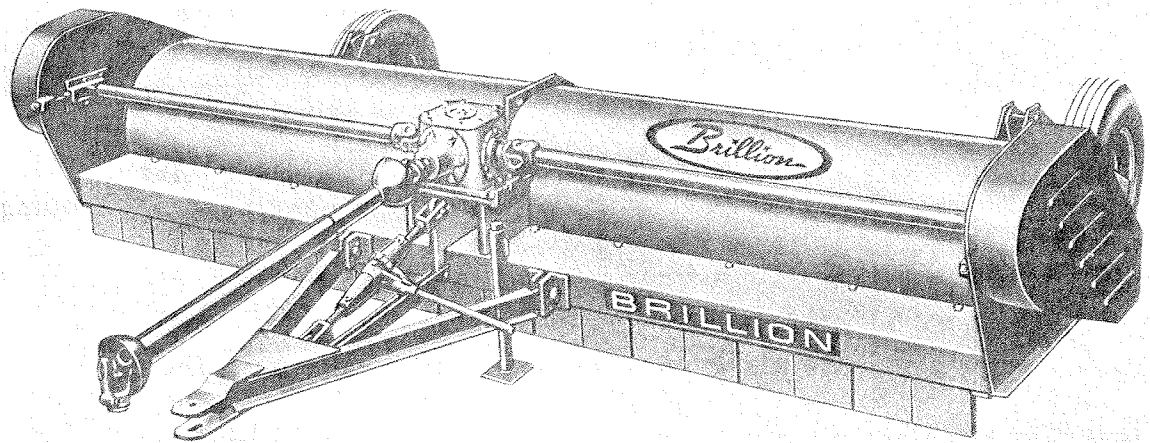


# OPERATOR'S MANUAL

*Brillion*

## 144" , 164" & 180" FLAIL SHREDDERS



Model F-144-01, F-164-01 & F-180-01

Model F-144-02-03 & F-180-02-03-04

Model FS-144-02-03-04

**BRILLION IRON WORKS, INC.**

Brillion, Wisconsin, U. S. A.

# SHREDDER SPECIFICATIONS

Width of Cut -

- F-144 - - - - - 12 foot
- F-164 - - - - - 13 foot-8 inches
- F-180 - - - - - 15 foot

Height of Cut- - - - - Adjustable -  
1 - 12 inches

- Knives - - - - - Heat treated steel  
reversible
- F-144 - 96 knives
  - F-164 - 112 knives
  - F-180 - 128 knives

Gears - - - - - Heat treated alloy steel  
Machine cut - run in oil  
bath

- Bearings - - - - - Gear Housing  
tapered roller  
shim and nut adjusted  
Universal Joint  
sleeve bearings  
Wheel Hubs  
tapered roller  
nut adjusted

P. T. O. Drive Shaft - - - - - Heavy duty - 2 joint  
Needle bearing - telescoping

Hitch- - - - - Adjusts to drawbar  
height of tractor

Lift- - - - - Hydraulic or manual

Wheel Size - - - - - 6:70 x 15" Rim

Frame - - - - - Heavy gauge steel  
welded assembly

- Belt - - - - - F-144  
"C" section - Matched set of 2  
FS-144, F-164 & F-180  
"C" section - Matched set of 3

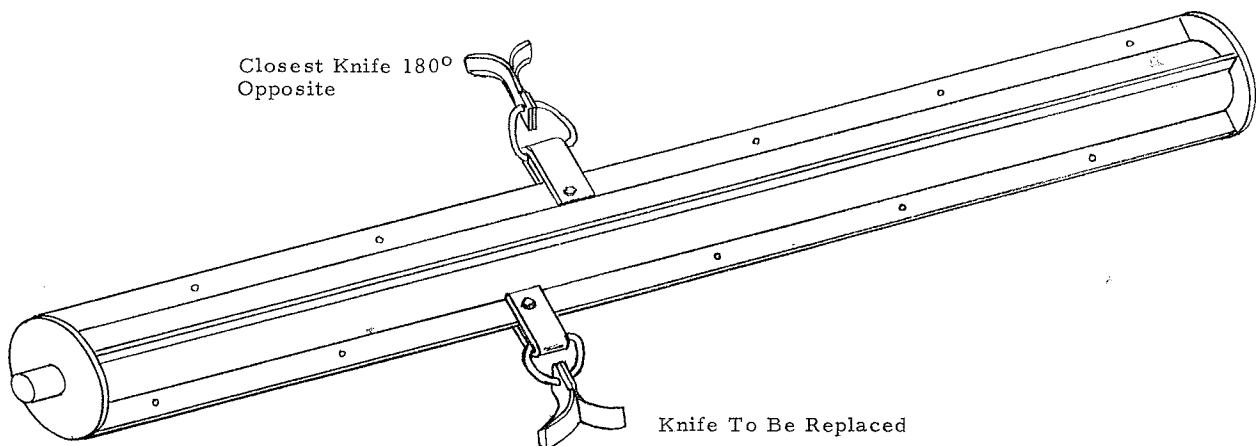
- Shredder Weight- - - - - F-144 - 2340 lbs.  
F-164 - 2530 lbs.  
F-180 - 2660 lbs.

## ASSEMBLY INSTRUCTIONS

1. Mount tires on rims. (Tires not regularly furnished with machine).
2. Raise machine high enough to install support stand. Set front of machine about 1 foot high.
3. Mount tailwheel brackets on 3" square tubing. Brackets are normally installed with the wheels towards the outside of the machine, but may be reversed depending upon wheel spacing desired. Use the widest possible wheel spacing. The correct way to install the brackets is with the series of holes for wheel height adjustment, up on top. See Figure 1, page 9.
4. Mount wheels on hubs. (On 15 foot machine wheels may be bolted to hub, before hub and spindle assembly is installed in tailwheel bracket.)
5. Install belts and tighten. See figures and instructions on proper belt tension on pages 5 & 6. Tighten belts by loosening mounting bolts on both gearbox and shaft bearings, then turn adjusting screws. Move both gearbox and shaft bearings equally to maintain alignment between sheaves and gearbox.  
  
To check alignment of sheaves and gearbox visually sight along drive shafts using front of machine as a reference line.
6. Attach front hitch with 1" diameter clevis pins. Then attach drawbar links to the lower holes on both front hitch and shredder frame, using remaining clevis pins. Do not operate the machine unless the drawbar links are installed. See Figure 2, page 9 for correct way to attach the front hitch and drawbar links.
7. Attach PTO shaft to gearbox, insert bolt and tighten nut. Lubricate sliding or telescoping section of PTO shaft.
8. To install skirts, insert the end of the rod with holes in it through the first lug. Next slide on two skirts. When the rod is all the way in put a cotter pin in the hole in the end of the rod. (On 13 ft. 8 in. machines place a spacer, then a 1/2" flat washer on the rod before the first skirt.)
9. When the machine is shipped there is no grease in the gearbox. Fill to level plug on side of gearbox with proper lubricant. Use S.A.E. No. 140 E.P. in summer and S.A.E. No. 90 E.P. when temperature is below 32° F. Important: remove plastic caplug from the cover and install breather valve to prevent damage to the oil seats.
10. Install either screw jack or hydraulic cylinder between front hitch and shredder frame.

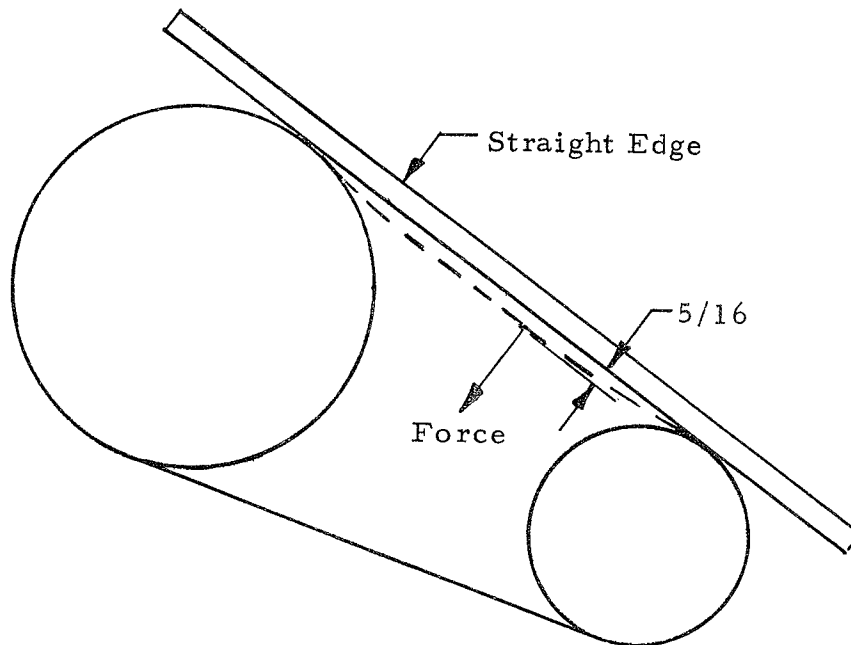
## OPERATING INSTRUCTIONS

1. Check oil level in gearbox before using. Maintain level with proper grade of lubricant.
2. Grease PTO shaft including bar and tube assembly daily.
3. Grease bearings lightly every 40 - 50 hours of operation. Do not overgrease. It is necessary to block up machine and get underneath the machine to grease the two center bearings on the flail assembly. Use proper safety precautions when working underneath machine.
4. Repack wheel bearings once a year.
5. Check and retighten all bolts and setscrews periodically.
6. Check belt tension frequently. New belts stretch rapidly in the first few hours of use. See instructions on pages 5 and 6 for proper belt tension and alignment.
7. Run unit at rated RPM. Decal on gearbox shows proper speed, either 540 or 1,000 RPM.
8. Important - When operating shredder maintain ground clearance (2" recommended minimum) on flail knives. If hydraulic cylinder has a stop on it, adjust stop to provide proper cutting height.
9. Do not make sharp turns when machine is running. Turning too short will cause vibration and may result in damage to the machine. It is advisable to skip 8 or 12 rows when turning around at the end of the field. If tractor is equipped with an overriding or free turning PTO shaft, it is advisable to disengage PTO when turning.
10. When changing cutting height, adjust tailwheels to keep machine as level as possible.
11. Never run machine without a full set of knives. If one knife assembly is replaced with a new one, the closest one, 180° opposite must also be replaced with a new one. See figure.



FOR MODEL F-144-01 & F-180-01 SHREDDERS  
WITH 5V 2 & 3 GROOVE BANDED BELTS

TO CHECK PROPER BELT TENSION



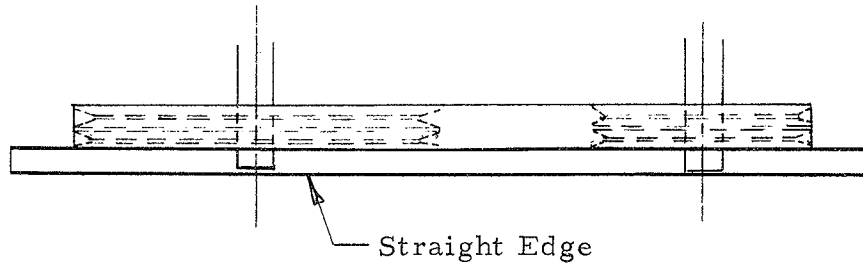
Lay straight edge along top of belt. Apply force or pull at midpoint of span between sheaves until belt is deflected 5/16". The force required to deflect a 2 groove belt this amount should be 19 lbs. minimum and 28 lbs. maximum.

On a 3 groove belt the force required to deflect the belts 5/16" should be between 29 and 42 lbs.

When new belts are installed the initial tension should be 1/3 higher. The force to deflect a 2 groove belt 5/16" should be 37 lbs. and for a 3 groove belt 55 lbs. Check belt tension every half hour the first 2 hours of operation.

If a belt feels hot this is a sign of belt slippage.

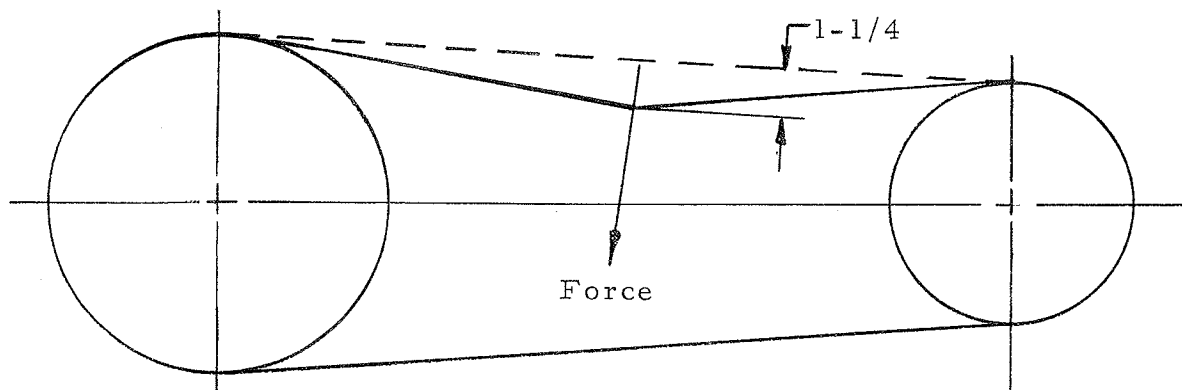
## TO CHECK PULLEY ALIGNMENT



Lay straight edge against both pulleys. Straight edge should touch on both edges of each pulley. It may be necessary to slide the pulley in or out on the shaft, as well as move the gear box to properly align the belts.

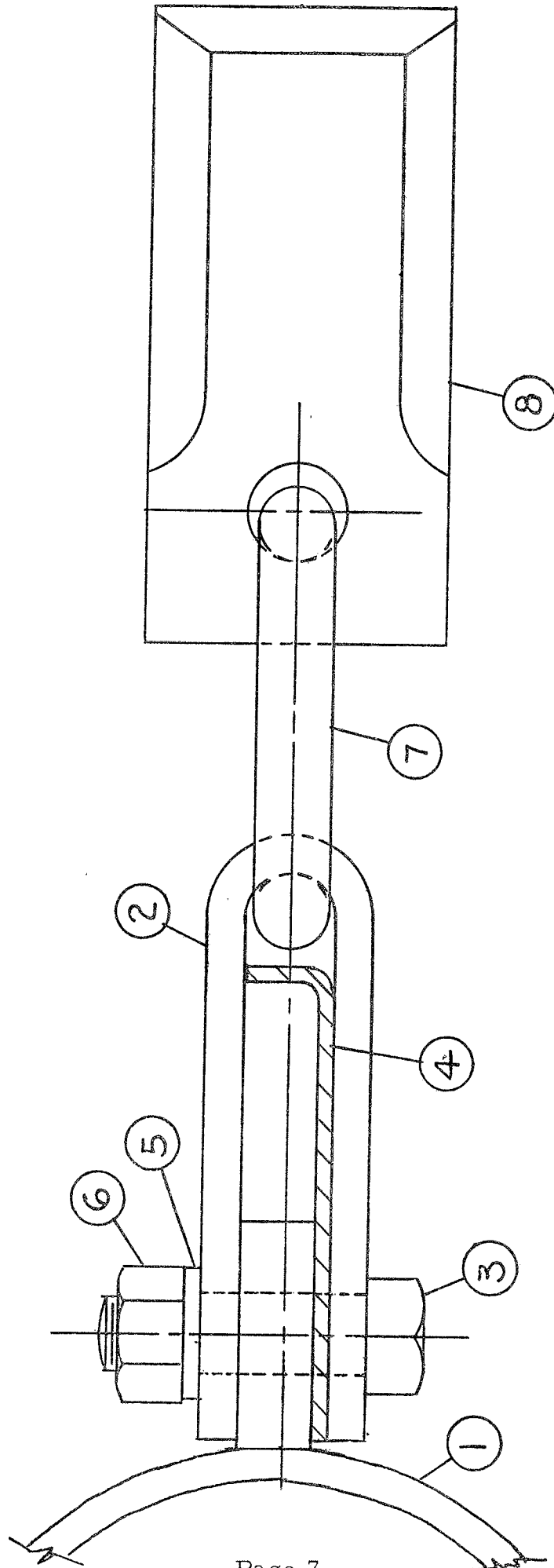
It is important to maintain pulley alignment for normal belt life.

## TO CHECK PROPER BELT TENSION ON MODELS WITH MULTIPLE "C" SECTION BELTS



1. Using spring scale at right angles to the center of the span, apply a force to one belt large enough to deflect the belt 1-1/4".
2. The force required should be about 20#. For a new belt that is being tightened for the first time the force required for 1-1/4" deflection should be 30#.
3. At the end of 2-4 hours of operation the belts should be retightened to the normal tension.
4. After 24-48 hours the belt tension should be rechecked. Either too high or too low a belt tension will shorten belt life.

This is a side view showing correct location of retainer used to keep the "D" ring from turning over. The retainers on all the knives on one cylinder must all be put in on the same side of the bar.



- 1. Cylinder and bar
- 2. "U" Bracket
- 3. Cap screw
- 4. Retainer
- 5. Lockwasher
- 6. Lock Nut
- 7. "D" Ring
- 8. Knife

## TRANSPORT ASSEMBLY INSTRUCTIONS

### F-180 SHREDDER

#### To put shredder into transport position:

1. Place the machine in a level area.
2. Raise the front of the shredder and lower support stand to its highest position.
3. Remove the front hitch assembly and the hydraulic cylinder.
4. Attach the transport axle to the hitch lug on the right hand side of the machine with a 1" diameter clevis pin. Slide the rear transport bracket on the pipe and bolt it to the 3" square tubing on the rear of the shredder. See Figures 3 and 4 on page 9.
5. Attach the front hitch to the lugs on the left end of the shredder. Attach the hitch to the tractor drawbar. See Figure 5, page 9.
6. Raise the left rear corner of the machine with the jack so that the rigid link can be installed between the front hitch and the lug on the end of the shredder. With the left rear corner still raised remove the left hand wheel and spindle assembly.
7. Use the jack to raise the right rear corner of the machine. Attach the wheel and spindle to the rear end of the transport axle, then remove the right hand wheel and spindle from the tailwheel bracket.
8. Raise the right front end of the machine and attach the wheel and spindle to the front end of the transport axle.
9. Raise the support stand and either tie up or remove the P. T. O. shaft.

To put the shredder into operating position, reverse the procedure.



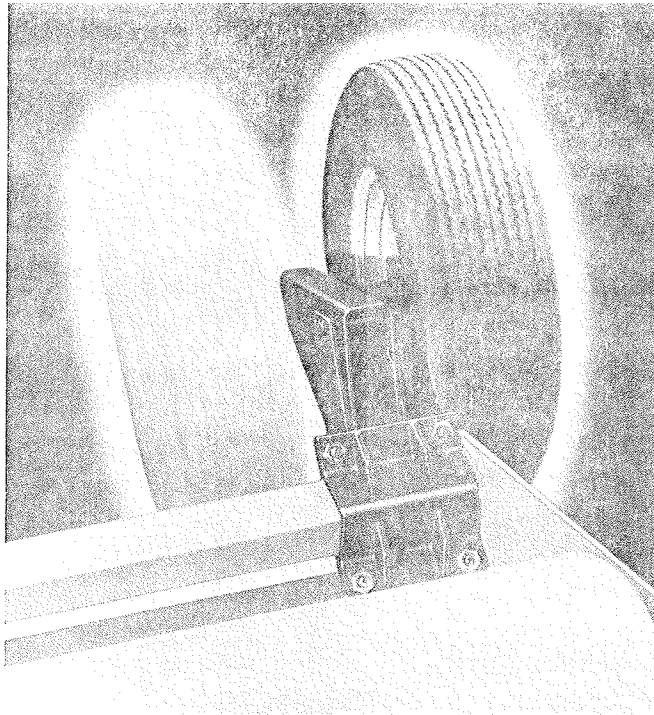


Figure 1

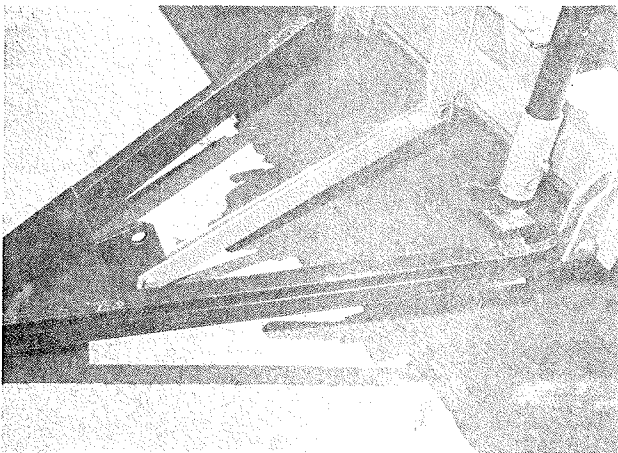


Figure 2



Figure 3

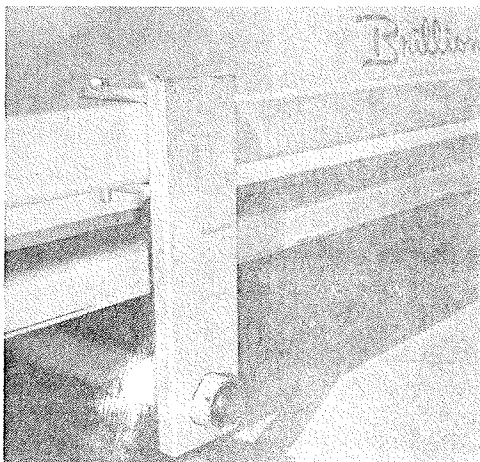


Figure 4

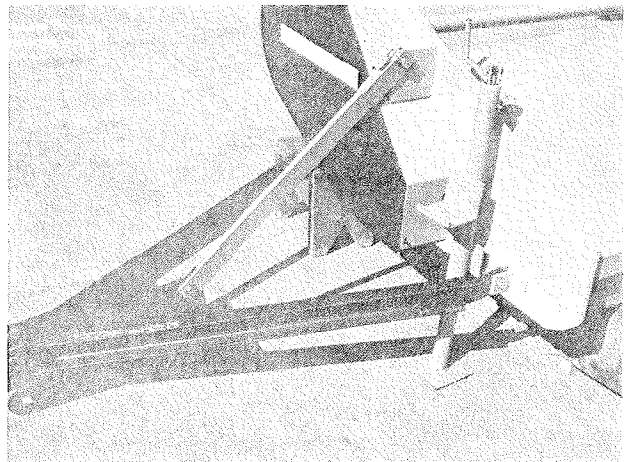


Figure 5