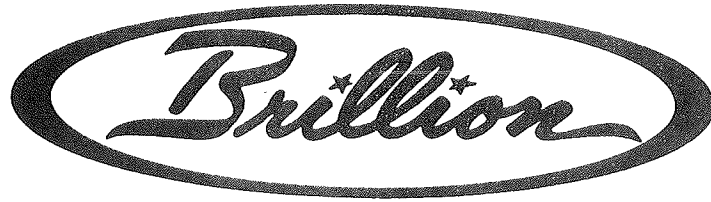
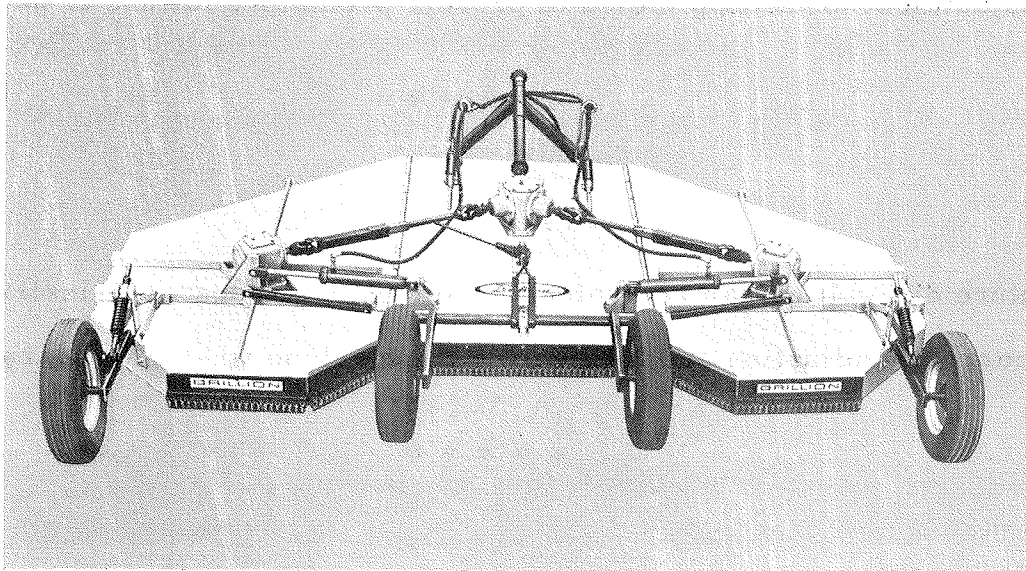


OPERATOR'S MANUAL



180" VERSA-MOWER



MODELS: IR-180-02
IRC-180-02
IRCC-180-02
IR-180-01
IRC-180-01
IRCC-180-01



BRILLION IRON WORKS, INC.
BRILLION, WISCONSIN 54110

7D-768

IR-180 VERSA-MOWER

Your Brillion Mower is built with the best materials and workmanship available. All machines are adjusted at the factory to assure their proper mechanical operation. Machines equipped with P. T. O. slip clutch may require minor adjustment to the slip clutch to prevent premature failure of parts.

* * * * *

Many future difficulties can be avoided by following the operating instructions, and by correctly adjusting and lubricating the machine when necessary.

* * * * *

Location Reference

"Right" and "Left", "Front" and "Rear" refer to the operators right and left, front or rear, when he faces the same direction as the machine is traveling.

SAFETY INSTRUCTIONS



Federal regulations require that at the time of initial assignment and at least annually thereafter, each employee shall be instructed in the safe operation and servicing of all equipment which he will be operating. This instruction shall cover the following safe operating practices:

1. Keep all guards and shields in place when machine is in operation.
2. Stop engine, disengage PTO and wait for all movement to stop before servicing, adjusting, cleaning, or unclogging machine.
3. Keep hands and feet away from machine openings and moving parts when operating.
4. Do not allow anyone but operator to ride tractor or equipment.
5. Make sure everyone is clear of machine before starting engine, engaging PTO or operating machine.
6. Run PTO at proper PTO speed for this machine. Refer to tractor Operator's Manual for proper engine speed to obtain proper PTO speed.
7. If servicing or adjusting require the temporary removal of any shield, wait until all movement has stopped before attempting to lift or remove shield.
8. Block machine up when working under the machine. Do not rely on hydraulic cylinders to support machine or machine parts.
9. Do not transport machine at speeds where the operator loses control. Do not exceed 20 mph under any conditions.

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SPECIFICATIONS

Model - - - - - IR-180 Versa-Mower (input P. T. O. equipped with shear pin assembly)
 IRC-180 Versa-Mower (input P. T. O. equipped with slip clutch)

Weight- - - - - IR-180 - 3150#
 IRC-180 - 3196#

Cutting Width - - - - - 180"

Cutting Height- - - - - 1" - 14" (Adjustable) with pneumatic tires

Wheel Positions- - - - - Rear Mounted - Wing Sections
 Rear Mounted - Center Section

Blades- - - - - Three sets - heat treated alloy steel

Center Cross Drive- - - - - 1 to 1 ratio, 540 RPM.

Blade Drive - - - - - Two individual drive units. 1 to 1 ratio.
 One transfer drive unit.

Bearings - - - - - Tapered roller bearings

Drive Coupling - - - - - Double telescoping universal joint assembly

Power Shaft - - - - - Three joint - needle bearing - integral shield. Shear pin protection. 7-1/2" slip clutch optional

Wheel Sizes - - - - - Three types available -
 (1) 15" Pneumatic (Std.)
 (2) 14" Pneumatic (Optional)
 (3) Laminated Rubber (Optional)

Tire Size - - - - - 7:60 x 15 rib implement
 4 ply for wing support wheels
 6 ply for transport axle wheels

Hitch - - - - - Drawbar - hydraulically operated

Options - - - - - Front chain shield kit
 Rear chain shield kit
 Shielded drive couplings - double telescoping - splined
 Round blade holders
 Dual wheel axle - center section
 Manual wing lift kit

SHIPPING ASSEMBLIES & PARTS

Your Brillion Versa-Mower is shipped in assemblies and bundles. Before starting to assemble the machine, separate the various bundles and take care not to lose any of the parts or fasteners.

Part No.	Description	Qty. Per Machine	
		IR-180	IRC-180
7D-269	Hood & Drive Assembly - Center	1	1
7D-342	Hood & Drive Assembly - R. H.	1	1
7D-343	Hood & Drive Assembly - L. H.	1	1
7D-378	Box Assembly (Basic)	1	1
7D-379	Axle Assembly	1	1
7D-387	Drawbar Assembly	1	1
7D-395	Axle Arm Bundle	1	1
7D-402	Bracket Bundle	1	1
7D-436	Box Assembly (Hyd. Cylinders)	1	1
8D-271	Power Shaft (Wing Drive)	2	2
7D-678	Box Assembly (Slip Clutch)		1
4C-129	Wheels, 15 x 5 - five bolt	4	4
7C-841	Ratchet Jack	1	1
1J-76	Drive Shaft Assembly	1	
1J-80	Drive Shaft Assembly		1
9D-948	Shield Assembly	1	1
9D-952	Box Assembly	1	1

All the above are standard components; optional equipment is not listed.

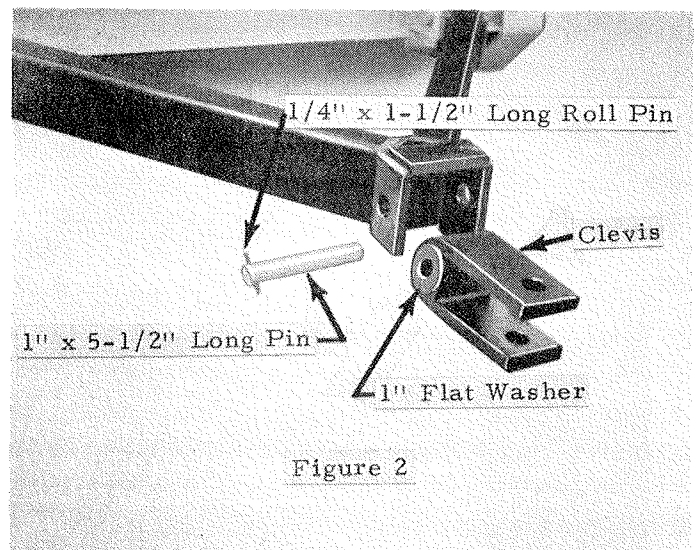
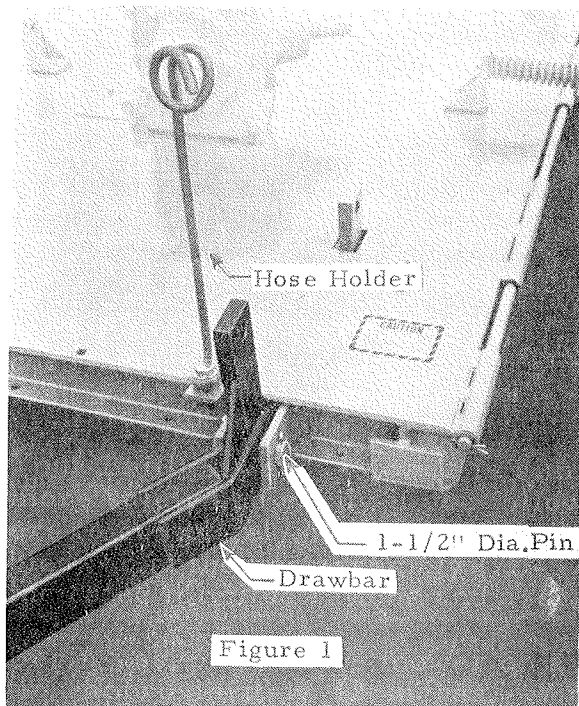
ASSEMBLY INSTRUCTIONS

IR-180 Versa-Mower

Your Brillion Versa-Mower is simple to assemble, however, it can be assembled more safely and easily if you follow instructions and the sequence used. Fasteners to completely assemble the mower are either attached to the part to be assembled, or in the box assembly (7D-378) containing small parts. Refer to the figures indicated for illustrations and assembly aid.

Begin assembly of the mower on a level area. Securely block up the center section approximately 12 inches. With the center section securely blocked remove the transport axle bearing caps, place the axle into the bearings, replace and secure the bearing caps. Complete the axle assembly by attaching the wheels to the hubs with the wheel bolts from the box assembly.

The drawbar is the next unit to assemble. Attach it to the lugs located on the front of the center section (see Figure 1) using the 1-1/2" diameter x 4-1/2" long clevis pins and 1/4" x 2-1/2" long cotter pins found in the box assembly. The clevis for the drawbar is also in the box assembly. Fasten it to the drawbar using the 1" diameter x 5-1/2" long pin, two 1" diameter standard flat washers placed on each side of the clevis, and two 1/4" x 1-1/2" long roll pin (see Figure 2). The hose holders are positioned as shown in Figure 1. Mount the hose holder using 5/8" x 1-3/4" long capscrew, flat washer, lock washer and nut.



Remove the hinge rods from the center section, and move the wing sections into position, aligning the hinge tubes. Apply grease to the hinge rods to facilitate assembly and reinsert the hinge rods and secure in place with the machinery bushings and cotter pins.

Next attach the wing wheel brackets to the wings. Figure 3 shows the assembly without the axle arm. Insert the trunnion into position between the inner bracket and outer bracket. Secure in place using $3/16''$ x $1-1/2''$ long roll pins. Attach the front of the brackets to the inner surfaces of the bolting lugs on the wing frame, using $5/8''$ x $1-3/4''$ long capscrews, lock washer and regular nuts. Fasten the rear of the brackets using the $1/2''$ x $2''$ long capscrews, lock washers and regular nuts. Attach the axle arm to the bracket with a $1''$ x $5-15/16''$ long pin and secure with $1/4''$ x $1-1/2''$ long roll pins. Connect the axle arm to the adjustment screw with a $3/4''$ x $2-3/4''$ long clevis pin and secure with $1/8''$ x $1-1/2''$ long cotter pin. Attach the wheels to the hubs, using the $1/2''$ x $13/16''$ long wheelbolts.

Next assemble the wing stops (see Figure 4). Insert the spring guide (7D-431) over the bolt assembly (7D-418). Slide the spring (3D-994) over the spring guide. Insert the bolt assembly through wing stop mounting bracket which is bolted to the center section hood top. The welded pad on the end of the bolt assembly should be positioned as to contact the wing when it is in the fully raised position. Secure the wing stop assembly with $5/8''$ locknut.

Attach the locking straps (7D-433, $1/4$ x $1-1/2$ x $28-1/8$ long) to the locking strap lug on the wings (Figure 5). Use $1/2$ x $1-3/4$ long capscrews and $1/2''$ locknuts.

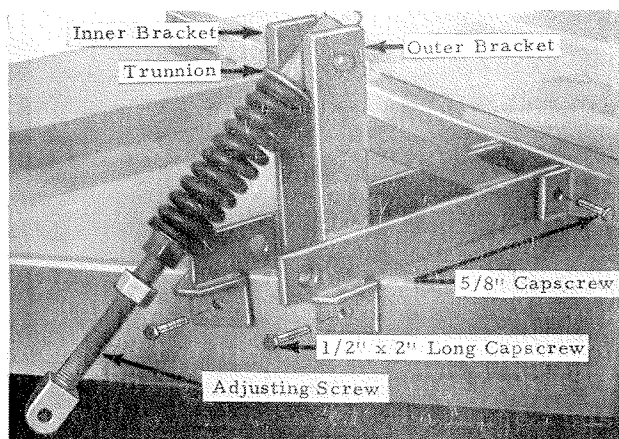


Figure 3

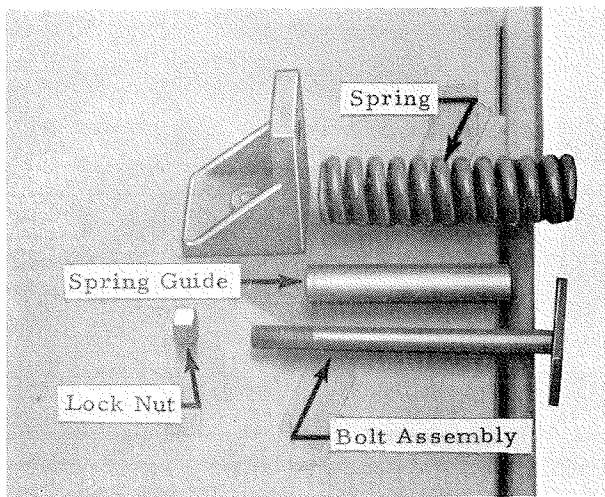


Figure 4

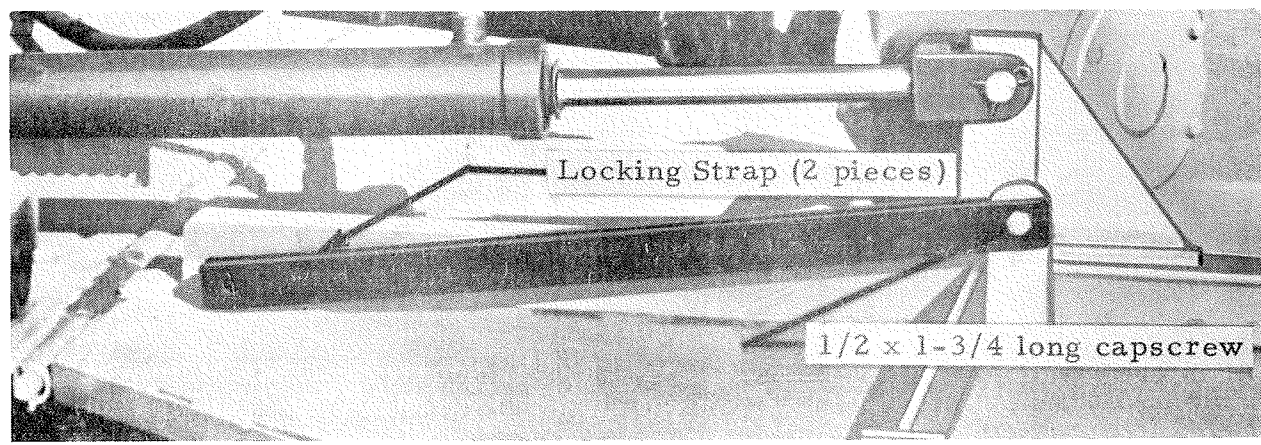


Figure 5

Install the hydraulic cylinders next. The cylinders with the longest stroke are used to raise the wings and the shorter stroke cylinders to actuate the drawbar. Two flow restrictors are included in the box assembly (7D-436) with the hydraulic cylinders. Install these into the oil port of each wing lift cylinder and attach the cylinders to the machine. Attach the rod-end clevis to the lug on wing frame and the anchor end to the lugs in the center section. Install the drawbar cylinders. Attach the rod-end clevis to the drawbar lift arm and the anchor clevis to the lug located directly behind the lift arm. Recommended hoses for these units should be S.A.E. 100 R1 or of equivalent rating. A complete kit can be purchased from your Brillion dealer. Order Brillion part number 7D-673. For tractors without adequate valving, a directional flow control valve is also available from Brillion. This valve will allow the wings of your mower to float freely.

Complete the assembly of the machine by attaching the power shafts. The double-telescoping units are used to drive the wings. Attach the splined yoke to the center section drive output shafts and secure with the retaining bolt (5/16" x 3" long - included) through the yoke and shaft. Attach the yoke with the keyway to the wing drives. The key is taped in position on the input shaft of the wing drive. The yoke retaining screw is in the end of the input shaft. Remove the tape and the retaining screw, and slide the yoke onto the shaft. Replace the retaining screw by inserting it through the washer welded into the yoke and threading it back into the shaft until the yoke is fully engaged on the shaft and the retaining screw is drawn tight.

The input P. T. O. assembly between tractor and center drive is equipped with a safety shear device and extra shear bolts have been shipped with the assembly. Remove this bag containing the extra shear bolts and keep for future use.

The input P. T. O. assembly is installed as follows: Remove the retaining screw (1/2-13 NC L. H. thread x 1" long) and washer from the input shaft of the center drive. Slide the shear flange onto the input shaft. Replace the shear flange retaining bolt (5/16 x 3" long) through the shear flange and input shaft, and secure with the lock nut. Then replace the retaining screw and washer through the shear yoke and tighten into place in the input shaft. Refer to page 2 of repair parts catalog for relative position of parts; then mount the bearing support (9D-951) to the front of the center hood using two 1/2 x 2" long capscrews, lockwashers, bevel washers, and lock nuts. Then slide the 9C-76 pillow block bearing onto the stub shaft of the above drive assembly and mount this bearing to the bearing support using 1/2 x 2" long capscrews, lockwashers, and lock nuts. Next, slide the yoke of the tube and joint assembly onto above stub shaft, up to the bearing, and bolt to stub shaft with the 1/2 x 1-1/4" long capscrew, flat washer, and lockwasher. Attach the 9D-947 shield to the bearing support with the four 1/4 x 3/4" long capscrews, lockwashers, and nuts. Now assemble the 9D-457 shield to the center hood. Position the shield over the shear coupler and fasten to the hood top sheet with the four self-drilling screws provided.

Optional Equipment

Machines equipped with a slip clutch input P. T. O. are assembled as follows: The slip clutch is contained in a box assembly (7D-678). Slide the clutch onto the input shaft of the center drive and secure on the shaft using the retaining washer found in the box assembly with the clutch and replace the capscrew which was found threaded into the pilot of the input shaft. Attach the clutch flange (part of P. T. O. assembly) to the clutch using the (6) capscrews found in the clutch box assembly. Complete the rest of the P. T. O. assembly in the same manner as for the slip clutch units outlined above.

The clutch is preset at the factory but may require periodic adjustment as recommended elsewhere in this manual. If the machine is stored for winter or not used for extended periods of time, it is recommended that the clutch be loosened to the point where it begins to slip and then readjusted to prevent slippage.

OPERATION & MAINTENANCE

Your Brillion Versa-Mower is designed to operate with any tractor having standard A.S.A.E. - S.A.E. drawbar and power take-off specifications and with sufficient power for the type of work being done.

Before attempting to operate your shredder, BE SURE TO PUT OIL IN ALL OF THE GEAR DRIVES. Remove plastic plugs from drive covers and install breathers, which are found in a small cloth bag wired to the center drive. Use anti-foam S.A.E. #90 oil in winter and #140 in summer. Fill to level of oil level plugs. Lubricate the axle bearings.

When starting your Versa-Mower, the blades may not be in balance at first, and it will shake violently if it is started too quickly. Engage the P.T.O. slowly and at a low throttle. The blades will balance quickly and then the throttle setting may be adjusted to operating speed. Try to avoid starting the machine directly in heavy material to be cut.

Cutting Height

The center section cutting height is controlled by actuating the drawbar cylinders. The maximum cutting height will be slightly less when the shredder is mounted on laminated tires than when mounted on pneumatic tires, due to the slightly smaller diameter of the laminated tires. The cutting height of the wing sections is regulated by setting the adjustment screw assembly of the gauge wheels. The setting of the gauge wheels should agree with that of the transport axle.

Leveling the Machine

After attaching the machine to the tractor, level the machine by adjusting the drawbar to the desired cutting height, and adjust the rear axle and wing support wheels accordingly. It is advisable to operate the unit level or slightly low in front. This adjustment eliminates the double cutting action which results if the frame is adjusted so the blades cut higher at the front than at the rear.

Slip Clutch (Optional)

The multiple disc clutch is intended to protect the machine and tractor against shock and overload damage. It also eliminates the downtime created by replacing shear pins. If the clutch runs hot during normal operation of the tractor, draw up 1/6 turn on each of the (12) adjusting screws. Continue to operate and recheck for heating. Do this until excessive slippage and heating are eliminated.

Periodic adjustment may be necessary to compensate for wear on the clutch facings.

Shear Pin Coupler

The twin pin shear coupler will transmit ample power to operate the machine satisfactorily and also provides the necessary safety to prevent shock or overload damage to the machine and tractor. When replacing shear pins, never use hardened pins or bolts. Use regular $3/8 \times 2-1/2$ " long bolts. Do not draw the shear pin nuts up too tight, rather allow about $1/64$ " end play. Use locknuts or double nuts to keep bolts from loosening. The shear flanges hard hardened bushings. Broken or worn bushings should be replaced to provide satisfactory operation of the shear coupling.

Transporting

The machine is designed to raise the wings independently or together from ground level (horizontal position) to the completely raised position (vertical) in one operation. It is recommended that the wings be fully raised for road travel and the safety links attached. DO NOT DEPEND ON HYDRAULIC SYSTEM. See figure 6 for illustration.

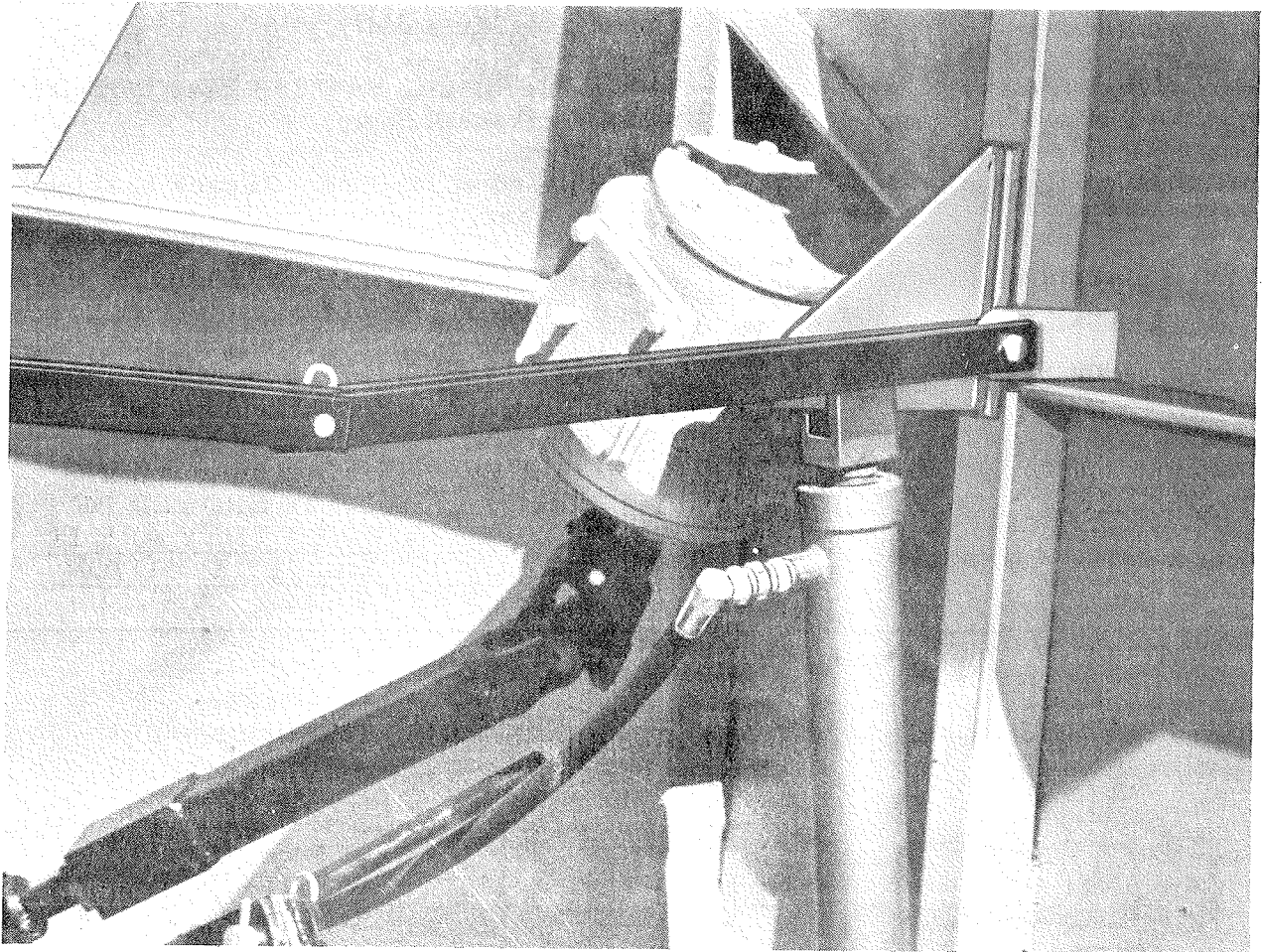
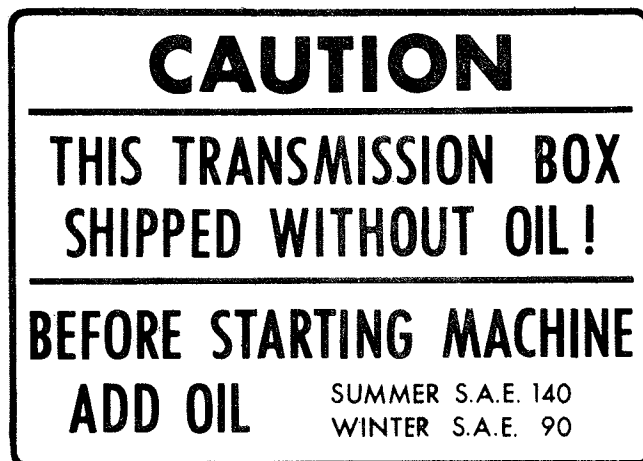


Figure 6

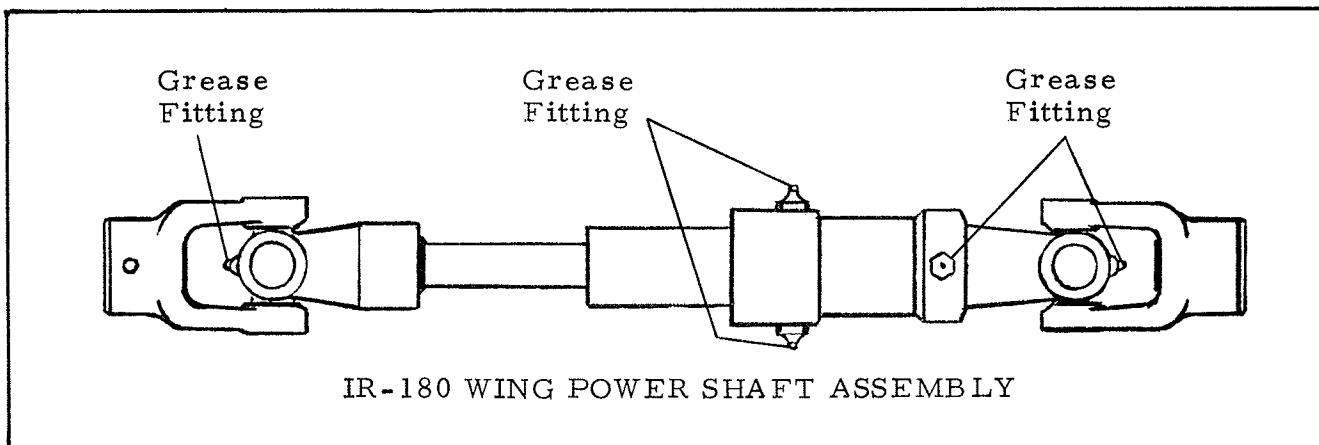
Lubrication

The center gear housing and the blade drive gear housings will require lubrication, before the machine can be operated. A caution tag similar to the one found on the shredder is pictured below.



Follow the lubrication instructions found on this tag and check the level of oil in the drives as shown in the chart below.

Center Drive	Fill to level with SAE 140 gear lubricant. Check oil level daily.
Blade Drive Units	Fill to level with SAE 140 gear lubricant. Check oil level daily.
Wheel Hubs	Lubricated at factory. Repack bearings once a year.
Lift Shaft Bearings	Grease before initial operation and after each 10 hours of operation.
Universal Joint Shafts	Grease before initial operation and after each 10 hours of operation (for lubrication of P. T. O. shaft and wing drive power shafts see illustration). <u>WING DRIVE POWER SHAFTS SHOULD BE GREASED ONLY WHEN THEY ARE IN THE FULLY RETRACTED POSITION (I. E. WINGS ARE FULLY RAISED).</u>



SAFETY SUGGESTIONS

Your Brillion Versa-Mower has been designed to minimize the chance of accidents. BUT REMEMBER ALL ROTARY MOWERS ARE POTENTIALLY DANGEROUS MACHINES. KEEP IN MIND "A MACHINE IS AS SAFE AS THE OPERATOR" - DON'T TAKE CHANCES.

The following precautions should be followed and adhered to:

1. DO NOT UNDER ANY CIRCUMSTANCES ALLOW ANYONE TO REMAIN IN VICINITY OF MACHINE WHEN STARTING & OPERATING. DEBRIS CAN BE THROWN MORE THAN A HUNDRED FEET BY THE MACHINE WHILE IN OPERATION.
2. OPERATOR MUST REMAIN ON TRACTOR WHILE POWER TAKE-OFF IS IN MOTION.
3. NEVER MAKE ADJUSTMENTS, LUBRICATE OR CLEAN MACHINE WITH ANY PART OF MACHINE IN MOTION.
4. KEEP ALL SHIELDS IN PLACE.
5. DO NOT ALLOW ANYONE TO RIDE THE MACHINE.
6. DO NOT OPERATE SHREDDER IN EXCESS OF STANDARD TRACTOR P.T.O. SPEED (540 RPM).
7. CHECK CONDITION AND RETIGHTEN ALL FASTENERS PERIODICALLY.
8. ALWAYS USE THE LOCKING STRAPS WHEN TRANSPORTING THE MACHINE ALONG A ROADWAY.
9. NEVER TRANSPORT THE MACHINE WITH THE WINGS NOT EQUALLY RAISED. The machine is very unstable if the wings are not in identical position, and the machine could easily turn over.

