LTF SERIES

OPERATION ** MAINTENANCE ** SET-UP INSTRUCTIONS

Model Number	Frame Size	Cutting Width	No. of Discs	Disc Thickness	Disc Size	Scrapers	Horsepower	Unit Weight	Hitch type
LTF100-1618	Small	6'	16	1/4"	18"	Optional	32-47	1600lbs	I and II Three Point Hitch
LTF100-2018	Small	7' 3"	20	1/4"	18"	Optional	41-52	1750lbs	I and II Three Point Hitch
LTF100B-2022	Large	7' 3"	20	1/4"	22"	Standard	60	2450lbs	II and III Three Point Hitch
LTF100B-2422	Large	8' 7"	24	1/4"	22"	Standard	60	2700lbs	II and III Three Point Hitch
LTF100B-2822	Large	10' 2"	28	1/4"	22"	Standard	82	2900lbs	II and III Three Point Hitch

AMCO MANUFACTURING COMPANY

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Rev. 2/29/12

To The Purchaser

The care you give your new AMCO LTF disk harrow will greatly determine the satisfaction and service you obtain. By observing the instructions and suggestions in this manual, your AMCO LTF disk harrow will serve you well for many years.

Your AMCO dealer stocks AMCO replacement parts, which are manufactured with the same precision and skill as the original equipment. For best performance and longer life, use only AMCO replacement parts. Your dealer's factory trained staff is kept fully informed of the most efficient methods of servicing your AMCO equipment and they are ready to assist you.

Should you sell you AMCO LTF disk harrow, you should pass this manual to the new owner.

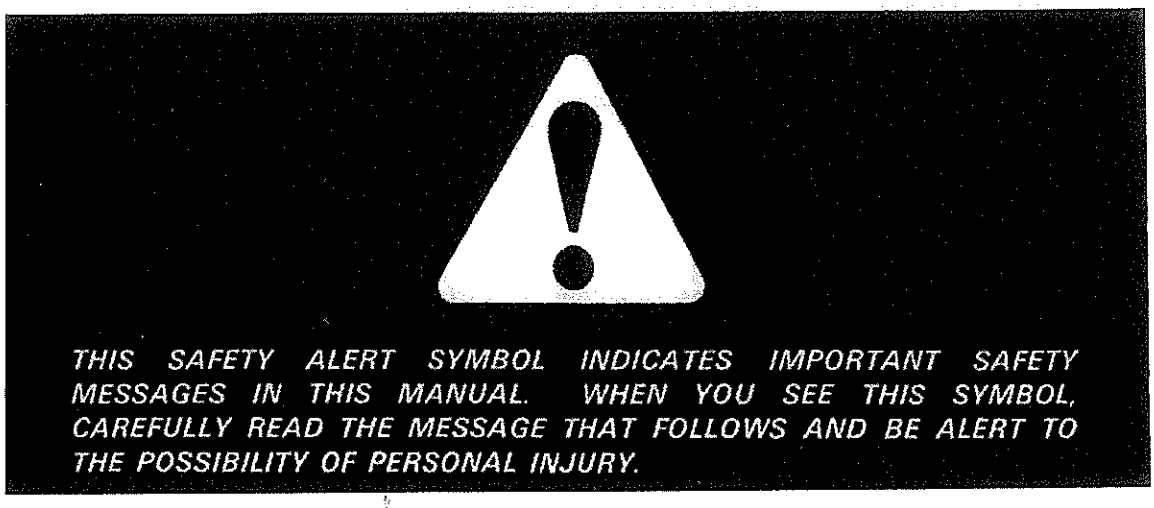
If you should require additional assistance or information, contact your AMCO dealer.

OSHA regulations require that as a farm employer you meet certain safety requirements. Become familiar with and comply with these requirements. Be certain that anyone who operates this equipment understands all safety related items. If your AMCO LTF disk is repainted, be certain that all decals are replaced.

Look for this symbol to point out important safety precautions. It means – Attention! Become alert! Your safety is involved.

To assure efficient and prompt service, please provide the model number and serial number of your AMCO disk harrow in all correspondence or contacts. Remember, the right and left hand sides of the harrow are determined by standing at the rear of the harrow and facing the direction of travel.

Model Number:_____ Serial Number:_____



Be aware of signal words

Signal words indicate a degree or level of hazard seriousness.

Danger

Danger: Indicates an imminently hazardous situation that, if not avoided, will result in death or serious injury. This signal word is to be limited to the most extreme situations, typically for machine components that, for functional purposes, cannot be guarded.

Warning

Warning: Indicates a potentially hazardous situation that, if not avoided, could result in death or serious injury, and includes hazards that are exposed when guards are removed. It may also be used to alert against unsafe practices.

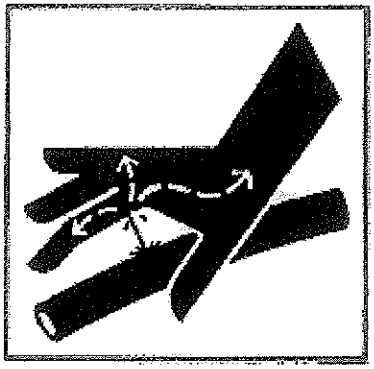
Caution

Caution: Indicates a potentially hazardous situation that, if not avoided, may result in minor or moderate injury. It may also be used to alert against unsafe practices.

Warning: Never stand between the tractor and disk harrow when hitching unless all controls are in neutral and the brakes are locked.

Warning: Never clean, adjust or lubricate a disk harrow that is in motion.

Danger: Stay out from underneath wing gangs when folding or unfolding the wings



Caution: Escaping fluid under pressure can penetrate the skin causing serious injury. Avoid the hazard by relieving pressure before disconnecting hydraulic lines. Use a piece of paper or cardboard, NOT BODY PARTS, to check for suspected leaks. Wear protective gloves and safety glasses or goggles when working with hydraulic systems. If an accident occurs, see a doctor immediately. Any fluid injected into the skin must be surgically removed within a few hours or gangrene may result.

Warning: All hydraulically or mechanically elevated components must be blocked to prevent accidental lowering or must be lowered to the ground when making adjustments or when the equipment is idle.

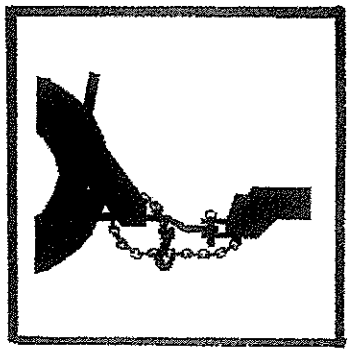
Caution: Lower or block the disk harrow so it will not roll when disconnected from the tractor.

Caution: When working on disk harrows, care should be used in handling or tightening bolts near disk blades to avoid injury.

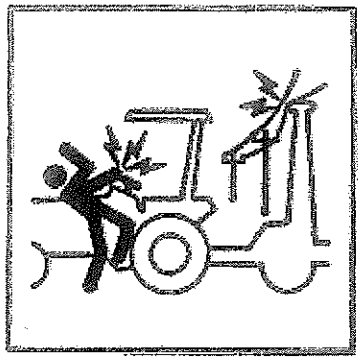
Danger: Never allow anyone to ride on an implement at any time. Allowing a person to ride on the implement can cause serious injury or death.

Caution: Always install the Transport Bars and Wing Lock Pins before transporting the disk.

Caution: Always lock tractor drawbar so it will be stationary when transporting the disk.



Warning: Use a safety chain to help control disk should it separate from tractor.



Warning: Check overhead clearance when transporting machinery under electrical lines. Check disk transport height; refer to specifications on page 3.

Caution: When transporting machinery over public roads, comply with your local and state laws regarding length, width, height and lighting

Caution: When transporting machinery over public roads, the SMV emblem must be used, for protection of tractor and motor vehicle operators

Caution: When transporting machinery over public roads, it is the responsibility of the operator to provide lighting and reflectors on the implement and tractor in accordance with local and state laws.

Storage:

Proper storage will add to the life of your disk harrow, and assure its being in good condition for the next season. The following storage procedures are recommended.

Wash the disk to remove all foreign matter and lubricate all grease fittings. (See Lubrication Instructions)

Carefully rotate each disk gang to check for worn or damaged disk blades, scraper blades, bent gang axles, damaged bearings or other parts that need repair.

Check all reflectors, lights, warning decals, safety chain and SMV emblem. These items should be replaced if damaged.

Tighten all loose bolts and repair or replace any worn or damaged parts. Check torque chart in back of manual for torque recommendations.

Repaint the harrow where the original paint is worn or damaged.

Coat the disk blades and all threaded rods with a rust preventative.

Retract the hydraulic cylinders to protect the cylinder rods. Coat all exposed cylinder rods with a rust preventative.

If possible store in a dry place with the gangs resting on boards to remove weight from the tires.

Warning: All hydraulically or mechanically elevated components must be blocked to prevent accidental lowering or must be lowered to the ground when making adjustments or when the equipment is idle.

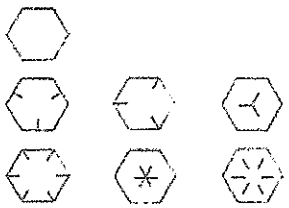
Caution: Lower or block the disk harrow so it will not roll when disconnected from the tractor.

Caution: When working on disk harrows, care should be used in handling or tightening bolts near disk blades to avoid injury.

General Torque Specification Table

All bolts should be tightened to the recommended torques shown in the General Torque Specification Table.
These torque vales apply to fasteners as received from the supplier.
These torque values do not apply if special graphite greases or other extreme pressure lubricants are used.

Grade 2
Grade 5
Grade 8



Bolt Size	Grade 2	Grade 5	Grade 8
1/4 - 20	5	7	11
5/16 - 18	10	15	22
3/8 - 16	25	35	50
7/16 - 14	35	55	80
1/2 - 13	55	85	125
9/16 - 12	75	125	175
5/8 - 11	105	170	235
3/4 - 10	185	305	425
7/8 - 9	170	445	690
1 - 8	260	670	1030
1 1/8 - 7	365	900	1460
1 1/4 - 7	515	1275	2060
1 1/2 - 6	900	2150	3500

Note: *Grade 8 or thick nuts should be used with Grade 8 bolts.

Lubrication:

Gang Bearings: Your AMCO disk is equipped with greasable Protect-O-Shield ball bearings. The grease fitting is located on the rear of the bearing housing. The bearings should be greased at the start of each season, the end of each season and twice weekly or every 25 hours while the disk is in use. More frequent greasing is recommended when working in sandy or wet conditions.

For best results, the gangs should be greased at the end of the work-day while the bearings are warm. After greasing, the gangs should be rotated to evenly distribute the grease.

DESCRIPTION

The AMCO LTF is a double offset tandem disk. This means it will cut the entire disk path and not leave a center balk like the tandem disk. If the disk is not cutting the entire path adjust the front gang to become closer to the center of the disk.

OPERATION

The AMCO LTF is usually assembled in full set. This means that it has the steepest gang angles. This makes the disk the most aggressive. If your tractor has problems pulling the disk, you can reduce the gang angles of the disk gangs. Note: All four gangs should be set in the same setting for best results. Reduction of the gang angles reduces the aggressiveness of the disc resulting in less horsepower required from the tractor. It also reduces how deep the blades will dig in. The least setting of the gang angle will result in a harrow action.

The AMCO LTF is designed to be as heavy as the hydraulic system on the tractors' three point can lift. This weight can cause the front end of the tractor to raise up during transport. To alleviate this problem additional weight must be added to the front of the tractor.

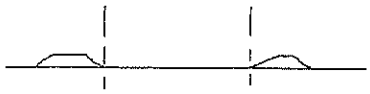
The adjustments that can be made to the AMCO LTF to change the profile of the dirt after disking are as follows:

If you have a watermelon row as pictured below:

The rear gangs are pulling more dirt towards the center than the front gangs are throwing out.

To alleviate this you must shorten the third (upper) link of your tractor. This raises the rear gangs up and lowers the front gangs down.

If you have a valley in the middle or two ridges on each side as pictured below:



The front gangs are throwing more dirt out than the rear gangs are pulling in.

To alleviate this you must lengthen the third (upper) link of your tractor. This raises the front

gangs up and lowers the rear gangs down.

The lower links of the tractor need to be level with each other and low enough to let the disk cut full depth. The speed of the tractor and the third (upper) link is the main adjustments that change the profile of he dirt after disking.

LUBRICATION

The bearings should be greased every 24 hours of operation minimum. Just a few pumps or until you see grease coming out through the gap between the Protect-O-Shield® washer and the bearing inner race. You can not blow the seals with this style bearing design. NOTE: It is highly recommended to grease the disk completely before putting it up for the season. The grease will protect the seals from contact with rain water while the disk is sitting idle.

SEEDER & DRAGBOARD

The seeder and dragboard kit adds versatility to your AMCO LTF The seeder should be cleaned and stored out of the weather when not in use. The dragboard should also be removed, especially if disk is doing primary tillage work in high obstacle conditions, or folded up on disk.

⚠ CAUTION: Do not back up with the dragboard down. This will bend or break the dragboard kit. NOTE: If fertilizer is spread with the seeder, the entire unit needs to be washed thoroughly. The seeder, disk, and dragboard kit are made of steel and the fertilizer will corrode it quickly. If you get corrosion, clean it and put some primer paint or grease on it.

You need to cut a piece of plywood to set on top of the disk when you want to use the seeder. This board serves two main purposes: 1) a safe place to stand while you are pouring seed and fertilizer into the seeder, and 2) a storage deck for bags of seed during planting. Make it so you can remove it during primary tillage work in high obstacle conditions. You can slip on the steel frame and hurt yourself in the disk gangs if you do not put a platform for loading seed into the seeder.

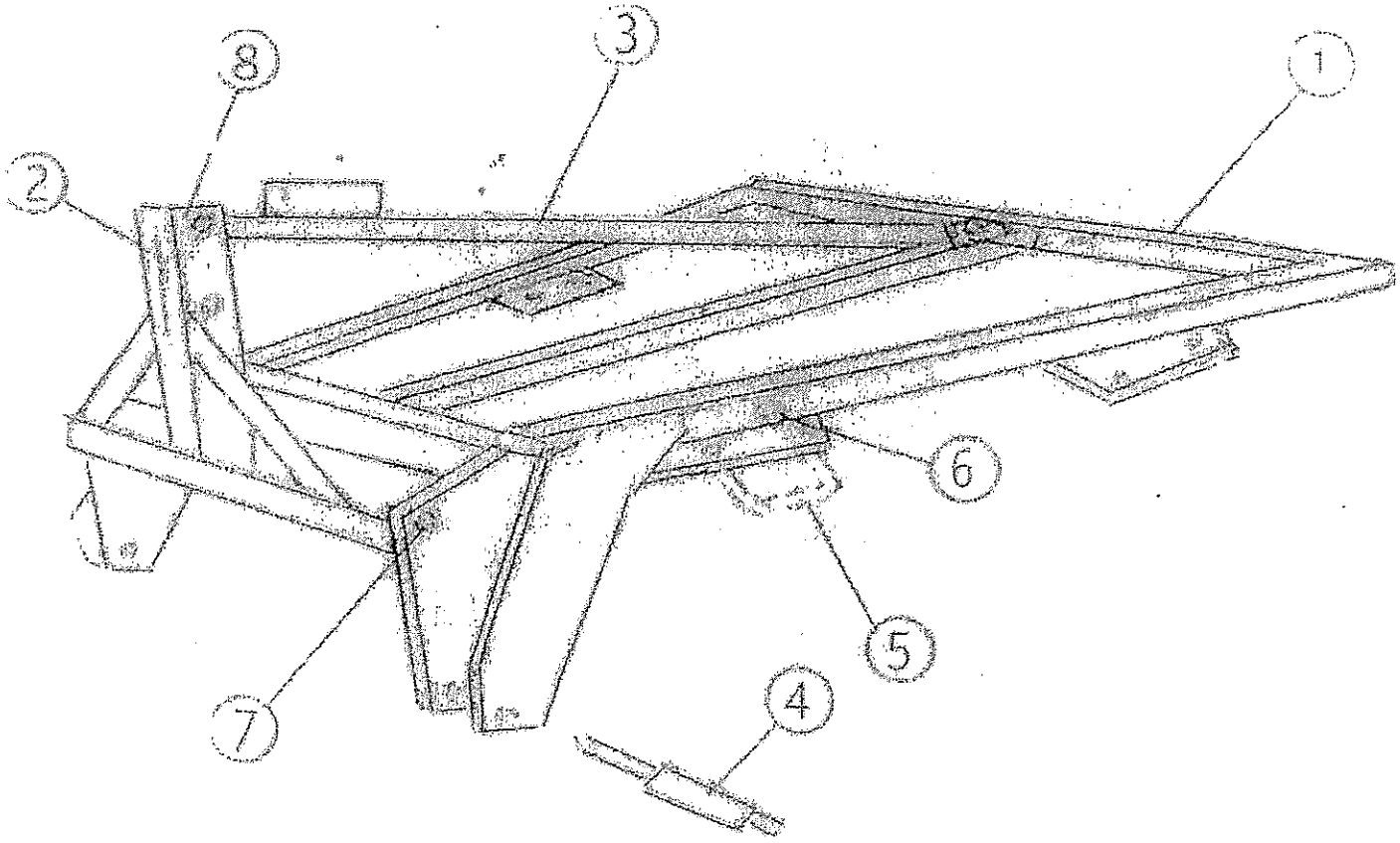
⚠ Always put disc on the ground and turn tractor off in park position before putting seed into the seeder.

The dragboard kit has multiple adjustments. These are to help you set the kit for different diameter disc blades. You can not back up the disk with the dragboard down. It will break. You can tilt the disk back with the third link, or set the dragboard to be lower than the disc blades. It is best to do a short run with the tractor to make sure you are putting out the amount of seed that is needed. Not enough seed - slow the tractor down. Too much seed - speed the tractor up. Once you have the right speed put the dragboard down and adjust it to cover the seeds.

AMCO
LTF SERIES

MAIN FRAME 6' & 7"3"

Ref. No	Part No.	Description	No. Req'd.
1	20618	Main Frame Assembly	1
2	20619	A-Frame Hitch Assembly	1
3	20605	Back Post Bar Assembly	1
4	102602	Lower Hitch Pin	2
5	7205	U-Bolt 3/4" Dia.	6
6	10300	Lock Nut 3/4" NC, PLT, Gr. B	2
7	11692	Hex Bolt 7/8" x 2" NC, PLT, Gr. 5	2
8	10113	Hex Bolt 3/4" x 4" NC, PLT, Gr. 5	2
Not Shown:			
	7397	Upper Hitch Pin 1"	1
	10317	Klik Pin 1/4"	4
	10696	Hex Bolt 3/4" x 7" NC, PLT, Gr.5	1
	10910	Roll Pin	1
	11691	Flanged Lock Nut 7/8" NC, PLT	2
	12069	Flanged Lock Nut 3/4" NC, PLT	13
	100683	Lock Pin 3/4" Dia. Hot Roll - 9-1/2" Long	1
	11716	Decal - Maintenance	1
	11741	Decal - Warning	1
	12368	Decal - LTF 100	4
	11465	Decal - AMCO	4
	12540	Reflector - Orange	2
	12541	Reflector - Red	2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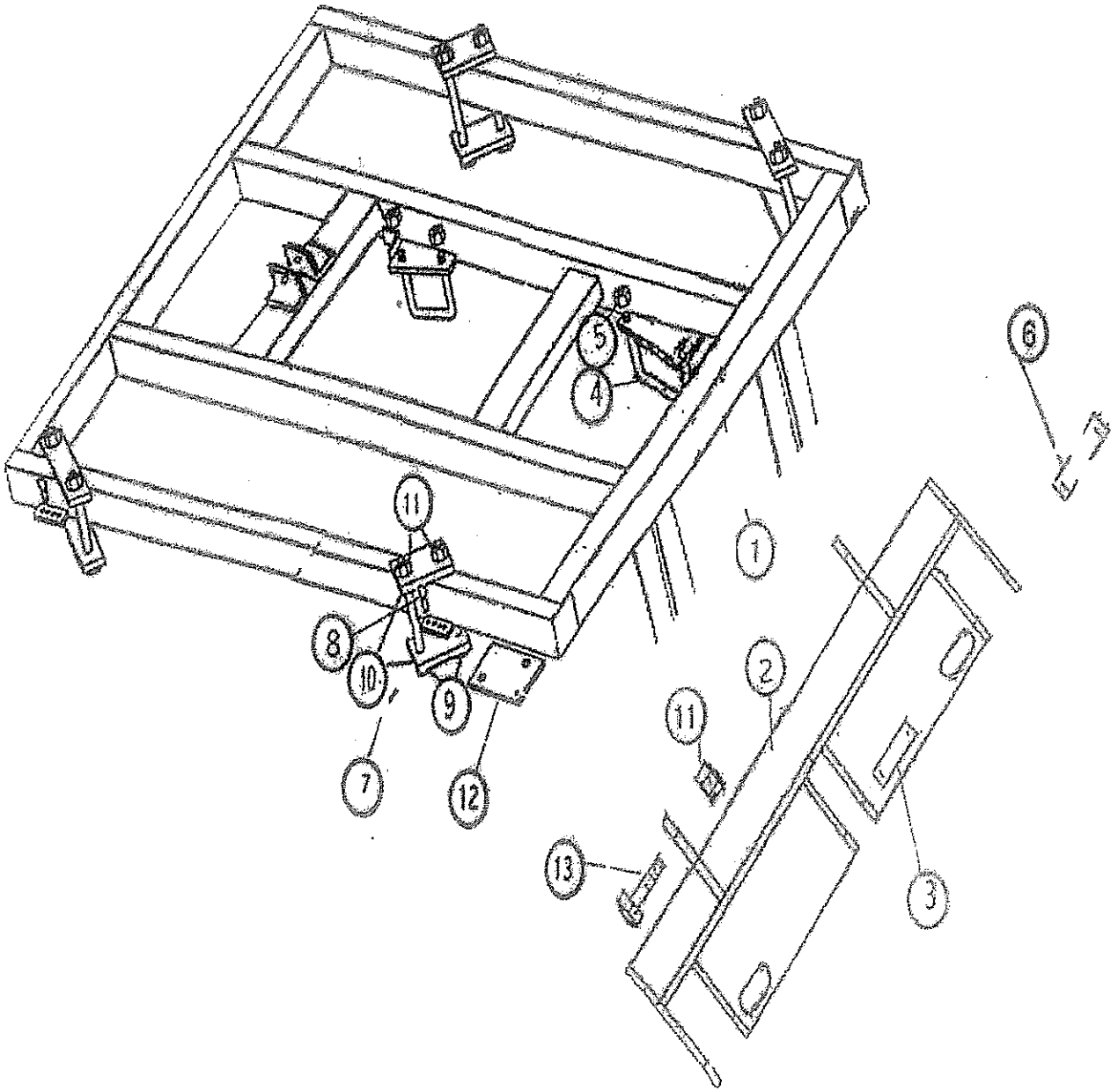
AMCO
LTF SERIES
MAIN FRAME 7'3" - 8'7" - 10'2"

Ref. No	Part No.	Description	No. Req'd.
1	20638	Main Frame Assembly	1
2	20639	A-Frame Hitch Assembly	1
3	0871	Upper Hitch Pin 1" Dia. C-1045 CF 5" Long	1
4	7205	U-Bolt 3/4" Dia. - 14" Long	4
5	10300	Lock Nut 3/4" Dia. NC, PLT, Gr. B	10
6	102558	Lower Hitch Pin - 1-1/8" Dia. C-14045, 5-13/16" Long	2
7	11967	Hair Pin Clip	4
8	101967	Set Pin 1/2" Dia. Hot Roll - 2-1/2" Long	4
9	11102	Hex Bolt 7/8" x 10" NC, PLT, Gr.2	8
10	101936	Set Bracket 3/4" x 3" Flat Bar 7-1/2" Long	8
11	10396	Lock Nut 7/8" NC, PLT, Gr. B	10
12	102000	Spacer Mount 1/4" x 5" Flat Bar 7" Long	4
13	10189	Hex Bolt 3/4" x 5" NC, PLT, Gr. 5	2
Not Shown:			
	20605	Back Post Bar (Same as #3 on Small Main Frame)	1
	10113	Hex Bolt 3/4" x 4" NC, PLT, Gr. 5	2
	10317	Klik Pin 1/4"	3
	10910	Roll Pin 5/16" x 2-1/4"	2
	11716	Decal - Maintenance	1
	11741	Decal - Warning	1
	12368	Decal - LTF 100	4
	11465	Decal - AMCO	4
	12540	Reflector - Orange	2
	12541	Reflector - Red	2

NOTE: Use this parts list after Serial # **02010001.**

See page 11 for list to use before this number.

Large Main Frame 7'3", 8'7" & 10'2"



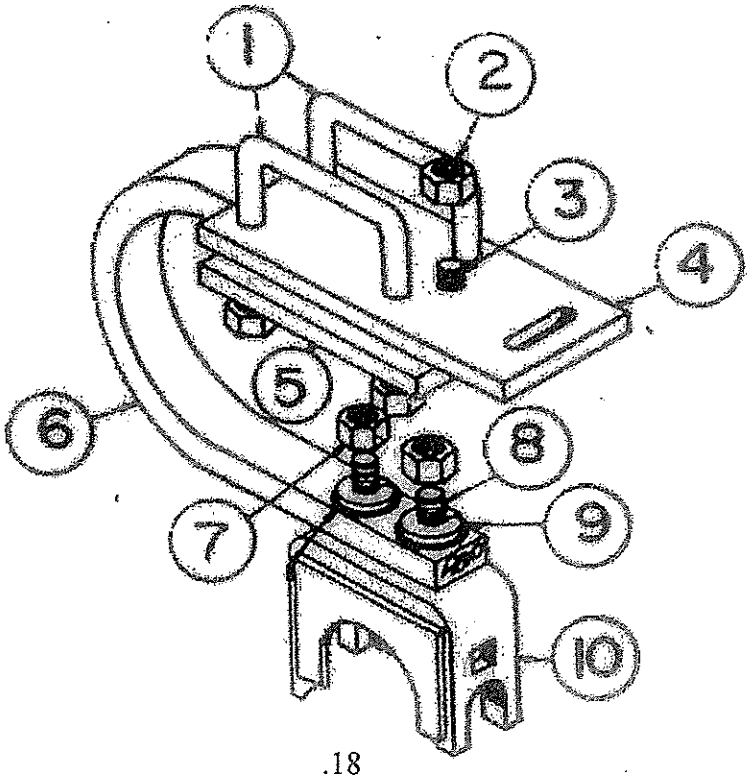
AMCO
LTF SERIES
MAIN FRAME 7'3" - 8'7" - 10'2"

Ref. No	Part No.	Description	No. Req'd.
1	20606	Main Frame Assembly	1
2	20604	A-Frame Hitch Assembly	1
3	0871	Upper Hitch Pin 1" Dia. C-1045 CF 5" Long	1
4	7205	U-Bolt 3/4" Dia. - 14" Long	4
5	10300	Lock Nut 3/4" Dia. NC, PLT, Gr. B	10
6	102558	Lower Hitch Pin - 1-1/8" Dia. C-1045, 5-13/16" Long	2
7	11967	Hair Pin Clip	4
8	101967	Set Pin 1/2" Dia. Hot Roll - 2-1/2" Long	4
9	11102	Hex Bolt 7/8" x 10" NC, PLT, GR. 2	8
10	101936	Set Bracket 3/4" x 3" Flat Bar 7-1/2" Long	8
11	10396	Lock Nut 7/8" NC, PLT, Gr. B	10
12	102000	Spacer Mount 1/4" x 5" Flat Bar 7" Long	4
13	10189	Hex Bolt 7/8" x 3" NC, PLT, Gr. 5	2
Not Shown:			
	20605	Back Post Bar (Same as #3 on Small Main Frame)	1
	10113	Hex Bolt 3/4" x 4" NC, PLT, Gr. 5	2
	10317	Klik Pin 1/4"	3
	10910	Roll Pin 5/16" x 2-1/4"	2
	11716	Decal - Maintenance	1
	11741	Decal - Warning	1
	12368	Decal - LTF 100	4
	11465	Decal - AMCO	4
	12540	Reflector - Orange	2
	12541	Reflector - Red	2

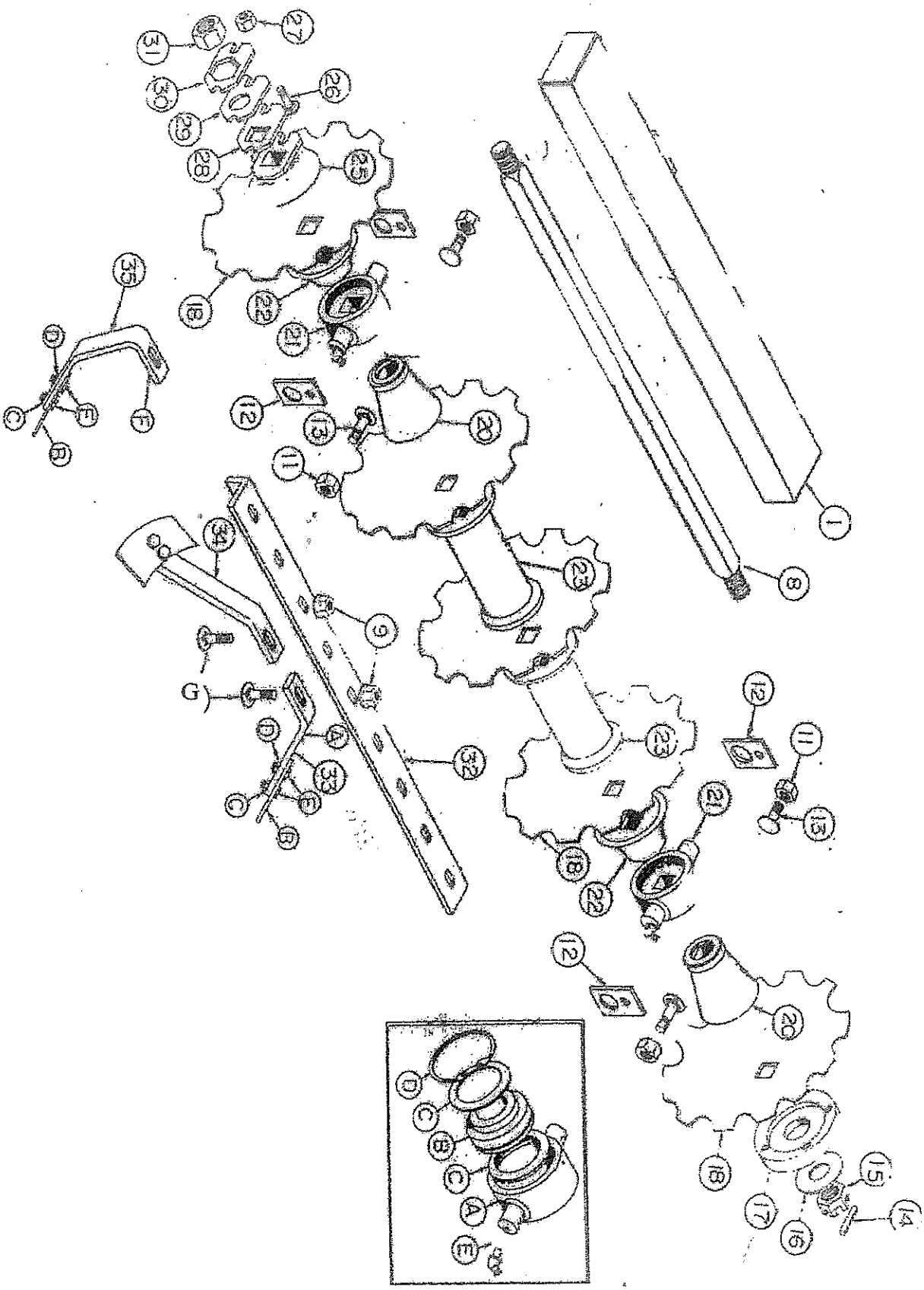
NOTE: Use this parts list after Serial # **02010001.**
See page 9 for list to use before this number.

AMCO
LTF SERIES
6' - 10'2" Flex Riser

Ref. No	Part No.	Description	No. Req'd.
1	12335	U-Bolt	2
2	10300	Lock Nut 3/4" NC, PLT, Gr. B	1
3	10727	Hex Bolt 3/4" x " NC, PLT, Gr. B	1
4	102596	Top Plate 1/2" x 5" Flat Bar - 11" Long	1
5	102597	Bottom Plate 1/2" x 5" Flat Bar - 7-3/4" Long	1
6	11521A	Flex Gang Shank 1-1/4" x 2"	1
7	12069	Flanged Lock Nut 3/4" NC, PLT, Gr. G	2
8	10579	Carriage Bolt 3/4" x 3" NC, PLT, Gr. 5	2
10	0944	Assy. Trunnion Mount	1



Flex Riser



AMCO
LTF Series
6' - 10'2"

Ref. No.	Part. No.	Description	No. Req'd. 16BL	20BL	24BL	Large Frame 28BL	20BL
1	102630	Gang Frame 16-Bld. Front - RH	1				
1	102631	Gang Frame 16-Bld. Center	1				
1	102632	Gang Frame 16-Bld. Rear - LH	1				
1	102633	Gang Frame 20-Bld. Front - RH		1			
1	102634	Gang Frame 20-Bld. Center		1			
1	102635	Gang Frame 20-Bld. Rear - LH		1			
1	20608	Gang Frame 20-Bld. Front					2
1	20609	Gang Frame 24-Bld. Front - 20 Bld. Rear			2		2
1	20610	Gang Frame 24-Bld. Front - 28 Bld. Front			2	2	
1	20611	Gang Frame 28-Bld. Rear				2	
8	9440	Gang Bolt (4-Bld.) 16-Bld. Unit	4				
8	9441	Gang Bolt (5-Bld.) 20 Bld. Unit		4			4
8	9442	Gang Bolt (6-Bld.) 24-Bld. Unit			4		
8	9443	Gang Bolt (7-Bld.) 28-Bld. Unit				4	
9	11646	Flanged Lock Nut 1/2" NC, PLT, Gr. G	12	16	20	24	16
11	10299	Lock Nut 5/8" NC, PLY	16	16	16	16	16
12	9628	Trunnion Clamp	8	8	8	8	8
12A	20579	Grease Guard	8	8	8	8	8
13	10135	Carriage Bolt - 5/8" x 1-3/4 NC, PLT, Gr. 5	28	32	36	40	32
14	10910	Roll Pin 5/16" x 2-1/4"	4	4	4	4	4
15	10226	Slotted Nhut 1-1/2" NF	4	4	4	4	4
16	10872	Flat Washer 1-3/8" PLT	4	4	4	4	4
17	2404	Bumper Washer	4	4	4	4	4
18	3275	Blade - 22" x 1/4" Cut-Out			16	20	16
18	9487	Blade - 20" x 1/4" Cut-Out			6	6	2
18	12219	Blade - 18" x 1/4" Cut-Out	16	20	2	2	2

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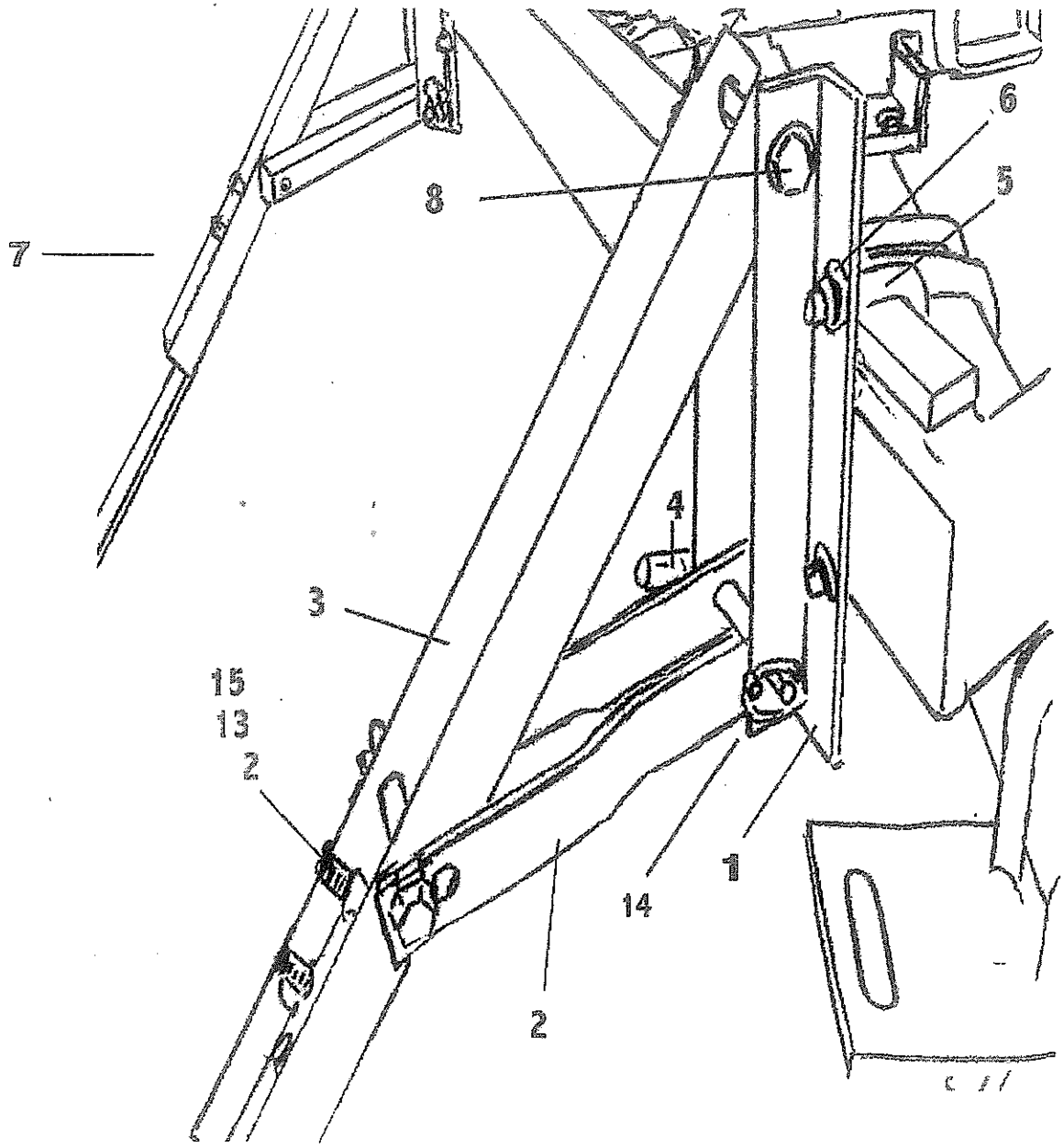
AMCO
LTF Series
6' - 10'2"

Ref. No.	Part. No.	Description	No. Req'd. 16BL	20BL	24BL	Large Frame 28BL	20BL
20	17014	Small End Bell	8	8	8	8	8
21	FB-09-0015	Bearing & Housing Complete	8	8	8	8	8
	A	16003 - Bearing Housing ---1 each					
	B	11503 - Bearing ---1 each					
	C	100104 - Washer -- 2 each					
	D	11064 - Retainer Ring -- 1 each					
	E	12384 - Straight Grease Fitting -- 1 each					
22	17010	Large End Bell	8	8	8	8	8
23	0522	Spacer Spool	4	8	12	16	8
25	1222A	End Gang Washer	4	4	4	4	4
26	10710	Carriage Bolt - 1/2" NC, PLT, Gr. 5	4	4	4	4	4
27	10395	Lock Nut 1/2" NC, PLT, Gr. B	4	4	4	4	4
28	100099	Spacer Plate	4	4	4	4	4
29	100098	Bearing Plate	4	4	4	4	4
30	5622A	Lock Plate	4	4	4	4	4
31	10489	Gang Bolt Nut 1-1/2" NF	4	4	4	4	4
32	9476	Scraper Bar 2" x 2" x 3/8" Angle - 33-1/16" Lon	4				
32	9475	Scraper Bar 2" x 2" x 3/8" Angle - 42-1/2" Long		4			4
32	9548	Scrapter Bar 2" x 2" x 3/8" Angle - 51-11/16" (6 Bld.)			4		
32	9549	Scraper Bar 2" x 2" x 3/8" Angle - 60-7/8" (7 Bld.)				4	
33	0788	Scraper - RH	6	8	10	12	8
34	0789	Scraper - LH	6	8	10	12	8
35	0824	Special Scraper - RH					
35	0825	Specail Scraper - LH					
	A	100271---Leg Scraper					
	B	100270 --- Blade Scraper					
	c	10395 --- Lock Nut					
	D	10395 -- Lock Nut					
	E	11652 -- Bolt					
	F	100368 -- Leg Special Scraper					
	G	10870 -- 1/2" x 1-1/2" Carriage Bolt					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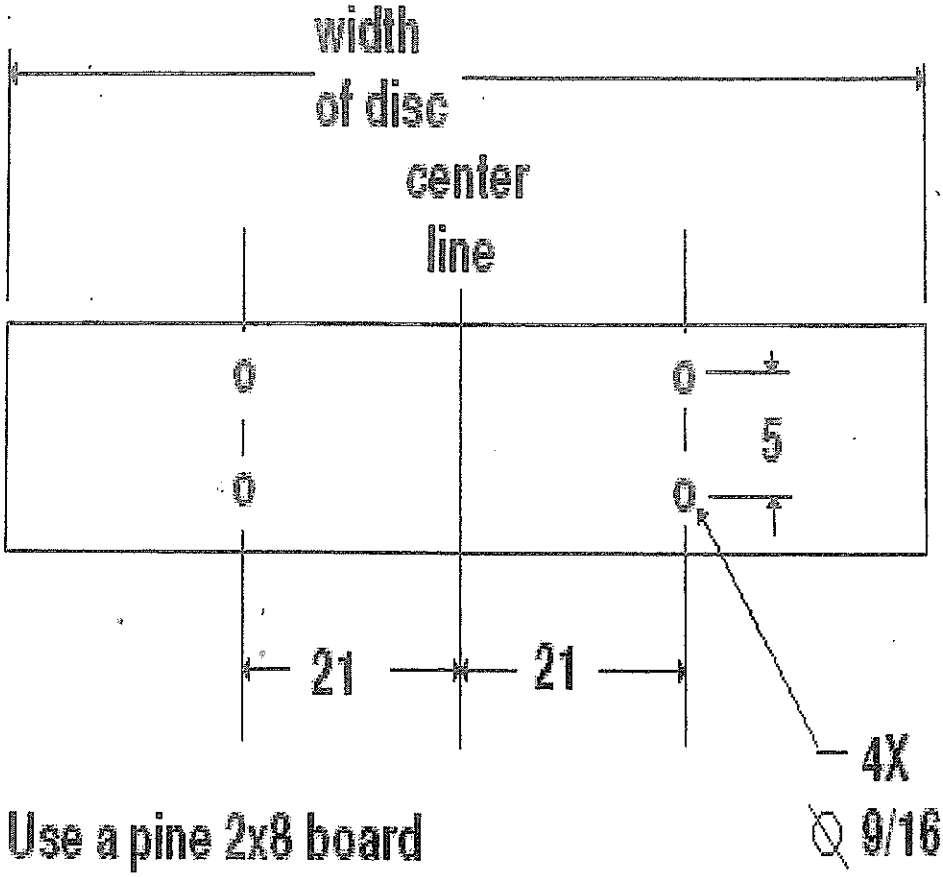
AMCO
LTF Series
Drag Board Kit

Ref. No.	Part. No.	Description	No. Req'd.
1	102591	Bracket 2" x 2" x 3/8" Angle - 10-1/2" Lg	4
2	102593	Link Mount 1/4" x 1-1/2" Flat Bar - 13" Lg	4
3	102592	Spring Mt. Bar 4" x 3" x 1/4" WT - 24" Lg	2
4	102601	L-Pin 5/8" Dia. Hot Roll - 7" Lg	2
5	12349	U-Bolt 1/2" x 4" x3-1/2"	4
6	11646	Flanged Lock Nut 1/2" NC, PLT	8
7	12143	Leaf Spring	2
8	10666	Hex Bolt 5/8" x 5" NC, PLT, Gr. 5	4
9	10299	Lock Nut 5/8" NC, PLT, Gr. B	4
10	12350	Carriage Bolt 1/2" x 3" NC, PLT, Gr. 5	4
11	10832	Flat Washer 1/2" PLT	4
12	10097	Hex Bolt 1/2" x 2-1/2" NC, PLT, Gr. 5	4
13	10786	Lock Washer 1/2" PLT	8
14	10317	Klick Pin 1/4"	2
15	10787	Hex Nut 1/2" NC, PLT	8



Drag Board Sketch

MOST OFTEN ENCOUNTERED DISK BLADE FAILURES

Most disk blade failures can be prevented by selecting the correct blade size and thickness for individual conditions when buying a disk. Reduction of speed in areas containing rocks and stumps will greatly lengthen the blade life. Keeping gang bolts properly torqued and raising the harrow while turning will also reduce disk blade breakage.

FIGURE 1 — Laminated Disc—defective steel. Eligible for warranty consideration.

SURFACE VIEW EDGE VIEW

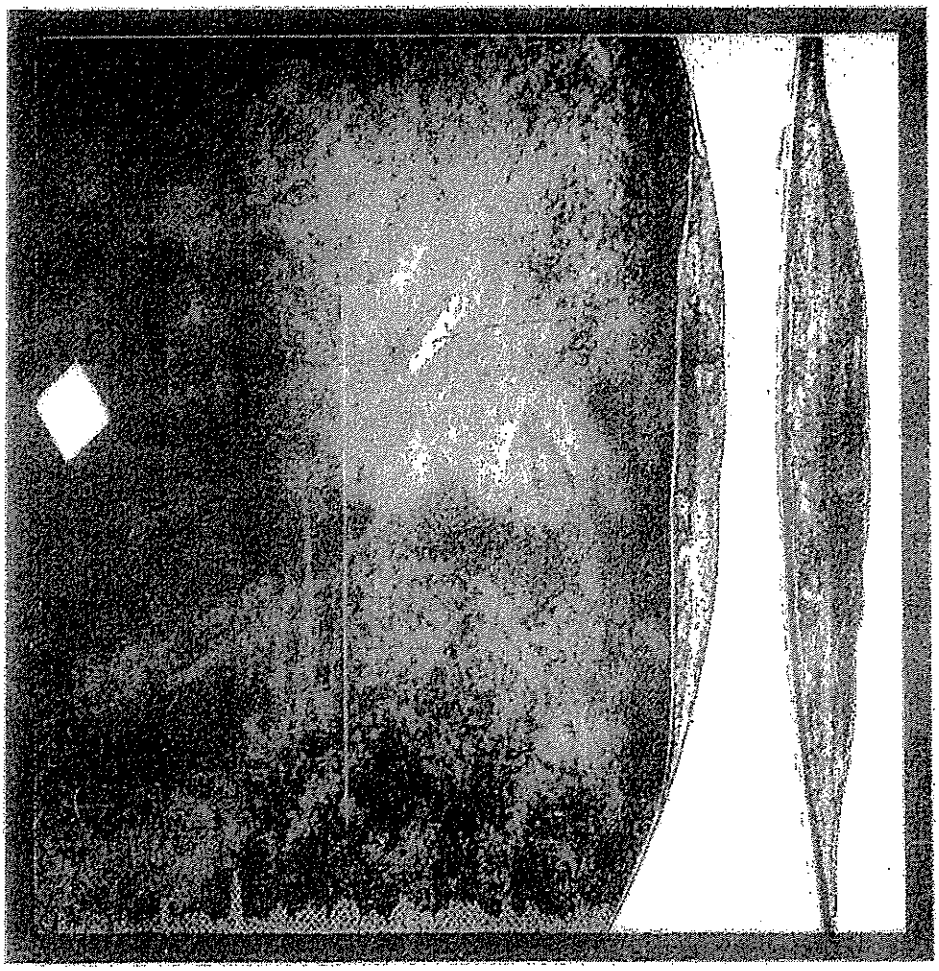
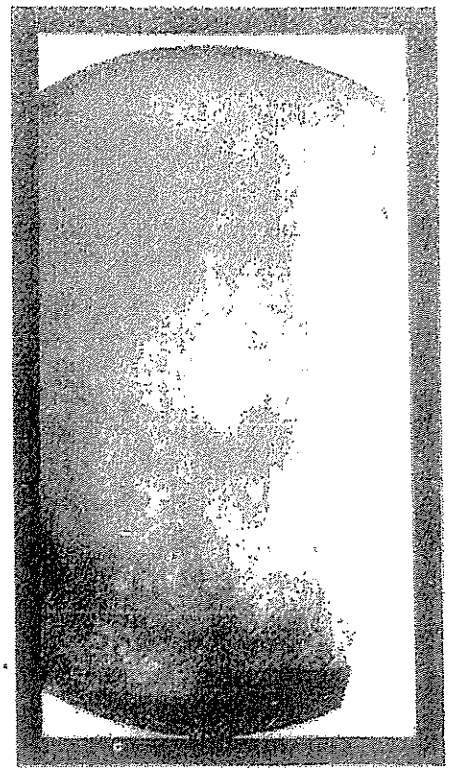


FIGURE 2 — Straight directional break caused by defective steel. Eligible for warranty consideration.



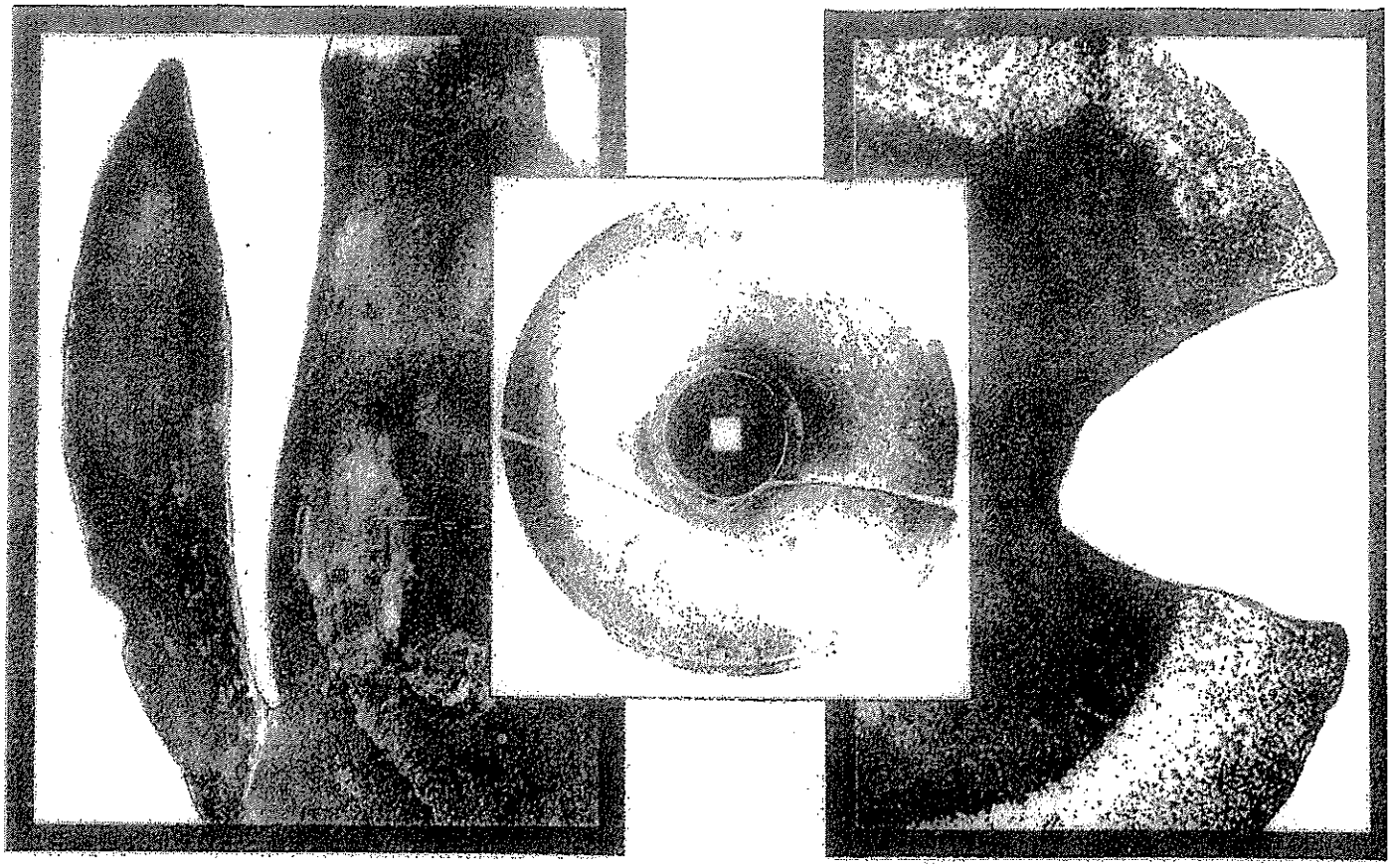


FIGURE 3, 4, 5 Irregular breaks caused by contact against rocks or stumps. Not covered by warranty.

FIGURE 6 — Chipped or dented edges resulting from use in areas containing rocks or stumps. Not covered by warranty.

FIGURE 7 — Center broken out—Experience has show that this is usually caused by loose bolts, excessive flexin or by contact with rocks and stumps. Not covered b warranty.