant efforts to improve the TAS. In this way, we meet the demands of farmers for economical, convenient and safe working implements.

## We understand agriculture!

The Tractor Attachment System handles key functions in the farmer's work-schedule: coupling, adjusting and stabilising. From the driver's seat, implements and machines are hitched and unhitched conveniently, quickly and safely, implements are optimally set for the respective function, and both tractor and implement are protected against material-damaging and dangerous impacts and shocks. The Walterscheid TAS range encompasses all the components of the three-point linkage: complete lower links, lift rods and top links, as well as stabilisation systems.

The demands on the Tractor Attachment System are as varied as agriculture itself. Consequently, when developing TAS components, we give consideration to all the factors that have an influence on farming practice:

- Farm size
- Crops
- Implements used
- Intensity of use

## Recommended and maximum permissible operating ranges



A contractor may operate wide seedbed combinations every day but the tractor of an all-round family business needs to be constantly adapted. Whether it be to cope with the varied work load or the use of special-purpose implements use for speciality crops:

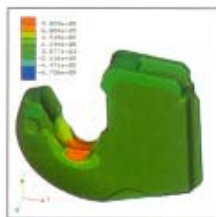
**Walterscheid has the right products for every application.**



## We accept responsibility!

Modern farming faces an extreme challenge: more and more people need to be fed off the available arable and grazing land. Reaping ever higher quality and simultaneously conserving natural resources – that is the motto under which Walterscheid not only accompanies the change in farming, but takes it a decisive step forwards. Our innovations are milestones in agritechnical engineering: only recently was Walterscheid awarded the Silver Medal of the German Agricultural Society (DLG) for the first lower link hook that can be operated entirely from the driver's seat. We are currently engaged in intensive work on a new measuring system for hydraulic cylinders. The electronic control of top links, lift rods or multifunctional lateral stabilisers is just one of Walterscheid's visions that will continue to take farming forwards in the future.

Greater productivity and functionality of agricultural machinery is the goal of our development engineers. We want farmers to be able to work efficiently, conveniently and safely. We accept the responsibility for that when designing, manufacturing and testing our products.



### Functional and economical

Every component of Walterscheid's Tractor Attachment System is optimally designed according to economic criteria. The latest design and computation methods, such as finite-element calculations, are the prerequisite for developing superior products.



### High-quality and safe

A modern production environment ensures the quality expected of Walterscheid products. Modern welding robots guarantee 100% reproducible results, and products that are always one decisive step ahead of the market's constantly growing demands. In addition, we adhere to the highest environmental standards, from solvent-free powder coating all the way to regular staff training.



### Convenient and time-proven

Our products have to withstand the tough conditions prevailing in everyday farming practice. That's why we rigorously test them on electronically controlled test benches for static and dynamic test cycles, and also subject them to field trials under real conditions.

## Progress for farming!





## Coupling



### There's no need to get up!

Hitching and unhitching implements conveniently from the driver's seat: that's no problem with Walterscheid hooks for top and lower links! Numerous time-consuming and hazardous work routines between the tractor and the implement are eliminated.

Walterscheid hooks withstand extremely high loads, are easy to operate and safe. They are made of high-strength forged steel and designed specifically to absorb high tensile, compressive and lateral forces. As a result, they stand up to all the stresses occurring between the tractor and the implement in the work process. As the partner of numerous tractor manufacturers, Walterscheid also designs and builds complete lower links with hooks and telescopic or ball ends.

### The lower link hook



#### Safe locking – convenient handling

The hook never opens accidentally. The lock can only be released via the opening lever: by cable, by hand or, in future, by switch from the driver's seat.



#### Simple hitching

The lower link hook facilitates coupling: special centring contours guide the ball on the implement side safely into the mouth of the hook. The tractor does not have to be accurately driven up to the coupling points on the machine.



#### Superior design

The hook is of slender, compact design. The mechanical equipment consists of just a few individual parts and is accommodated in the closed housing for protection against shocks and dirt. Conventional tools can be used to replace the locking device components separately without having to dismantle the lower link.

### Award-winning: New lower link hook with convenient switch operation

Opening and closing conveniently from the driver's seat: Walterscheid has developed a new lower link hook that can be operated by switch. The user no longer has to enter the hazard area between tractor and implement to either open or close the hook. A pneumatic control cylinder replaces the return spring of the hook mechanism and is displaced in an elastic tube by an electric valve and compressed air. This innovation won the DLG Silver Medal at Agritechnica 2003.



Easily and quickly retrofitted thanks to prepared weld and centre mark.



## The top link hook



The Walterscheid top link hook establishes a particularly safe connection between tractor and implement. The top link hook guarantees maximum enclosure of the implement-side ball, reliably preventing loss even when the complete system is exposed to high loads. The special safety lock is never released accidentally, but can only be opened by cable from the driver's seat or by hand. Not only the mechanical top links are equipped with the original Walterscheid hook, but also all hydraulic top links in Categories 2/63 to 3/90.

## Walterscheid accessories – Original in every detail!



Only use original Walterscheid accessories, since all Walterscheid components are optimally coordinated. Ball bushes, ball guide cones, etc. of inferior quality constitute a safety risk for which Walterscheid cannot assume any liability.



Top implement pin with ball bush for all power ranges: Walterscheid offers not only ball bushes for normal applications, but also a heavy-duty ball bush for extreme loads.



Lower implement pin with ball guide cone for low and medium power ranges: The ball guide cone is quickly fitted and helps during the hitching operation.



Lower implement pin with ball bush and clamp-type guide cone for medium and high power ranges: The ball bush with separate clamp-type guide cone is used where high loads are encountered. Advantage: Despite the guide cone, the ball can rotate freely, thus avoiding stresses.

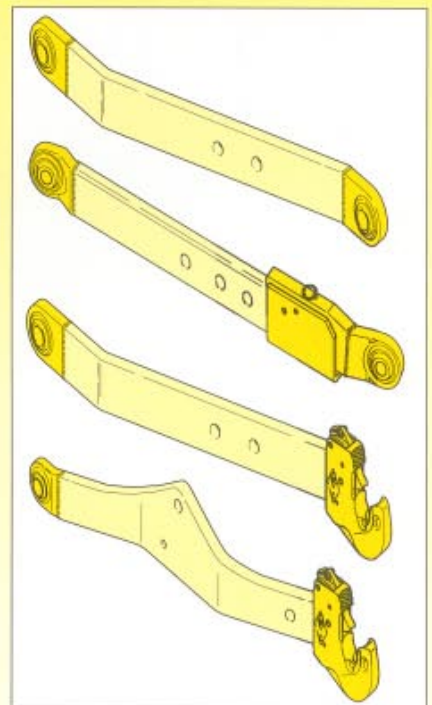


Lower implement pin (mounted in bearings at both ends) with ball bush and spacer disks for all power ranges: The spacer disks minimise play, reduce wear and help during hitching. Again, Walterscheid offers heavy-duty ball bushes for extreme applications.

## Coupling



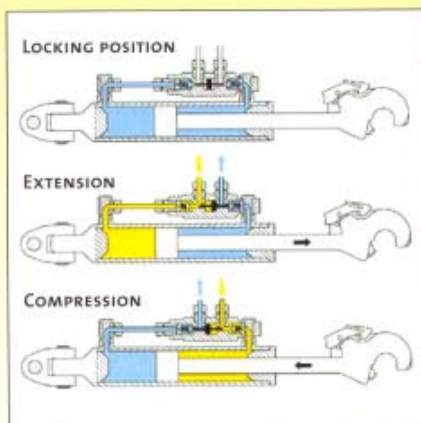
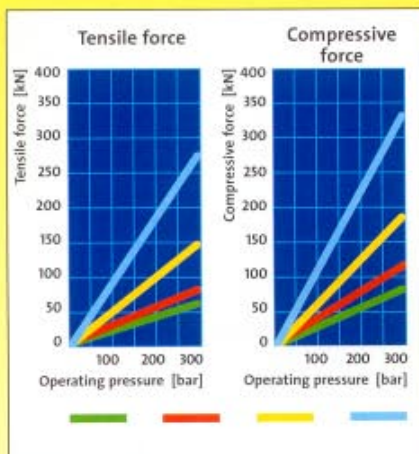
The top link hook with integrally forged threaded shank also comes as a retrofit and spare part for spindle top links.



Both the lower link hooks and the tractor and implement-side eyebolts are available as spare parts and for retrofitting.



## Adjusting



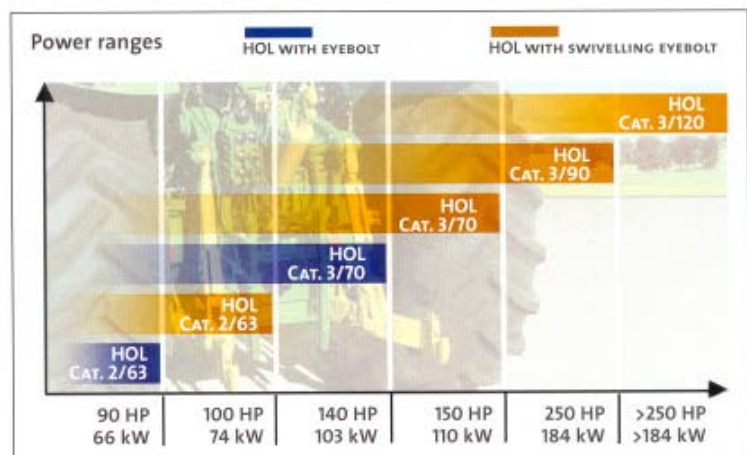
## Implements at the ready!

Optimum adjustment: Walterscheid top links and lift rods get implements into the right working position. They offer various degrees of convenience and come in different performance classes – tailored to the different needs of farmers.

While mechanical top links with hook or eyebolt, which are manufactured entirely by Walterscheid, have to be set to the right dimension by hand, hydraulic top links are particularly convenient to operate: just set the top link to the required length from the driver's seat – either with or without an attached implement. Leading manufacturers also equip their tractors with Walterscheid lift rods, which make for the right connection between lifting shaft and lower link. They move the lower links and are used to set the lateral inclination of the implement.

## Hydraulic top links for all power ranges

The range of Walterscheid hydraulic top links HOL completely covers the different requirements of modern agriculture.



The key elements of all hydraulic top links from Walterscheid are not only high-quality cylinders and special sealing systems, but also the original Walterscheid hook and the pilot-controlled, twin-type non-return valve.

## Twin-type non-return valve – Safe in use and gentle on the equipment!

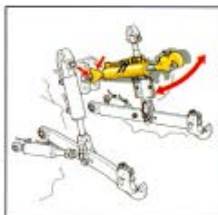
The technology of the hydraulic top link is based on a double-acting cylinder with twin-type non-return valve made of solid steel. The valve blocks the set top link length, even during extended breaks, and prevents the transmission of shock loads to the tractor's hydraulic system.

## Adjusting

### Hydraulic top links with eyebolt

- Equipped with the original Walterscheid hook
- Convenient operation by cable
- Wide range of accessories
- Seals and valve block can be replaced separately

Available in Cat. 2/63 and Cat. 3/70 versions with different connecting dimensions and adjustment ranges.



Important note: Some tractor types do not offer enough space for top links with eyebolt in the tractor-side mount. Top links with swivelling eyebolt should be used in these cases.

### Hydraulic top links with swivelling eyebolt

- Equipped with the original Walterscheid hook
- Versatile use due to interchangeable swivelling eyebolt
- Long service life
- Valve block protected by special, reinforced clip
- Complete with marking bar and label, ball, cable, clip and tractor-side retainer
- All components can be replaced separately

Available in Cat. 2/63, Cat. 3/70 and Cat. 3/90 versions with different connecting dimensions and adjustment ranges.

### Hydraulic top links with swivelling eyebolt and implement-side eyebolt

- Maximum tensile and compressive forces for extreme demands on performance
- Versatile use due to variety of swivelling eyebolts
- Valve block protected by special, reinforced clip
- Equipped with clip and tractor-side retainer
- Extremely high forces can be absorbed due to implement-side eyebolt

Available in a Cat. 3/120 version with different connecting dimensions on the tractor and implement side.

### Spindle top links

- Equipped with the original Walterscheid hook
- Special anti-rotation lock to prevent unintentional change of length
- Versatile use due to variety of connection options
- Wide choice of lengths and adjustment ranges
- Long service life due to anti-corrosion treatment and lubricating facility
- Available for all tractor types
- All individual components available as spare parts or for retrofitting





# Stabilising



Rigid position



Floating position



## Convenient stability!

Every farmer is familiar with that scary moment when an implement swings out in a narrow street or on difficult terrain. Swinging implements can cause serious damage in a matter of seconds: to parking cars, buildings or the farmer's own vehicles. In the worst case, someone may even be injured. That's why good stabilisation of the lower links, and thus of the whole combination, is indispensable for transport and work alike – for your own safety and that of others.

The solutions commonly encountered today, such as chains and simple struts, have to be operated manually in the hazard area behind and under the tractor while the implement is attached. That's not only awkward and time-consuming, it's also dangerous. The result: stabilisers of this kind are often not used in practice, and the risk of accidents and greater wear on the three-point linkage and the tyres is accepted.

Only if stabilisers are convenient to operate and work dependably are they actually used in everyday farming. Walterscheid's ASST-B and HGST stabilisation systems not only operate automatically, they also make many work routines easier in the field. Walterscheid offers the automatic ASST-B lateral stabiliser and – for use with heavy implements or on difficult slopes, for instance – the HGST lateral stabiliser with hydraulic control.

Both systems are geared to high standards of convenience and safety:

### Demands on modern stabilisers

- Safe transport
- Stability on slopes
- Automatic switching between rigid and floating position
- No handling in the hazard area behind and under the tractor with attached implement
- Reliable steering stability even on tough terrain
- Convenient hitching due to simple setting of the width of spread
- Low susceptibility to dirt
- Reduction of wear on the three-point linkage
- Stabilisation independent of the lift rod length



## Stabilising: ASST-B

Easily and quickly retrofitted:

### Automatic lateral stabiliser ASST-B

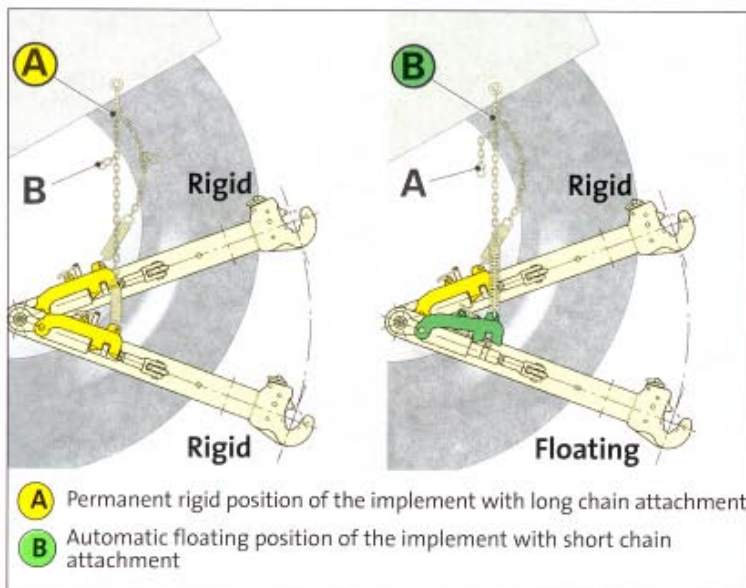


The automatic lateral stabilisers stabilise every lower link against tensile and compressive forces, and thus also the attached implement. During work, switching between rigid and floating position takes place automatically during lifting and lowering of the implement. During lifting, the implement moves through the centre position, where it engages safely, then remaining stable. The lift height at which stabilisation is to start is pre-set by adjusting the chain length outside the hazard area behind the tractor and can thus be adapted to suit every implement and application.

The lift height at which stabilisation is to start is pre-set by adjusting the chain length outside the hazard area behind the tractor and can thus be adapted to suit every implement and application.

#### Width of spread

The width of spread of the lower link is infinitely variable and is set simply by turning the forked rod. The special design rules out the possibility of the width of spread changing unintentionally.



#### ASST-B product features

- Automatic switching between rigid and floating position when the power lift is raised and lowered
- Stabilisation is set by attaching a chain, without having to enter the hazard area
- Simple hitching and unhitching: the width of spread of the lower links is maintained at the set distance by springs
- Automatic release during lowering of the implement simplifies working operations in the field
- Improves road safety during transport
- Retrofit system for installation by the user for over 300 tractors



Rigid position



Floating position

#### Note

With all stabilisers, always pay attention to correct setting of the width of spread. Incorrect settings can result in increased wear on the stabilisers or the lower link hooks!

## Stabilising: HGST



### HGST for safety Field report

Contractor Claudio Peroni in Rapagnano, Italy, has been using the hydraulically controlled lateral stabiliser HGST on three tractors since 1999.



Mr. Peroni, what makes you such a convinced user? I like everything to be quick and easy. And switching from rigid to floating position is very easy with the HGST. So

is hitching. Of course, the system has to be set properly. And I don't want an implement swinging out behind me when I'm driving on the road.

Does the HGST have advantages in terms of durability?

Definitely! I have far less trouble with the entire three-point linkage, and with the lower links as well. I often have to turn on a slope, and that causes strong lateral shocks. That's deadly for all the components and also for the tyres. The lateral stabilisers prevent that.

And what about safety, Mr. Peroni? The HGST blocks the implement and reduces the risk of me overturning with the tractor on a slope.

For the toughest demands:

### Hydraulically controlled lateral stabiliser HGST



The hydraulically controlled lateral stabiliser HGST automatically centres and stabilises the tractor's three-point linkage, and thus the implement, at any, freely selectable lift height. The HGST is operated from the driver's seat by electronic controls: the lift height at which stabilisation is to start is infinitely variable and is set by means of a rotary knob. The

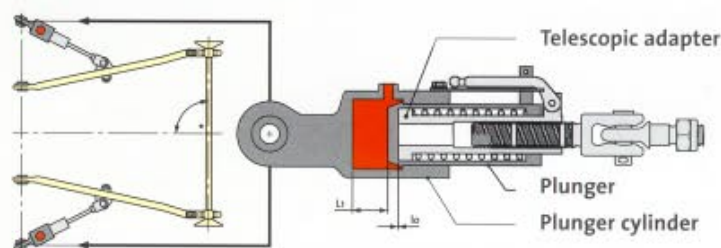
lateral stabilisers actively push the implement into the required central position smoothly and stabilise it completely without play. The system can be switched regardless of load. The individual width of spread is set before hitching and thus covers all requirements.

#### HGST product features

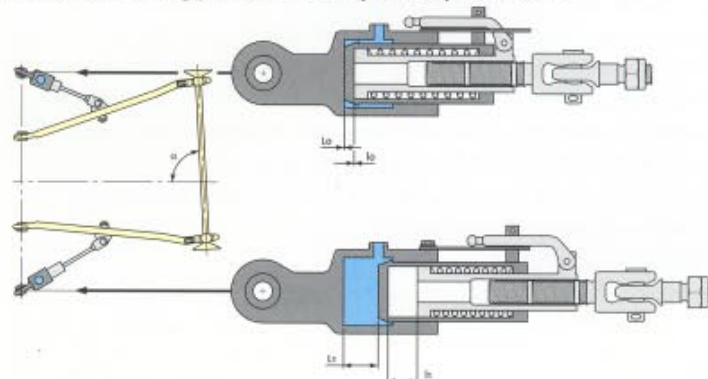
- Automatic switching between rigid and floating position when raising and lowering the power lift
- Permanent rigid or floating position possible at any time
- Convenient control by rotary knob from the driver's seat
- Centres actively and stabilises smoothly and with absolutely no play
- Minimises wear on the three-point linkage and the tyres
- Offers maximum safety on slopes and on the road
- Facilitates and rationalises work on difficult terrain
- Integrated in the tractor's hydraulic circuit without occupying a control valve

The HGST can be retrofitted on many tractors with load-sensing systems. It can be installed by your Walterscheid Service Partner, who will be pleased to help and advise you.

#### Lower link rigid position – Pressure on both cylinders



#### Lower link floating position – Both cylinders pressureless





## Controlled three-point systems

### Rationalisation and precision at the back of the tractor

Electronically controlled hydraulic cylinders from Walterscheid permit efficient and simple coupling, adjustment and stabilisation of attached implements – a future-oriented continuation of the tractor-side functions of the three-point linkage.

The common features of all these components: the measuring equipment integrated in the cylinder, control via a single Walterscheid electronics box, and operation via the ISOBUS terminal already in widespread use today. The cylinders are controlled via electronic hydraulic valves with proportional or CANBUS input signals that are actuated directly by the internal control system. The next logical development will be control via a Class 3 ISOBUS interface. The overall result will be rapid and extremely precise control of all attached implements, which can then be conveniently guided, adjusted and secured from the driver's seat.

#### Systematic guidance – The controlled top link

At the push of a button in the cab, the top link assumes one of five freely programmable positions, changes its length as a function of the lift height, or uses different characteristic curves for lifting and lowering. This permits automatic steep and parallel lifting of the implement – even differently for lifting and lowering. After confirmation by the user, the top link can additionally assume a floating position, which will also be limitable in future.

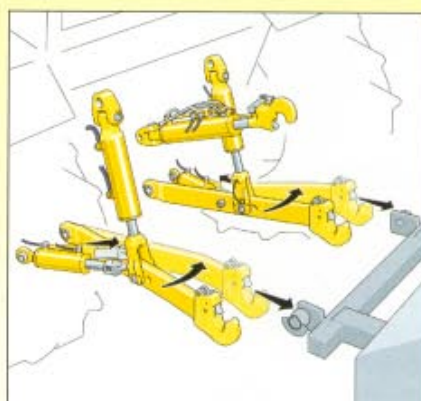
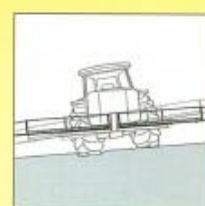
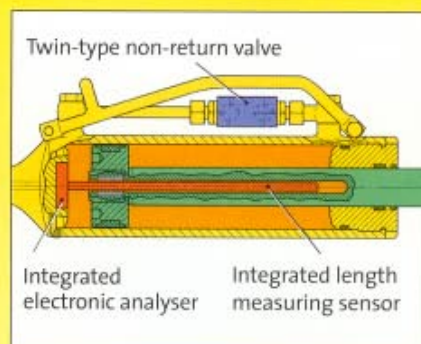
#### Precise adjustment – The controlled lift rod

The lift rod achieves extreme precision when adjusting the machine, again at the push of a button. In future, it will be able to process external signals, e.g. straight from the attached implement. The lift rod can additionally assume a floating position, this eliminating the inconvenient work steps required with a mechanical lift rod.

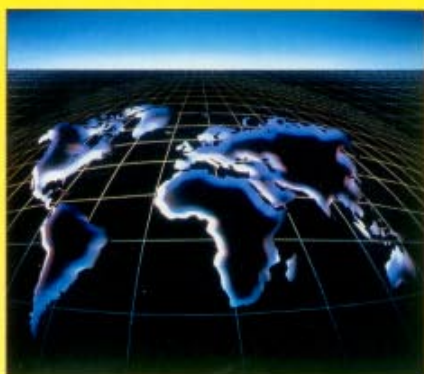
#### Convenient securing – The controlled lateral stabiliser

With a lateral stabiliser on one side, a lower link can be moved into one of five freely programmable lateral positions or adjusted as required, thus facilitating hitching. The implement can additionally be stabilised for transport by road. When used on both sides, five positions are again freely programmable for both lower links, or the lower links can be adjusted as required. Different widths of spread can be set at the push of a button, and the implements are hitched far more easily. In addition, implements can be stabilised completely smoothly and with absolutely no play. In future, it will again be possible to limit the floating travel and to achieve row control or curve guidance, for example, by using external signals.

The aims of our constant further development of all Walterscheid products are: absolutely precise adjustment and stabilisation of all implements, together with maximum safety and convenience for the farmer. Our visions are the driving force behind these efforts.



# Wherever you are, we're there before you!



**Walterscheid –  
The original!**



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## Everything from a single source – The Walterscheid range

The tractors of most leading manufacturers are today equipped with Walterscheid's Tractor Attachment System TAS as standard. Our worldwide sales network ensures that all original components, spare parts and an extensive range of accessories are available at all times – wherever you may be. Only original Walterscheid products guarantee dependable operation of your implements.

Over 20,000 dealers sell products bearing the Walterscheid quality rhombus. The advantage for you: a complete range of coordinated products and a rapid delivery service.

## Experts in agritechnical engineering!

As the world market leader, GKN Walterscheid GmbH stands for top quality and constant innovation in agritechnical engineering. We are not only specialists in the field of the Tractor Attachment System, but also develop and design high-quality driveline systems and components – the Drive Line System DLS – for all well-known manufacturers of agricultural machinery and tractors.

Your Walterscheid Service Partner can give you information on all Walterscheid products:

- Agricultural PTO drive shafts
- Overload and overrunning clutches
- Gearboxes

The Walterscheid product range is additionally supplemented by a separate, complementary range of hydraulic products.

Walterscheid Rohrverbindungstechnik GmbH has been an independent pioneer of innovation in the field of tube fittings since 1994.

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