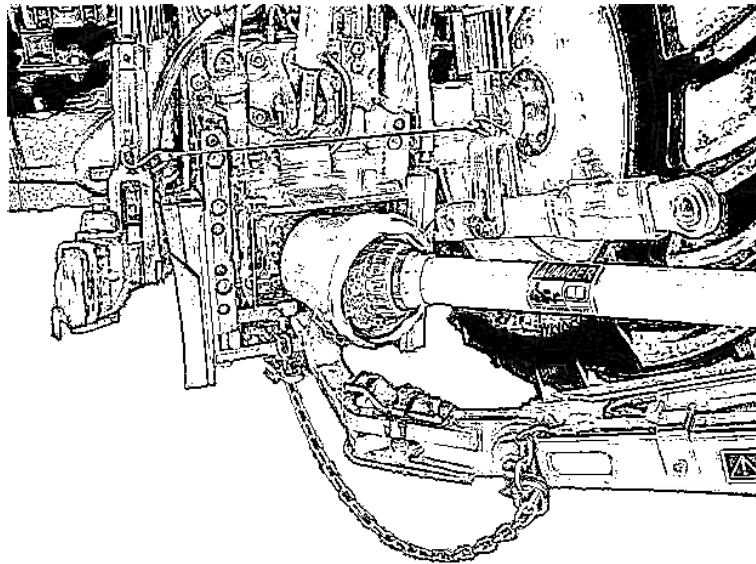


# Power Take-Off (PTO) Drive Shaft Guard Damage and Prevention

For owners and operators



*Agriculture is recognized as one of the more hazardous occupations. Today's farmer spends long hours in close proximity to increasingly complex and powerful machinery. In order to avoid accidents, everyone from the component suppliers, to the company who manufactures and assembles the machinery, to the dealers and ultimately the actual user must keep safety in mind.*

*ADMA is concerned that PTO drive shafts be used in the safest possible manner. This PTO Guard Damage and Prevention Guide contains safety information directly related to the PTO drive shafts of agricultural implements.*

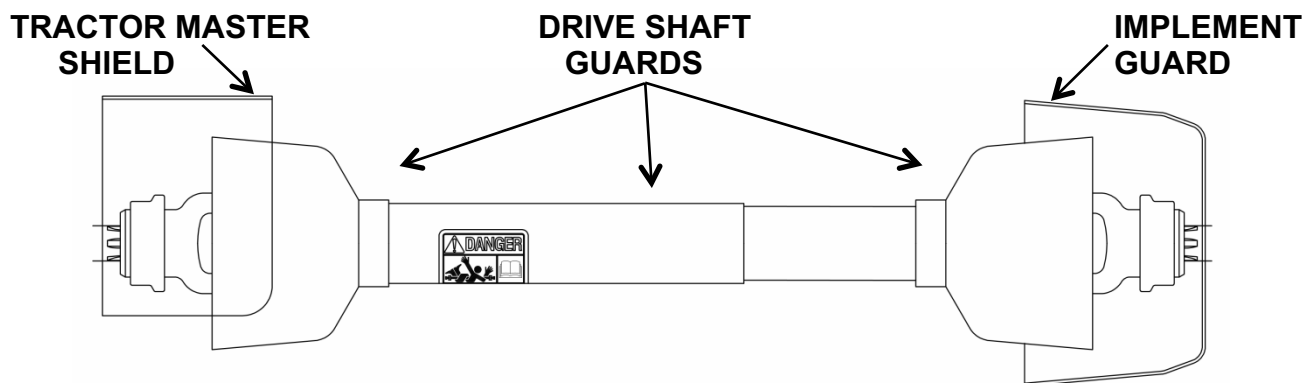
*PTO guards are designed to prevent inadvertent contact with the rotating drive shaft. They must operate in conditions of extreme temperatures, dust and dirt and exposure to sun and rain. They must be properly maintained so that they can telescope with the drive shaft while rotating freely on the drive shaft.*

*Most PTO drive shaft accidents occur when the tractor master shield, PTO drive shaft guards or the implement connection guard are damaged or missing. The best way to prevent an accident is to keep all guards in place and in good working order.*

Following are the typical causes of PTO guard damage and how to prevent them from happening:

## 1. Intentional - Guard Removal and Modifications

- Removal of the PTO master shield from the tractor or the implement guard at the implement end of the PTO drive shaft.
- The enlargement of access holes for lubrication of moving parts or clutch adjustment.
- PTO drive shaft guard is removed from the drive shaft and is not reinstalled.



### Prevention

These types of accidents are the easiest to prevent. Never do anything that increases exposure to rotating drive shaft components. Do not operate machinery if the guards are damaged or missing. Replace damaged or missing guards immediately.

## 2. Accidental - Field Usage Damage

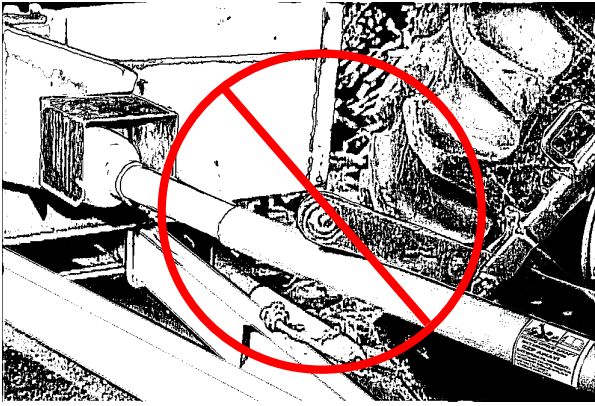
- Incorrect drawbar/clevis hitch positioning and oversized hitch pins.
- Incorrect attachment of PTO drive shaft guard restraint chains.
- Contact with drawbar hitch pins, 3-point hitch arms, implement jacks, tractor tires, hydraulic hoses, etc.



### Prevention

Consult the operator's manual for proper hookups. During extreme field operation conditions or transportation, the PTO drive shafts move up, down, left and right in the space between the tractor and the implement. To avoid guard damage from contacting other elements, pay close attention to clearance around the drive shaft during tight turns or while driving over hills or through ditches.

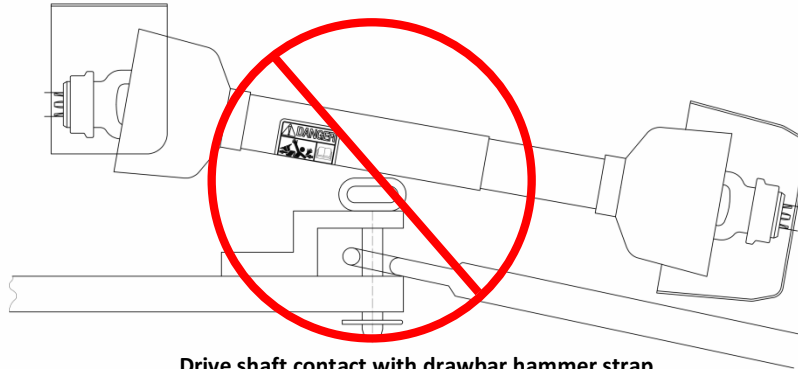




Drive shaft contact with 3-point hitch



Drive shaft contact with tractor tire



Drive shaft contact with drawbar hammer strap

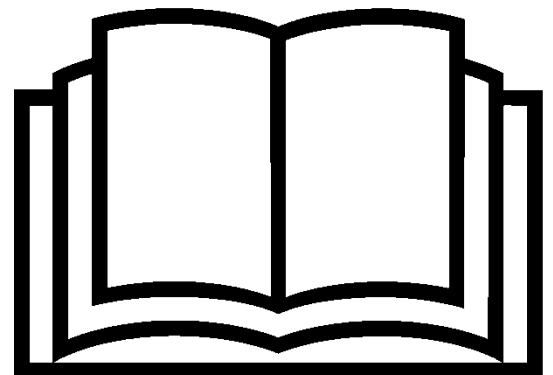
### 3. Maintenance - Lack of Maintenance Causes Guard Damage

- Failure to perform recommended PTO drive shaft guard maintenance.
- Failure to regularly inspect PTO drive shaft for guards that do not turn freely on their support bearings.
- Failure to regularly inspect for PTO drive shaft guard damage that increases operator exposure to rotating members, and prevents easy telescoping of guard tubes.
- Failure to inspect for safety signs that are no longer clear or legible.



#### Prevention

Check the operator's manual for maintenance recommendations and repair instructions. If you do not have an operators manual, get one from your local dealer or check the manufacturer's website. Whenever possible, store implements in buildings where they are protected from damaging environmental conditions. Lubricate the drive shaft guard bearings as recommended in the operator's manual. Replace damaged or missing guard bearings, cones, tubes and safety signs. Use genuine OEM replacement parts.



**READ THE  
OPERATOR'S MANUAL.**

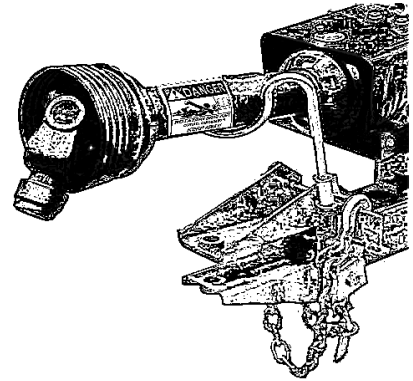
## 4. Environmental - Exposure Over Time Will Cause Guard Damage

- Operation in harsh field conditions of temperature extremes, prolonged direct sunlight, high humidity and both natural and applied corrosive field chemicals.
- Unfavorable storage conditions where PTO drive shafts are in contact with the ground and equipment is parked for extended periods with exposure to environmental conditions.



### Prevention

Review the operator's manual for any special recommendations in regard to harsh field conditions. Whenever possible store implements in buildings where they are protected from damaging environmental conditions. Use the drive shaft storage support included on your implement.



## Protect yourself and others with properly guarded equipment. Make Your Farm a Safer Place to Work & Grow.

- Heed all safety warnings in the owner's manual and on safety signs.
- Slippery conditions increase your risk of injury.
- Stay at least your height away from a rotating drive shaft.
- Never operate equipment without proper guarding.
- You have an obligation to keep children away. There is NO reason for any child to be near operating equipment.
- If the elderly are assisting with farm work, their physical limitations need to be recognized and accommodated.
- Keep long hair tucked securely under a hat.
- Never step across a drive shaft.
- Don't use the tractor drawbar or the implement tongue as a step.
- Never use the drive shaft as a step.
- Stop when fatigue is a safety issue.



### Agricultural Driveline Manufacturers Association

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