



DRIVE LINE SYSTEM DLS

Agricultural PTO Drive Shafts
and Clutches

TRENDSETTING MODULES FOR ECONOMICAL DRIVES





DRIVE LINE SYSTEM DLS

KNOWING WHAT'S INSIDE

Have you ever asked yourself what actually drives your valuable machines? No? Well, you really ought to. After all, the driveline is the heart of an agricultural machine. If it stops, so does the whole machine. And you have to deal with the driveline components every day: when hitching and unhitching the PTO drive shaft, or when greasing.

**THE COMPONENTS OF OUR
DRIVE LINE SYSTEM MAKE
LIFE EASY FOR YOU: THEY'RE
SIMPLE TO OPERATE AND
STRAIGHTFORWARD TO
SERVICE. AS A RESULT, YOU
SAVE TIME AND CAN
RELY COMPLETELY ON THE
PERFORMANCE AND EFFICIENCY
OF YOUR MACHINE.**

IF THERE'S A BRAND ON IT, THERE SHOULD BE WALTERSCHEID IN IT

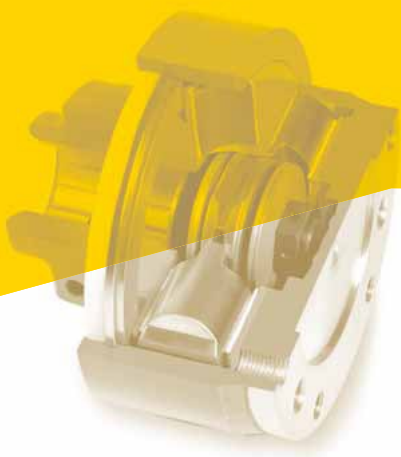
Many manufacturers with high quality standards have the drivelines of their agricultural machinery developed by Walterscheid. You can tell our components by the diamond mark. When buying new equipment or spares, you too should pay attention to this quality symbol on PTO drive shafts, gearboxes and clutches. Because if the entire driveline comes from an experienced source, everything will run smoothly. A perfectly operating driveline protects your valuable equipment against wear and avoids breakdowns and repairs.

SKIMPING ON THE DRIVELINE MEANS JEOPARDISING YOUR SUCCESS

As a farmer, you naturally have to keep a close eye on your costs. In this context, remember

- > that Walterscheid has products optimally tailored to every power range in terms of price and features,
- > that our components have the longest service life,
- > that Walterscheid parts protect your machine,
- > that driveline components of inferior quality cause long downtimes.

Then, you'll also know that it's worth while to invest in high-quality driveline components. And professionals can tell them by the diamond mark.





THE COMPONENTS OF THE DRIVE LINE SYSTEM DLS

PTO DRIVE SHAFTS

At Walterscheid, you'll find the right components to fit any requirements profile – from a standard PTO drive shaft to the high-end Power Drive solution.

CLUTCHES

These guardians of agricultural machinery protect your valuable equipment against overloading – and you, the user, against the great expense that could otherwise result.

GEARBOXES

A decisive component in the Walterscheid Drive Line System and one of our specialities. We cooperate closely with the manufacturers of agricultural machinery in this field. For you as a farmer, it's good to know that the driveline comes from a single source.



OVERVIEW



PTO DRIVE SHAFTS

Page 6



LOCKS

Page 8



PTO DRIVE SHAFT GUARD

Page 10



CLUTCHES

Page 12



INFO

Page 15



PTO DRIVE SHAFTS

FOR EVERY REQUIREMENT: SO EVERYTHING ALWAYS RUNS SMOOTHLY

Hopefully. After all, if the PTO drive shaft fails, things can get expensive – or dangerous. That's why this crucial component should always be a quality product! The investment will pay off in the long run.

There's a different, optimum PTO drive shaft configuration for every combination of tractor and implement – which is why we produce a variety of types with different features. The manufacturers make a preliminary choice in cooperation with us.



SAFETY AND OPERATING CONVENIENCE: YOU CAN REPLACE COMPONENTS

Something many farmers don't know is that they can themselves do something to improve operating convenience and their personal safety after buying a PTO drive shaft:

DO YOU FIND GREASING TOO INCONVENIENT?

If so, use cap bottom lubrication and grease conveniently through a small opening in the guard cone.

OR IS THE LOCK TOO AWKWARD FOR YOU?

In that case, just switch to the convenient QS lock: push back, hitch, done!



**LUBRICATE JUST ONCE PER SEASON:
WITH CAP BOTTOM LUBRICATION, ALL
YOU HAVE TO GREASE IS A READILY
ACCESSIBLE GREASE NIPPLE. LARGE
DUCTS STORE PLENTY OF GREASE. THIS
OPTION IS AVAILABLE FOR ALL SERIES.**



THE RIGHT THING FOR EVERYONE

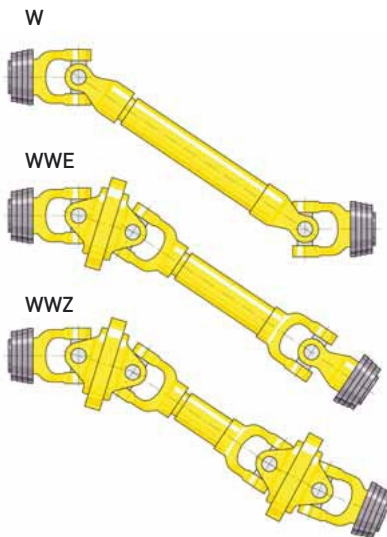


AS INDIVIDUAL AS YOUR COMBINATION

Ever since we began manufacturing PTO drive shafts – and that's more than 50 years ago – we've constantly been incorporating the latest developments in safety engineering and practice in our products. The result is a range of top-quality components that you can use to put together PTO drive shafts to suit every requirement. From the small, economical version and standard features, all the way to heavy-duty combinations for constant use. After all, we know that every combination of tractor and implement has its own peculiarities. And every farmer has his own particular preferences.

DEPENDING ON THE APPLICATION PROFILE, WE OFFER DIFFERENT DESIGNS OF UNIVERSAL JOINT:

- > **SIMPLE PTO DRIVE SHAFT (W)**
- > **WIDE-ANGLE, CONSTANT-VELOCITY PTO DRIVE SHAFTS, ONE WIDE-ANGLE JOINT (WWE)**
- > **WIDE-ANGLE, CONSTANT-VELOCITY PTO DRIVE SHAFTS, TWO WIDE-ANGLE JOINTS (WWZ)**



HIGH POWER FOR CONSTANT USE

The Power Drive fills the requirements profile of large-scale farmers and contractors. Well-conceived features make the Power Drive a real high-end solution in terms of handling, cost-efficiency and safety. The maintenance effort has been minimised to such an extent that you now only have to lubricate the Power Drive once every 250 hours of operation.

PTO DRIVE SHAFTS IN THREE DESIGNS

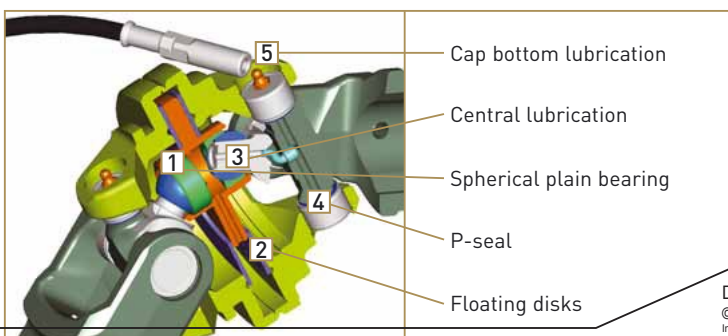
A normal universal joint may only be angled to a very limited degree and is thus suitable for operation with the joint straight. Wide-angle, constant-velocity PTO drive shafts are a better solution if you have to work with larger angles. We offer these shafts with one or two wide-angle joints. The WWE version is the right choice if one joint is usually straight and the other has to move. In the event of large and unequal operating angles, you'll be on the safe side with the WWZ version, which has wide-angle, constant-velocity joints on both ends. Ask your agricultural machinery dealer about the optimum solution for your particular field of application.

THE NEW POWER DRIVE WIDE-ANGLE JOINT

The new generation of Walterscheid wide-angle joints features a number of technical refinements that result in not only a low maintenance requirement, but also a substantial increase in service life.

LONGER SERVICE LIFE, LESS MAINTENANCE!

High-quality spherical plain bearings (1) and floating disks (2) increase the service life of the guide system. Dirt cannot get in, and grease cannot escape. The central lubrication system (3) supplies the joint with sufficient grease. The crosses are equipped with the blue P-seal.



- Cap bottom lubrication
- Central lubrication
- Spherical plain bearing
- P-seal
- Floating disks

Convenient greasing is achieved thanks to the familiar cap bottom lubrication system (5). Compared to the standard version, Power Drive wide-angle joints only have to be lubricated every 40 hours, instead of every 8.

TOP SECURITY

UNBEATABLY SIMPLE HANDLING WITH THE QS LOCK

For you as the user, the lock is one of the most important details of your PTO drive shaft. After all, you have to operate it day after day when hitching and unhitching. In this context, your convenience and your safety are of decisive importance. And something else you should know is that you can greatly improve the operating convenience at little expense – just replace the lock! The most convenient solution is the QS lock.





YOU HAVE THE CHOICE: QUICK-DISCONNECT LOCKS FOR STANDARDISED POWER TAKE-OFF SHAFT PROFILES

The **QS PTO drive shaft lock** is an advanced development of the familiar push-pull lock and available for all series. Since the QS yoke can be set down on the power take-off shaft, you have both hands free for sliding on or pulling off. Engaging of the QS lock is automatic and clearly audible. Safety advantage: no risk of injury due to the master shield and projecting parts, no risk of stalks or clothing being drawn in.

> For series W 2100 – P 700

The **AZG lock** is an open design and based on time-proven push-pull lock technology, as used in radial pin clutches.

> For series W 100E – W 400E

The **ASGE lock** comes with a plastic collar. It makes handling easy and covers the locking spring.

> For series W 2100 – W 2400

The **ASG lock** is the stable metal version of the ASGE without plastic parts, since operation is easy at this size.

> For series W 2500 – P 700

The **CC lock** establishes a play-free connection between yoke and power take-off shaft. The clamping cone engages the annular groove on the power take-off shaft; a spring compensates for tolerances.

> For series P 600 – P 700

(No illustration available)

**YOKES EQUIPPED WITH A
QD PIN LOCK NO LONGER
COMPLY WITH THE
EUROPEAN STANDARDS
APPLICABLE SINCE 2004
AND MAY NO LONGER BE
USED ON THE TRACTOR SIDE.**



AZG lock



ASGE lock



ASG lock



QS lock

PTO DRIVE SHAFT GUARD

MILESTONES IN AGRITECHNICAL ENGINEERING

In the last fifty years, we have continuously made farming even safer and more convenient: with the Tractor Attachment System, various safety clutches or the hydraulically controlled lateral stabiliser – to name but a few of the milestones in agritechnical engineering.

FLEXO-ELEMENT CLOSES THE LAST GAP ON WIDE-ANGLE JOINTS

European Standard EN 12965, which has been in force since November 2004, occasioned us to develop our latest innovation: the green flexo-element for wide-angle, constant-velocity PTO drive shafts. The standard prescribes that the gap between the guard cone and the joint may be no larger than 30 mm. With this highly flexible, plastic element, we even close it completely.



WALTERSCHEID LAUNCHED THE FIRST FULLY GUARDED PTO DRIVE SHAFT ON THE MARKET IN 1953. THANKS TO WALTERSCHEID PTO DRIVE SHAFTS, SERIOUS ACCIDENTS HAVE SINCE BECOME A THING OF THE PAST.





WIDE-ANGLE JOINTS

Standard: one flexo-element – two safety chains

The new flexo-element protects the master shield on the tractor side against rotation.

- > The risk of objects being drawn in is eliminated.
- > Small openings in the green plastic ensure air exchange and prevent overheating.
- > Coarse dirt no longer gets into the joint, fine particles can flow out.
- > For cleaning or lubrication, you can easily slide the element over the shaft and the cone.

Power Drive: full guard and flexo-element – no safety chains

- > On this high-end version, profiled tubes are used to prevent rotation of the guard.

SIMPLE JOINTS

Standard: two shields – two safety chains

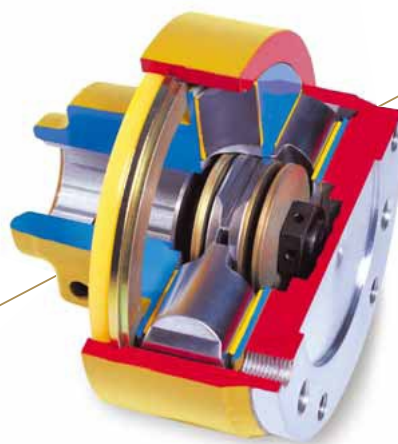
- > The classical guard is formed by the two shields in combination with the safety chains on both sides. Time-proven and effective.

Power Drive: full guard – without safety chain

- > The Power Drive with simple joint has a full guard.
- > It makes the implement-side safety shield and both safety chains superfluous.
- > On the tractor side, dangerous rotation of the guard components is prevented by connection to the implement.
- > To service the PTO drive shaft, you can simply pull the guard cone back.



CLUTCHES



THE GUARDIANS OF AGRICULTURAL MACHINERY

You'll have an encounter with the clutch on your PTO drive shaft whenever something is wrong. For instance, if you're driving too fast and there's a risk of you overloading the attached implement. That most often happens when you start work, before you've found the optimum working speed. However, overloads also occur when foreign bodies obstruct your implement, or if you try to process too much material at once.

There are various clutch types that manufacturers typically use to equip particular implements. You have experience with your combination and know, for example, how to clear your big baler with the cam-type cut-out clutch. It goes without saying that the output of your tractor must not exceed the maximum force specified by the manufacturer in the user manual. But if your clutch still keeps on interrupting your work, the reason could also be that it is not optimally adjusted. The clutch setting depends not only on the equipment configuration, but also on the condition of the ground, for example. For many situations, there are convenient, high-end solutions as well as the standard equipment. The best thing would be for you to consult your agricultural machinery dealer, since he has the necessary specialist knowledge.



CLUTCHES FOR EVERY REQUIREMENT

The main clutch types at a glance:

> Cut-out clutches

Typical applications include: self-loading trailers, manure spreaders, big balers, rotary harrows, corn headers, feeders on forage harvesters, snow blowers, etc.

> Friction clutches or combined friction and overrunning clutches

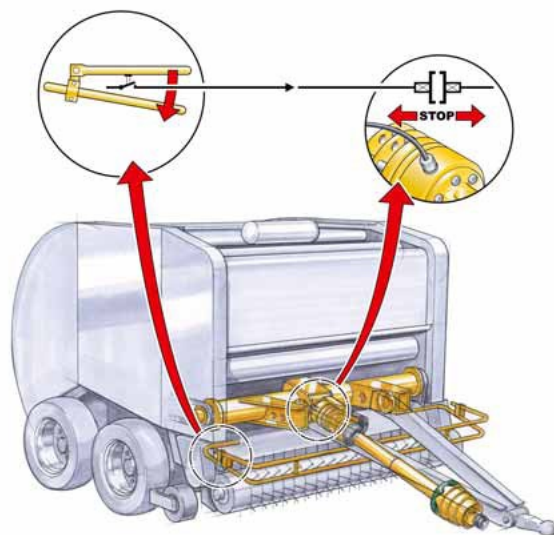
Primarily used on high-density pick-up balers, fans, rotary cultivators or rotary mowers.

> Radial pin clutches

Particularly suitable for manure spreaders and self-loading trailers in the low-end power range, for rotary tedders, rotary windrowers, sugar beet or potato lifters and cutting equipment.

INTEGRATED CUT-OUT CLUTCH: OUR KNOW-HOW FOR YOUR SAFETY!

Walterscheid has always paid particular attention to safety in agritechnical engineering. Integrated safety clutches are one of our specialities. Experience shows that warnings in manuals and on implements are not enough to prevent serious accidents on running big balers, for example. We play on the safe side and develop clutches that interrupt the driveline before you, the operator, enter the danger zone: for instance, by means of sensors on the driver's seat or light barriers in the loading area.



Friction clutch



Overrunning clutch



Friction and overrunning clutch



Shear bolt clutch



Radial pin clutch



Maintenance notes

Friction clutches always have to be released after extended periods of non-use. The clutch then has to be turned when released in order to free any friction linings that may have become stuck to the opposite surfaces.

Cut-out clutches and combined friction and overrunning clutches should be checked regularly for play between the hub and the implement PIC. If there is too much play, the PTO drive shaft will begin to "thrash".



EXPLOIT OUR EXPERIENCE



SYMBOL FOR RELIABILITY

When you invest in the safety of your driveline, you're guaranteed to be doing the right thing. So, decide on Walterscheid products!

- > PTO drive shafts, clutches, gearboxes and their components are designed for long-term use.
- > Wear parts are easily repaired, or replaced with spare parts.
- > You can upgrade or convert your equipment with individual components to suit your needs.
- > You'll find the right product for every power range and can thus avoid the risk of over-investing.

DEALER NETWORK: READY AND WAITING WORLDWIDE

We see ourselves as service partners for dealers and farmers alike. Our logistical and technical dealer support benefits you as the user:

- > We regularly inform our sales partners about technical innovations. Consequently, your dealer can tell you in detail which part is the right one for you.
- > Your dealer can also install or repair parts for you.
- > He also has rapid access to the 24-hour spare parts service, thus minimising downtimes in the event of repairs.
- > If you're in a hurry and want to install the part yourself, the dealer can also arrange for it to be delivered directly to you.
- > Using the electronic spare parts catalogue at www.walterscheid.com, you can also identify spare parts yourself and order them from your dealer.

**YOU CAN BUY OUR PRODUCTS
FROM 20,000 SELECTED,
SPECIALIST AGRITECHNICAL
DEALERS THROUGHOUT
THE WORLD. THERE'S BOUND
TO BE ONE NEAR YOU.**

The logo features the word "WALTERSCHEID" in a bold, black, sans-serif font. It is centered within a white rectangular box that has a thin black border. This box is set against a larger yellow rectangular background.

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A small version of the Walterscheid logo, featuring the word "WALTERSCHEID" in black text on a white background, which is itself on a yellow background.

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