



MODEL 503A

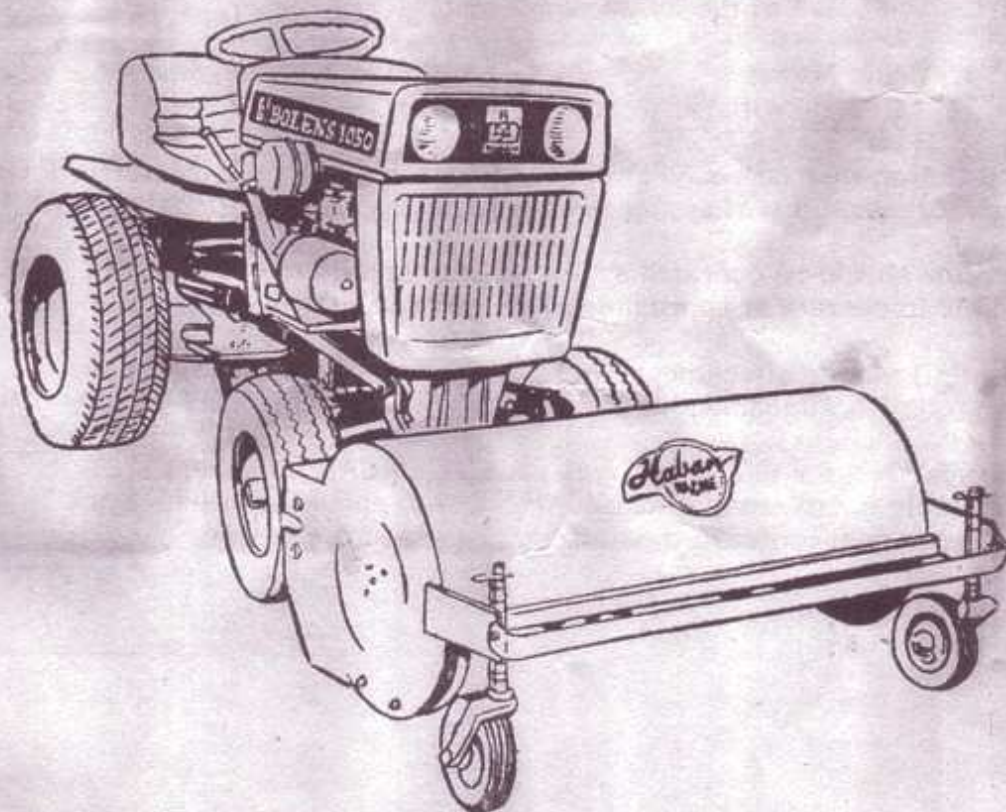
FOR



BOLENS

BOLENS DIVISION, FMC CORPORATION, PORT WASHINGTON, WISCONSIN

800, 850, 900, 1000, 1050, TRACTORS



**OPERATION AND SERVICE MANUAL
WITH
REPAIR PARTS LIST**



HABAN MANUFACTURING COMPANY

RACINE, WISCONSIN

REV

SERVICE BULLETIN

Haban Manufacturing Company

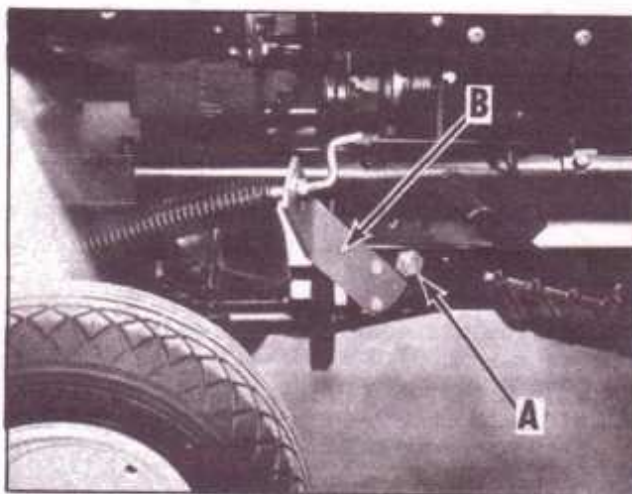
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(503A MODEL) Set up change notes on Crank Guide installation for G 10 and late model tractors.

Move anchor bolt (A) to middle top hole in mounting bracket as shown. Align holes in crank guide (B) to holes in mounting bracket. Insert two 5/16x1-1/4" hex. bolts through holes; secure with lock washer and hex. nut.



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SPECIFICATIONS

Your Haban Flail Mower attachment is shipped in one carton. In this carton you will find the following pieces:

1. Basic Mower
2. Lift Arm with Hardware
3. Lift Pivot with Hardware

The flail mower cuts a 36" swath and operates from the tractor P. T. O. It is suggested that rear wheel weights be used for additional traction.

Tractor should be operated at full-engine throttle to enable flail mower to operate at approximately 2,000 r. p. m.

The flail mower attachment can be lifted and lowered by either the hydraulic lift attachment or the hand lift lever attachment.

The gear box for the flail mower uses No. 90SAE oil except in extremely warm areas, where SAE No. 140 should be used. Zerk fittings should be greased with regular pressure gun lube.

GENERAL INFORMATION
HABAN FLAIL MOWER ATTACHMENT FOR BOLENS HUSKY TRACTOR

Your Haban Flail Mower attachment is designed specifically to match your compact tractor. Carefully observing the points of service as listed below will assure you of successful operation and satisfaction. Properly maintained and operated, it will give you years of trouble-free performance.

OPERATING SUGGESTIONS

MOWING SPEED:

The Haban Flail Mower attachment is designed for rough-cut mowing in areas which include tall weeds, grass, light brush, etc. Fineness of cutting can be regulated by the adjustable damper door at the rear of the machine. Raising the damper door to its maximum height will leave material coarse, while allowing the damper door to float on the grass surface will result in finer cut residue. Variation of forward travel of tractor will result in different cutting action. Speed should be regulated so that best mowing job is done. In some cases you may wish to crisscross and re-cut residue from previous mowing.

HEIGHT OF CUT:

When mowing in extremely rough areas, it may be necessary to either raise the mower unit by the adjustable spacers on the front caster wheels or through the use of the lift handle attachment on the tractor.

TRANSPORT POSITION:

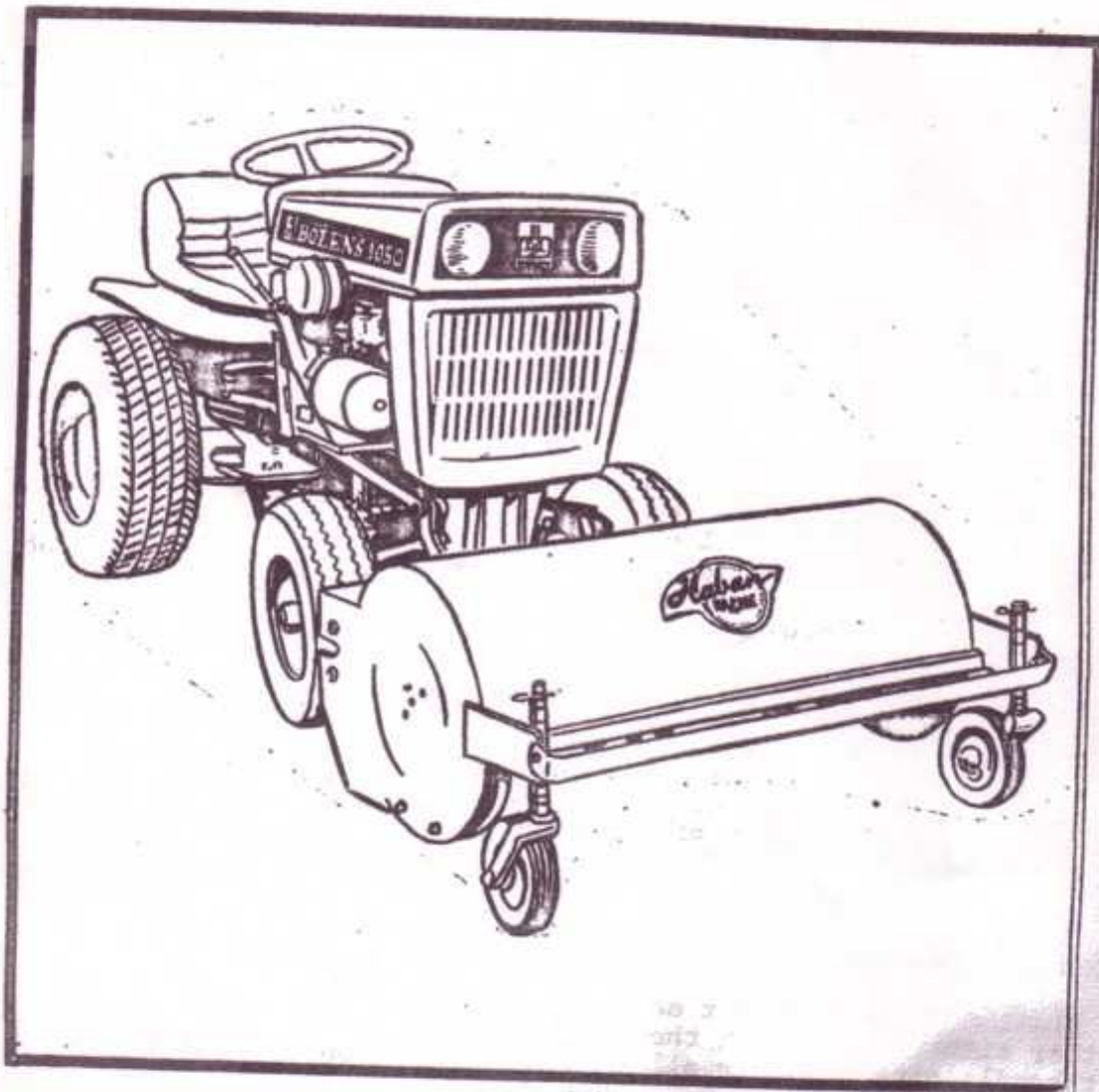
The flail mower attachment can be transported from one location to another either by raising the unit off from the ground with the lift handle attachment or allowing it to ride on the pivoting caster wheels.

ALWAYS OPERATE AT CAREFUL SPEEDS IN TRANSPORTING. DO NOT ATTEMPT TO MAKE SUDDEN, SHARP TURNS WITH MOWER IN RAISED POSITION.

Note: Lubricate unit per lubrication chart enclosed.

OPERATION

The Haban Flail Mower can be stopped or started by using the Bolens power take-off lever. Do not leave P.T.O. clutch engaged when operating mower in transport position.



SPECIAL CAUTION

Do not work on or around the flail mower without shutting off tractor engine. Keep children and pets away from machine.



FLAIL-MO OPERATION

SAFETY IS NO ACCIDENT !!

Read Carefully

BE CAREFUL

1. KEEP ALL SHIELDS IN PLACE.
2. STOP MACHINE TO ADJUST AND OIL.
3. WHEN MECHANISM BECOMES CLOGGED DISCONNECT POWER BEFORE CLEANING.
4. KEEP HANDS, FEET AND CLOTHING AWAY FROM POWER-DRIVEN PARTS.
5. KEEP OFF IMPLEMENT UNLESS SEAT OR PLATFORM IS PROVIDED. KEEP OTHERS OFF.

1. Make sure lift operates smoothly
2. Check chain tension
3. Check knife clearances
4. Check shear bar bolts
5. Check bolts that held main cylinder to the base of the machine
6. Check all other bolts to make sure they are tight

CAUTION: Keep hands and feet away from the knives until the machine has come to a complete stop. Never open the inspection panels when the machine is running.

CAUTION: Always disengage the PTO shaft before dismounting from the tractor.

Do not allow anyone to walk alongside or behind the machine during operation.

Before mowing, check and remove sticks, stones or any other debris from area to be mowed. This will prevent possible mower damage as well as eliminate the possibility of blades picking up and throwing debris.

Always use wide rear wheel tread when mowing on sidehills.

Always drive slowly over rough ground and on hillsides. Drive at speeds slow enough to insure your safety. Use the variable speed control lever to obtain a maximum safe speed.

Always wear relatively tight and belted clothing when operating tractor. Loose jackets, shirts, sleeves or other loose clothing should not be permitted because of the danger of catching them in moving parts or controls.

Refuel your tractor only when the engine has been shut off. Never smoke while filling the fuel tank.

Never operate the tractor engine in a closed building.

Before leaving tractor seat, always disengage mower drive clutch and stop tractor engine.

AVOID ACCIDENTS

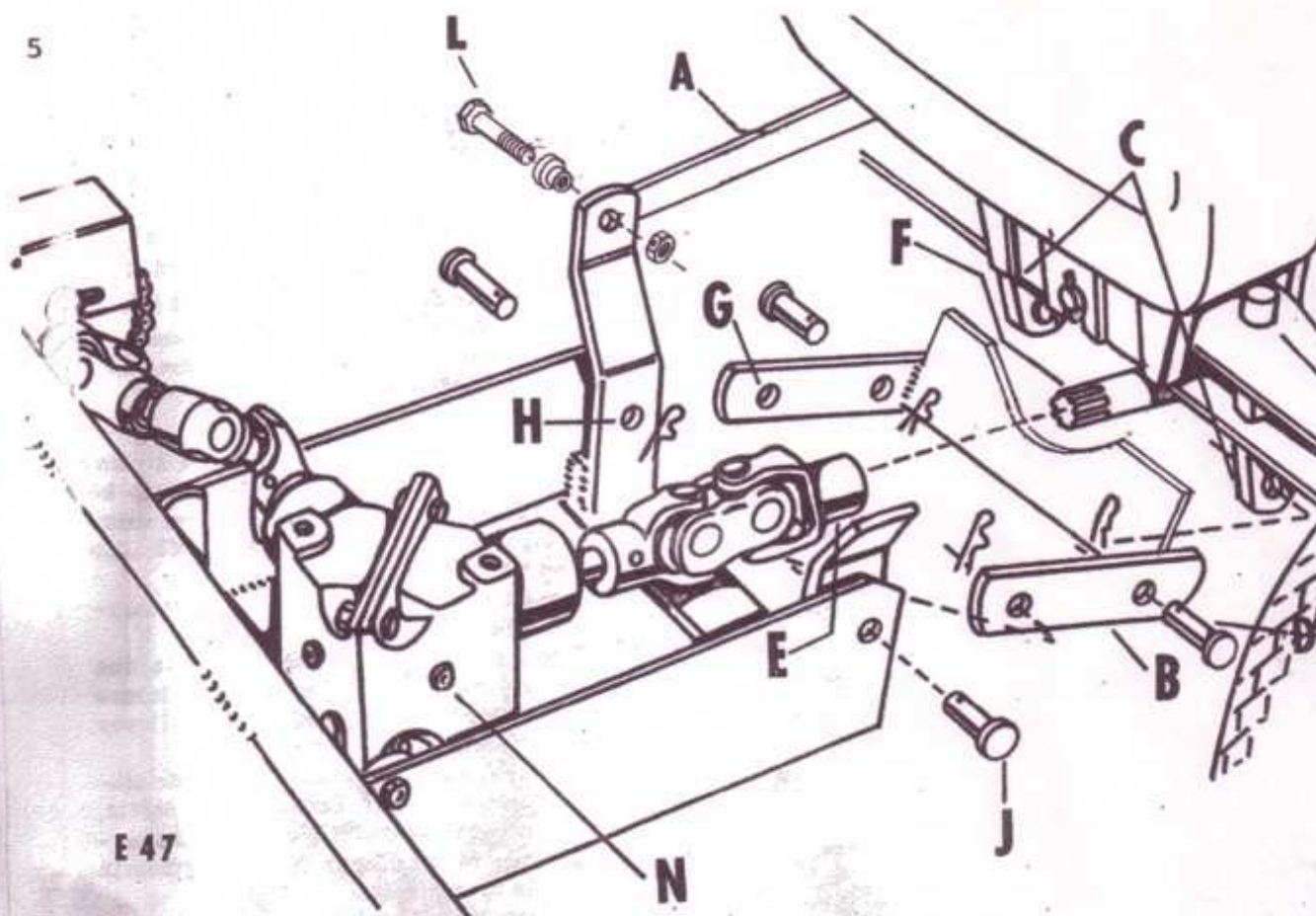
BE A SAFE OPERATOR

No accident prevention program can be successful without the whole-hearted co-operation of the person who is directly responsible for the operation of equipment.

To read accident reports from all over the Country is to be convinced that a large number of accidents can be prevented only by the operator anticipating the result before the accident is caused and doing something about it. No power-driven equipment, whether it be transportation or processing, whether it be on the highway, in the harvest field, or in the industrial plant, can be safer than the man who is at the controls. If farm accidents are to be prevented--and they can be prevented--it will be done by the operators who accept a full measure of their responsibility.

It is true that the designer, the manufacturer, the safety engineer can help; and they will help, but their combined efforts can be wiped out by a single careless act of the operator.

It is said that "the best kind of a safety device is a careful operator." We ask you to be that kind of an operator.



Check oil level in gear box by removing oil plug (N). Oil level should be to the bottom of oil plug. If it is necessary to add oil, use SAE 90. IF OPERATING IN TEMPERATURES 90° FAHRENHEIT OR ABOVE, USE SAE 140 OIL.

MOUNTING FLAIL MOWER TO TRACTOR

Your Haban Flail Mower attachment is shipped completely assembled except for the lift lever arm (A) and pivot bracket (B) with hardware attached.

Install pivot bracket (B) to axle lugs at (C). Insert clevis pins as illustrated and insert hair-cotter pins.

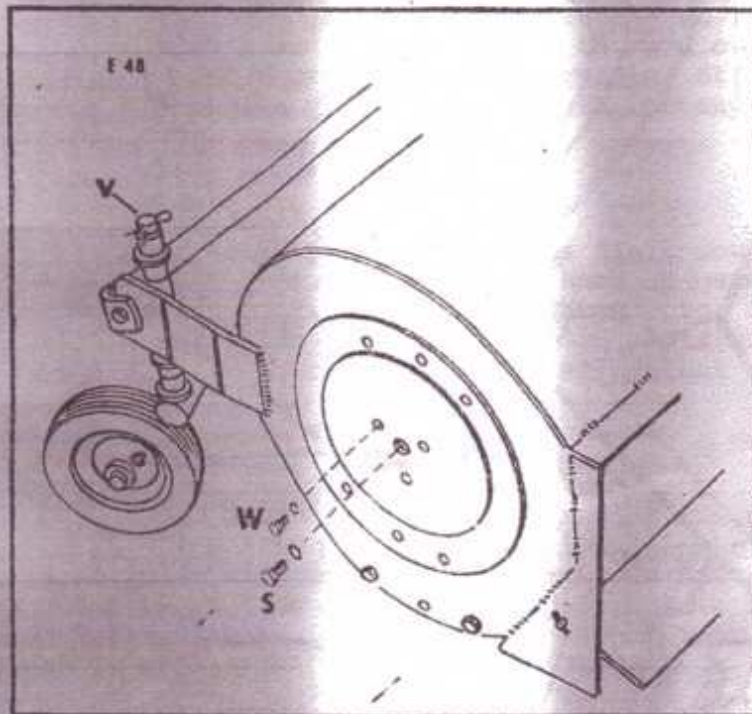
Remove all paint from PTO spline of tractor, as well as from the PTO yoke on the flail mower. Move mower up to the tractor and slide yoke (E) on to PTO shaft (F).

Align holes (G) and (H) and insert pins (J) in bracket.

Install lift arm (A) to mower at (L) as illustrated. Use 3/8" by 1-3/4" bolt with trunnion and Hex lock-nut.

FLAIL-MO OPERATION

To raise or lower cutting level of Flail Mower. reposition spacers on caster wheel (V). Remove hair cotter pin & drop caster wheel out of tube. To raise cutting height, insert additional spacers under pivot tube; to lower cutting height, remove spacers under pivot tube & reposition on top.



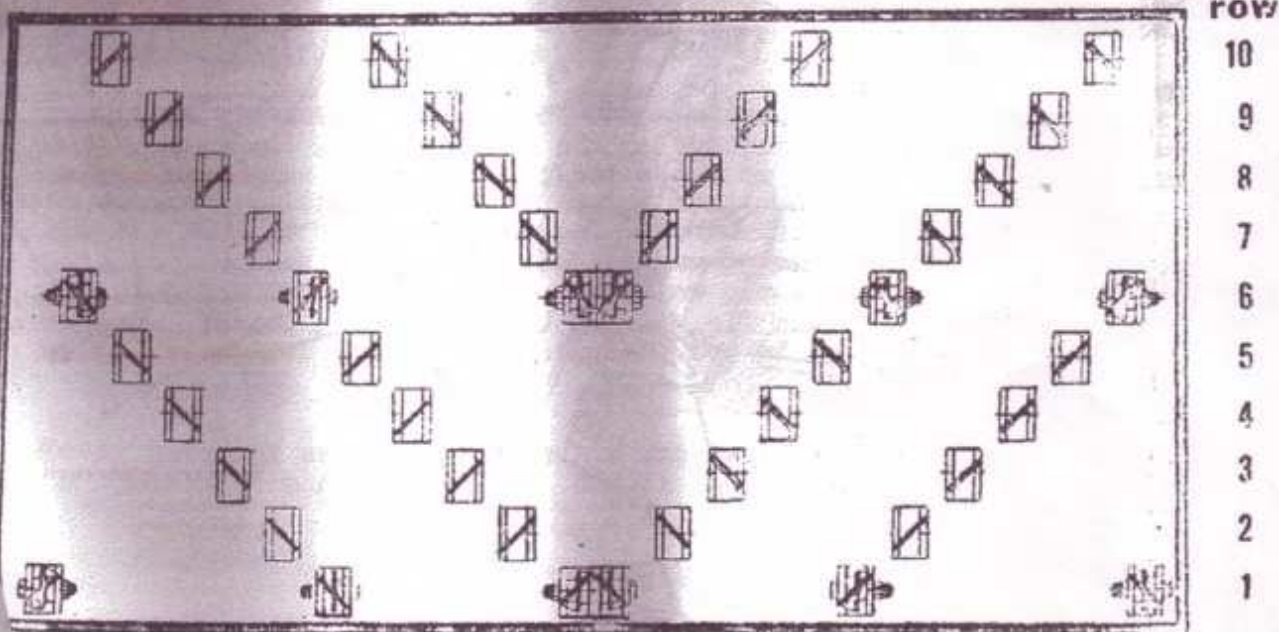
Check bearing bolts (W) periodically for tightness - Also shaft retainer bolt (S). Keep tight and secure.

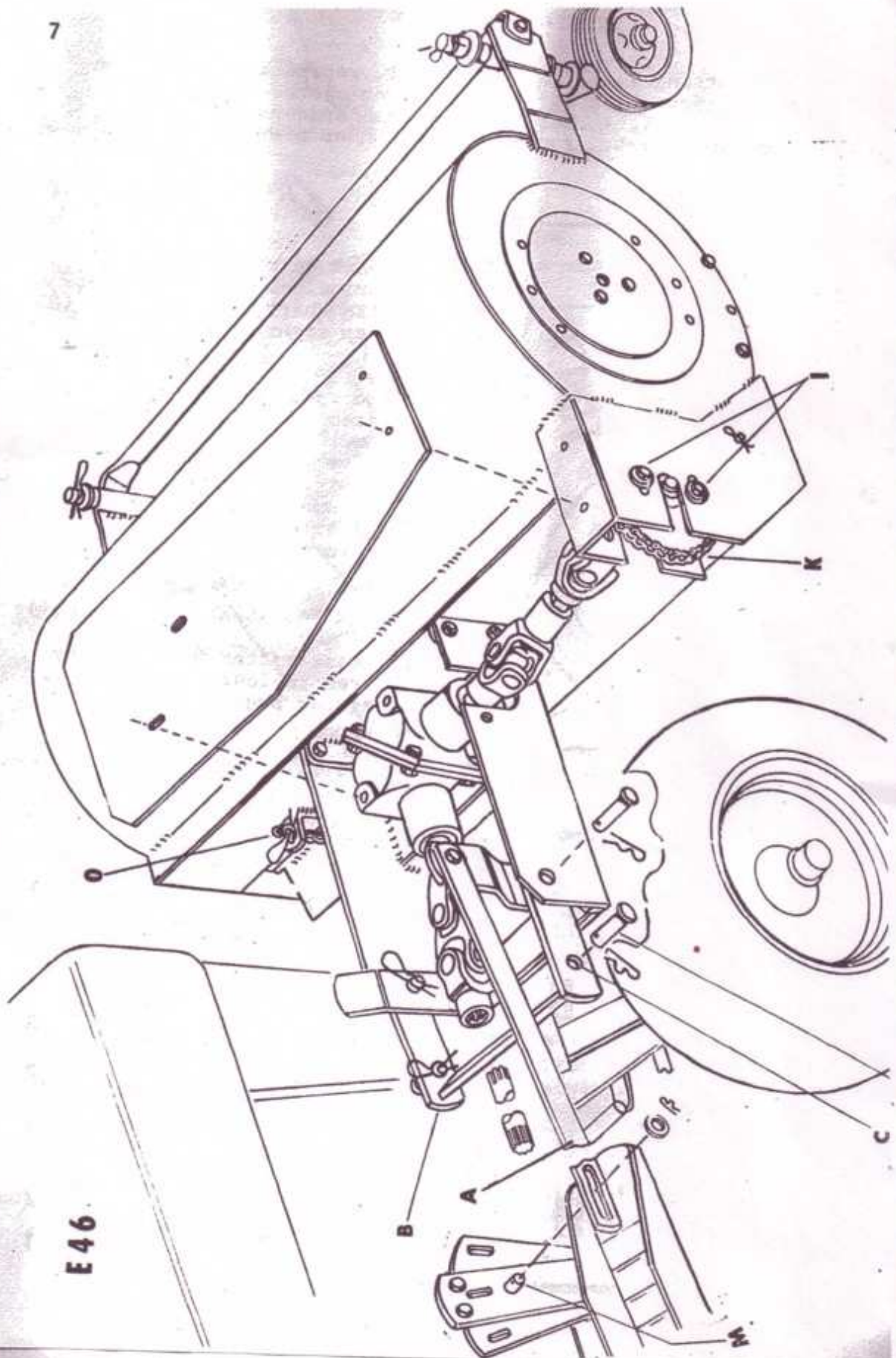
The rotor assembly is balanced at the factory and should operate smoothly. If vibration occurs, check rotor for either missing or damaged knives, since vibration could cause early failure of rotor bearings.

(SEE ROTOR DIAGRAM FOR PROPER INSTALLATION OF KNIVES)

Grease caster wheels every three to four hours of use. Regular pressure gun lube.

NOTE: When replacing flail knives be sure to install knives as illustrated in the diagram below.





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SET-UP

Attach lift arm with slotted hole to lift bracket attachment at (M) as illustrated. Install washer and hair cotter pin to lock lift arm in position. Flail mower attachment can now be raised and lowered by either mechanical lift lever handle or hydraulic lift attachment of tractor.

Start tractor engine and set throttle at 1/4 speed. Engage P.T.O. clutch slowly and allow machine to turn over slowly. Gradually increase speed until engine is running at full throttle. Then, shut off engine of tractor. Check for any loose nuts or bolts.

DRIVE CHAIN:

The rotor drive chain (K) on the flail mower is set properly at the factory for tension. However, some adjustment will need to be made after a few hours' use. To tighten rotor drive chain, loosen bolts at (I) and slide shaft assembly in slots until chain has proper tension. Then, retighten bearing bracket nuts.

DAMPER DOOR:

The damper door can be used in one of two ways, either free-floating, or in the raised position to allow quicker discharge of chopped material. With damper door raised in highest position, shredded material will be coarser. Damper door in lowest position will shred material finer. Adjustment of damper door to desired position can be made by adjusting chain at (O).

CASTER WHEELS:

The pivoting caster wheels serve two functions: first, to assist in transport of the flail mower attachment; and secondly, to regulate the cutting height of the machine.

To change the cutting height of the machine, reposition the spacers in the caster wheel assembly. To change the position of spacers, remove the hair cotter pins at (T) and either raise or lower the header assembly to desired position. Highest mowing position would be with all four spacers located below pivot tube. Intermediate position would be with two spacers on top of tube and two below, as illustrated. Lower position would be with one spacer below pivot tube and three spacers on top. Lowest position would be with all spacers removed from bottom of spacer tube and position on top of tube.

Rotor bearings are sealed bearings and require no grease. Grease U-joints with pressure gun. Grease and oil drive chain as needed.



(Fig. 1)

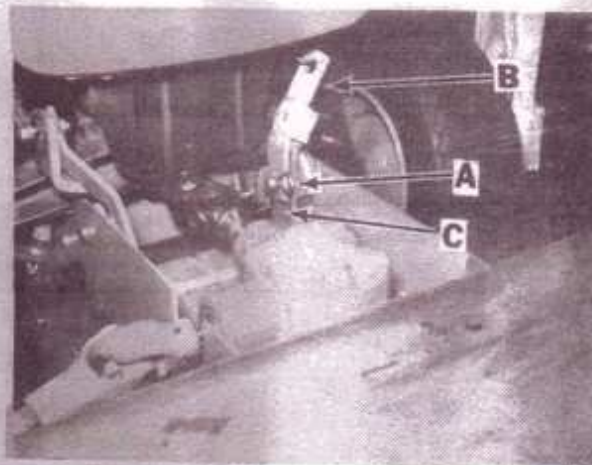


Fig. 1: To install spring assist lift assembly, remove hair pin at (A) and slide bracket (B) over stop bracket (C).

(Fig. 4)



Fig. 4: Side view of spring lift assist kit fully assembled. To remove from tractor, turn crank counter-clockwise until crank is backed out of spring. Remove parts from tractor as needed.

MODEL 503 SPRING ASSIST. ASSEMBLY MOUNTING INSTRUCTIONS

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(Fig. 2)

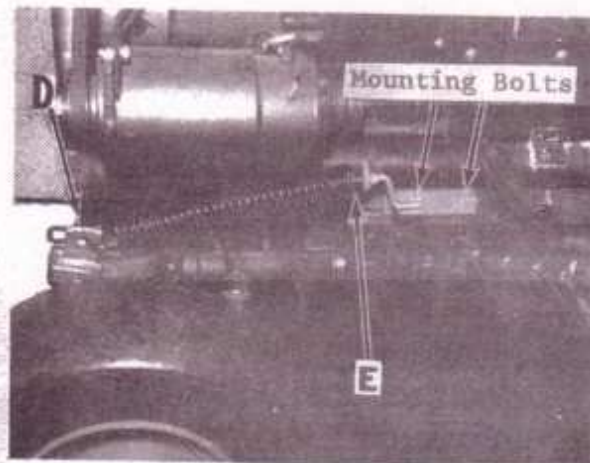


Fig. 2: Bolt crank guide support to tractor frame as illustrated with 5/16" x 3/4" carriage bolts, lock washers, and nuts, as illustrated. Hook spring into spring anchor at (D); slide crank through guide hole and thread crank into spring plug (E). Tighten spring until spring rests against crank guide support, as illustrated

(Fig. 3)

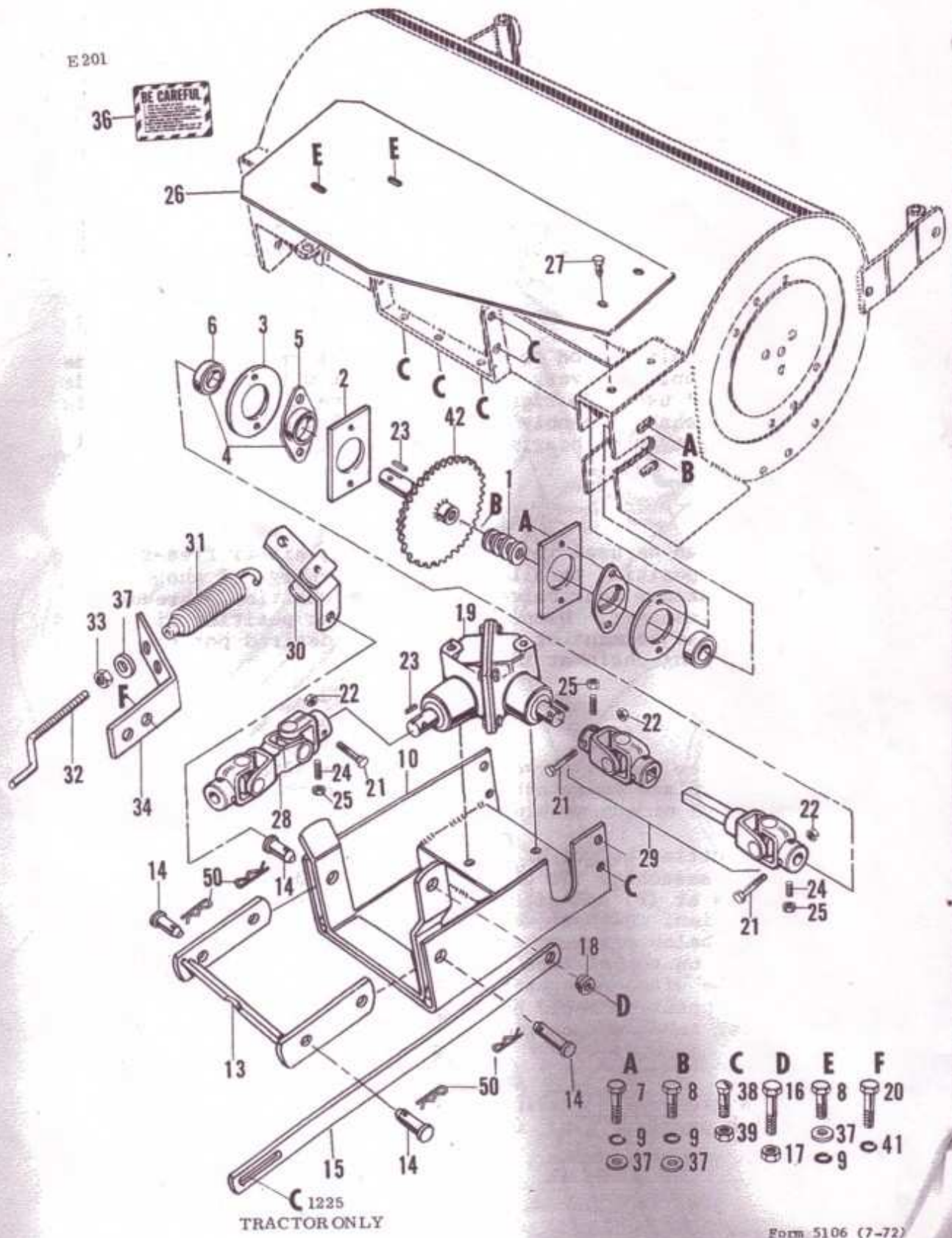


Fig. 3: Front view of spring lift assist fully assembled.

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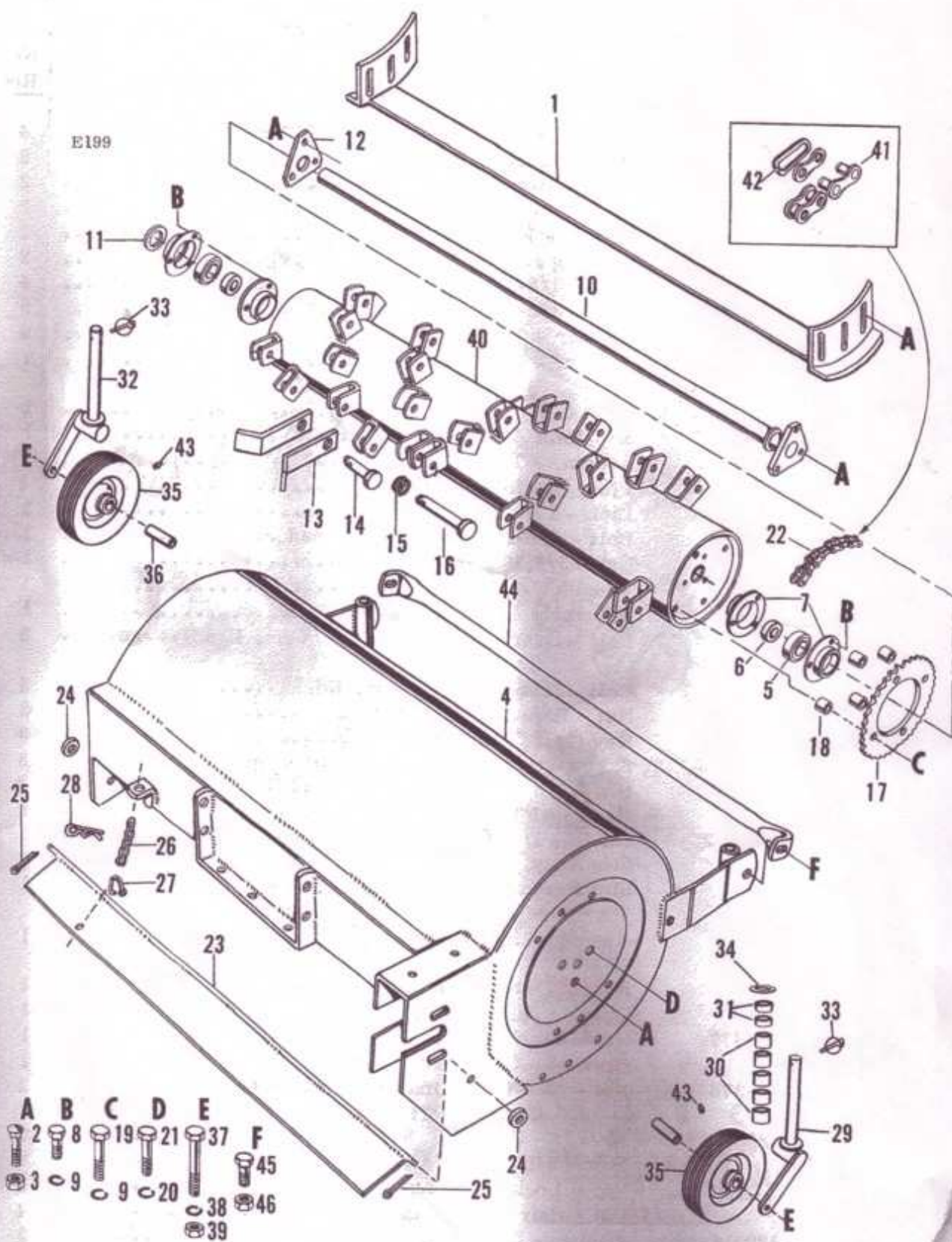
A	B	C	D	E	F
7	8	38	16	8	20
9	9	39	17	37	41
37	37			9	

Form 5106 (7-72)

**HABAN FLAIL MOWER
REPAIR PARTS LIST
MODEL 503A MOUNTING PARTS ASSEMBLY**

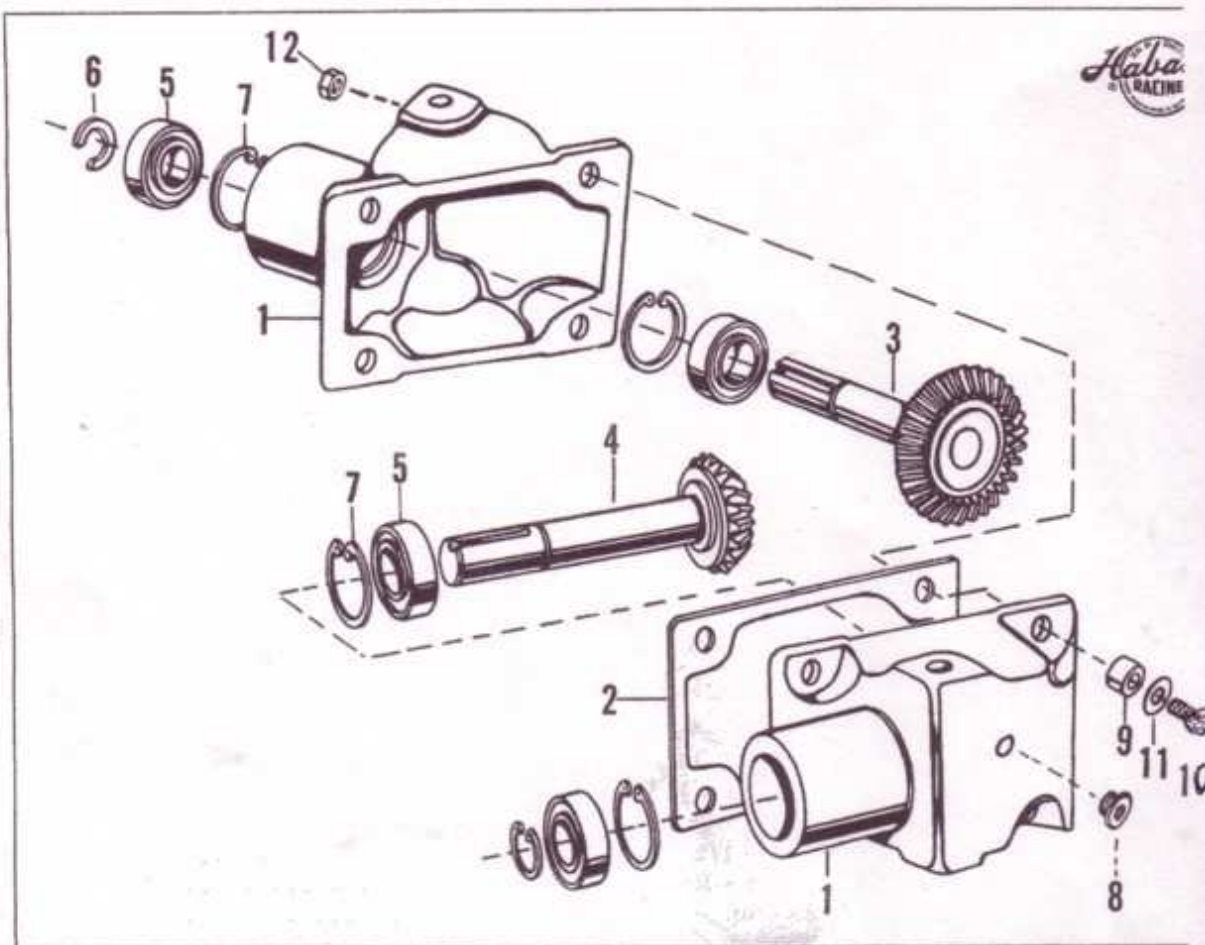
<u>Ref. No.</u>	<u>Part No.</u>	<u>Description</u>	<u>No. Req.</u>
1	5429	Washer - (1-1/16 x 49/64 x .0598 Flat).....	4
2	5547	Bar - Bearing Support	2
3	8320	Shim - Bearing	2
4	5030	Assem. - Bearing & Flange	2
5	5028	Flange - Bearing	2
6	4611	Bearing	2
7	GM-180122	Bolt - 3/8-16 x 1 Hx. Hd.	4
8	GM-180120	Bolt - 3/8-16 x 3/4 Hex. Head	5
9	GM-120382	Washer - 3/8 Med. Lock	9
10	5020	Assem. - Lift Channel	1
11		Yoke & Square Shaft Assem.	1
12	7558	Slip Joint Assembly (Keyed)	1
13	5031	Assem. - Pivot Bracket	1
14	3980	Pin - Clevis	4
15	5029	Link - Lift	1
16	GM-180128	Bolt - 3/8-16 x 1-3/4 Hex. Head	1
17	GM-9413534	Nut - 3/8-16 Hex. Lock	1
18	3700	Trunnion	1
19	4612	Assembly - Gearbox	1
20	GM-180081	Bolt - Gearbox (5/16-18 x 1-1/4 Hx. Head).....	2
21	GM-180042	Bolt - (1/4-20 x 1-3/4 Hx. Hd.)	3
22	4119	Nut - (1/4-20 Hex. Lock).....	3
23	3259	Key (3/16 Sq. x 1)	3
24	GM-102594	Screw - 3/8-16 x 5/8 Allen Hd. Cup Pt. Set	3
25	GM-124829	Nut - 3/8-16 Half Hex	3
26	5025	Cover - PTO & Gearbox	1
27	GM-9414012	Screw - 1/4-14 x 1/2 Type "A" Self Tap. Hex	2
28	5034	Slip Assy. (Comp)	1
29	5035	Slip Assembly (Complete) (Gearbox Output -	1
30	5379	Short Shaft - To Flail Header Jackshaft)	1
31	3849	Assem. - Spring	1
32	3852	Crank - Spring	1
33	GM-120377	Nut - Crank (3/8 - 16 Lt. Hex.)	1
34	7210	Bracket - Crank Guide	1
35	GM-120376	Nut - 5/16-18 Lt. Hx. (Model 1257 Only)	2
36	S-820	Decal - Caution (PTO Cover)	1
37	GM-120388	Washer - 3/8 Med. Flat (7/16 x 1 x .083)	10
38	7953	Bolt - 5/16-18 x 3/4 Carriage	8
39	GM-271184	Nut & Lock Washer Assem. (5/16-18 Hex.)	8
40	3341	Pin - Hair Cotter	4
41	GM-120214	Washer - 5/16 Med. Lock	2
42	5026	Assem. Jackshaft & Sprocket	1

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**HABAN FLAIL MOWER
REPAIR PARTS LIST
MODEL 503 A HEADER PARTS ASSEMBLY**

<u>Ref. No.</u>	<u>Part No.</u>	<u>Description</u>	<u>No. Req.</u>
1	5557	Assy. - Shear Bar	1
2	7953	Bolt - 5/16-18 x 3/4 Carr.	6
3	GM-271184	Nut & Lock Washer Assy. - (5/16-18 Hex.)	6
4	4991	Assem. - Flail Head (36" RH)	1
5	S-225	Bearing - Rotor (1" Bore)	2
6	S-97	Collar - Bearing	1
7	5473	Flangette - Auger Bearing	4
8	GM-180075	Bolt - 5/16-18 x 5/8 Hex. Head	12
9	GM-120214	Washer - 5/16 Med. Lock	16
10	3022	Assem. - Rotor Shaft	1
11	4143	Washer - Rotor Shaft	1
12	3024	Disc - Rotor Shaft	1
13	7011	Knife - Flail	80
14	3398	Pin - Clevis (3/8 x 1-3/8)	38
15	5714	Spring Clip	39
16	5715	Pin - Clevis (3/8 x 2-1/2)	1
17	3026	Sprocket - 35 Tooth	1
18	7753	Spacer - Sprocket	4
19	GM-180087	Bolt - 5/16-18 x 2 Hex. Head	4
20	GM-120384	Washer - 1/2 Med. Lock	1
21	GM-180175	Bolt - 1/2-13 x 1-1/4 Hex. Head	1
22	5036	Chain - Rotor Drive (80 Links)	1
23	4932	Assem. - Deflector Door	1
24	GM-120388	Washer - 3/8 Med. Flat (7/16 x 1 x .083)	2
25	GM-121222	Pin - Cotter (3/32 x 3/4)	2
26	4938	Chain - Deflector Door	1
27	3436	Anchor - Chain	1
28	3341	Pin - Hair Cotter	1
29	6220	Assem. - Wheel Bracket (RH)	1
30	3094	Spacer - Wheel Mtg. Brk't. (3/4 Long)	10
31	6179	Spacer - Wheel Mtg. Brk't. (1/2 Long)	4
32	6219	Assem. - Wheel Bracket (LH)	1
33	5882	Pin - Klik	2
34	3396	Washer - (49/64 x 1-1/2 x 16 Ga. Flat)	2
35	4944	Wheel & Tire Assembly	2
36	5579	Spacer - Wheel	2
37	GM-180192	Bolt - 1/2-13 x 3-1/2 Hx. Head	2
38	GM-120390	Washer - 9/16 x 1-3/8 x .109	2
39	GM-120238	Nut - 1/2-13 Half Hex.	2
40	4913	Assem. - Rotor (36") Sprocket	1
41	3096	Link Chain	1
42	3095	Clip Connector	1
43	5074	Fitting - Grease 1/4-28 Str. Self Tape	2
44	3086	Auger - Guard	1
45	GM-180077	Bolt - 5/16-18 x 3/4 Hex. Head	2
46	GM-9413447	Nut - 5/16-18 Hex. Lock	2



REPAIR PARTS LIST / GEAR BOX ASSEMBLY COMPLETE 4612

Ref. No.	Part No.	Description	
1	4607	Gearbox - Right Angle.....	1
2	4608	Gasket - Gearbox	1
3	4586	Assem. - Shaft & Gear	
4	4587	Assem. - Shaft & Pinion.....	
5	4611	Bearing - Gearbox	
6	4609	Ring - Snap	
7	4610	Ring - Snap	
8	7091	Plug - Pipe (1/2 - 14 Sq. Socket)	
9	4606	Bushing.....	
10	GM-180081	Bolt - Gearbox (5/16-18 x 1-1/4 Hx. Head)	
11	GM-120386	Washer - Gearbox (5/16 ID x 3/4 OD x 1/16 Thk) Flat	
12	GM-271184	Nut & Lock Washer Assem. (5/16 - 18 Hex.)	