



HAMMER KNIFE HEAVY DUTY SHREDDER

**Operation, Service,
& Parts Manual
For Models:
GHF90, 100, & 140**

March 2006

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Date of Purchase:_____

Model Number:_____

Serial Number:_____

INSTALLATION

BEFORE ATTACHING THE SHREDDER TO THE TRACTOR

1. Make sure that the shredder is suitable for your tractor's horsepower.

MODELS

YOUR TRACTOR'S MAX. H.P.

All Models with 540 RPM gearbox	100 HP
All Models with 1000 RPM gearbox	120 HP



CAUTION: Please note that if these limits are exceeded, it will **invalidate your warranty.**

2. Make sure the lower links and top link on the 3-point hitch arms of your tractor are the correct size (Cat. 2 only), so that they correspond to the size of the hitch on the shredder you have purchased.
3. Verify that the hitch assembly is mounted in the correct position for the shredder's application. (front or rear mounted on tractor)
4. ***P.T.O. Installation:***

First, connect the P.T.O. shaft to the tractor. With the shaft in its shortest position, there should be about a 2" clearance between the end of the gearbox shaft and the end of the P.T.O. shaft. Should it be necessary to shorten the P.T.O. shaft, shorten both male and female shafts equally, keeping the protective tube covers 1" shorter than the steel tubes.

Particular attention should be given to carefully removing all burrs and to clean and lubricate the steel tubes and protective covers. There must be sufficient telescopic movement so that the two tubes do not touch the end of the P.T.O. shaft.

It is most important to carefully raise and lower the shredder with the tractor hydraulic system, making sure that the P.T.O. shaft does not bottom or disengage the telescopic shaft tubes, otherwise damage may occur.

SAFETY INFORMATION



OPERATIONAL SAFETY:

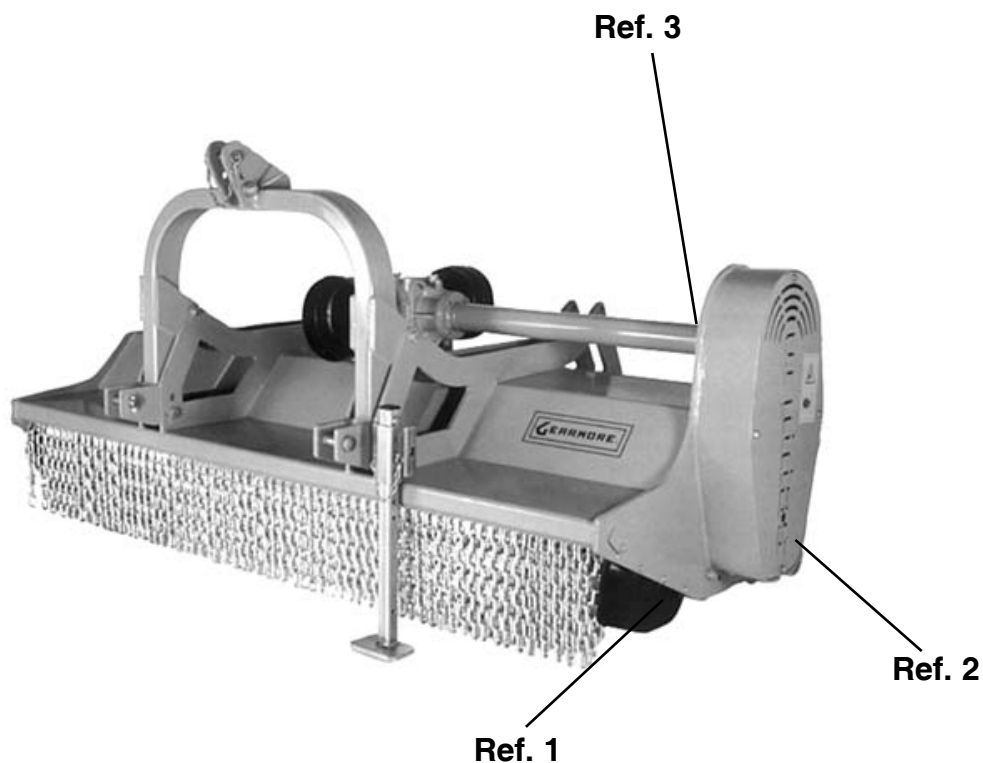
- ❑ Guards and safety shields are for your protection. **DO NOT** operate equipment unless they are in place.
- ❑ Always operate tractor PTO (power-take-off) at recommended RPM (revolutions per minute).
- ❑ Disengage tractor PTO and shift into neutral before attempting to start engine.
- ❑ Read and observe all safety decals on the tractor and shredder.
- ❑ **NEVER** allow anyone within 25' of machine while it is in operation.
- ❑ **DO NOT** stop or start suddenly when going uphill or downhill. Avoid operation on steep slopes.
- ❑ Be alert for holes in terrain and other hidden hazards. Always drive slowly over rough ground.
- ❑ Reduce speed on slopes and in sharp turns to prevent tipping or loss of control. Be careful when changing direction on slopes.
- ❑ Stop shredder and tractor immediately upon striking an obstruction. Turn off engine, inspect shredder and repair any damage before resuming operation.
- ❑ Disengage power to shredder and stop engine before dismounting from tractor, before making any repairs or adjustments, transporting or unclogging shredder.
- ❑ Take all possible precautions when leaving tractor unattended: Disengage PTO, lower shredder, shift into neutral, set parking brake, stop engine and remove key from ignition.
- ❑ Front tractor weights or front tire ballast should be used to enhance front end stability on small tractors.
- ❑ Check to make sure PTO is properly connected and that the driveline is correct to prevent bottoming out or pulling apart during the full lift range of the hitch.
- ❑ This implement is designed for a one-man operation. It is the responsibility of the tractor operator to see that no one is in the proximity of the implement when it is started. **DO NOT** operate the implement with another person within 25' of the implement.
- ❑ **NEVER** operate shredder with hatch in the wrong working position.
- ❑ **NEVER** run shredder with rotorshaft out of balance.

LUBRICATION



Grease all fittings according to the following schedule:

1. **ROLLER (Ref. 1):** Grease at both ends *after 4 hours* of operation, until grease is visible..
2. **CUTTING SHAFT (Ref. 2):** Grease at both ends lightly *after 8 hours* of operation.
DO NOT overgrease.
4. **EXTENSION SHAFT (Ref. 3):** Grease extension shaft bearing *every 40 hours*.
3. **P.T.O. SHAFT:** The universal joints and overrunning clutch (option) need to be greased *every 8 hours*. The telescopic tubes should be greased *every 16 hours* and the shield retaining bearing should be greased *every 40 hours*.



PRE-OPERATION CHECK

- ✓ Check tightness of all bolts and nuts.
- ✓ Check gearbox oil level (Grade SAE80W-90 gear oil).
- ✓ Grease all points, on all GHF mowers.
- ✓ P.T.O. (power take-off) speed should not exceed shredder's rated RPM (revolutions per minute).
- ✓ Check correct length of P.T.O. shaft. When fitted, there should be 3 3/4" free travel on male and female tubing (check in fully raised and fully lowered positions).
- ✓ The recommended cutting height, with the hammer or blade in its lowest position, is between 2" and 4" (*Ref. 1*). Basically, the fine height adjustment is achieved with the top link of the 3-point hitch. For a greater height adjustment, it is necessary to raise or lower the roller (*Ref. 2*).
- ✓ Drive belt should flex 3/8" (1 cm.) when pushed firmly with the finger.
- ✓ Shredder should be completely cleaned after use and before storage.

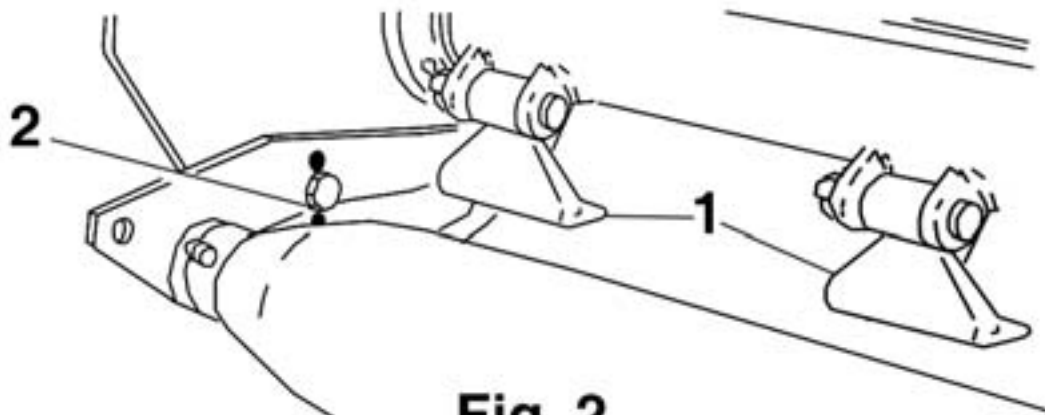


Fig. 2

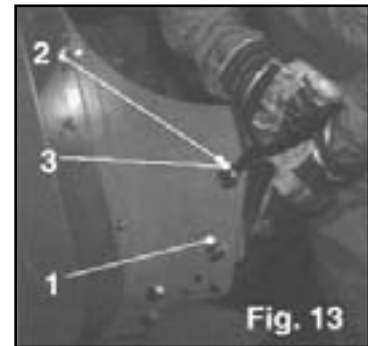
SHREDDER ADJUSTMENTS

FOR VARIOUS TYPES OF MOWING

There is an adjustable rear hatch (*Fig. 3*) that can be set in one of seven positions to control the amount of power needed to do the work.

FOR BEST MOWING OPERATION, OPEN REAR HATCH FULLY TO ALLOW MATERIAL TO EXIT

1. Adjustment of the rear hatch can be made by removing the two bolts at the side (*Fig. 13, ref. 1*). Loosen the nut (*Fig. 13, ref. 2*) until the hatch can be pivoted around bolt (*Fig. 13, ref. 3*). To fix the hatch in the desired position, align the hole in the side of the casing of the machine with the appropriate hole in the hatch. Insert the bolt and tighten the self-locking nut (*Fig. 13, ref. 1*). Tighten the pivot bolt (*Fig. 13, ref. 3*) with the self-locking nut (*Fig. 13, ref. 2*).



2. The rear hatch should be in a completely closed position (*Fig. 4*) when used for mulching of prunings, or pulverizing debris.
3. The hatch is used in position (*Fig. 5*) to allow the grass clippings to escape above the roller.
4. The hatch should be in a completely open position when the shredder is used for cutting grass, vegetables, corn stalk and cotton cutting operations (*Fig. 6*). An open hatch enables the clippings to be discharged quickly, thus allowing a faster mowing speed and lower H.P. requirements.



DANGER: When the hatch is in the fully open position, objects may be thrown out of the machine. Make sure that **NO ONE** is in the operation area.



Fig. 3

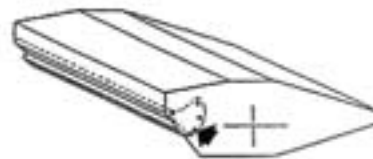


Fig. 4



Fig. 5

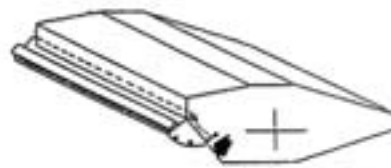
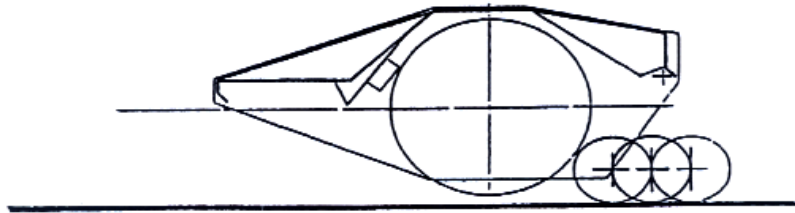


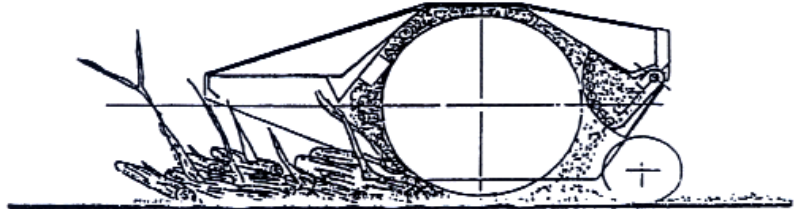
Fig. 6

SHREDDER ADJUSTMENTS

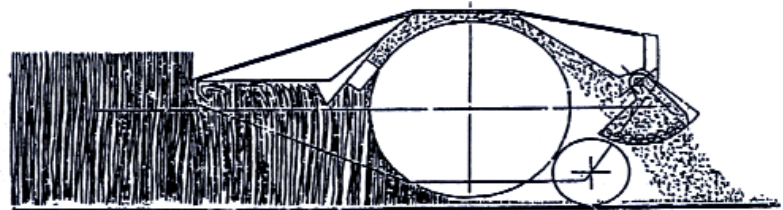
1. Various roller adjustments
3 positions



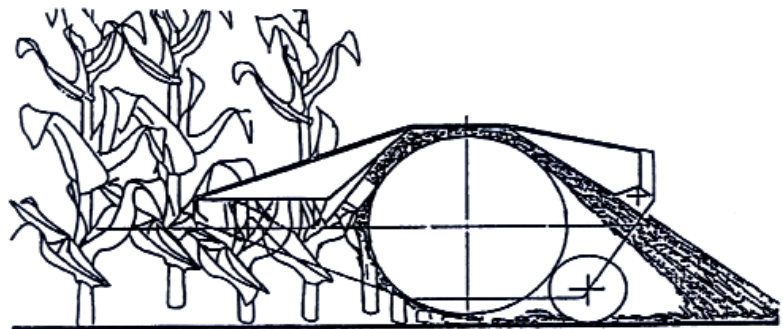
2. Used for mulching
of prunings



3. Used for cutting
grass



4. Used to mulch
cornstalk



ROLLER HEIGHT CONTROL

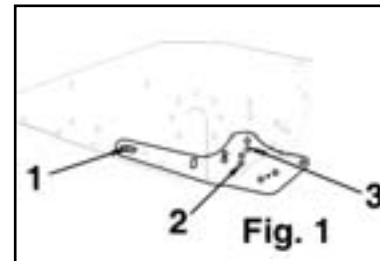
The roller can be adjusted for 2 or 3 cutting heights. By raising the roller, you get a shorter cut, by lowering it, a longer cut is achieved. You can also fine adjust the cutting height with the top link arm. By shortening the link arm, your cut is further from the ground.

A suggested cutting height is having the hammer tips about 2" from the ground.

You can control the power needed and the amount of wear on the hammers by this adjustment.

ADJUSTING REAR ROLLER:

To adjust roller, loosen (*Fig. 1, ref. 1*). Completely remove (*Fig. 1, ref. 2 & 3*). Align the appropriate hole in the support bracket with the hole in the deck to achieve roller position desired.



1. There is also an adjustment that can be made on the roller to control mulch size and power needed. By moving the roller toward the cutting shaft (*Fig. 7*), a finer mulch is produced, requiring less H.P. In this case, we suggest opening the hatch to cut grass, vegetables, cornstalk, cotton, etc.
2. By moving the roller away from the cutting shaft (*Fig. 7*), a coarser mulch is produced, requiring more H.P. In this case, we suggest closing the hatch to mulch prunings.
3. For more precise work and performance, we recommend spending 5 minutes adjusting your shredder for the job, this can be done according to the previous recommendations.
4. The roller scraper can be removed when cutting grass, because close positioning of the roller to the cutting shaft permits the hammers to act as a roller cleaning device.

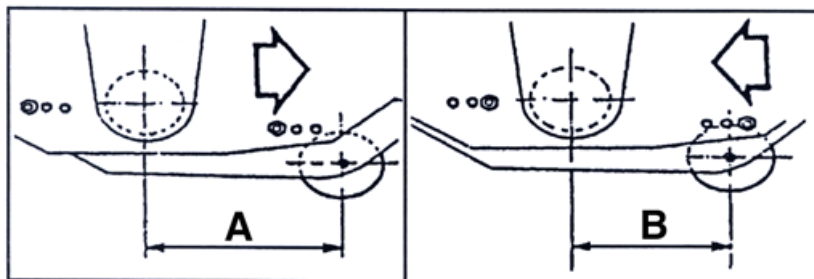


Fig. 7

DRIVE BELT TENSION ADJUSTMENT

1. Check belt tension before each use (*Fig. 8*). The tension is correct when you can depress one belt 1 cm ($3/8$ ") between the two pulleys. It is possible for you to insert a tool through the belt cover (*Fig. 9*), with shredder stopped, to check the tension.
2. To adjust the belt tension, loosen bolts 1, 2, 3 & 4 and locknut 6 (*Fig. 9*). To adjust tension, move bolt 5. Do not forget to tighten all bolts after correct belt tension is achieved. If a belt requires replacement, replace all other belts as well.

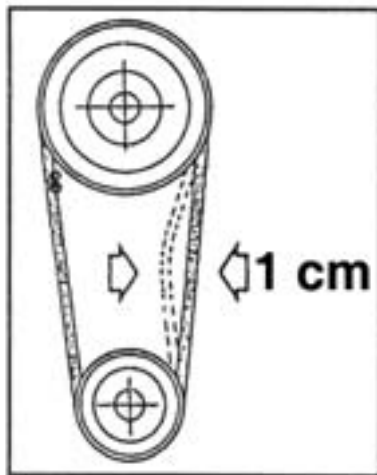


Fig. 8

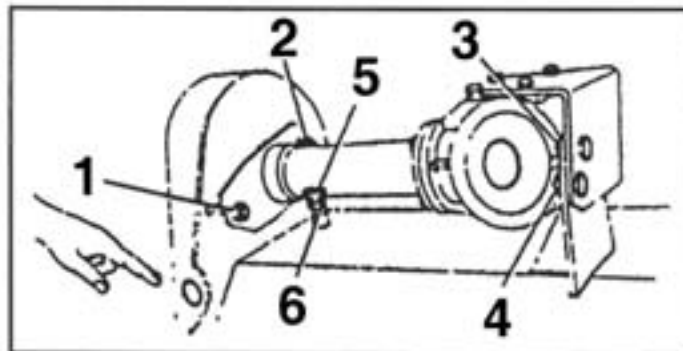


Fig. 9

TROUBLESHOOTING

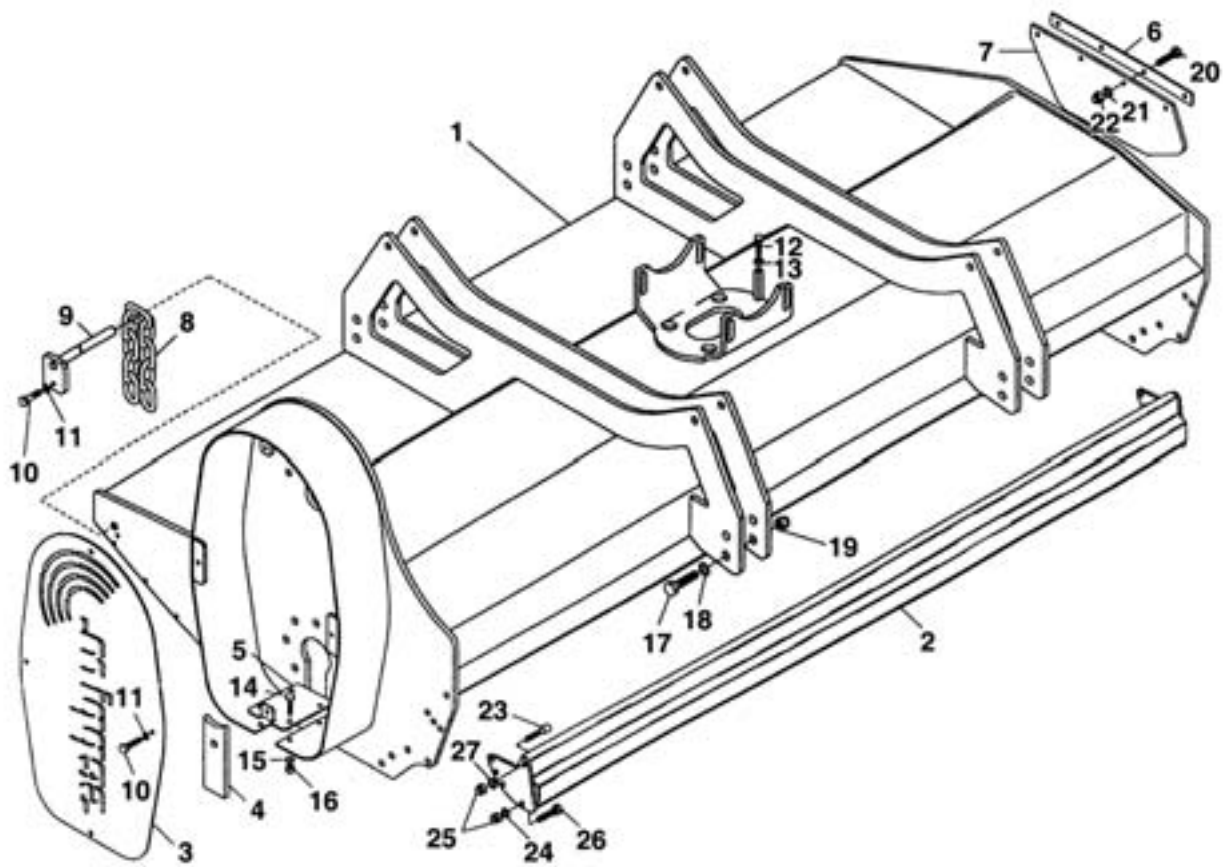
1. Cutting shaft does not rotate properly:
 - a. Tighten drive belts to correct tension (*see page 8*).
 - b. Replace belts if they no longer can be adjusted properly.
2. Shredder vibrates:
 - a. Check for loose or missing hammers or bolts.
 - b. Check for hammers that are unevenly worn. If one or more hammers is badly worn, replace all the hammers the first time. Keep the hammers that are in good shape for future replacement in worn series of hammers. For example: when replacing a worn hammer, replace it with a hammer of similar shape and weight. This will insure a balanced and vibration free cutting.
3. If the cutting shaft becomes jammed, reverse the rotation of the shaft to loosen and release the obstruction.
4. If the hammer mounting ears break off, they must be welded back in their exact position, otherwise the cutting shaft will be unbalanced.
5. If you have any questions or problems, it is always best to contact your dealer immediately.
6. When ordering spare parts, you must contact your authorized Gearmore dealer for original replacement parts. When doing so, please include the following information:
 - a. Model Number
 - b. Serial Number

SAFETY PRECAUTIONS

1. All adjustments, inspections and repairs must be made with tractor and shredder completely stopped.
 - a. When the shredder is in operation, make sure that there is no one near the flying debris from the shredder, to prevent the possibility of serious injuries.
 - b. **ALWAYS** keep hands and feet away from a shredder that is in operation.
 - c. Check that all guards and safety features are in place and in good operating condition.
2. While mowing, take the necessary precautions to insure operator's and others safety.
3. **DO NOT** make height adjustment using only the top link. This will cause flying debris to come out the front of the shredder and toward the operator. Use the roller adjustment.

We thank you again for your choice of shredders and we remind you that the safety points outlined in this manual will help you do your work in a safe and efficient manner.

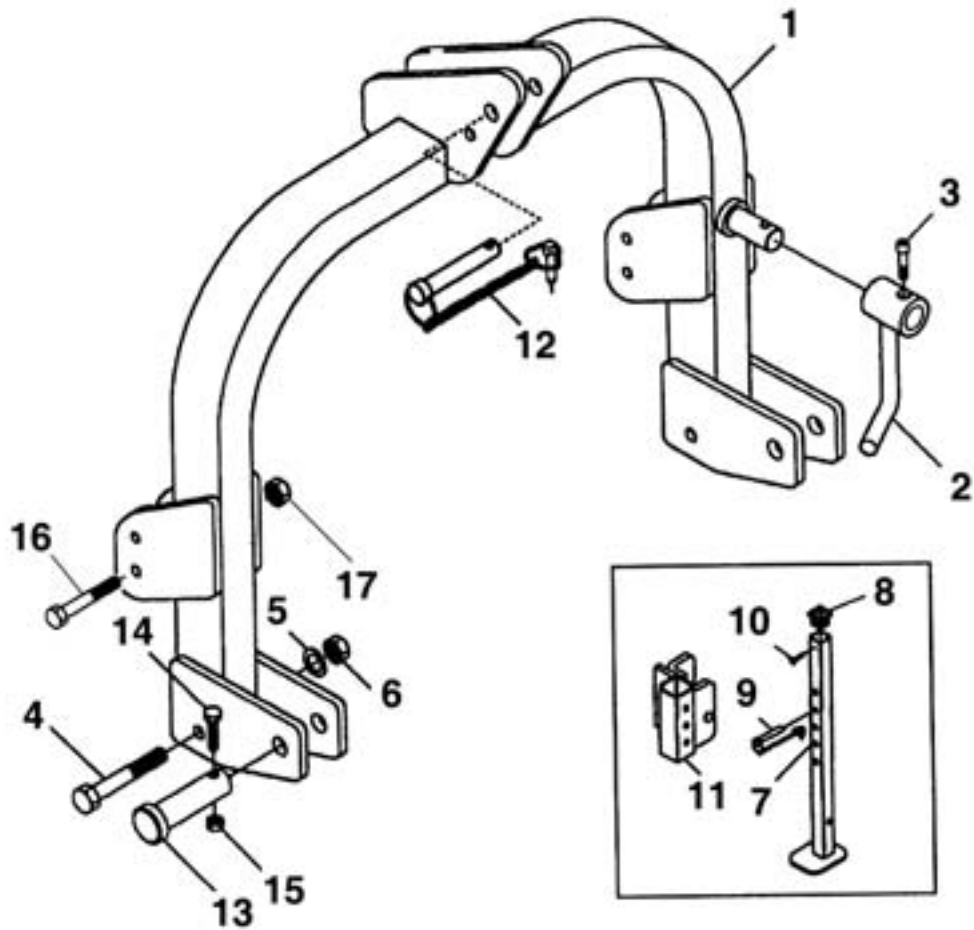
GHF DECK ASSEMBLY



GHF DECK ASSEMBLY

<u>REF#</u>	<u>QTY.</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>
1	1	14301033	Deck Frame GHF90
1	1	14301034	Deck Frame GHF100
1	1	14301035	Deck Frame GHF110
1	1	14301036	Deck Frame GHF120
2	1	13008021	Grass Hatch GHF90
2	1	13008022	Grass Hatch GHF100
2	1	13008023	Grass Hatch GHF110
2	1	13008024	Grass Hatch GHF120
3	1	14310001	Belt Cover Plate
4	1	14301040	Plate
5	1	14310003	Plate
6	1	14310007	Support Plate
7	1	14310006	Rubber Shield
8	As Req'd	14310004	Deflector Chain
9	1	19410014	Rod, Deflector Chain
10	5	96607521	Bolt M10 x 20
11	5	97494931	Lock Washer
12	1	96601321	Bolt M10 x 60
13	1	96979671	Lock Nut M1
14	4	96607621	Bolt M10 x 25
15	4	97095111	Washer
16	4	97971821	Lock Nut M10
17	12	96617221	Bolt M20 x 50
18	12	97096011	Washer 21 x 37
19	12	97972821	Lock Nut M20
20	4	96605921	Bolt M8 x 40
21	4	97494831	Lock Washer
22	4	97971721	Lock Nut M8
23	2	96695721	Allen Head Bolt M14 x 40
24	4	97495131	Lock Washer
25	6	97972321	Lock Nut M14
26	4	96612421	Bolt M14 x 40
27	2	97095511	Washer

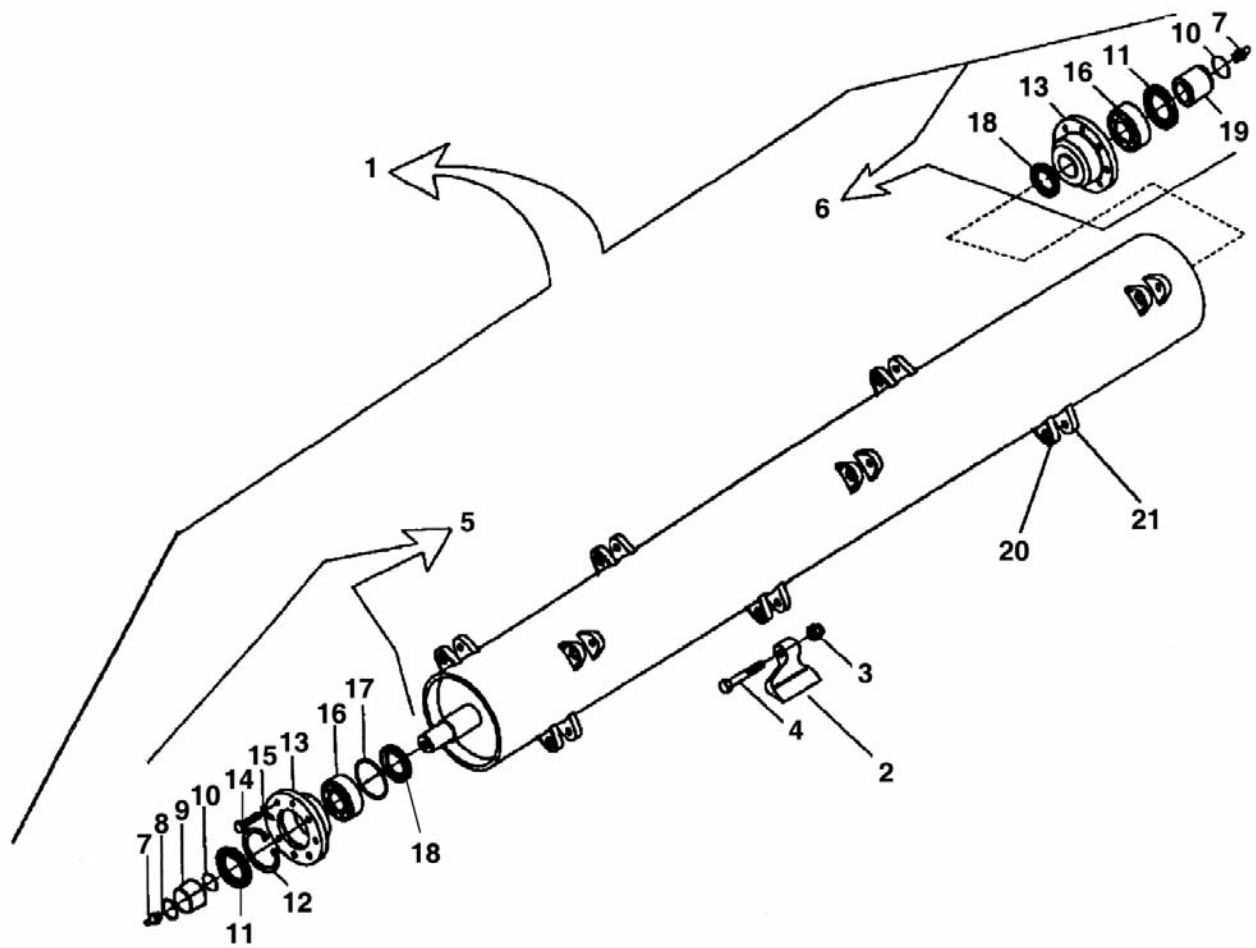
GHF A-FRAME ASSEMBLY



GRF A-FRAME ASSEMBLY

<u>REF#</u>	<u>QTY.</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>
1	1	13004088	A-Frame
2	1	19704010	Support, P.T.O.
3	1	96689323	Bolt M6 x 25
4	2	96618421	Bolt M20 x 150
5	2	97096011	Washer
6	2	97972821	Lock Nut
7	1	14311003	Stand
8	1	14311001	Cap, Plastic
9	1	14311010	Pin w/Chain
10	1	97486611	Bolt M6.3 x 19
11	1	14311006	Support
12	1	19404015	Pin w/Chain
13	2	19704013	Lift Pin
14	2	96601821	Bolt M10 x 45
15	2	97971821	Lock Nut
16	2	96619221	Bolt M16 x 45
17	2	97972521	Lock Nut

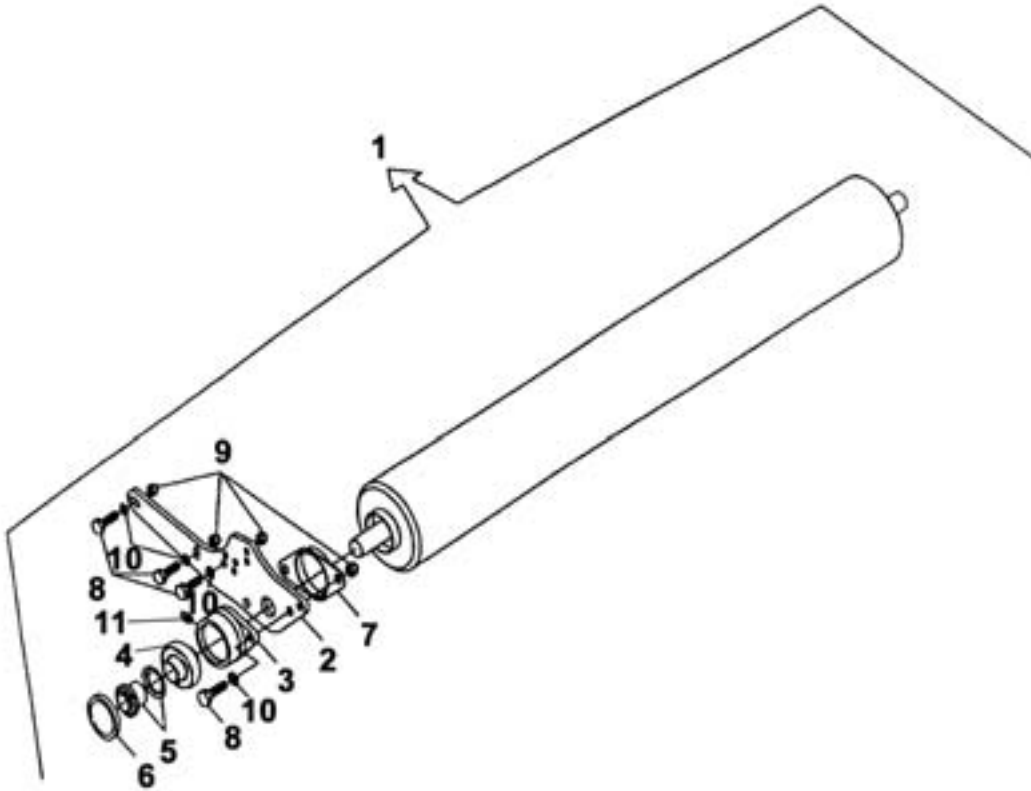
GHF ROTOR SHAFT ASSEMBLY



GHF ROTOR SHAFT ASSEMBLY

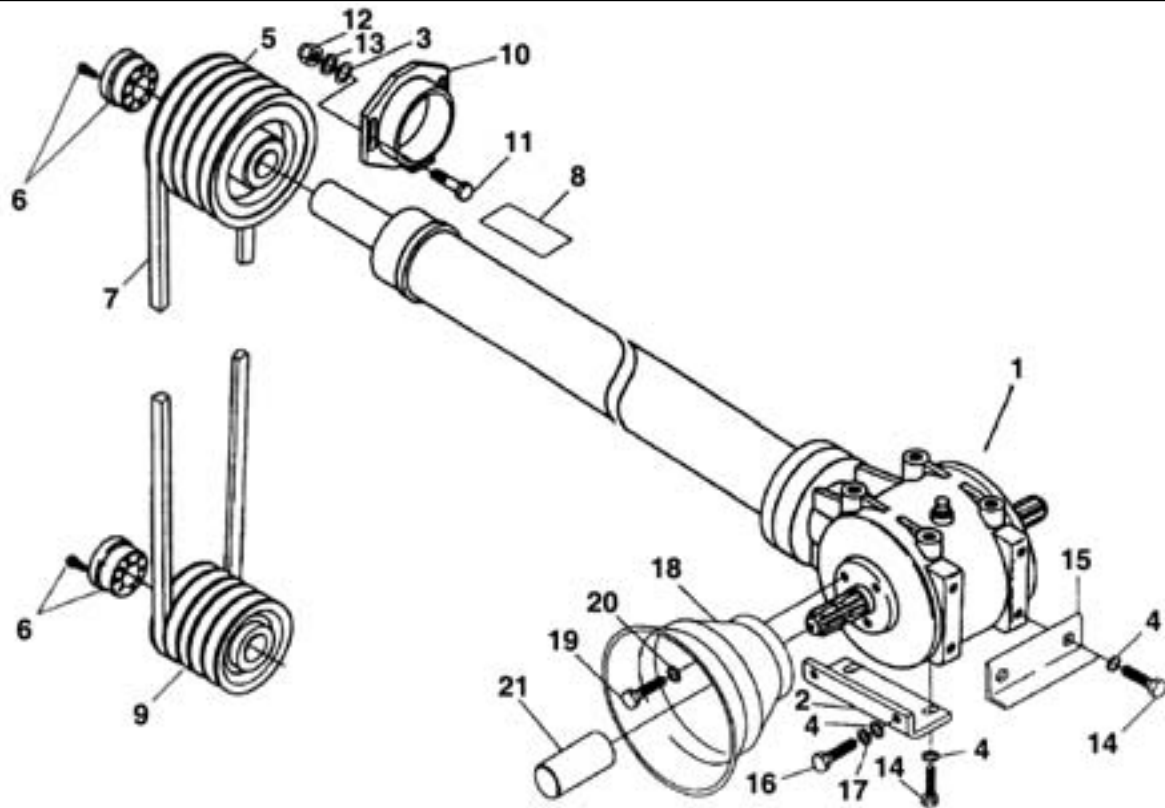
<u>REF#</u>	<u>QTY.</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>
1	1	14302028	Complete Rotor GHF90
1	1	14302029	Complete Rotor GHF100
1	1	14302030	Complete Rotor GHF110
1	1	14302031	Complete Rotor GHF120
2	As Req'd	48020002	Hammer Knife
3	As Req'd	13002076	Special Lock Nut M16
4	As Req'd	13002075	Bolt M16 x 1.8 x90
5	1	19702057	Bearing Support Assy LH
6	1	19702058	Bearing Support Assy RH
7	2	97036711	Grease Zerk M8
8	1	96868076	Circlip 55 x 2
9	1	19702056	Spacer
10	2	97284280	O-Ring
11	2	80X120X13	Oil Seal 80 x 120 x 13
12	1	96876276	Circlip 120 x 4
13	2	19702054	Support Hub
14	16	96615021	Bolt M16 x 60
15	16	97495231	Lock Washer
16	2	22311	Bearing
17	1	98048716	Spacer 100 x 120 x 3
18	2	65X100X12	Oil Seal
19	1	19702055	Spacer
20	1	14302002	Hex Flail Ear
21	1	14302001	Flail Ear

GHF ROLLER ASSEMBLY



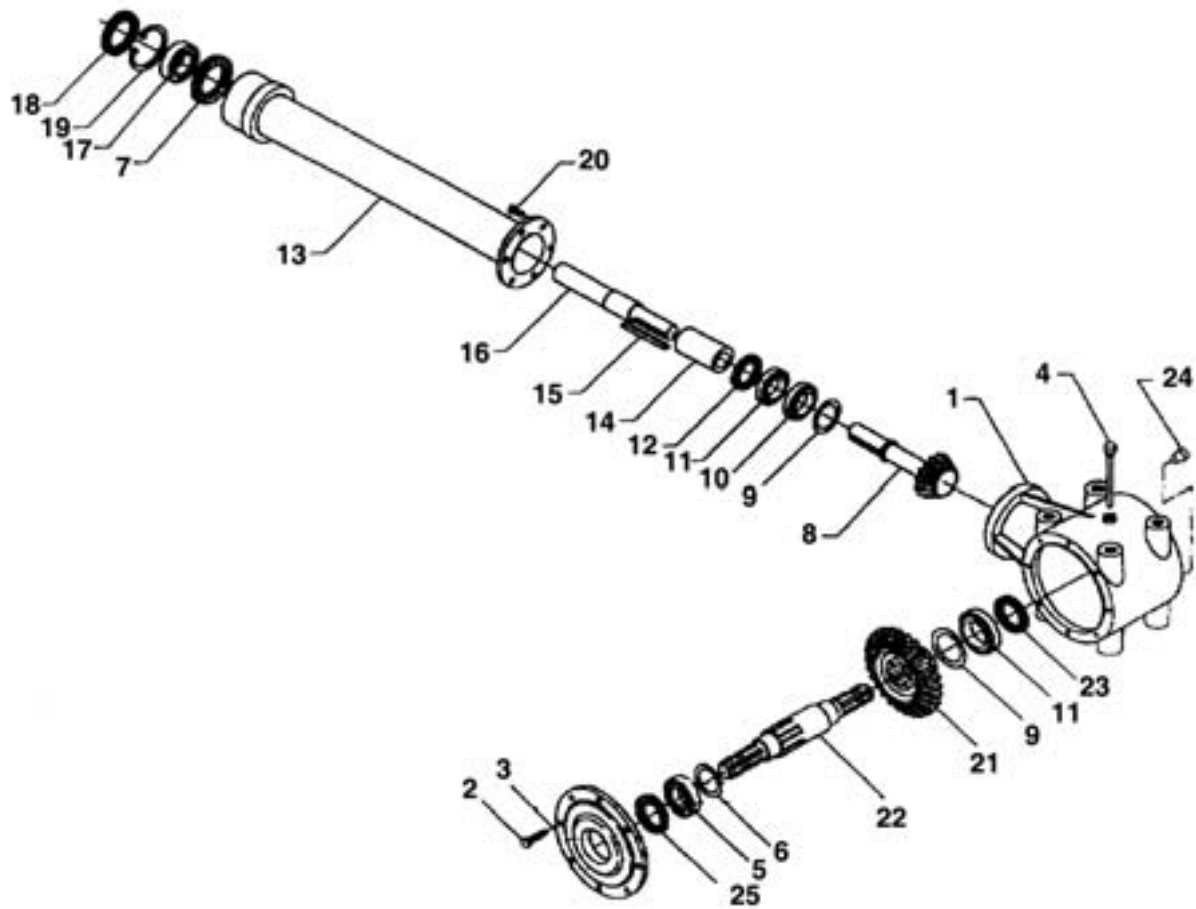
<u>REF#</u>	<u>QTY.</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>
1	1	14305002	Complete Roller Assy. GHF90
1	1	14305003	Complete Roller Assy. GHF100
1	1	14305004	Complete Roller Assy. GHF110
1	1	14305005	Complete Roller Assy. GHF120
2	2	13005071	Roller Support
3	2	14305028	Bearing Hub Support
4	2	UK209	Bearing
5	2	14305043	Nut H309
6	2	14310013	Bearing Cover
7	2	14305024	Flange
8	8	96602921	Bolt M18 x 55
9	8	97972921	Lock Nut M18
10	8	97095911	Washer
11	2	97036611	Grease Zerk M6

GHF DRIVE ASSEMBLY



<u>REF#</u>	<u>QTY.</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>
1	1	19703010	Gearbox Assy, 540 RPM (no ext. shaft)
1	1	19703009	Gearbox Assy, 1000 RPM (no ext. shaft)
2	2	19703017	Support Bracket
3	2	97095511	Washer 15 x 28
4	10	97095711	Washer 17 x 30
5	1	13003015	Pulley SPB250
6	2	13003006	Taper Lock 45 x 80
7	5	19603001	Belt SPBX1600
8	1	13011003	540 RPM Plate
9	1	13103012	Pulley
10	1	13103006	Support, Extension Tube
11	2	96612521	Bolt M14 x 45
12	2	97038721	Lock Nut M14
13	2	97495131	Lock Washer
14	6	96614521	Bolt M16 x 35
15	1	19703016	Support Plate
16	4	96614621	Bolt M16 x 40
17	4	97495231	Lock Washer
18	1	14310012	Safety Cone
19	3	96605321	Bolt M8 x 12
20	3	97094911	Washer
21	1	13010027	Cover, Input Shaft

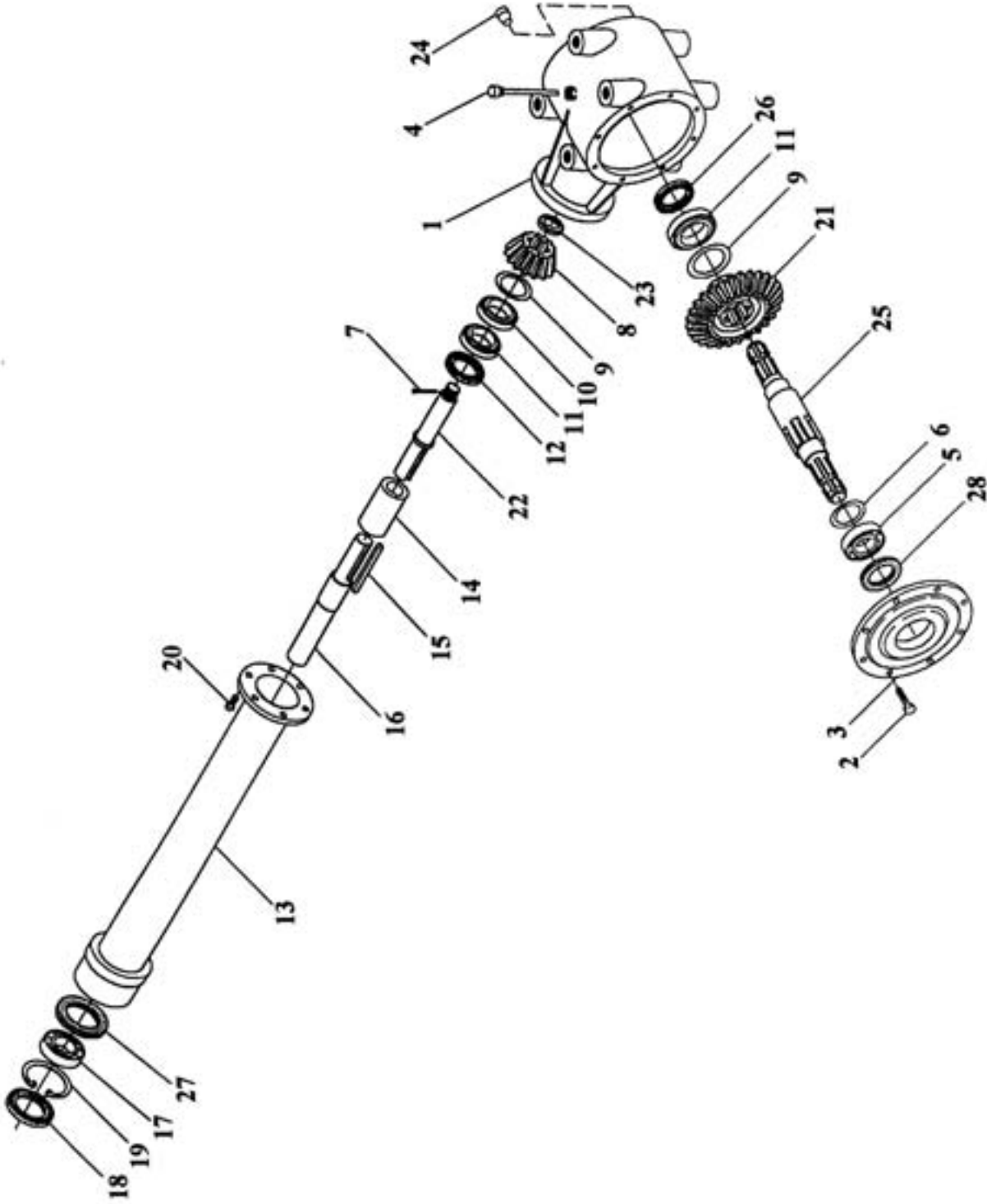
GHF 540 RPM GEARBOX ASSEMBLY



GHF 540 RPM GEARBOX ASSEMBLY

<u>REF#</u>	<u>QTY.</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>
1	1	48030001	Gearbox Housing
2	8	96607621	Bolt M10 x 25
3	1	48030495	Cover, Input Shaft
4	1	48030003	Oil Lever Stick
5	1	6307-2RS	Bearing
6	1	48030005	Spacer 35.3 x 48
7	1	48X72X10	Oil Seal
8	1	48030484	Pinion Shaft Z12
9	1	48030008	Spacer 40.3 x 51.5
10	1	30308	Bearing
11	2	30208	Bearing
12	1	40X80X10	Oil Seal
13	1	48030500	Extension Tube GHF90
13	1	48030501	Extension Tube GHF100
13	1	48030502	Extension Tube GHF110
13	1	48030503	Extension Tube GHF120
14	1	48030013	Bushing
15	1	48030363	Key
16	1	48030511	Extension Shaft GHF90
16	1	48030512	Extension Shaft GHF100
16	1	48030513	Extension Shaft GHF110
16	1	48030514	Extension Shaft GHF120
17	1	22209	Bearing
18	1	45X85X10	Oil Seal
19	1	96874973	Circlip 85 x 3
20	6	96693723	Bolt M12 x 25
21	1	48030365	Bevel Gear Z36
22	1	48030521	Input Shaft
23	1	35X72X10	Oil Seal
24	1	48030020	Plug
25	1	40X72X10	Oil Seal

GHF 1000 RPM GEARBOX

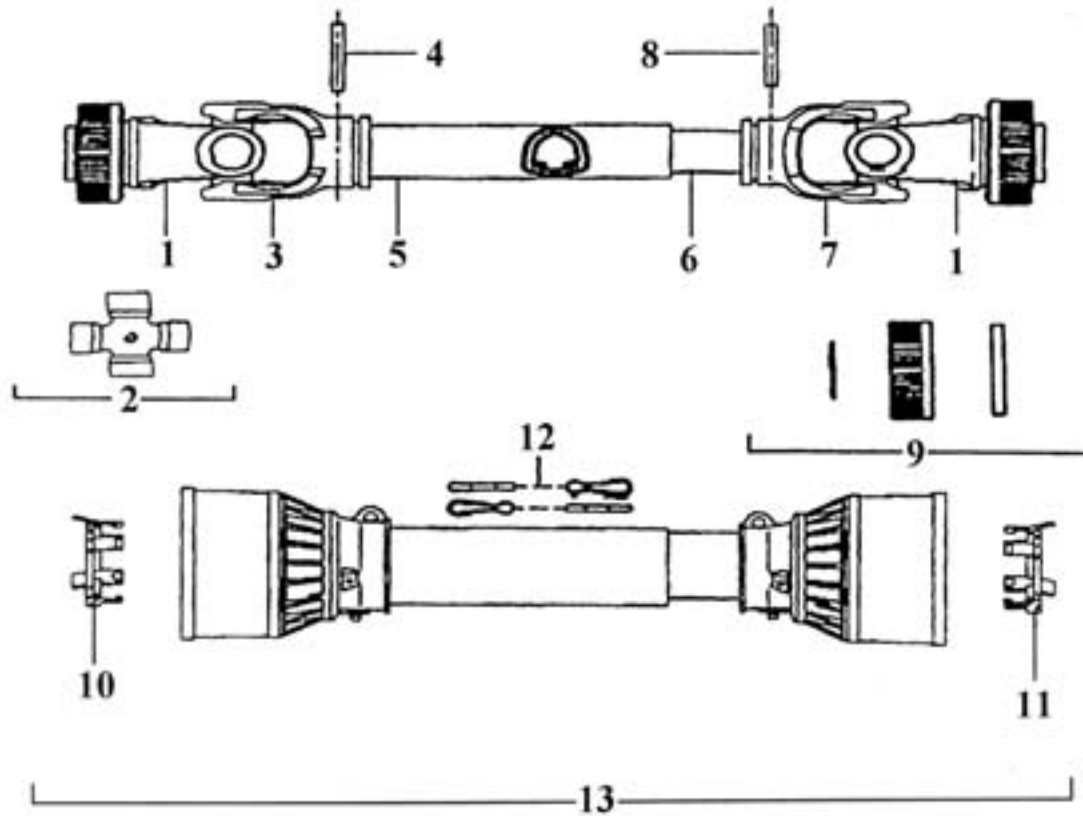


GHF 1000 RPM GEARBOX

<u>REF#</u>	<u>QTY.</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>
1	1	48030001	Housing
2	8	96607621	Bolt M10 x 25
3	1	48030495	Cover
4	1	48030003	Oil Dip Stick
5	1	6307-2RS	Bearing
6	1	48030005	Spacer 35.3 x 48
7	1	96859001	Cotter Pin
8	1	48030485	Pinion Gear Z16
9	1	48030008	Spacer 40.3 x 51.5
10	1	30308	Bearing
11	2	30208	Bearing
12	1	40X80X10	Oil Seal
13			<i>Contact Gearmore</i>
14	1	48030013	Coupler
15	1	48030363	Key
16			<i>Contact Gearmore</i>
17	1	22209	Bearing
18	1	45X85X10	Oil Seal
19	1	96874976	Snap Ring 85 x 3
20	6	96693723	Bolt M12 x 25
21	1	48030493	Bevel Gear Z26
22	1	48030019	Shaft
23	1	48030006	Nut M30 x 1.5
24	1	48030020	Plug
25	1	48030521	Input Shaft
26	1	35X72X10	Oil Seal
27	1	48X72X10	Oil Seal
28	1	40X72X10	Oil Seal

GHF PTO SHAFT

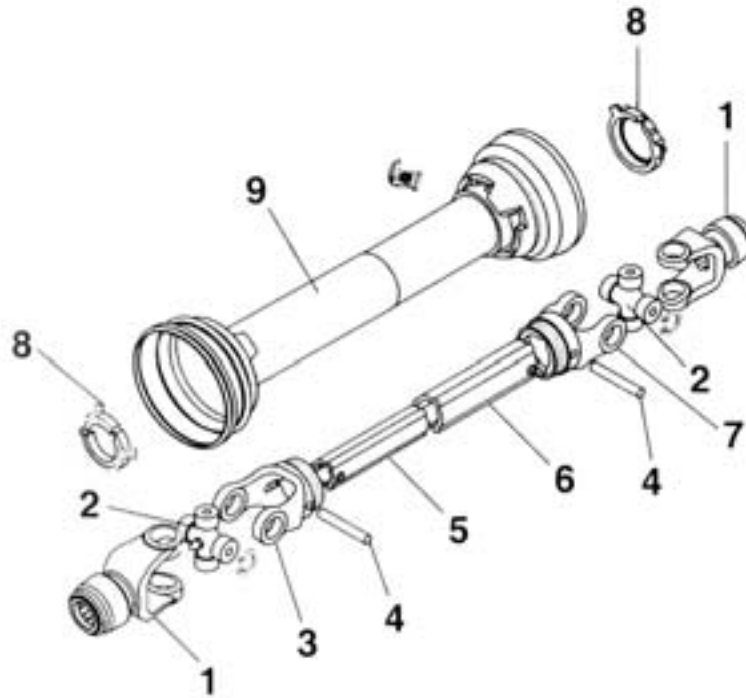
Bondioli & Pavesi



<u>REF#</u>	<u>QTY.</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>
1	2	572080351	RS Yoke 1-3/8 6 Spline
1	1	572083751	RS Yoke 1-3/8 21 Spline (Optional)
2	2	41208	#8 Cross Kit
3	1	204086860	Outer Tube Yoke
4	1	341054000	Roll Pin O.T.
5	1	225730860	Outer Drive Tube
6	1	225690860	Inner Drive Tube
7	1	204086861	Inner Tube Yoke
8	1	341055000	Roll Pin I.T.
9	2	240003551	RS Collar Kit
10	1	255080005	Shield Bearing Outer
11	1	255080006	Shield Bearing Inner
12	2	252000005	Safety Chain
13	1	5F08086F6	Complete Shield w/Bearings
	1	7108086T07S07	Complete Driveline Assembly

GHF PTO SHAFT

Weasler



<u>REF#</u>	<u>QTY.</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>
1	2	110-8606	Yoke Auto Lock
1	-	400.724621	Yoke Auto Lock
2	2	201-6806	Cross and Bearing Kit
3	1	410.800245	Yoke Inner Tube
4	2	795.1290	Spring Pin 12 x 90
5	1	710.554	Inner Tube
6	1	710.634	Outer Tube
7	1	410.800263	Yoke Outer Tube
8	2	961-4589	Bearing Kit
9	1	902-4560	Shield Kit
	1	13006500	Safety Chain Kit (Not Shown)
	1	ZB8086638	Complete Driveline Assembly 1-3/8" 6 Spline
	1	ZB80863821	Complete Driveline Assembly 1-3/8" 21 Spline

Please specify driveline manufacturer when ordering parts.

LIMITED WARRANTY



GEARMORE, INC., warrants each new Gearmore product to be free from defects in material and workmanship for a period of twelve (12) months from date of purchase to the original purchaser. This warranty shall not apply to implements or parts that have been subject to misuse, negligence, accident, or that have been altered in any way.

Our obligation shall be limited to repairing or replacement of any part, provided that such part is returned within thirty (30) days from date of failure to Gearmore through the dealer from whom the purchase was made, transportation charges prepaid.

This warranty shall not be interpreted to render us liable for injury or damages of any kind or nature, direct, consequential or contingent, to person or property. This warranty does not extend to loss of crops, loss because of delay in harvesting or any other expenses, for any other reasons.

Gearmore in no way warrants engines, tires, or other trade accessories, since these items are warranted separately by these respective manufacturers.

Gearmore reserves the right to make improvements in design or changes in specification at any time, without incurring any obligations to owners or units previously sold.

GEARMORE, INC.
13477 Benson Ave.
Chino, CA 91710

Always refer to and heed machine operating warning decals on machine.

The serial number of this product is stored in our computer database, thus submitting a warranty registration card is not required.