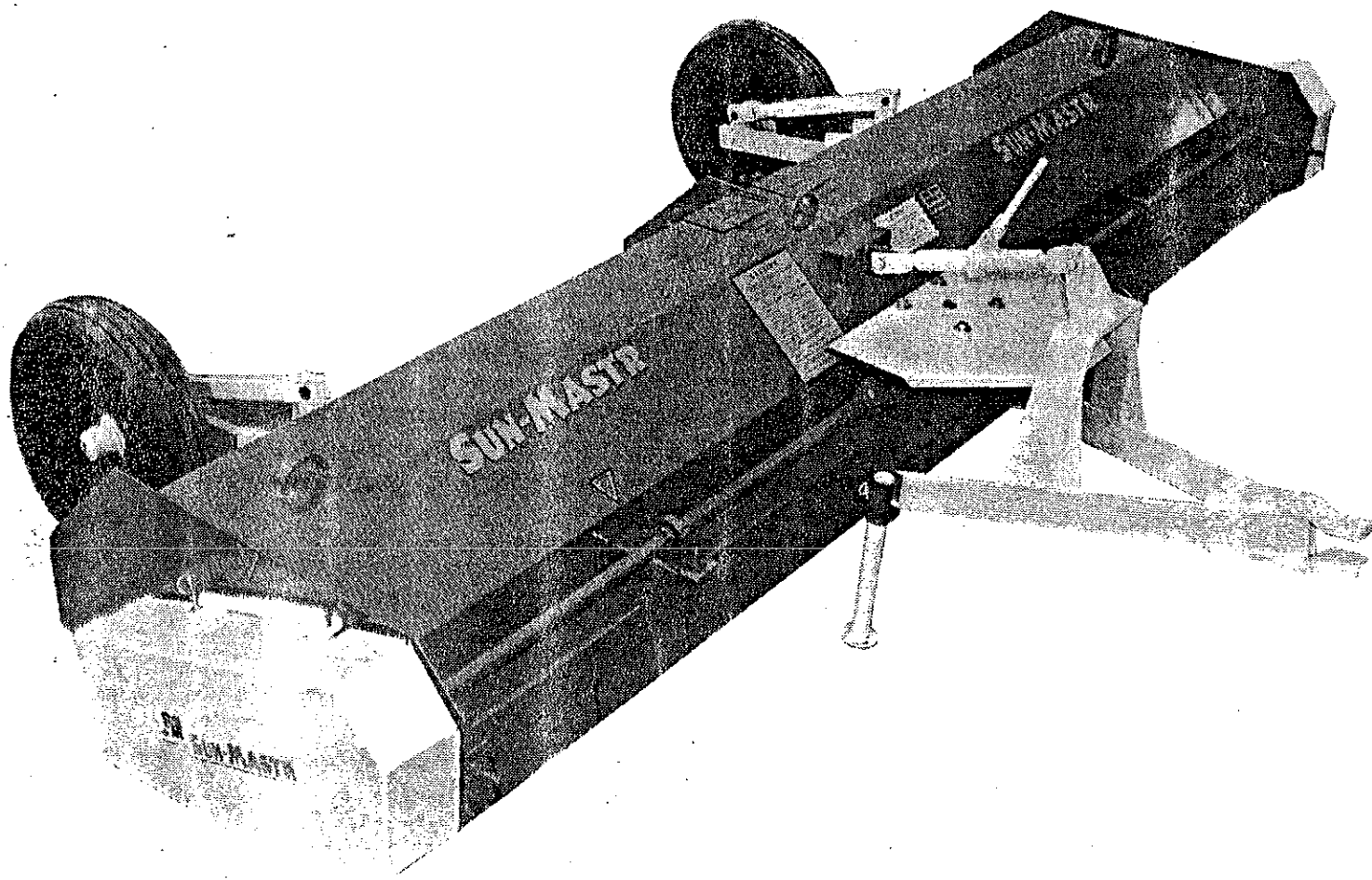


SUN-MASTR[®]

FLAIL KING CHOPPERS



MODELS
FK 80
FK 144
FK 180
FK 240

**Assembly Instructions
Operator's Manual
Parts Catalog**

LIMITED WARRANTY

The ART'S-WAY MANUFACTURING COMPANY, INCORPORATED warrants products sold by it to be free from defects in material and workmanship for a period of one (1) YEAR after the date of delivery to the first purchaser subject to the following conditions:

(1) ART'S-WAY MANUFACTURING COMPANY, INCORPORATED'S obligation and liability under this warranty is to repair or replace at the company's option, any parts which upon manufacture were defective in material or workmanship.

(2) All parts and repairs under this warranty shall be supplied at an authorized ART'S-WAY MANUFACTURING COMPANY, INCORPORATED dealer or at the factory at the option of ART'S-WAY MANUFACTURING COMPANY, INCORPORATED.

(3) ART'S-WAY MANUFACTURING COMPANY, INCORPORATED'S warranty does not extend to parts and elements not manufactured by ART'S-WAY MANUFACTURING COMPANY, INCORPORATED and which carry the warranty of the other manufacturer.

(4) Transportation or shipping to an authorized dealer for necessary repairs is at the expense of the purchaser.

(5) ART'S-WAY MANUFACTURING COMPANY, INCORPORATED MAKES NO OTHER WARRANTY EXPRESS OR IMPLIED AND MAKES NO WARRANTY OF MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE BEYOND THAT EXPRESSLY STATED IN THIS WARRANTY. ART'S-WAY MANUFACTURING COMPANY, INCORPORATED'S LIABILITY IS LIMITED TO THE TERMS SET FORTH IN THIS WARRANTY AND DOES NOT INCLUDE ANY LIABILITY FOR DIRECT, INDIRECT, INCIDENTAL OR CONSEQUENTIAL DAMAGES OR EXPENSE OF DELAY AND THE COMPANY'S LIABILITY IS LIMITED TO REPAIR OR REPLACEMENT OF DEFECTIVE PARTS AS SET FORTH HEREIN IN THE WARRANTY.

(6) Any improper use, including operation after discovery of defective or worn parts, operation beyond rated capacity, substitution or parts not approved by ART'S-WAY MANUFACTURING COMPANY, INCORPORATED, or any alteration or repair by other than an authorized ART'S-WAY MANUFACTURING COMPANY, INCORPORATED dealer which affects the product materially and adversely, shall void this warranty.

(7) No dealer, employee or representative is authorized to change this warranty in any way or grant any other warranty unless such change is made in writing and signed by an officer of ART'S-WAY MANUFACTURING COMPANY, INCORPORATED at its home office.

(8) Some states do not allow limitations on how long an implied warranty lasts or exclusions of or limitations on relief such as incidental or consequential damages so the above limitations or exclusions may not apply to you. This warranty gives you specific legal rights and you may have other rights which vary from state to state.

INFORMATION FOR ORDERING PARTS

OWNERS NAME _____

ADDRESS _____

DEALERS NAME _____

ADDRESS _____

SERIAL NUMBER _____

LOCATED ON LEFT END PLATE

DATE PURCHASED _____

Arts-Way reserves the right to make changes or add improvements to its products at any time without incurring any obligation to make such changes to products manufactured previously. Arts-Way, or its dealers, accept no responsibility for variations which may be evident in the actual specifications of its products and the statements and descriptions contained in this publication.

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TO THE OWNER

This Arts-Way unit is the finest equipment made and the purpose of this manual is to assist you in realizing the benefits you anticipated when you purchased this unit. Many people have contributed to the production of this product. They all have an interest in its successful performance and we are providing this manual to give you the benefit of the experience we have gained through the years of building and testing this equipment. The way you operate and the care you give this unit will have much to do with the successful performance of this unit. This operators manual has been carefully prepared and illustrated to make it as easy as possible for you in the operation of your unit. It will pay you to read the entire manual carefully and familiarize yourself with all operations "before operating" the unit. Keep this manual handy for reference. We will be glad to answer any questions you may have. For further information call or write Arts-Way Mfg. Co., (712) 864-3131, Armstrong, Iowa 50514.

WORK SAFELY — FOLLOW THESE RULES



This safety alert symbol identifies important safety messages in this manual. It means — ATTENTION! BECOME ALERT! YOUR SAFETY IS INVOLVED! When you see this symbol, be alert to the possibility of personal injury and read the message that follows.

A CAREFUL OPERATOR IS THE BEST INSURANCE AGAINST AN ACCIDENT.

BEFORE OPERATING

Review this entire manual.

Do not wear loose-fitting clothing which may catch in moving parts.

Use extreme care when making adjustments. Shut off machine before making adjustments. Shut off tractor and put key in pocket.

After servicing, be sure all tools, parts, or servicing equipment are removed from the machine.

Keep all safety shields in place.

Make sure there is no one near the machine before operating.

Be sure that the correct power take-off parts are used and that they are properly secured.

Be sure the tractor power take-off is disengaged before starting the tractor engine.

Use extreme care when transporting over uneven or rough terrain.

Keep all shields in place and in good condition.

Keep children away from machine in operation.

Have your fire extinguisher checked at regular intervals and place it in a position on the unit where it is readily accessible without reaching over or around moving parts.

Review all safety decals.

Securely block unit before working on it.

When working with flammable materials, be sure you do not smoke.

DURING OPERATION

No one other than the operator should ride on the tractor.

Do not attempt to remove any obstructions while operating the machine. First shut off the tractor and put key in pocket.

Always disengage the P.T.O. before transporting. Do not open any covers and expose the rotor or belts while they are rotating.

Shut off the tractor engine and be sure to wait until all moving parts have come to a complete stop before adjusting, cleaning, or lubricating. Keep hands, feet, clothing and objects away from moving parts.

ON-HIGHWAY OPERATION — TRANSPORTING

Check clearance carefully before towing over bridges and into buildings.

Always place the machine in the transport position.

For daytime and nighttime, accessory light and devices should be used for adequate warning to operators of other vehicles.

Comply with your state and local laws governing highway safety, and with regulations when moving machinery on a highway.

Drive at a reasonable speed to maintain complete control of the machine at all times.

When transporting on the highway, always use a safety chain between the towing vehicle and machine.

4

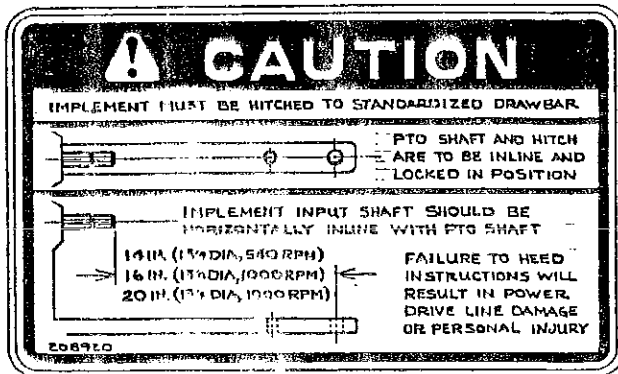
SAFETY DECALS

Located at strategic points on this machine are safety decals. These decals warn you of potential danger if the warnings on the decals are not followed.

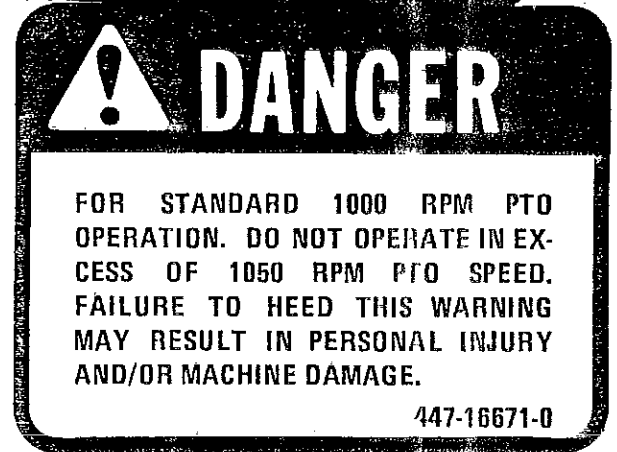
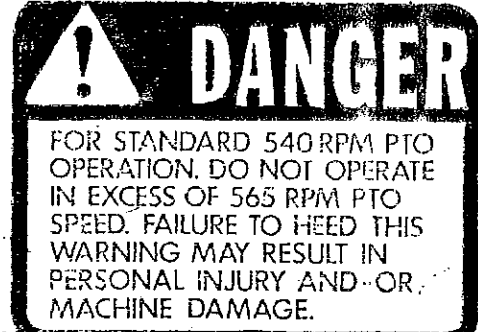
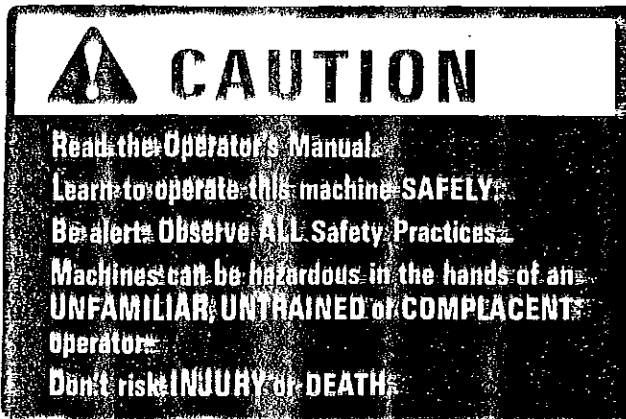
For location see page 6

No. 1 — "DANGER" — DO NOT OPERATE IN EXCESS OF 565 RPM PTO SPEEDS — Part No. 16672-0. DO NOT operate with 1000 R.P.M./ P.T.O.

No. 2 — "DANGER" — DO NOT OPERATE IN EXCESS OF 1050 RPM PTO SPEEDS — Part No. 446671-0. DO NOT operate with 540 R.P.M./ P.T.O.



No. 4 — "CAUTION" — Safety Shield caution decal, Part No. 11538-0 lists four basic rules to be observed at all times around this machine.



No. 3 — "CAUTION" — Machine must be hitched to standardized drawbar. Unless these instructions are followed, power drive line damage may result. Part No. 208920



No. 5 — "CAUTION" — Safety caution decal Part No. 11543-0.

No. 6 -- "DANGER" -- Decal, Part No. 11777-0 warning of the danger to stay off of machine when it is running. (Located on the top of the main shield.)

⚠ WARNING

COMPONENTS CONTINUE TO ROTATE AFTER P.T.O. HAS BEEN DISENGAGED. TO PREVENT PERSONAL INJURY WHEN SERVICING MACHINE:

- DISENGAGE P.T.O.
- SHUT OFF ENGINE.
- LOOK AND LISTEN FOR EVIDENCE OF ROTATION.
- DO NOT OPEN ACCESS COVER UNTIL ALL COMPONENTS HAVE STOPPED.
- NEVER ATTEMPT TO OPERATE MACHINE WITH ACCESS COVERS REMOVED.
- ACCESS COVERS MUST BE CLOSED BEFORE STARTING ENGINE OR ENGAGING P.T.O.

804455M1

No. 7 -- "WARNING" -- Part No. 14601-0, Warning of components continuing to rotate after machine has been shut off.

NOTE: KEEP ALL DECALS CLEAN AND FREE OF DIRT FOR MAXIMUM VISIBILITY. REPLACE ANY AND ALL DECALS THAT ARE NO LONGER LEGIBLE.

⚠ WARNING

ROTATING DRIVE LINE-KEEP AWAY

U-JOINT YOKES MUST BE LOCKED IN PLACE.
ADJUST TRACTOR DRAWBAR AND IMPLEMENT HITCH TO PROPER DIMENSIONS.
KEEP TRACTOR MASTER SHIELD, PTO GUARDS AND IMPLEMENT GUARDS IN PLACE.



FREQUENCY OF LUBRICATION



h = hours

* When used in winter the outer tube must be greased to prevent it freezing solid

⚠ DANGER

Stay off machine when it is running. Shut off tractor engine and remove ignition key for safety while working in or around machine.

⚠ DANGER

ROTATING DRIVE LINE

FAILURE TO HEED THESE WARNINGS MAY RESULT IN PERSONAL INJURY OR DEATH.

KEEP CLOTHING, YOURSELF AND OTHERS WELL CLEAR

DO NOT OPERATE UNLESS PTO GUARDS, TRACTOR MASTER SHIELD AND IMPLEMENT GUARDS ARE IN PLACE.

PTO GUARDS MUST TURN FREELY AND BE PROPERLY ATTACHED AND MAINTAINED.

U-JOINT YOKES MUST BE SECURELY LOCKED ONTO TRACTOR AND IMPLEMENT SHAFTS. BE SURE TRACTOR DRAWBAR AND IMPLEMENT HITCH ARE ADJUSTED CORRECTLY.

GREASE TELESCOPING SHAFT REGULARLY TO MINIMIZE THRUST FORCES.

447-15110-0

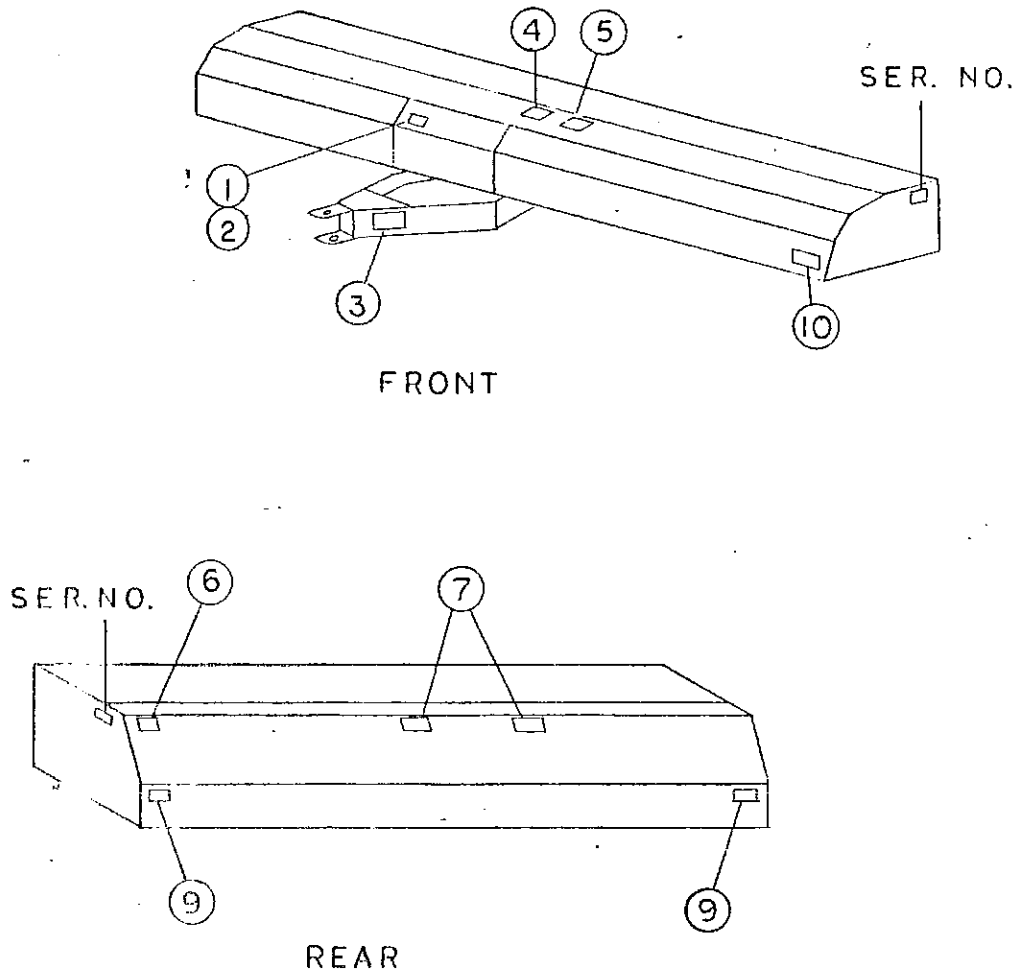
No. 8 -- "DANGER" -- Decal, Part No. 15110-0, warning of the danger to stay away from rotating drive line. Located on P.T.O. shaft.

No. 9 -- "RED REFLECTOR" -- (Not Shown) Part No. 12116-0. Reflector warns traffic of machine's presence on road. Located on rear of machine.

No. 10 -- "AMBER REFLECTOR" -- (Not shown) Part No. 12115-0. Reflector warns traffic of machine's presence on road. Located on left front side of machine.

No. 11 -- "WARNING" -- (located on PTO shaft) Part No. 19680-0. Warns of rotating drive and frequency of lubrication.

DECAL LOCATION



SAFETY CHAIN

TRANSPORTING

Whenever machinery is to be transported on a public thoroughfare, always use safety chain and secure safely.

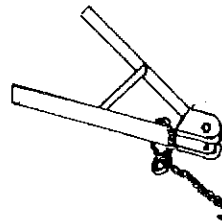


Figure - A

SAFETY CHAIN MOUNTING INSTRUCTIONS

- 1.) Mount chain on machine tongue by running chain around tongue frame and running hook through the large ring at the end of the chain and pull tight as shown in Figure A.
- 2.) Run the chain through a clevis pin bolted on the tractor draw bar, then wrap the chain around a supporting member of the tractor and hook as shown in Figure B.

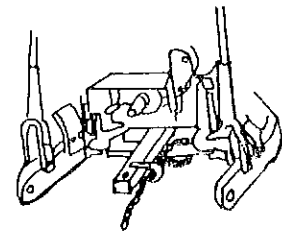


Figure - B


OPERATION

This shredder has a tapered shield for fast flow of material and a rear discharge for dust. On the front of the shredder there are special rubber skirts to protect the operator from ears of corn and other objects which may become dislodged during operation. Located under the housing is a heavy duty shredder bar. This shredder bar is an exclusive feature of our shredder which protects the main housing from damage and excessive wear by not allowing large objects to enter. In addition to this, we have positioned the deep cup knives so that they pass within one inch of the shredder bar, creating a great suction which forces the material to flow through the shredder for a more thorough shredding operation. The belt shields on the ends of the shredder protect the belts and sheaves from cornstalks and dirt. They are also designed for ease of lubrication and inspection of belt tension and condition. On the top of the shredder are two access doors to facilitate greasing and inspection of the inside rotor shaft bearings.


In the manufacture of any shredder, one of the most important procedures is the balancing of the rotor assembly. To ensure proper balancing, the complete rotor assembly with blades is rotated at 1200 rpm and balanced within one ounce inch.

Once the assembly is completed, all bearings are greased, the gear box is filled to the bottom of the level plug, and the machine is tested for operation, vibration and noise level. A check list is then completed on each shredder by the final inspector.

IMPORTANT: Before using machine, w tractor engine stopped (key in pocket), inspect machine and remove any foreign objects.

 **CAUTION:** Never put your hands inside of the machine during operation, or perform any kind of an adjustment, lubrication, or repair to the machine without shutting off the tractor ignition and placing key in pocket. Keep children away from machine in operation.

- Determine right or left side of the machine by viewing it from the rear and looking toward the tractor.
- Use only bolts and nuts of types and sizes recommended.
- Lift the shredder only with the lift rings provided on the top of the machine.

 **CAUTION:** At the end of each working session, before getting off of the tractor, lower the shredder to the ground with hydraulic cylinder so that the machine rests securely on the ground or on adequate blocking.

SETTING-UP INSTRUCTIONS



In the set up procedure, keep SAFETY IN MIND. Use adequate blocking to prevent personal injury. Keep children away. Injury can occur from lifting too heavy of an item or from a falling member if it is not properly supported or blocked.

I. INSTALLING THE "A" HITCH AND DRIVE LINE

1. Secure shredder on wood blocks so that the blades are clear of the ground. This will protect the balanced shafts.
2. Slide the "A" hitch into the front of the shredder in the front mounting brackets located on each side of the gear box. Fasten in place with the (two) 1-8 x 3 hex bolts and the (two) 1-8 hex lock nuts provided.
3. Before installing the drive line, slide it apart and use heavy grease on the internal parts, including safety housings. If drive line is not greased it will rust and could pull and break the pin on the gear box spline during turning operation.
4. Install drive line.

II. ATTACHING WHEEL ASSEMBLY

1. Slide the axle attaching bracket onto the mounting tube. Adjust it for row spacing and fasten in position with (two) 5/8-11 x 6 hex bolts, (two) 5/8" flat washer, and (two) 5/8-11 hex locknuts provided.
2. Slide the axle arm into the attaching bracket, with tab on end of axle to the top side, and join the arm and the bracket with the attaching pin and 1/4 x 2 cotter pin provided.
3. Mount tire and inflate to a maximum pressure of 12 P.S.I.

III. LEVELING THE SHREDDER

1. The front end of the shredder should be level with the rear end.

This is best judged by standing at the end of the shredder and looking at the bottom of the plate where the belt shield fastens. (For initial level, start at the rear of the machine).

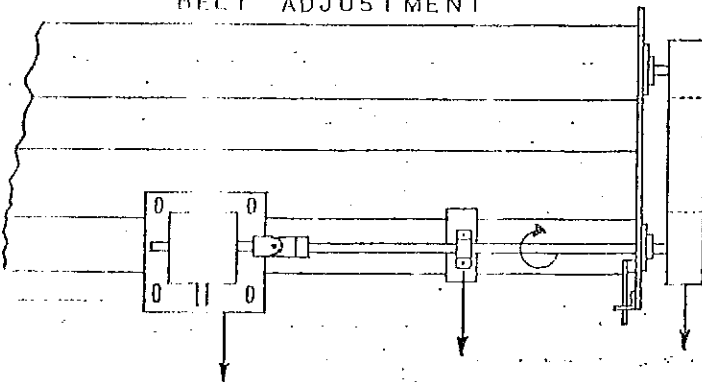
2. The manual jack fastens to the axle arm and the attaching bracket with two one inch pins, flat washers, and 3/16 x 1-1/2 cotter pins provided.
3. There are three adjustments on the slip tube of the manual jack.

NOTE: TO SAVE TIME, BEGIN WITH THE CENTER HOLE.



4. Connect the shredder to the tractor, making sure engine is stopped, PTO is disengaged, brakes are locked and that you have removed the key and placed it in your pocket.

BELT ADJUSTMENT



IV. FIELD LEVELING

1. The end of the blade tips should be 4" to 6" from the top of the ground.
2. Adjust the front end first.
3. Now adjust the rear end so that it is level with the front.

V. BEFORE OPERATION



1. Make certain that the tractor is still shut down and the key still remains in your pocket.
2. Recheck all fasteners for proper installation and tightness.
3. Grease all bearings on the jack shaft and rotor shaft lines with a hand grease gun using no more than two squirts. Over greasing will damage the seals and allow dirt into the bearing.
4. Check to ensure that the gear box has sufficient oil. DO NOT over fill the gear box. Correct gear box lubricant level is verified by removing top vent plug. Then use clean dip stick or visually verify that oil is even (level) with the top of main cross shaft. Use EP90 gear lubricant or equal as required.
5. Set the tension on the belts to approximately 3/32 inch of deflection in the center.
6. Remove all wrenches, tools, grease rags, or other foreign objects from the machine.

ADJUSTMENTS





Never, repeat never, make any adjustment or replace any part without first observing all safety procedures outlined in this manual and waiting until all moving parts have stopped.


I. BELT ADJUSTMENT (Excluding Model 240 serial #AWFK240MR1388 and above, see page 20)


1. Loosen flange bearing, belt tightener rod, and jack shaft bearing bracket.
2. Adjust belt with the belt tightener rod, then tighten the two top bolts on the flange bearing.
3. Pull the gear box forward until the sheave runs parallel with the end plate.
4. Correct any bow in the jack shaft brackets, using a pry bar on the bracket if necessary.
5. Tighten the bolts in the bracket and also the two bottom bolts in the flange bearing.
6. Finish by tightening the four bolts on the gear box plate.
7. To prevent damage to the bearings, always adjust the gear box and jack shafts when adjusting the belts.

SERVICE

BOLT AND NUT TORQUE SPECIFICATIONS

RECOMMENDED TORQUE IN FOOT POUNDS COARSE AND FINE THREADS		
	 Grade 2	 Grade 5
BOLT	NO RADIAL DASHED	THREE RADIAL DASHES
1/4	6	9
5/16	11	18
3/8	19	31
7/16	30	50
1/2	45	75
9/16	66	110
5/8	93	150
3/4	150	250
7/8	202	378
1	300	583

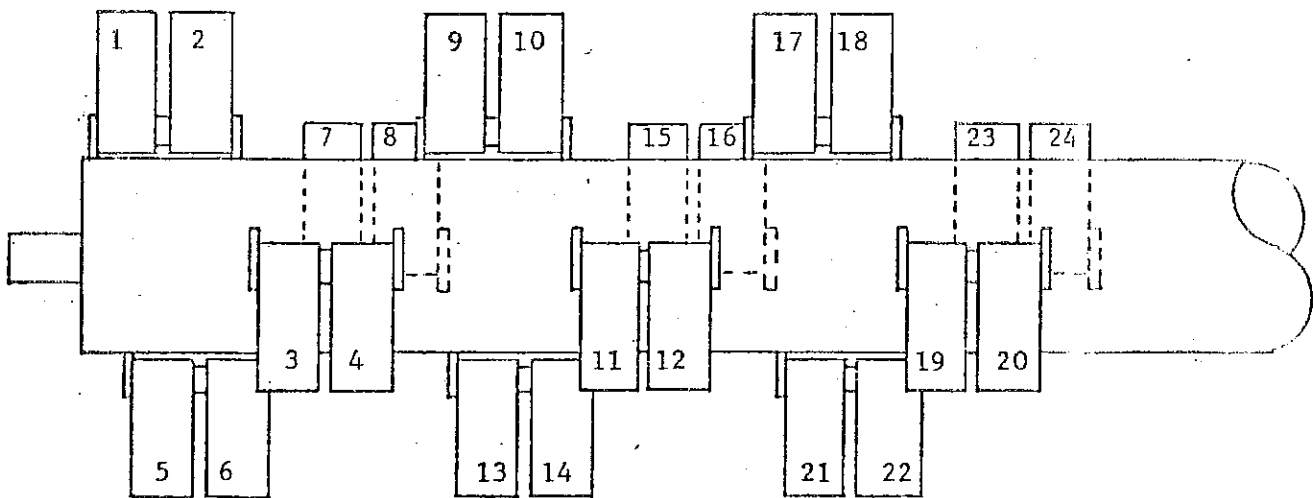
 **CAUTION:** Never put your hands inside of the machine during operation, or perform any kind of an adjustment, lubrication, or repair to the machine without shutting off the tractor ignition and placing key in pocket. Keep children away from machine in operation.

-  I. REPLACEMENT OF BLADES
1. Disconnect machine completely from the tractor and block securely.
 2. Replace the broken blade plus one blade on all 3 (three) rows around the shaft next to the broken blade.

NOTE: ALWAYS REPLACE BLADES IN SETS OF FOUR TO PREVENT DESTRUCTION OF THE PRECISION BALANCE IN THE ROTOR ASSEMBLY. AN UNBALANCED ROTOR WILL CAUSE THE MACHINE TO VIBRATE EXCESSIVELY AND WILL DAMAGE BOTH THE BEARINGS AND THE SHAFTS.

II. EXAMPLE OF BLADE REPLACEMENT

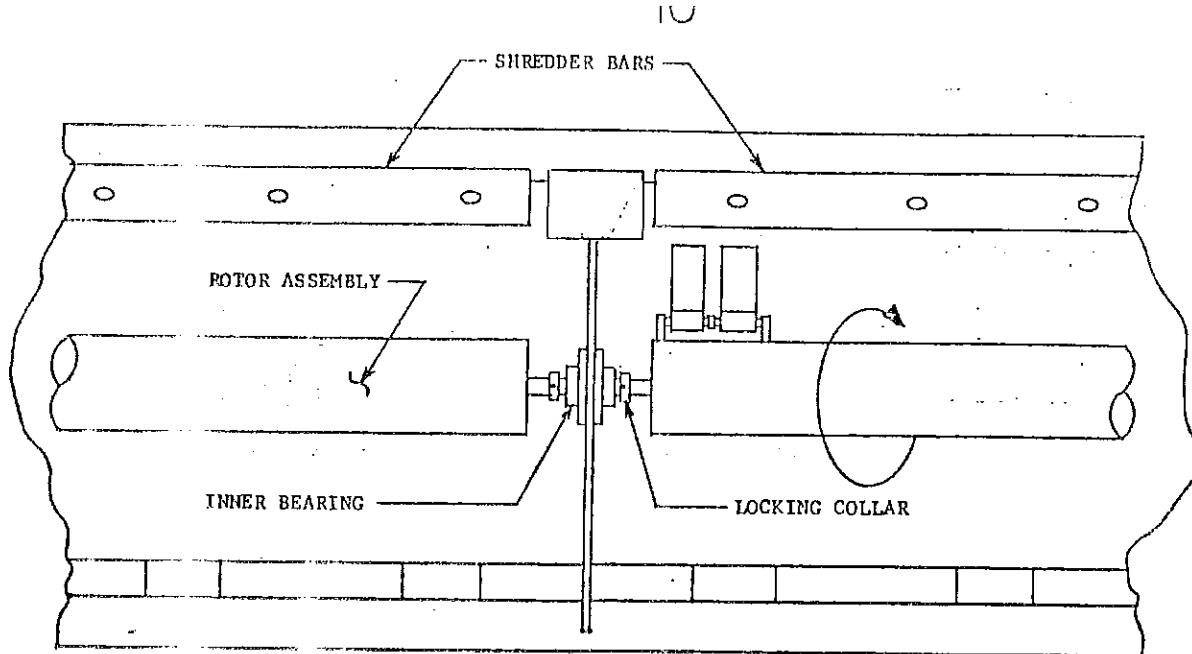
- A. Blade number 3 is broken - replace blade numbers 2, 3, 6 and 7.
- B. Blade number 4 is broken - replace blade numbers 2, 4, 6 and 7 or numbers 4, 8, 9 and 13 depending on which direction has the worst wear.



III. REPLACEMENT OF ROTOR SHAFT BEARINGS

1. Do not, repeat do not, attempt to replace bearings from underneath the shredder. The proper way is to remove the axle arms and "A" hitch.
2. Loosen jackshaft brackets, flange bearings, belt tightener nuts, and remove belts
3. Turn the shredder on its back.
4. Blow out the three holes in the sheave on the end of the rotor shaft, using WD 40 oil in each of the threaded holes.
5. Remove the three bolts in the sheave and re-insert them into the three holes cleaned in step #4. (Insert finger tight against hub.)
6. Work around the hub evenly, turning each bolt one (1) full turn at a time. (Do not attempt to turn each bolt more than one full turn.)

NOTE: IF THE SHEAVE IS STILL TIGHT ON THE HUB, USE A WHEEL PULLER.



7. After you have removed the hub and sheave, use an emery cloth to clean the surface of the shaft. Then lightly grease or oil the shaft to permit smooth sliding of the bearing.
8. Remove the four (4) bolts that secure the bearing to the end plate and remove the locking collars. Remember, the locking collars are set in the direction of shaft rotation.

NOTE: IT MAY BE NECESSARY TO FILE THE SHAFT WHERE THE SET SCREW HAS LEFT A BURR. AND, YOU MAY ALSO HAVE TO USE A WHEEL PULLER.

9. Remove the bolts and nuts from the center bearings, but do not attempt to remove the bearing until the shaft is clear of the housing.
10. Loosen the locking collar and remove the bearing. (If you are replacing all four bearings, return to step #4 and repeat procedure for the other end.
11. Install center bearing on the stub (inner) end of the rotor shaft and lock the collar in position.
12. With the grease fitting facing down towards the inspection hole, slide the long (outer) end of the rotor shaft all the way into the end plate and bring back to the center plate.

13. Observing location of the grease fitting, slide the bolts into the holes. Then bring the other shaft into position, guiding the bolts into the bearing.



14. Secure the bolts with the locknuts and tighten down.

NOTE: NEVER SUBSTITUTE A SMALLER BOLT, OR A SOFTER GRADE THAN THOSE THAT ARE STANDARD EQUIPMENT FOR YOUR MACHINE. TORQUE 9/16 GRADE 5 BOLTS TO 110 FOOT POUND AND 5/8 GRADE 5 BOLTS TO 150 FOOT POUNDS.

15. Install outside bearing with grease fitting facing down, remember to install the bolts through the end plate before sliding the shaft through, install the lock collars and install the hub and sheave.
16. Tighten collar snugly against the bearing and, with a drift punch and hammer, lock it tight.
17. Check all bolts and Allen screws.
18. Grease all new bearings with three (3) squirts of grease from a hand operated grease gun.
19. Return the shredder to its proper position, adjust the belts and re-install the axle arms and "A" hitch.

DAILY MAINTENANCE

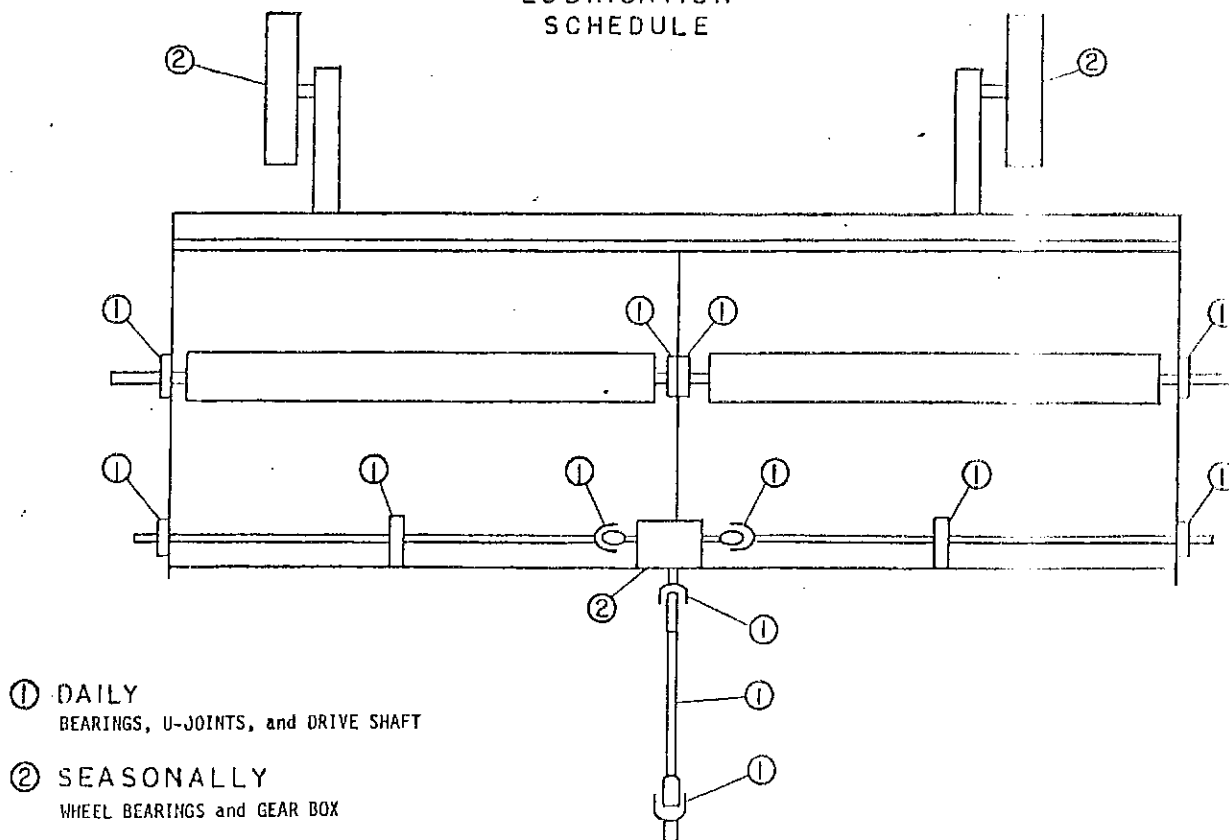
- I. CHECK TENSION ON BELTS.
- II. GREASE BEARING WITH ONE SQUIRT OF GREASE FROM A HAND GREASE GUN EVERY 10 (TEN) HOURS OF OPERATION.
- III. CHECK GEAR BOX LUBRICATION LEVEL SEASONALLY. CORRECT GEAR BOX LUBRICANT LEVEL IS VERIFIED BY REMOVING TOP VENT PLUG. THEN USE CLEAN DIP STICK OR VISUALLY VERIFY THAT OIL IS EVEN (LEVEL) WITH THE TOP OF MAIN CROSS SHAFT. USE EP90 GEAR LUBRICANT OR EQUAL AS REQUIRED.
- IV. CHECK FOR LOOSE OR DAMAGED FASTENERS.
- V. CHECK ALL BLADES FOR EXCESSIVE WEAR, OR BENT, OR BROKEN BLADES. (REMEMBER, ALWAYS REPLACE FOUR BLADES AT A TIME).
- VI. CHECK DRIVE SHAFT FOR GREASE AND SMOOTH OPERATION.
- VII. REPLACE WORN, DAMAGED, OR MISSING FRONT RUBBER SKIRTS.

STORAGE

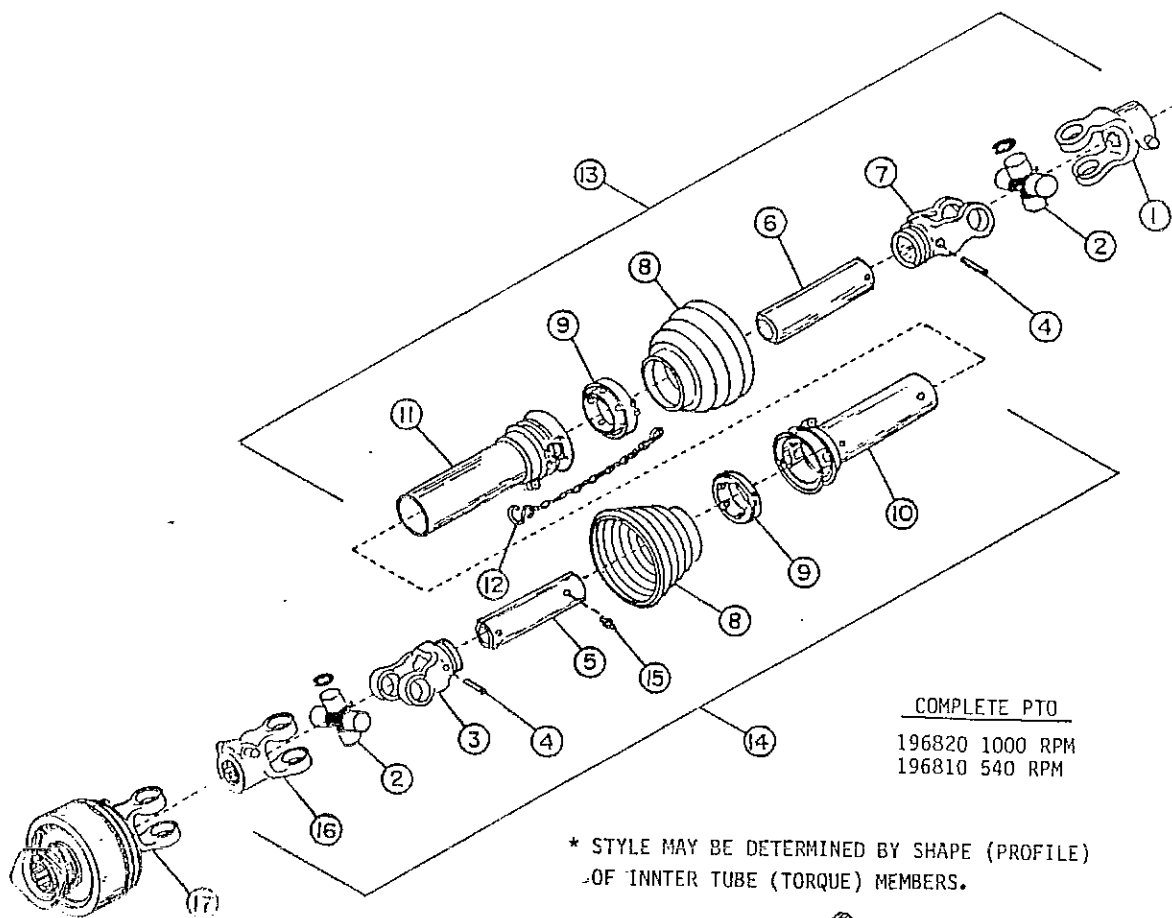
To obtain a long life and trouble-free service from this unit, it should be properly prepared and stored.

First, flush entire unit with water to remove all accumulations of dirt, grease, or material. Then check for cracked, worn, or damaged belts, bearings, blades, or other parts. Early detection and replacement of failing parts will save "Downtime" next season. Repaint any area(s) where the paint has been worn or chipped off. Replace all safety decals that are no longer legible. Remove and grease driveline and store in a dry place. Repack wheel bearings. Set machine on blocks and store inside.

LUBRICATION SCHEDULE

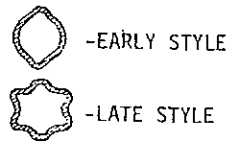


POWER TAKE OFF



COMPLETE PTO
196820 1000 RPM
196810 540 RPM

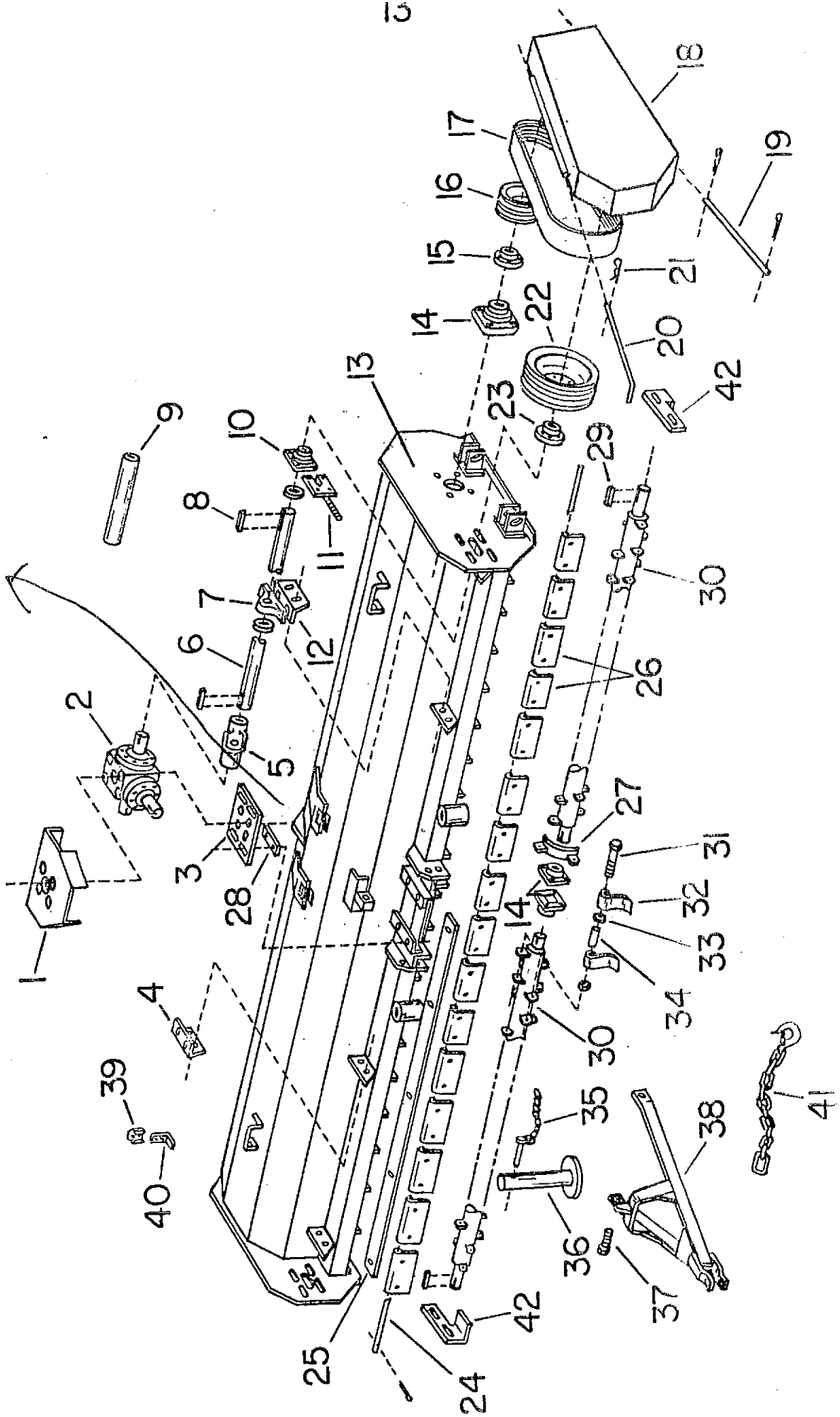
* STYLE MAY BE DETERMINED BY SHAPE (PROFILE) OF INNER TUBE (TORQUE) MEMBERS.



"WALTERSCHEID" POWER TAKE OFF

KEY	PART NO.	80	80VS	144	180	240	DESCRIPTION
1	182870	1	1	1	--	--	YOKE, 1-3/8" 6 SPL Q.D. 540 RPM
	182980	--	--	1	1	1	YOKE, 1-3/8" 21 SPL Q.D. 1000 RPM
2	182230	2	2	2	2	2	KIT, CROSS AND BEARING
3	182950	1	1	1	1	1	INBOARD YOKE 2S (EARLY STYLE)*
	196770	1	1	1	1	1	INBOARD YOKE S5 (LATE STYLE)*
4	182880	2	2	2	2	2	SPRING PIN 10 x 85 (EARLY STYLE)*
	196740	2	2	2	2	2	SPRING PIN 10 x 90 (LATE STYLE)*
5	182970	1	1	1	1	1	OUTER PROFILE 2S (EARLY STYLE)*
	196760	1	1	1	1	1	OUTER PROFILE S5 (LATE STYLE)*
6	182960	1	1	1	1	1	INNER PROFILE 1S (EARLY STYLE)*
	196750	1	1	1	1	1	INNER PROFILE S4 (LATE STYLE)*
7	182940	1	1	1	1	1	INBOARD YOKE 1S (EARLY STYLE)*
	196730	1	1	1	1	1	INBOARD YOKE S4 (LATE STYLE)*
8	182930	2	2	2	2	2	SHIELD CONE 6 RIB
9	182900	2	2	2	2	2	BEARING RING SC24
10	196790	1	1	1	1	1	INNER SHIELD TUBE
11	196780	1	1	1	1	1	OUTER SHIELD TUBE
12	182890	1	1	1	1	1	SAFETY CHAIN
13	183210	--	--	1	1	1	TRACTOR HALF 1000 RPM (EARLY STYLE)*
	196840	--	--	1	1	1	TRACTOR HALF 1000 RPM (LATE STYLE)*
	183220	1	1	1	--	--	TRACTOR HALF 540 RPM (EARLY STYLE)*
	196860	1	1	1	--	--	TRACTOR HALF 540 RPM (LATE STYLE)*
14	183190	1	1	1	1	1	IMPLEMENT HALF (EARLY STYLE)*
	196850	1	1	1	1	1	IMPLEMENT HALF (LATE STYLE)*
15	196890	1	1	1	1	1	GREASE ZERK
16	182870	1	1	1	1	1	YOKE, 1-3/8" 6 SPL Q.D.
17	182990	1	1	1	1	1	CLUTCH, FRICTION (REPLACES ITEM #16)
--	182860	2	2	2	2	2	KIT, Q.D. PIN (INCLUDED WITH ITEMS #1 & #16)
18	214570	--	--	1	1	1	YOKE, 1-3/4-20 SPLINE (AVAILABLE THROUGH PARTS ONLY)

cover latch, hinge
R6444



KEY	PART NO.	80	144	180	240	DESCRIPTION
22	R40330	1	2	--	--	SHEAVE, JACKSHAFT 3/B 12.4" SK
22	R41170	--	--	2	--	SHEAVE, JACKSHAFT 4/B 12.4" SK
22	R64762	--	--	--	2	SHEAVE, JACKSHAFT 5/B 12.4" SF
23	R40340	1	2	2	--	Hub, Jackshaft Sheave SK 1-3/8"
23	R64765	--	--	--	2	Hub, Jackshaft Sheave SF 1-3/8"
24	R42330	1	--	--	--	Rod, Skirt 86"
24	R42340	--	1	--	--	Rod, Skirt 80"
24	R42360	--	--	2	--	Rod, Skirt 91"
24	R45310	--	--	--	2	Rod, Skirt 123"
24	R42870	--	1	--	--	Rod, Skirt 67"
	R61505	1	2	2	2	Pin, 1/8 x 1-1/2 Cotter
25	R63938	1	--	--	--	Bar, Shredder 82"
25	R60589	--	2	--	--	Bar, Shredder 70"
25	R61055	--	--	2	--	Bar, Shredder 87"
25	R64368	--	--	--	2	Bar, Shredder 119"
	R61646	4	6	8	10	Bolt, 1/2-13 x 1-1/2 HHC
	R61489	4	6	8	10	Washer, 1/2 Lock
	R61468	4	6	8	10	Nut, 1/2-13 Hex
	005200	4	6	8	10	Washer, 1/2 Flat
26	18333-0	13	23	29	39	Skirt, Rubber 6-1/8"
	03521-0	15	25	31	41	Washer, 5/8 Flat
27	223490	--	--	--	4	Bearing Guard
27	18353-0	--	4	4	--	Bearing Guard w/Slot
	18384-0	--	8	8	8	Washer, 5/8 Special
28	R67002	2	2	2	*2	Spacer
29	R53390	1	2	2	--	Key, 3/8 Square x 2
29	R65305	--	--	--	2	Key, 1/2 Square x 2
30	R40120	1	--	--	--	Rotor Ass'y w/o Knives
30	18382-0	1	--	--	--	Rotor Ass'y w/Knives
30	18383-0	1	--	--	--	Rotor Ass'y w/H.S. Knives
30	R60586	--	2	--	--	Rotor Ass'y w/o Knives
30	R60719	--	--	2	--	Rotor Ass'y w/o Knives
30	R66297	--	--	--	2	Rotor Ass'y w/o Knives
30	18274-0	--	1	--	--	Rotor Ass'y w/Knives R.H. w/Offsets
30	18275-0	--	1	--	--	Rotor Ass'y w/Knives L.H. w/Offsets
30	18276-0	--	1	--	--	Rotor Ass'y w/H.S. Knives R.H. w/Offsets
30	18277-0	--	1	--	--	Rotor Ass'y w/H.S. Knives L.H. w/Offsets
30	18278-0	--	--	1	--	Rotor Ass'y w/Knives R.H. w/Offsets
30	18279-0	--	--	1	--	Rotor Ass'y w/Knives L.H. w/Offsets
30	18280-0	--	--	1	--	Rotor Ass'y w/H.S. Knives R.H. w/Offsets
30	18281-0	--	--	1	--	Rotor Ass'y w/H.S. Knives L.H. w/Offsets
30	18284-0	--	--	--	1	Rotor Ass'y w/H.S. Knives R.H. w/Offsets
30	18285-0	--	--	--	1	Rotor Ass'y w/H.S. Knives L.H. w/Offsets
31	R61567	24	40	48	64	Bolt, 5/8-11 x 7 HHC
	R66867	24	40	48	64	Nut, 5/8-11 Hex Lock
32	R62067	--	1	1	--	Kit, Offset Knives (2)
32	R62066	--	--	--	1	Kit, Offset Knives (2)
32	R40140	48	80	96	--	Standard Knives
32	R40141	48	80	96	--	Hard Surfaced Knives
32	R45450	--	--	--	128	Hard Surfaced Knives
33	R41660	24	40	48	64	Spacer, Blade
34	R41650	24	40	48	64	Bushing, Blade
35	16716-0	1	1	1	2	Pin & Chain Ass'y
36	R60636	1	1	1	2	Stand, Parking
	04237-0	1	1	1	2	Nut, 1/4-20 Hex Lock
	01205-1	1	1	1	2	Bolt, 1/4-20 x 3/4 HHC
37	R66338	2	2	2	2	Bolt, 1-8 x 3 HHC
	R65072	2	2	2	2	Nut, 1-8 Hex Lock
38	R66834	1	1	1	1	Hitch Ass'y
39	16733-0	1	1	1	2	Socket, S.M.V. Mounting
	01241-0	2	2	2	4	Bolt, 5/16-18 x 3/4 Crg.
	02362-0	2	2	2	4	Washer, 5/16 Lock
	02363-0	2	2	2	4	Nut, 5/16-18 Hex Lock
40	I493166R1	1	1	1	2	Bracket, Socket Mounting
	03108-0	1	1	1	2	Bolt, 1/2-13 HHC
	00537-0	1	1	1	2	Washer, 1/2 Lock
	00536-0	1	1	1	2	Nut, 1/2-13 Hex
41	17653-02	1	1	1	1	Kit, Safety Chain
42	212260	2	2	2	2	SCRAPPER, END BEARING
	212970	4	4	4	--	BOLT, 9/16-18 x 2
	129230	4	4	4	--	WASHER, 9/16 FLAT
	E672416	--	--	--	4	BOLT, 5/8-18 x 2-1/2
	035210	--	--	--	4	WASHER, 5/8 FLAT
	18301-0	--	1	1	--	Kit, Sun Master Decal
	18311-0	--	--	--	1	Kit, Sun Master Decal
	18328-0	1	--	--	--	Kit, Sun Master Decal

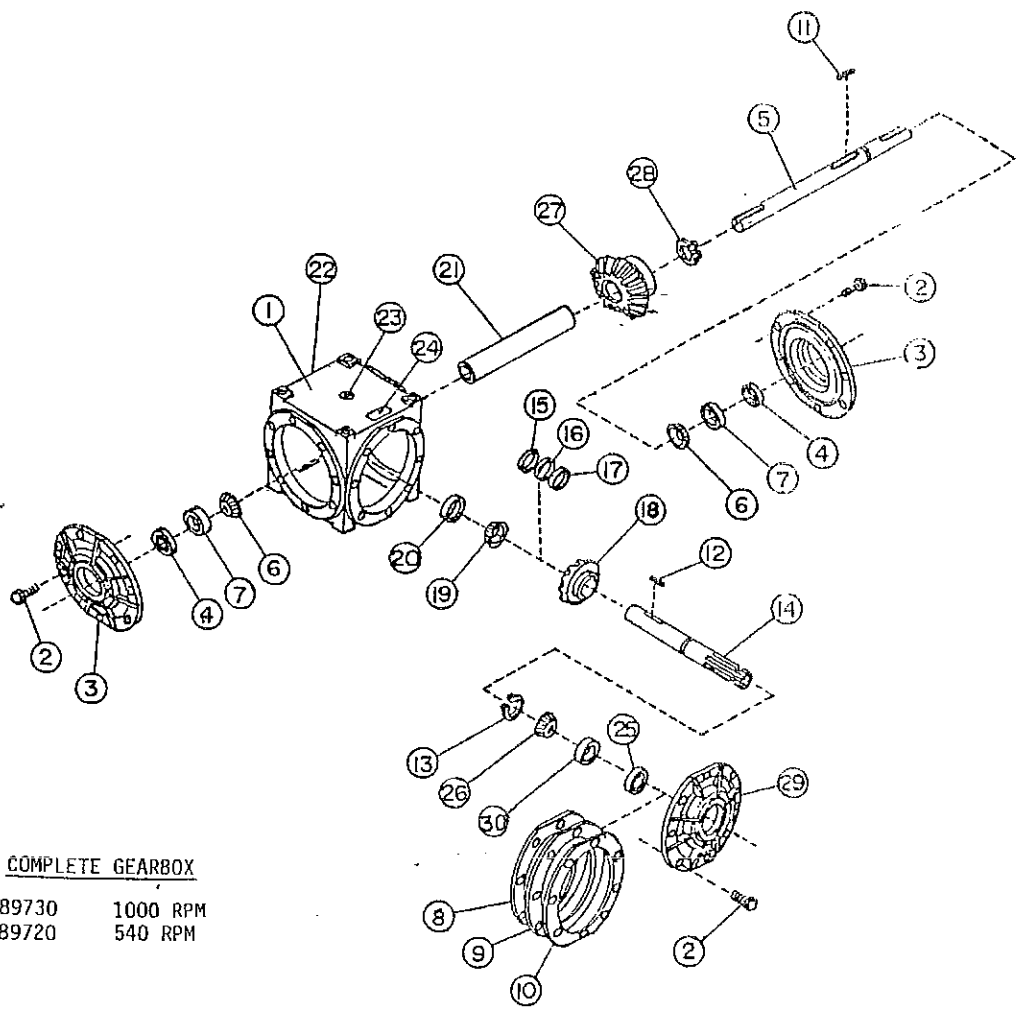
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1-LH center
1-RH offset
knives

*Model 240 only prior to serial #AWFK240MR1388,
For serial #AWFK240MR1388 and above see pages 19 & 20.

KEY	PART NO.	80	144	180	240	DESCRIPTION
1	R67020	1	1	1	1	SHIELD, GEARBOX
	R61348	4	4	4	4	BOLT, 1/2-13 x 1-1/4 HHC
	005200	4	4	4	4	WASHER, 1/2 FLAT
	R61489	4	4	4	4	WASHER, 1/2 LOCK
2	18972-0	1	1	1	--	GEARBOX, 540 RPM COMPLETE
	18973-0	--	1	1	1	GEARBOX, 1000 RPM COMPLETE
	R61646	4	4	4	4	BOLT, 1/2-13 x 1-1/2 HHC
	R61489	4	4	4	4	WASHER, 1/2 LOCK
3	R67041	1	1	1	* 1	MOUNTING PLATE, GEARBOX
	R61646	4	4	--	2	BOLT, 1/2-13 x 1-1/2 HHC
	R61489	4	4	4	4	WASHER, 1/2 LOCK
	005200	4	4	4	4	WASHER, 1/2 FLAT
	R61344	--	--	4	2	BOLT, 1/2-13 x 1-3/4 HHC
4	R60608	--	1	1	2	BRACKET, BRG MTG RH
	014770	--	2	2	4	BOLT, 1/2-13 x 1-1/2 HHC
	005200	--	2	2	4	WASHER, 1/2 FLAT
	R61489	--	2	2	4	WASHER, 1/2 LOCK
	R61468	--	2	2	4	NUT, 1/2-13 HEX
5	R40270	1	2	--	--	U-JOINT ASSY 14N
5	R43080	--	--	2	* 2	U-JOINT ASSY 35N
	R61566	4	8	8	* 8	SET SCREW, 3/8-16 x 3/4 SQ HD
6	R66705	1	--	--	--	JACKSHAFT
6	R40250	--	2	--	--	JACKSHAFT
6	R66709	--	--	2	--	JACKSHAFT
6	R45250	--	--	--	* 2	JACKSHAFT
7	R40741	--	2	2	4	BEARING, 1-3/8 PILLOW BLOCK
	R61344	--	4	4	8	BOLT, 1/2-13 x 1-3/4 HHC
	005200	--	8	8	16	WASHER, 1/2 FLAT
	R61489	--	4	4	8	WASHER, 1/2 LOCK
	R61468	--	4	4	8	NUT, 1/2-13 HEX
8	R53390	3	6	6	* 6	KEY, 3/8 SQUARE x 2
9	R64474	1	--	--	--	SHIELD, SPIN 29"
9	R64467	--	2	2	* 2	SHIELD, SPIN 23"
9	R64470	--	2	--	--	SHIELD, SPIN 34"
9	R64471	--	--	--	* 2	SHIELD, SPIN 28"
9	R64473	--	--	2	--	SHIELD, SPIN 50"
9	R64476	--	--	--	2	SHIELD, SPIN 51-1/2"
10	R40290	1	2	2	2	BEARING, 1-3/8 FLANGE BLOCK
	R61344	4	8	8	8	BOLT, 1/2-13 x 1-3/4 HHC
	005200	4	8	8	8	WASHER, 1/2 FLAT
	R61489	4	8	8	8	WASHER, 1/2 LOCK
	R61468	4	8	8	8	NUT, 1/2-13 HEX
11	R42370	1	2	2	* 2	TIGHTENER, BELT
	Q20430	1	2	2	2	WASHER, 5/8 FLAT
	R61469	1	2	2	2	NUT, 5/8-11 HEX
12	R62891	--	1	1	2	BRACKET, BRG MTG LH
	014770	--	2	2	4	BOLT, 1/2-13 x 1-1/2 HHC
	005200	--	2	2	4	WASHER, 1/2 FLAT
	R61489	--	2	2	4	WASHER, 1/2 LOCK
	R61468	--	2	2	4	NUT, 1/2-13 HEX
13	R40470	1	--	--	--	HOUSING
13	R64451	--	1	--	--	HOUSING
13	R64622	--	--	1	--	HOUSING
13	R45220	--	--	--	1	HOUSING
14	R16260	2	4	4	--	BEARING, 1-3/4 FLANGE BLOCK
14	R66250	--	--	--	4	BEARING, 2-3/16" FLANGE BLOCK -W/ 5/8 DIA. BOLT
14	198160	--	--	--	4	BEARING, 2-3/16" - W/3/4 DIA BOLT
	R61718	4	4	4	--	BOLT, 9/16-18 x 1-3/4 HHC
	R61321	--	4	4	--	BOLT, 9/16-18 x 3 HHC
	R61575	8	12	12	--	NUT, 9/16-18 HEX LOCK
	213260	--	--	--	4	BOLT, 5/8-18 x 2-1/4 HHCS
	R64706	--	--	--	4	BOLT, 5/8-18 x 3-1/4 HHCS
	R61480	--	--	--	12	NUT, 5/8-18 HEX LOCK
	990580	--	--	--	8	BOLT, 3/4-10 x 3-1/4
	990540	--	--	--	4	BOLT, 3/4-10 x 2
	152360	--	--	--	12	NUT, 3/4-10 LOCK
15	R37960	1	2	2	--	HUB, ROTOR SHEAVE Q.D. SK 1-3/4"
15	R66251	--	--	--	2	HUB, ROTOR SHEAVE Q.D. SF 2-3/16"
16	R40750	1	2	--	--	SHEAVE, ROTOR 3/B Q.D. 8"
16	R41180	--	--	2	--	SHEAVE, ROTOR 4/B Q.D. 8"
16	R64761	--	--	--	2	SHEAVE, ROTOR 5/B Q.D. 8"
17	R39950	1	2	--	--	BELT, DRIVE 3/8-70
17	R41190	--	--	2	--	BELT, DRIVE 4/8-70
17	R65108	--	--	--	* 2	BELT, DRIVE 5/8-70
18	R65647	--	1	1	* 1	SHIELD, BELT ASSY RH
18	R65648	1	1	1	* 1	SHIELD, BELT ASSY LH
19	R60578	1	2	2	* 2	ROD, BOTTOM SHIELD
	R61531	2	4	4	* 4	PIN, 1/8 x 1 COTTER
20	R60577	1	2	2	* 2	ROD, TOP SHIELD
21	R50990	1	2	2	* 2	PIN, 3/16 x 3 SPRING

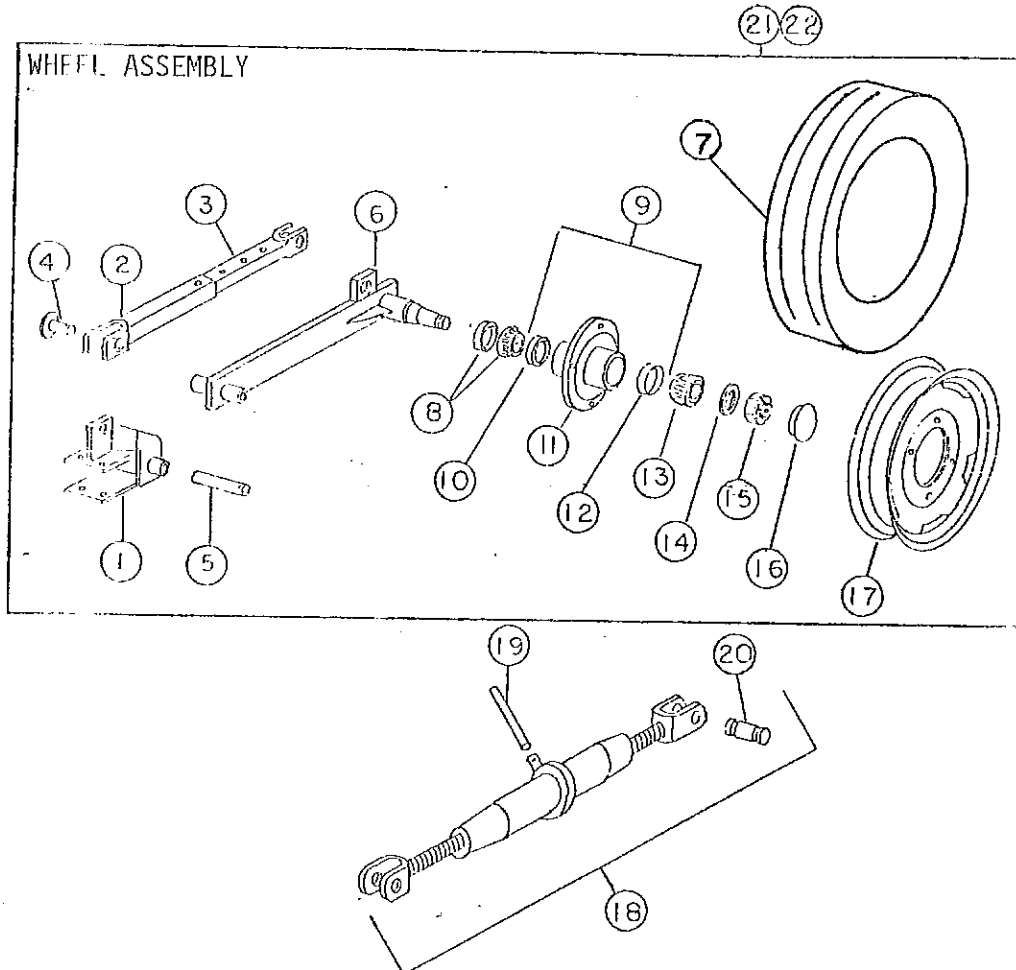
*Model 240 only prior to serial #AWFK240MR1388.
For serial #AWFK240MR1388 and above see pages 19 & 20.



COMPLETE GEARBOX

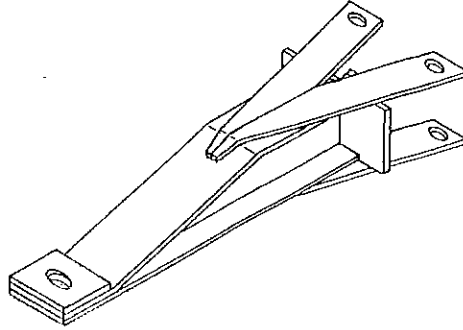
189730 1000 RPM
 189720 540 RPM

KEY	PART NO.	QTY	DESCRIPTION
1	R67294	1	HOUSING
2	184750	24	CAPSCREW, SEMS 3/8-16 x 1-1/4
3	R67295	2	CAP
4	R67296	2	SEAL, NTL 470136 1.50 x 2.25 x .50
5	237390	1	SHAFT, OUTPUT
6	R67298	2	CONE, BRG TMKN 27889 1.50 ID
7	R67299	2	CUP, BRG TMKN #27820 3.15 OD
8	R67301	VAR	GASKET (.015)
9	R67302	VAR	GASKET (.005)
10	R67303	VAR	GASKET (.003)
11	235700	1	KEY
12	236580	1	KEY
13	R67305	1	RETAINING RING
14	237400	1	SHAFT
15	R67309	VAR	SHIM (.002)
16	R67310	VAR	SHIM (.005)
17	R67311	VAR	SHIM (.010)
18	R67312	1	GEAR, 22 TOOTH (1000 RPM)
	R67313	1	GEAR, 30 TOOTH (540 RPM)
19	R67314	1	CONE, BRG TMKN #2690 1.16 ID
20	R67315	1	CUP, BRG TMKN #2631 2.62 OD
21	R67316	1	SPACER
22	R66580	2	PLUG, PIPE 1/2 NPT SOC HD
23	R66581	1	PLUG PIPE 1/2 NPT SOC HD VENT
24		1	ID TAG
25	R67307	1	SEAL, NTL #470169 1.37 x 2.25 x .50
26	189740	1	CONE, BRG #HM88649 (LATE STYLE USE WITH 189760)
	R67308	1	CONE, BRG TMKN #27875 1.38 ID (EARLY STYLE USE WITH R67299)
27	R67317	1	GEAR, 22 TOOTH (1000 RPM)
	R67318	1	GEAR, 20 TOOTH (540 RPM)
28	R67319	1	RETAINING RING
29	189750	1	CAP (LATE STYLE USE WITH 189740 AND 189760 BRG)
	R67295	1	CAP (EARLY STYLE USE WITH R67308 AND R67299 BRG)
30	189760	1	CUP, BEARING #HM88610 2.84 OD (LATE STYLE USE WITH 189740)
	R67299	1	CUP, BEARING TMKN #27820 3.15 OD (EARLY STYLE USE WITH R67308)

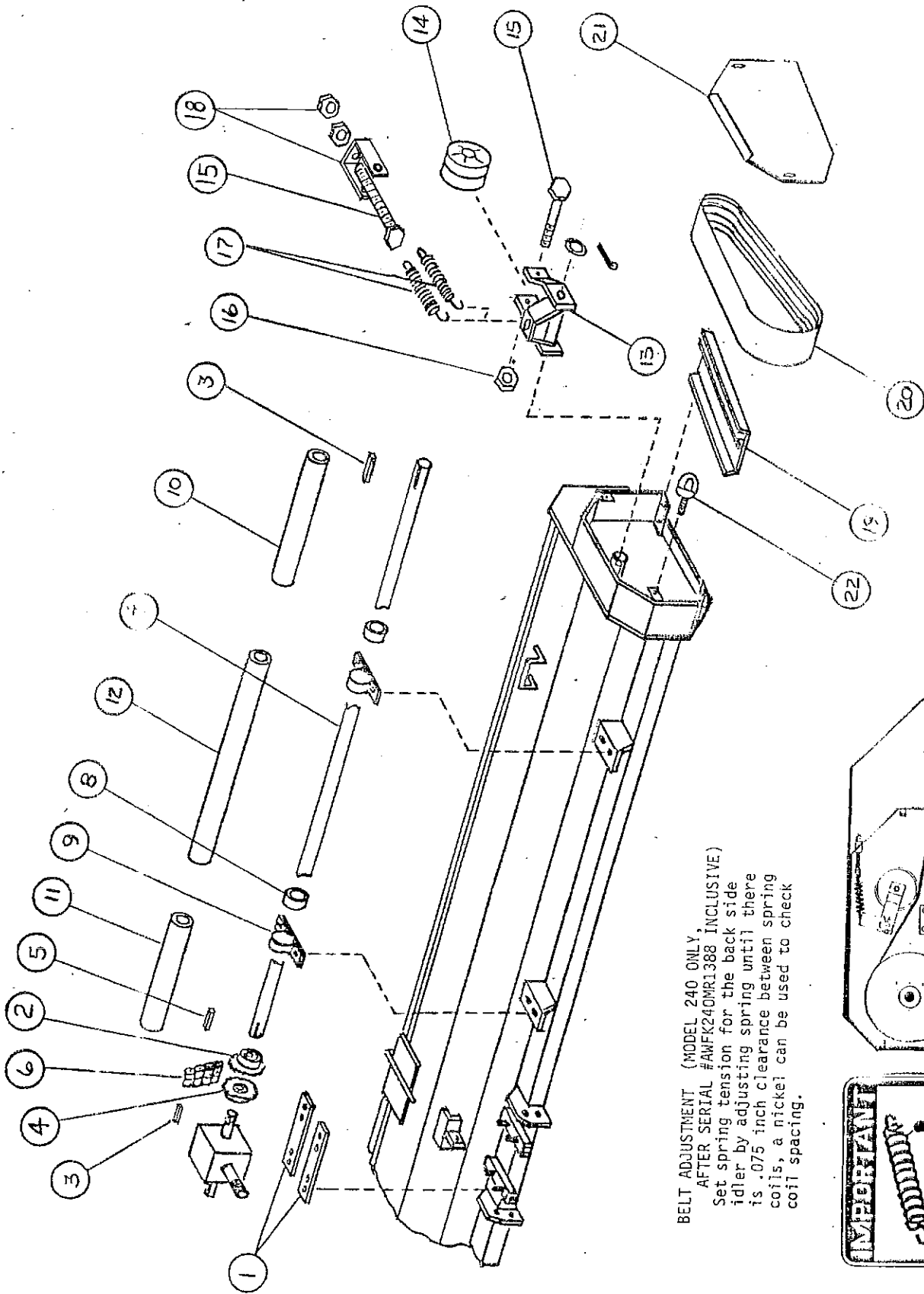


KEY	PART NO.	80	144	180	240	DESCRIPTION
1	R40440	1	1	1	1	Bracket, Axle Adj. & Att. Ass'y
	R61119	-	-	-	-	Bolt, 5/8-11 x 6 HHCS
	O20430	-	-	-	-	Washer, 5/8 Flat
	R61476	-	-	-	-	Nut, 5/8-11 Hex Lock
2	R60428	1	1	1	1	Tube, Outer Adj. Ass'y
	R61455	-	-	-	-	Bolt, 5/8-18 x 3 HHCS
	R61480	-	-	-	-	Nut, 5/8-18 Hex Lock
3	R60429	1	1	1	1	Tube, Inner Adj. Ass'y
4	R42500	-	-	-	-	Pin, Clevis 1" x 2-1/2
	R61694	-	-	-	-	Washer, 1" Flat
	R61510	-	-	-	-	Pin, 3/16 x 1-1/2 Cotter
5	R40070	-	-	-	-	Pin, Axle Arm Attaching
	R61513	-	-	-	-	Pin, 1/4 x 2 Cotter
6	182100	1	1	1	1	Axle Arm Ass'y, L.H.
6	182110	1	1	1	1	Axle Arm Ass'y, R.H.
7	219620	1	1	1	1	Tire
8	I602958R91	1	1	1	1	Cone, 1.25 ID. w/Seal
9	1803506	1	1	1	1	Hub, 4-Bolt w/Cups
10	I651817R1	1	1	1	1	Cup
11	1765108	1	1	1	1	Hub, 4-Bolt w/o Cups
12	I651814R1	1	1	1	1	Cup
13	1758209	1	1	1	1	Cone, .75 ID
14	I575813R1	-	-	-	-	Washer, 3/4 Flat
15	I69442D	-	-	-	-	Nut, 3/4-16 Slotted Hex Jam
	I120123	-	-	-	-	Pin, 1/8 x 1-1/4 Cotter
16	1799509	1	1	1	1	Cap, Wheel Hub
17	1757903	1	1	1	1	Rim, 15 x 4-1/2
	I64420	1	1	1	1	Valve Stem w/Core & Cap
18	R39520	1	1	1	1	Jack, Ratchet
19	R41830	1	1	1	1	Handle, Jack
20	R41810	-	-	-	-	Pin, Yoke
	R41820	-	-	-	-	Pin, Cotter Hair
21	181840	1	1	1	1	Kit Wheel Ass'y L.H. (Complete)
22	181850	1	1	1	1	Kit Wheel Ass'y R.H. (Complete)
23	I351079R1	-	-	-	-	Bolt, Wheel Hub

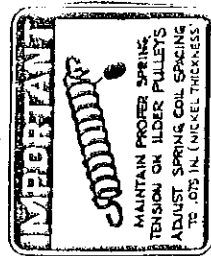
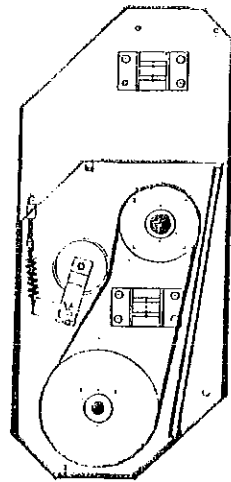
DISK HITCH



<u>KEY</u>	<u>PART NO.</u>	<u>QUANTITY</u>	<u>DESCRIPTION</u>
1	R42650	1	DISK HITCH
	20166-0	2	BOLT, 5/8 x 6 HHCS, G5
	02044-0	2	WASHER, 5/8 LOCK
	1124589	2	NUT, 5/8
	18194-0	-	KIT, DISK HITCH COMPLETE



BELT ADJUSTMENT (MODEL 240 ONLY,
 AFTER SERIAL #AMFK240MR1388 INCLUSIVE)
 Set spring tension for the back side
 idler by adjusting spring until there
 is .075 inch clearance between spring
 coils, a nickel can be used to check
 coil spacing.



MODEL 240 ONLY BACK SIDE IDLER
(AFTER SERIAL #AWFK240MR1388 INCLUSIVE)

<u>KEY</u>	<u>PART NUMBER</u>	<u>QTY</u>	<u>DESCRIPTION</u>
1	210650	2	BRACKET, GEARBOX MTG
	P61489	4	WASHER, LOCK 1/2
	005360	4	NUT, HEX 1/2-13
2	210690	2	SPROCKET, TYPE "B" 60B14 - 1-3/8 BORE
	R29110	4	SET SCREW, ALLEN HD 3/8-16 x 5/16
3	P53390	4	KEY, 3/8 x 2
4	210700	2	SPROCKET, TYPE "B" 60B14 1-1/2 BORE
	P0970	4	SET SCREW, ALLEN HD W/NYL 3/8-16 x 1/2
5	021630	2	KEY, 5/16 SQ x 1-1/2
6	163770	2	CHAIN ASSY, 60-2 x 14
7	210680	2	JACKSHAFT, 120"
8			
9	P40741	4	BEARING, 1-3/8 P. BLOCK
	1770500	8	BOLT, 1/2-13 x 1-1/4 HHC
	005200	16	WASHER, FLAT 1/2
	R61469	8	WASHER, LOCK 1/2
	R61468	8	NUT, HEX 1/2-13
10	J19641	2	SHIELD, SPIN 24"
11	R64469	2	SHIELD, SPIN 33"
12	R64476	2	SHIELD, SPIN 51-1/2"
13	210330	2	IDLER WELDMENT
	1107389	2	WASHER, FLAT 1"
	124340	2	PIN, COTTER 3/16 x 1-1/2
14	210270	2	PULLEY ASSY, IDLER
15	162930	1	BOLT, 1/2-13 x 5-1/2
16	127890	2	NUT, LOCK 1/2-13
17	220860	4	SPRING
18	221400	2	CLIP, TAKE-UP BOLT
	R61468	4	NUT, HEX 1/2-13
19	210890	2	BOTTOM CHANNEL
	012260	8	BOLT, 3/8-16 x 1
	021190	8	WASHER, FLAT 3/8
	021180	8	WASHER, LOCK 3/8
	027260	8	NUT, HEX 3/8-16
20	210260	2	BELT, DRIVE 5/B-72
21	210390	1	SHIELD, BELT - RIGHT
	210400	1	SHIELD, BELT - LEFT
22	156510	4	LATCH, SHIELD
	022920	-	WASHER, FLAT 5/16 x 3/4

