

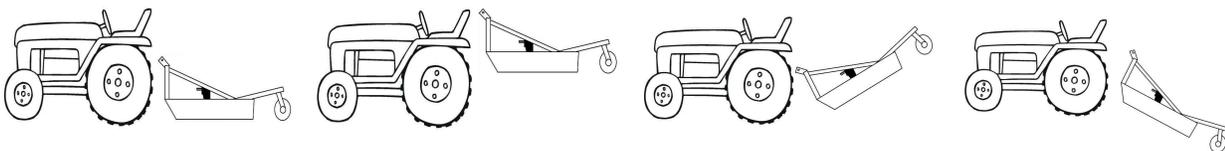
PTO shaft length may need to be shortened depending on your tractor / implement combination, this can be done using basic hand tools.

You must make sure the PTO shaft maintains a minimum safe overlap of 6” of the 2 halves of the PTO shaft and never have a condition where the shaft can bottom out.

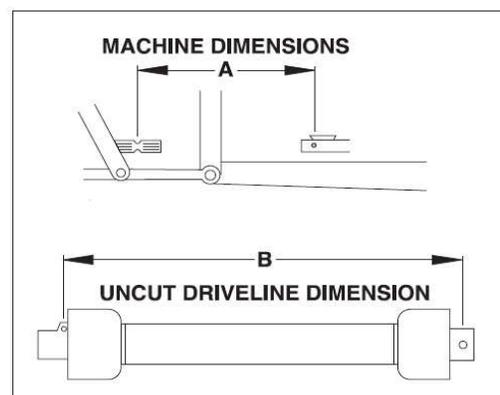
The PTO shaft provided with your new implement is designed to accommodate a large variety of 3 point hitch styles and tractor sizes, it may be too long for most machines and possibly too short for others. It is very important that the PTO drive shaft be free to telescope but not bottom out when going through its working range. If the PTO drive shaft bottoms out, the bearings on both the implement and tractor will be overloaded and fail in a short time, it is also possible to break or bend components of the implement and tractor.

1. To determine the proper length of the drive line follow this procedure:

- a. Read & follow all safety precautions outlined in your tractor and / or implements owners manuals.
- b. Attach the implement to the tractor but do not attach the PTO shaft.
- c. Adjust your 3 point hitch to position the implement level or at the angle desired for operation.
- d. Raise the implement until the input shaft of the implement is horizontally level to your tractors 6 spline PTO shaft, this will likely be the shortest possible distance between the tractors 6 spline PTO shaft and your implements input shaft. Also consider how this distance would be affected in all other possible operating conditions as show bellow:



- e. Measure the dimension between the locking grooves on the 6 spline PTO shaft of your tractor and the input shaft of your implement, this will be dimension “A”.
- f. Measure the same dimension on the compressed PTO drive shaft, this will be dimension “B”.
- g. If dimension B is greater then dimension A the PTO drive shaft will have to be shortened.



2. To shorten the PTO drive shaft:

a. Subtract dimension B from A, this will determine how much too long the PTO shaft is, this will be dimension C. ($B - A = C$)

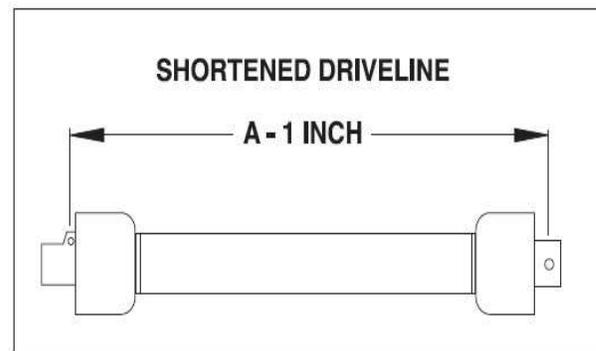
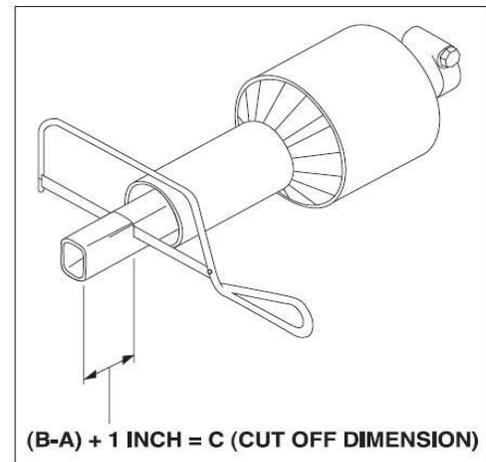
b. Add one more inch to dimension C to be sure the PTO shaft will not bottom out ($C + 1'' =$ amount to shorten PTO shaft)

c. Use a hack saw to cut this amount from each half of the PTO drive shaft ($C + 1''$), cut both the plastic tubes and the metal cores.

d. Use a file to remove the burrs from the cut edges, clean off any metal filings and lubricate the metal cores with grease.

e. Assemble the 2 ends of the PTO drive shaft.

f. Make sure the PTO shaft can telescope freely, if it does not separate the 2 parts and inspect for burrs, filings or other damage and correct as needed. Be sure it telescopes freely before installing.



Once you have installed the PTO drive shaft you must make sure it will not contact any part of the tractor or implement in its working range. It may also be necessary to limit the lift height of your implement by way of physically locking out the movement of the operating lever on your tractor to prevent the PTO drive shaft halves from separating at full lift height.

It is also very important that if you break a shear bolt for any reason that you replace it with exactly the same part. There are many very similar looking fasteners that may fit but may have a higher breaking strength, using an improper shear bolt can cause major damage to both your tractor and implement that will not be covered by warranty. Once the cause of the shear pin break has been determined and remedied make sure the shear bolt clutch can freely rotate and is well lubricated before installing a new shear bolt. Shear bolts should always have a locking nut and be tightened to just snug.

Shear bolts: (please check your operators manuals to confirm)

rotary cutters:	grade 2 - 1/2" x 3.5"
wood chippers:	grade 8.8 - M8 x 50mm OR grade 2 - 3/8 x 2"
snow blowers:	grade 8.8 - M8 x 50mm shaft / M6 x 30mm chain
post augers:	grade 2 - 3/8" x 3"