



PRUFSTAND Mobile PTO Dynamometers

STEINBAUER Engineering LLC.
22790 Fosdick Street
Dowagiac, MI 49047
Phone: (704) 587 - 0856
www.steinbauer-engineering.com

PRUFSTAND Dynamometers do not require any external power or water source, nor any hydraulic fluid to operate. They work completely independent anywhere, anytime.



When most people think about a PTO Dyno, they imagine the old water brake kind on a trailer – but really only designed to move around the yard. These have been around since the 60's and sadly there was little investment in improving them even though farming machinery and technology has changed. Machines are bigger and more advanced technically, farmers need to be as efficient as possible and any downtime is costly - so it's surprising that a tool as valuable as the PTO Dyno has changed little.

PRUFSTAND® changes all of that – the first PTO Dyno on the market to be completely 100% independent. Needing no water, no hydraulic fluid or power supply. It was designed from the ground up to be versatile, portable, smart, flexible and efficient.

The flexibility of the PRUFSTAND® system means that having to take the machine into the Dealership for testing becomes a thing of the past. Service technicians can simply hook up the trailer and test literally in the middle of a field. Think of the time

saving benefits for troubleshooting alone. PRUFSTAND® comes in the A400hp and A800hp trailer versions, but can be adapted to fit into a service vehicle - remember it's 100% independent! It can also be linked together with other Dynos in the family for greater hp testing. We call this DYNOLink®.



PRUFSTAND® can be adapted to fit into service vehicles

Forget ongoing maintenance costs and the hassle of water or power becomes a thing of the past with You will wonder why you didn't upgrade your old dinosaur PTO Dyno sooner.

WHAT'S IN IT FOR YOUR DEALERSHIP?

A farmer who's spending tens to hundreds of thousands of dollars on a tractor wants to know that it will do what he wants it to do and what your sales person tells him it does. This can be achieved by conducting a full range power test with documentation from PRUFSTAND®.

A PRUFSTAND® dynamometer is capable of producing printed results and /or torque and power curve graphs can give you much needed accurate and independent proof of performance and credibility. No two tractors are the same and the only way to satisfy your customer's desire for proof is to offer them a documented and printed power report, produced by PRUFSTAND®.

A PRUFSTAND® power test is something that has been proven to be easily sold by sales staff and is no different to upselling an accessory or any other additional feature.

- It can be a semi-regular source of revenue, not expenditure.
- An assessment session on trade-in equipment can save you thousands when settling a price.
- It can save you or your customer thousands of dollars, if it turns out their used machinery only needed a deglaze instead of something far greater.
- Diagnose faults right in the field – no need to bring machinery off the field into the dealership to diagnose many issues. Save money and time on unnecessary transport costs.
- It is easy to use, both sales staff and service team can use it in the field.

It is important that you have some things in place:

- Your sales team are actively selling PRUFSTAND® testing and reports to customers.
- Your sales team use PRUFSTAND® as a sales tool.
- Your field technicians take the PRUFSTAND® into the field with them to assist in diagnosing faults and reducing downtime of customers.
- Your service team are billing sessions for rebuild run-ins, fault finding and deglazing.

Power testing NEW tractors - Endeavour to sell your customer a documented power report because without it your customer may think his new tractor is under powered solely because modern tractors run smoother, quieter and cleaner than older tractors.



PRUFSTAND A800 in action

Running-in NEW tractors - Include a dyno session to ensure you know it has been run in correctly under load, don't risk glazing by it being put straight into light work. Also get the tractor to running temperature to check for any possible leaks such as hydraulic connections, hoses, etc, saving expensive non-chargeable on-farm service calls.

Forced DPF regeneration - When a normal regeneration is no longer possible. You can place the machine under load and force the DPF regeneration to run its cycle.

Check Prospective Trades - Placing a prospective trade on a dyno can give you much needed insight into its 'real' condition and help to minimise any possible repair costs that would otherwise not be taken into account when discussing your trade price.

USED Tractors - A dyno session may support your sales price because of the documented proof you're able to offer. For example, a used tractor that has done high hours yet still has close to correct power, doesn't breathe excessively and sounds fine, will yield more than one that doesn't.

Deglazing - Bring life back into a glazed motor by running it on the dyno under load for a couple of hours. You will notice a difference, even after 10 minutes (a deglaze can take between 2-4 hours, sometimes longer). Your customer will be much happier with a \$600-\$800 dyno session than an \$8000+ possible rebuild.

SPECIAL FEATURES

PRUFSTAND® recognized the need for greater flexibility with PTO Dynos. With Equipment Dealers now having multiple branches it was necessary to design a system where each branch could have access to the most common PTO Dyno for everyday testing - the A400 - plus have the ability to 'join forces' with other branches to test higher HP machinery.

We bring you the revolutionary DYNOLink® system, available only from PRUFSTAND®. The unique ability to link the PRUFSTAND® systems gives Dealerships the flexibility for their branches to work together to easily test higher HP machinery in the field.

Imagine the flexibility of being able to test or diagnose technical issues when and where you need to. Both the A400 and A800 can be joined in different configurations to test up to 2400HP.

DYNOLink® provides the unique benefit of being able to easily share DYNO resources between your branches.

Work Smarter with PRUFSTAND.



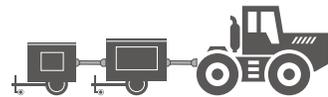
A400 + A400

800 hp / 4400 lb-ft
800 hp / 6000 Nm



A400 + A800

1200 hp / 6600 lb-ft
1200 hp / 9000 Nm



A800 + A800

1600 hp / 8800 lb-ft
1600 hp / 12000 Nm



Possible PRUFSTAND® DYNOLink configurations

SAFETY FEATURES

The PRUFSTAND® A400 and A800 have been designed to overcome the major safety risks posed by conventional PTO dynamometers, while offering easy and safe operation with greater reliability and low maintenance costs.

PTO Dynamometers can pose a serious threat to their operators if used improperly. Many of these machines are run with **unguarded PTO drive shafts** rotating at **540 to 1,000 RPMs**, posing a potentially lethal danger of entanglement. *The average person's reaction time is about three quarters of a second. At 540 RPMs, the average person would be pulled into the PTO about 5 ¼ feet before they even realized that they were in danger.*¹

PRUFSTAND® Dynos are built with a **set of safety features** to minimize the risk of harm to the users during operation.

E-STOP Button

Peace of mind with a one-button shutdown for emergency situations.

Safety Shutdown

Smart programming ensures automatic shutdown in case of overheating.

Stationary Handbrake & Trailer Stabilizers

To keep the PRUFSTAND from shifting or upending during operation.

Safety Doors

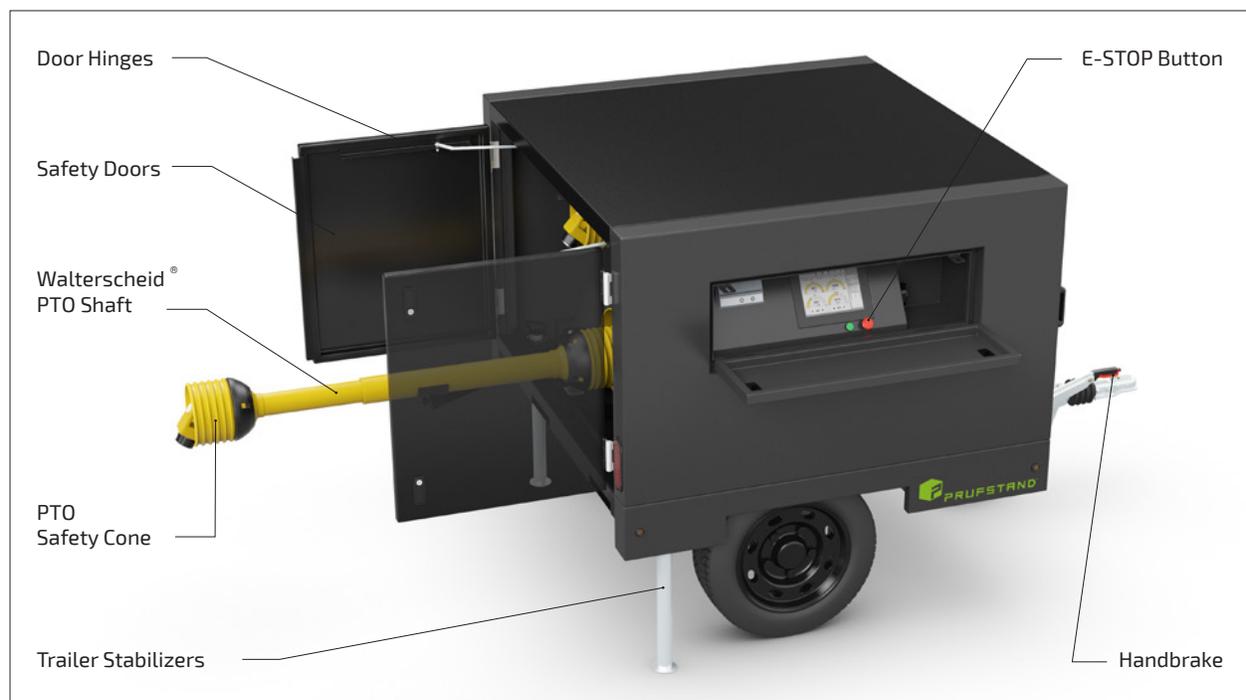
Locking in place to shield the PTO drive and shaft while in operation.

Walterscheid® PTO Shafts

German-made PTO shafts, designed for maximum safety.

PTO Safety Cone

Shielded in safety yellow, fully protected PTO drive and shaft.



¹ Excerpt from "Safety News Issue 3 2015 - Power Take Off Safety for Tractors" from State Compensation Insurance Fund - by Rick Alvord

WALTERSCHEID PTO SHAFTS

Power Drive PTO drive shafts provide higher performance, greater safety and improved handling. Specifically designed for machines in continuous use, these shafts cater to the toughest demands, particularly to those of large-scale farmers and contractors.¹



Walterscheid received the AE50 AWARD from the American Society of Agricultural Engineers for the new Power Drive PTO shaft, and an international design award for the PTO drive shaft guard.²

The development and production of high-quality PTO drive shafts for use in agriculture is part of the core competence of GKN Walterscheid. For more than 50 years, Walterscheid has ranked among the world's leading manufacturers and continuously developed all of their components further. Today, the drive shaft made by Walterscheid is composed of components with the highest quality which can be configured in such a way that they will meet all necessary requirements perfectly. Our products are suitable for applications ranging from small, economical solutions utilised in standard applications to high-performance combinations intended for continuous use and needed to deliver the highest possible drive power. We offer different series that are suitable for different application profiles.⁴

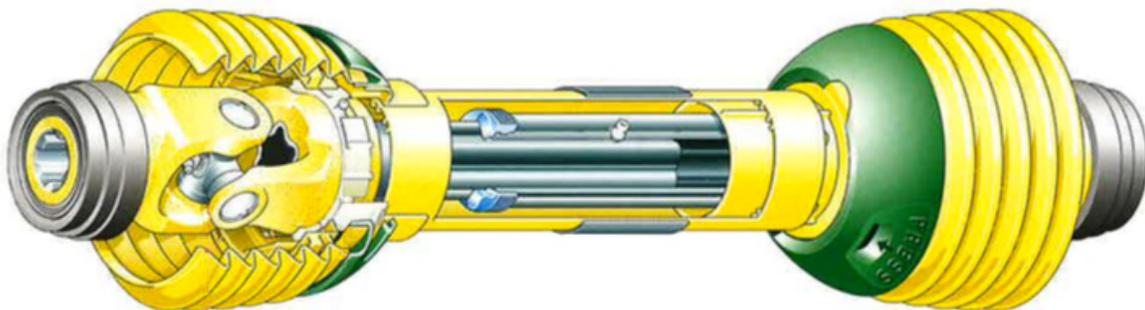


Figure 3 - Walterscheid PTO Drive Shaft Cutaway³

^{1,2,3} Excerpts from "POWER DRIVE PTO DRIVE SHAFT SERIES P 300 - P 800" from Walterscheid - GKN Walterscheid GmbH

⁴ Excerpt from "http://www.walterscheid-coupler.de/Products/Product-information/PTO-Drive-shafts" from Walterscheid - GKN Walterscheid GmbH