

# MSU - Dawg Tracks

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MISSISSIPPI STATE UNIVERSITY™  
EXTENSION

PTO Shields

The dangers of power take-off (PTO) shafts and drive lines are widely known. We've all heard the stories of people becoming critically injured or dying from getting caught in them. Many articles have been written and read on this topic. It all boils down to **do not get off equipment with the PTO engaged and do not get close to moving parts.** But, unfortunately for some, knowing and doing are still two different things. Most PTO-driven implements produced since the early 1970s are equipped with a fully shielded PTO driveline to protect the operator from accidental entanglement. A common item found during safety inspections is damaged or missing parts to PTO drivelines. So periodically inspect the following areas:

## Master Shield

The first shield in the PTO driveline is the master shield on the rear of the tractor (Fig 1). This shield prevents the operator from accidentally coming into contact with the tractor stub shaft and the front universal joint of the equipment's driveline.

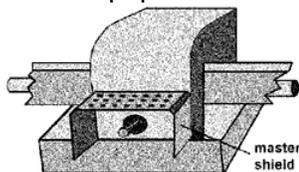


Figure 1.

## Driveline Guards

This shield covers the drive shafts along with a bell shaped end covering the u-joints to prevent wrap point hazards. Ensure this assembly is slid into position correctly and does not stick or become hung on the shaft.



## Shield Chains

These are sometimes located on each end of the driveshaft shield assembly to hold the shield stationary while the shaft turns inside of it. They are not used by all manufacturers, but if originally equipped, they must be used.

## Tips to Avoid PTO Driveline and Guard Damage:

- ✓ Regularly test driveline guards by spinning or rotating them to ensure that they have not become stuck to the shaft. PTO equipment is frequently operated in inclement weather and exposed to dust, chaff and other foreign materials which can quickly damage the bearings that allow the shaft to spin freely inside the shield. Rust, dirt and crop debris must be cleaned frequently to allow the bearings to spin freely.
- ✓ Position the tractor's drawbar properly for each machine used to help prevent driveline stress and separation on uneven terrain and during tight turns.
- ✓ Reduce PTO shaft abuse by observing the following:
  - Avoid tight turns that pinch rotating shafts between the tractor and machine;
  - Keep excessive telescoping to a minimum;
  - Engage power to the shaft gradually;
  - Avoid over tightening of slip clutches on PTO-driven machines.
- ✓ Be sure PTO driveline is securely locked onto the tractor PTO stub shaft.
- ✓ Keep universal joints in phase. (If unfamiliar with this term, check the operator manual or talk with a farm implement dealer.)

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Sources:

<http://nasdonline.org/1289/d001094/shield-yourself-from-pto-dangers.html>  
<https://extension.psu.edu/power-take-off-pto-safety>