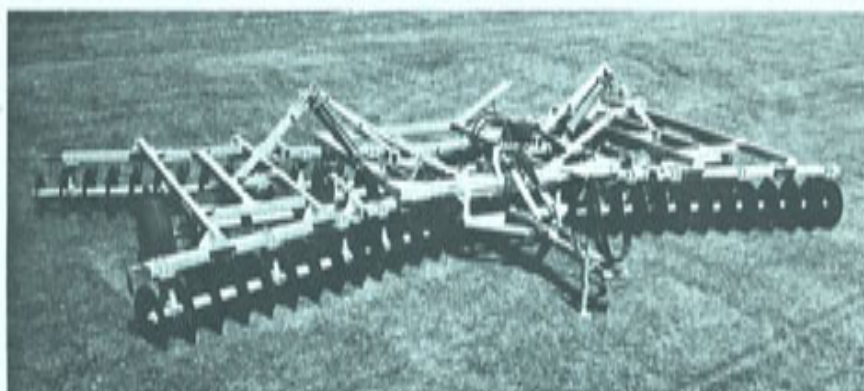
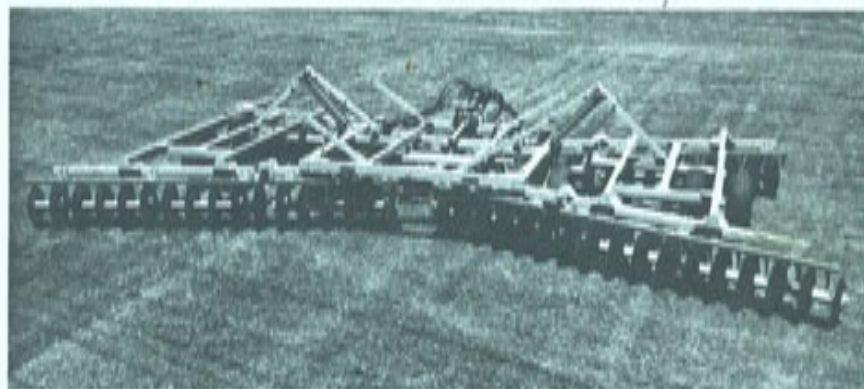




F-25 & J-25 WHEEL TANDEM FLEXWING

PARTS CATALOG

**OPERATION — MAINTENANCE — SET-UP
INSTRUCTIONS**



Amco
PRODUCTS

Portable Elevator Division, Dynamics Corporation of America
No. 1 AMCO Drive, Yazoo City, Mississippi 39194 / 601/746-4464



TO THE PURCHASER

The care you give your new AMCO F25 or J25 Wheel Tandem Flexwing Disk Harrow will greatly determine the satisfaction and service you will obtain from it. By observing the instructions and suggestions in this manual, your AMCO F25 or J25 Harrow will serve you well for many years.

As an Authorized AMCO Dealer, we stock Genuine AMCO Parts, which are manufactured with the same precision and skill as the original equipment. For best performance and longer life use only Genuine AMCO replacement parts. Our factory trained staff is kept fully informed of the most efficient methods of servicing AMCO equipment and is ready and able to assist you.

When you sell your F25 or J25 Harrow you should pass this manual to the new owner.

If you should require additional aid or information, contact us.

YOUR AUTHORIZED AMCO DEALER

OSHA requires that as a farm employer you meet certain safety requirements. Become familiar with and comply with those requirements. Be sure anyone who operates this equipment understands all safety related items. If this harrow is repainted, be certain new decals are ordered. Decals pertaining to personal safety must be replaced.



Look for this symbol to point out important safety precautions. It means — **ATTENTION!** Become alert! Your safety is involved.

To insure efficient and prompt service, please provide the model number and serial number of your AMCO 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

AMCO

F-25 WHEEL TANDEM FLEXWING

GENERAL SPECIFICATIONS

AXLES:	1-1/2" square high carbon, cold rolled steel	CENTER TOOTH:	Spring steel with chisel point
DISC:	22" x 1/4" Plain	BEARINGS:	Protect-O-Shield, 1-1/2" square bore regreaseable ball type, toggle mounted
BLADES:	Diminishing with Two feathering blades on rear gangs	WHEELS:	6-15 x 10
SCRAPERS:	High carbon blades on heavy duty shanks, mounted on high carbon angle iron bars	CLEVIS:	Reversible ductile iron
TONGUE:	76-1/2 inches long with tongue jack and reversible ductile iron clevis	WRENCH:	1 for gang bolt
HYDRAULIC CYLINDERS:	2-4" x 8" with depth control 2-4" x 24" for folding wings	DISC SPACING:	9 inches
HYDRAULIC HOSES:	Complete to front of main frame	ANGLE:	Preset at 18° — No adjustment necessary
		WEIGHT:	143 — 157 lbs per blade 380 — 412 lbs per foot
		TRANSPORT WIDTH:	Under 16'0"
		TRANSPORT HEIGHT:	70 blade 12'6" max. 74 blade 13' max. 82 blade 14' max.

Model	Cutting Width	No. of Blades	No. of Bearings	Approximate Weight Pounds	Recommended Drawbar Horsepower
F25-7022	25' 6"	70	22	11000	170-220
F25-7422	27' 0"	74	22	11300	175-225
F25-8222	30' 0"	82	24	12000	200-260

With 22" Dia. x 1/4 Plain Blades

DISK BLADE OPTIONS
22" Dia. x 1/4 Cut Out
24" Dia. x 1/4 Plain
24" Dia. x 1/4 Cut Out

RECOMMENDED TIRE SIZE
6-12.5L x 15-8 Ply Tires

OPTIONAL EQUIPMENT:
Dual wheels for wings

NOTE: Use of disk on tractors with higher than recommended Drawbar Horsepower will cause excessive maintenance cost and may void your warranty.

PRINTED IN U.S.A.

AMCO #11420
Issued July 1978

GENERAL TORQUE SPECIFICATION TABLE

ALL BOLTS SHOULD BE TIGHTENED TO THE
RECOMMENDED TORQUES SHOWN IN THE
"GENERAL TORQUE SPECIFICATION TABLE"

GENERAL TORQUE SPECIFICATION TABLE									
USE THE FOLLOWING TORQUES WHEN SPECIAL TORQUES ARE NOT GIVEN									
Note: These values apply to fasteners as received from supplier, dry, or when lubricated with normal engine oil. They do not apply if special graphited or moly-disulphide greases or other extreme pressure lubricants are used. This applies to both UNF and UNC threads.									
SAE Grade No.		2		5		8 *			
Bolt head identification marks as per grade				  		  			
NOTE: Manufacturing Marks Will Vary		Torque		Torque		Torque			
Bolt Size		Foot Pounds		Foot Pounds		Foot Pounds			
Inches	Millimeters	Min.	Max.	Min.	Max.	Min.	Max.		
1/4	6.35	5	6	9	11	12	15		
5/16	7.94	10	12	17	20.5	24	29		
3/8	9.53	20	23	35	42	45	54		
7/16	11.11	30	35	54	64	70	84		
1/2	12.70	45	52	80	96	110	132		
9/16	14.29	65	75	110	132	160	192		
5/8	15.88	95	105	150	180	220	264		
3/4	19.05	150	185	270	324	380	456		
7/8	22.23	160	200	400	480	600	720		
1	25.40	250	300	580	696	900	1080		
1-1/8	25.58			800	880	1280	1440		
1-1/4	31.75			1120	1240	1820	2000		
1-3/8	34.93			1460	1680	2380	2720		
1-1/2	38.10			1940	2200	3160	3560		

* Thick nuts must be used with Grade 8 bolts

* Thick nuts must be used with Grade 8 bolts

TABLE OF CONTENTS

To the Purchaser	i
General Specifications — F25	1
General Specifications — J25	2
Safety Suggestions	3
General Torque Specifications	4
Table of Contents	5

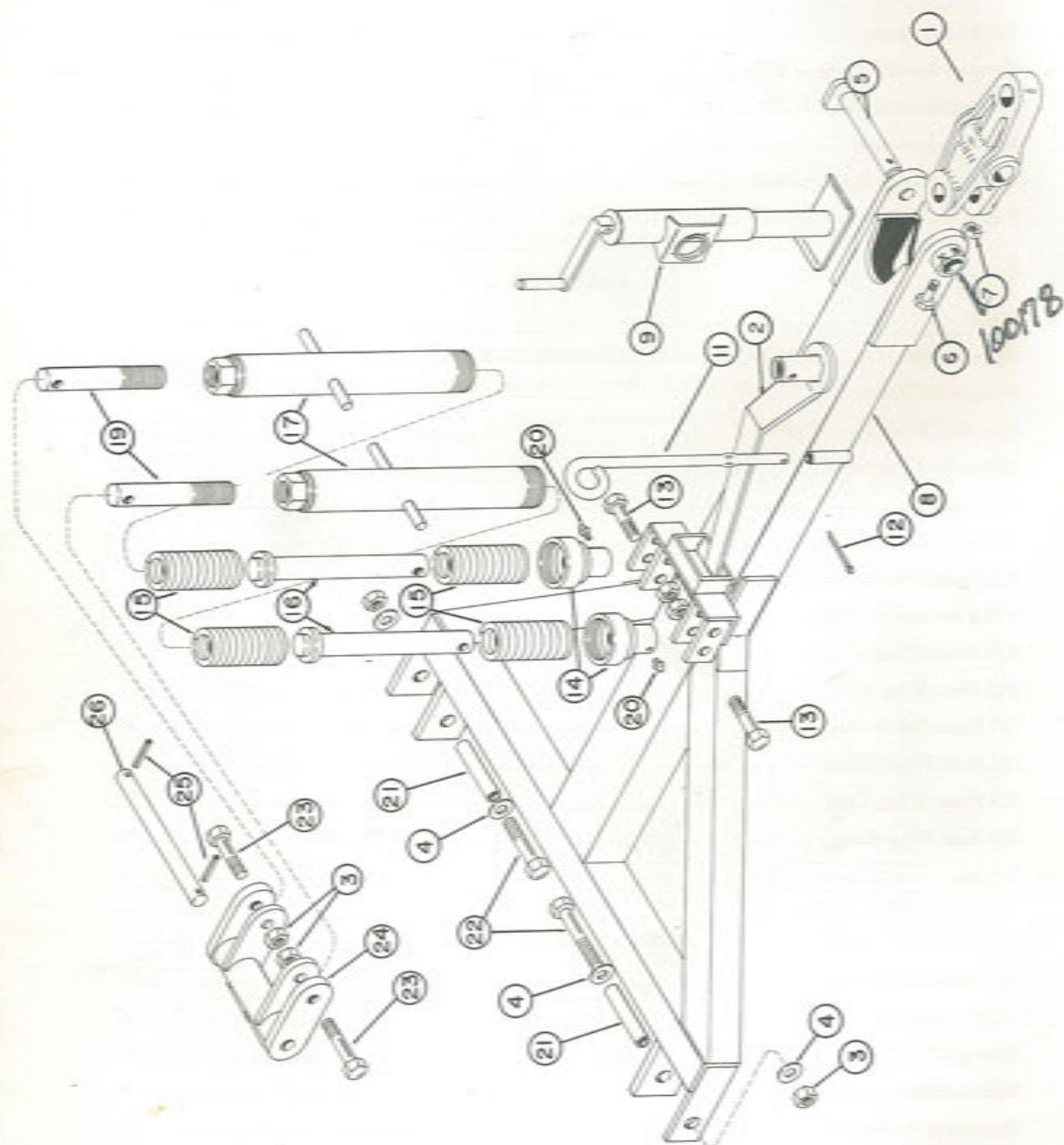
PARTS LIST

Hitch	7
Main Frame	9
Wing Main Frame	11
Spindles, Wheels and Hubs	13
Hydraulic Cylinders	15
Hydraulics	17
Center Tooth Attachment	19
F25 Front Inside Gang	21
F25 Rear Inside Gang	23
F25 Front Wing Gang	25
F25 Rear Wing Gang	27
J25 Front Inside Gang	29
J25 Rear Inside Gang	31
J25 Front Wing Gang	33
J25 Rear Wing Gang	35
Decals	36

OPERATORS MANUAL

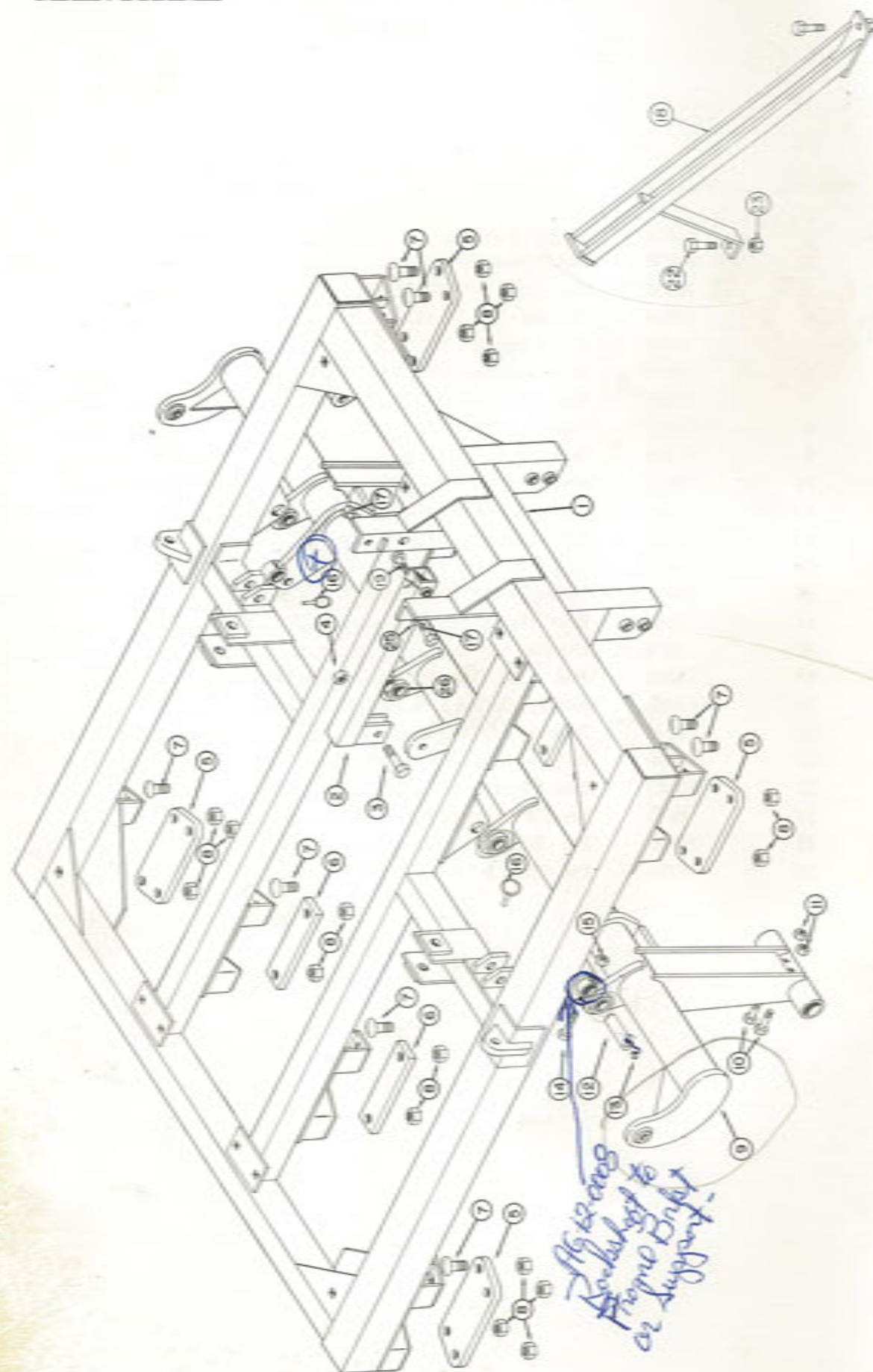
Assembly Instruction	37
Lubrication	45
Storage	47
Maintenance	48
Operating Instructions	52
Operating Tips	54
Disk Blade Failures	55

HITCH

AMCO F25 & J25 SERIES DISK HARROW
HITCH

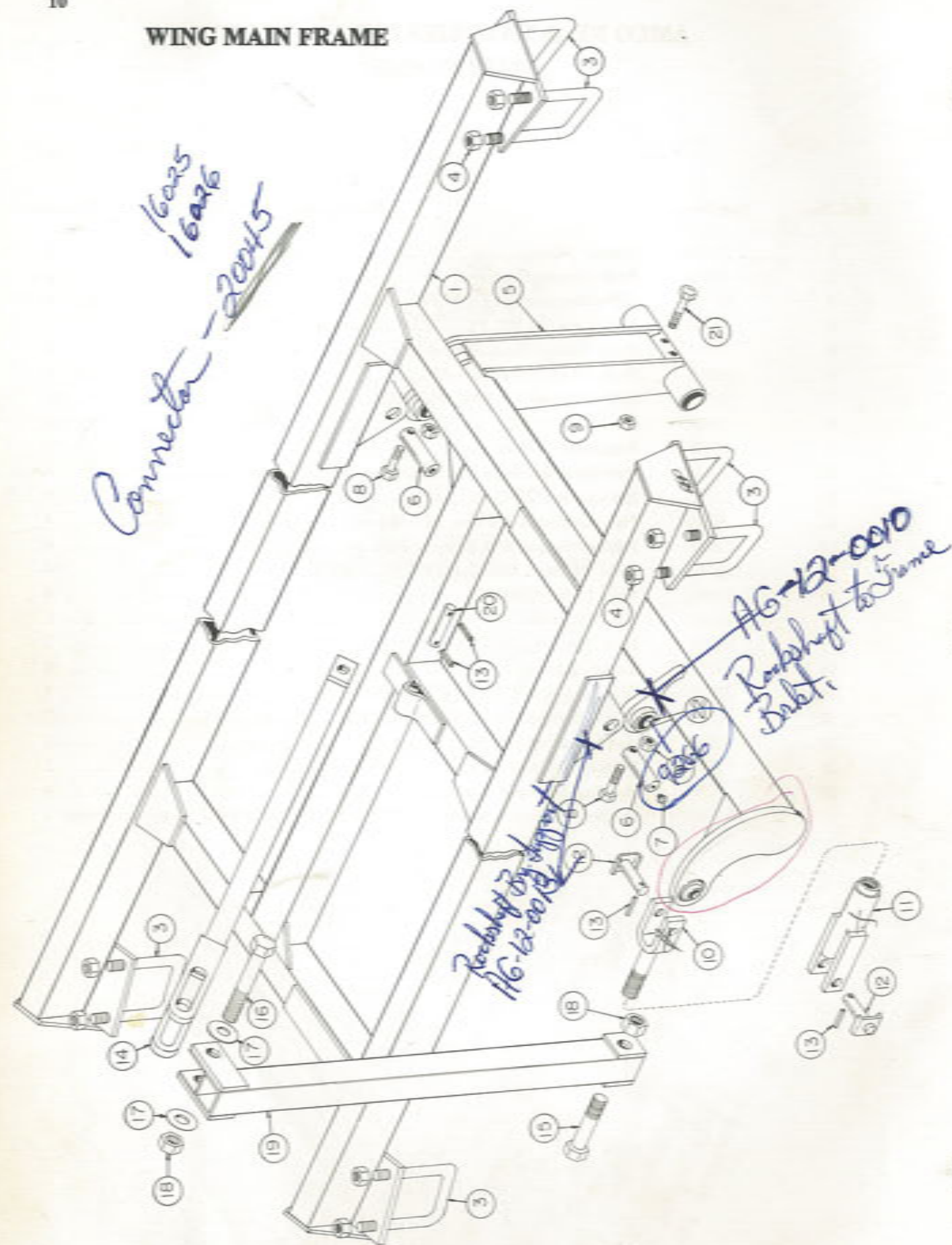
Ref. No.	Part No.	Description	No. Req'd
1	16018	Clevis - Pull.....	1
2	100134	Nut Wrench	1
3	10300	Nut - Lock 3/4 NC, PL	6
4	10866	Washer - Cut 3/4 PL	4
5	0769	Pin - Clevis	1
6	10871	Bolt - Machine 3/8 x 3 NC, PL, GR5	1
7	10509	Nut - Lock 3/8" NC, PL	1
8	0569A	Tongue - Pull	1
9	11261	Jack - Parking	1
11	100061	Holder - Hose	1
12	10075	Pin - Cotter 1/4 x 1-1/2	1
13	10320	Bolt - Machine 3/4 x 3-1/2 NC, PL	2
14	1166	Cap	2
15	10460	Spring 3" O.D. x 7" Long	4
16	1167	Rod - Piston	2
17	1479	Housing - Spring	2
19	5403	Rod - Stud Threaded 1-1/2 Dia. x 14 Long	2
20	11081	Fitting - Grease 5/16 Straight-Drive in	2
21	9206	Bushing 1-5/16 O.D. x 5-3/4 Long	2
22	10696	Bolt - Machine 3/4 x 7 NC, PL	2
23	10113	Bolt - Machine 3/4 x 4 NC, PL, GR5	2
24	0570	Bracket - Tongue Pivot Control	1
25	10910	Pin - Roll 5/16 x 2-1/4	2
26	9754	Pin - Pivot 1-1/4 Dia. x 14-1/4 Long	1

MAIN FRAME

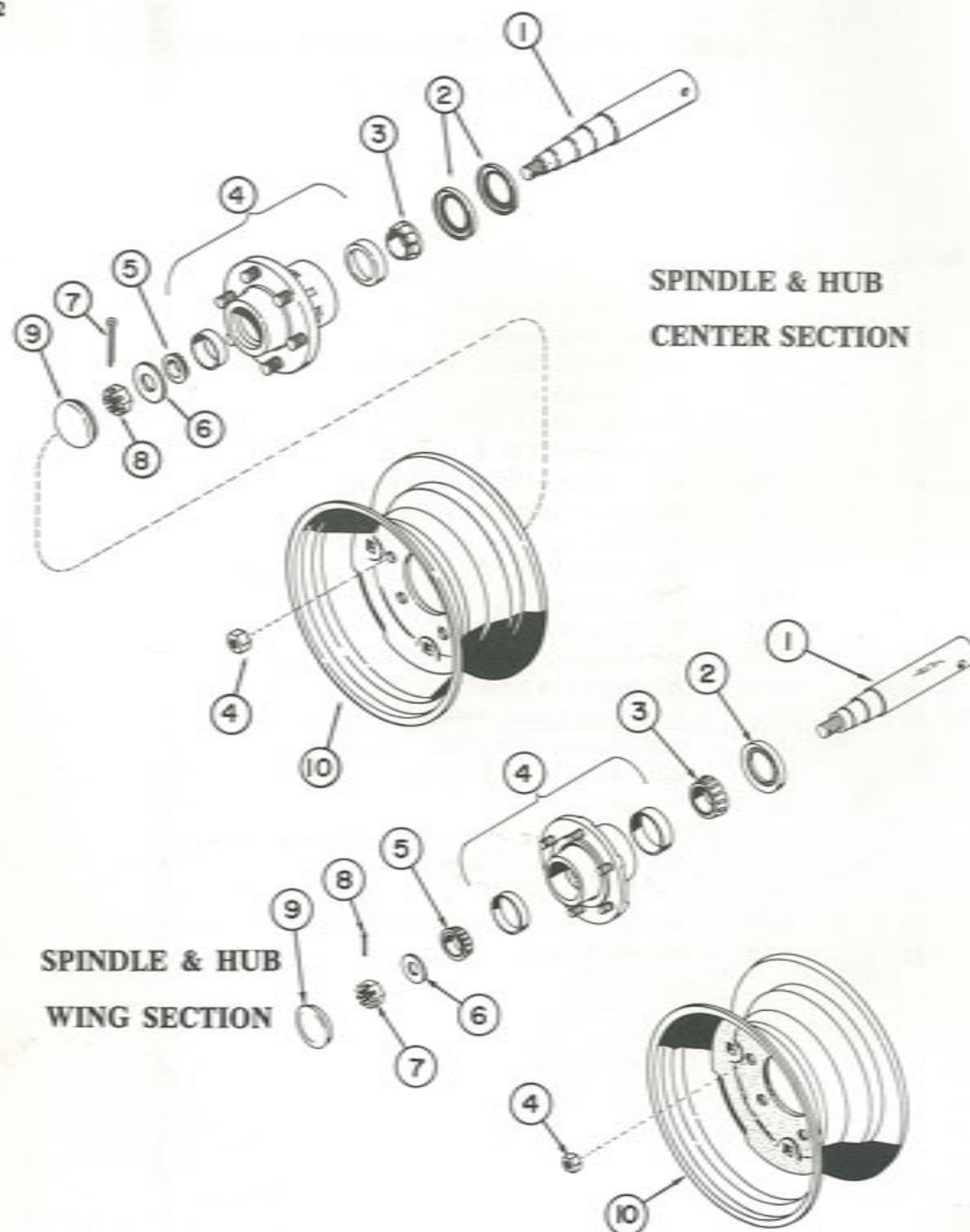
AMCO F25 & J25 SERIES DISK HARROW
MAIN FRAME

Ref. No.	Part No.	Description	No. Req'd
1	0572	Frame - Main	1
2	0571	Rod - Tongue Control	1
3	10727	Bolt - Machine 3/4 x 3 NC, PL, GR5	1
4	10300	Nut - Lock 3/4 NC, PL	2
5	9753	Plate - Gang Clamp (Large)	4
6	9208	Plate - Gang Clamp (Small)	4
7	11130	Bolt - Carriage 1 x 3 NC, PL, GR5	24
8	10868	Nut - Lock 1" NC	24
9	0575B	Rockshaft - Center	1
10	10834	Bolt - Machine 1/2 x 4 NC, PL	4
11	10395	Nut - Lock 1/2 NC, PL	4
12	9209	Pin - Retainer 1-1/2 Dia. x 5-1/4 Long	4
13	11081	Fitting - Grease 5/16 Straight Drive in	4
14	10765	Bolt - Machine 3/8 x 2-1/2 NC, PL, GR5	4
15	10509	Nut - Lock 3/8 NC, PL	4
16	10317	Pin - Klik 1/4"	6
17	10818	Bolt - Hex 5/8 x 1-1/2 NC, PL, GR5	2
18	0592B	Stand - Parking	4
19	10671	Bolt - Machine 3/4 x 5 NC, PL, GR5	1
22	10665	Bolt - Carriage 5/8 x 2 NC, PL, GR5	12
23	10299	Nut - Lock 5/8 NC, PL	12
25	11002	Washer - Lock 5/8 PL	2
26	9270	Bushing - Bronze	4
	11501	Bushing - Cylinder Mount 1-1/2 O.D. x 1-1/4 I.D. x 1-1/2 Long (not shown)	2

WING MAIN FRAME

AMCO F25 & J25 SERIES DISK HARROW
WING MAIN FRAME

Ref. No.	Part No.	Description	No. Req'd
1	0738A	Frame - Wing Main L. H.	1
1	0737A	Frame - Wing Main R. H.	1
3	9752	Bolt - "U" 7/8 Dia.	8
4	10396	Nut - Lock 7/8 NC, PL	16
5	0577B	Rockshaft - Wing L. H.	1
5	0576B	Rockshaft - Wing R. H.	1
6	9209	Pin - Retainer 1-1/2 Dia. x 5-1/4 Long	2
7	11081	Fitting - Grease 5/16 Straight-Drive In	2
8	10765	Bolt - Machine 3/8 x 2-1/2 NC, PL, G5	2
9	10509	Nut - Lock 3/8 NC, PL	4
10	0594A	Yoke - Adj. Male	1
11	0595	Yoke - Adj. Female	1
12	0598	Pin - Retainer 1" Dia.	2
13	10910	Pin - Roll 5/16 x 2-1/4	4
14	0596A	Arm - Wing Control, 6	1
15	11021	Bolt - Machine 1-1/4 x 7 NC	1
16	11037	Bolt - Machine 1-1/4 x 8 NC	1
17	10077	Washer - Cut 1-1/4 PL	2
18	10397	Nut - Lock 1-1/4 NC, PL	2
19	0597B	Arm - Wing Control, 2	1
20	6555	Pin - Hitch	1
21	10773	Bolt - Machine 3/8 x 3-1/2 NC, PL, GR5	2
22	9270	Bushing - Bronze	2



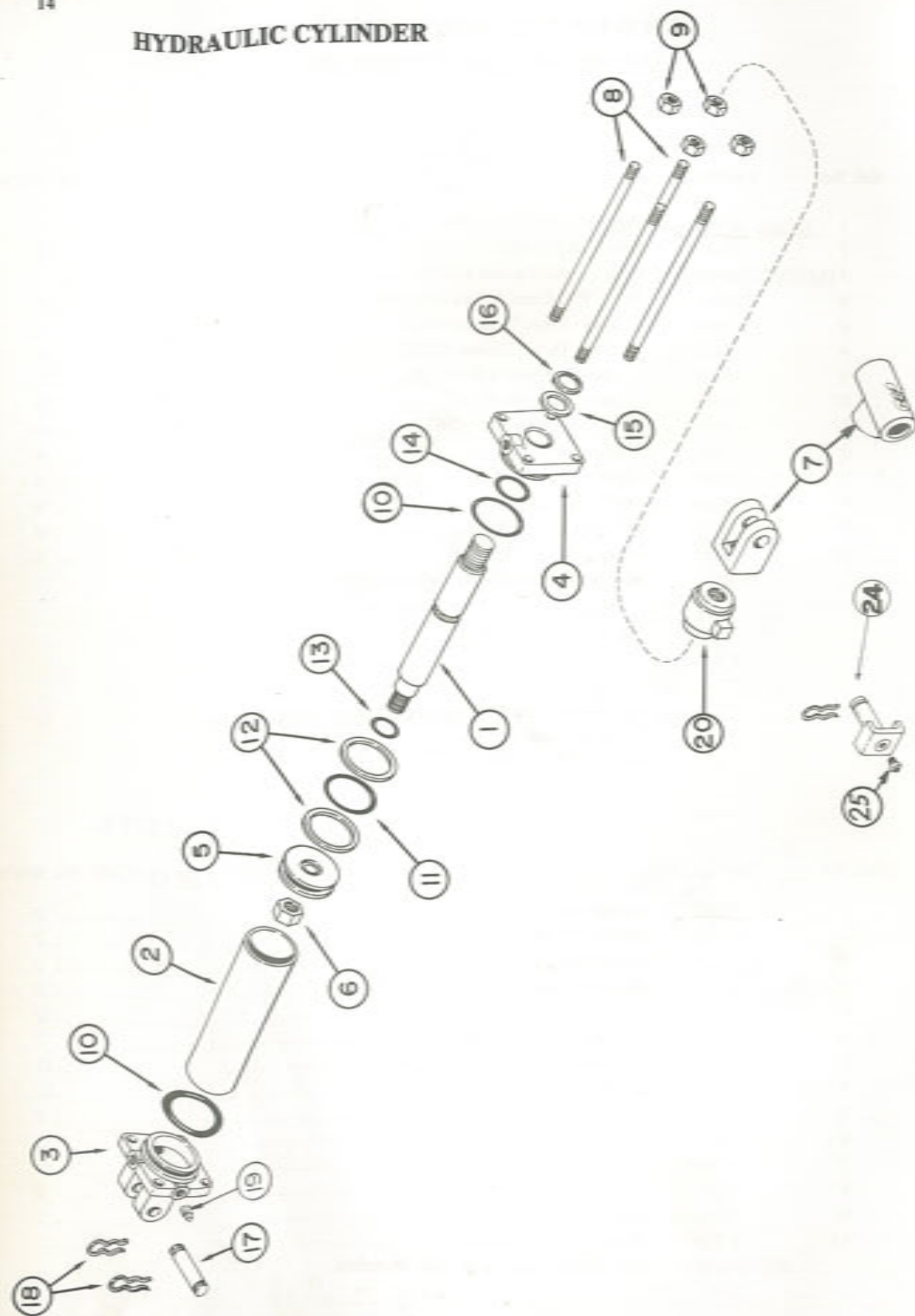
AMCO F25 & J25 SERIES DISK HARROW SPINDLE & HUB CENTER SECTION

Ref. No.	Part No.	Description	No. Req'd
1	10922	Spindle 2-7/32 Dia. x 14-1/2 Long	4
2	10467	Seal (C/R 521430)	8
3	10469	Cone - Inner Timken #25590	4
4	10463-1	Hub - W/2 Cups, 6 Hub bolts and Nuts	4
4	10468	Cup - Inner Timken #25520	4
4	10472	Cup - Outer Timken #25821	4
4	10470	Hub Bolt 9/16 x 2-1/4 NF	24
4	10471	Hub Nut 9/16 NF	24
5	10473	Cone - Outer Timken #25877	4
6	10263	Washer 7/8	4
7	10291	Cotter Pin 5/32 x 1-1/4	4
8	10264	Nut 7/8 NF slotted	4
9	10474	Hub Cap	4
10	11236	Wheel 15 x 10-6 Bolt	4
JA-05-0024		Sub Bundle Spindle & Hub Complete	

AMCO F25 & J25 SERIES DISK HARROW SPINDLE & HUB WING SECTION

Ref. No.	Part No.	Description	No. Req'd
1	10880	Spindle 50mm Dia. x 13 Long	2
2	10256	Seal (C/R 22870)	2
3	10258	Cone - Inner (Timken 342A)	2
4	11297	Hub W/2 Cups 6 Hub Bolts and Nuts	2
4	10257	Cup - Inner (Timken 332)	2
4	10261	Cup - Outer (Timken 14276)	2
4	11299	Hub Bolt 1/2 x 1-7/8 NF	12
4	11046	Hub Nut 1/2 NF	12
5	10262	Cone - Outer (Timken 14137A)	2
6	10263	Washer - Spindle 7/8	2
7	10264	Nut - Spindle 7/8 NF Slotted	2
8	10291	Cotter Pin 5/32 x 1-1/4	2
9	10242	Hub Cap	2
10	11236	Wheel 15 x 10-6 Bolt	2
BC-05-0098		Sub Bundle Spindle & Hub Complete	

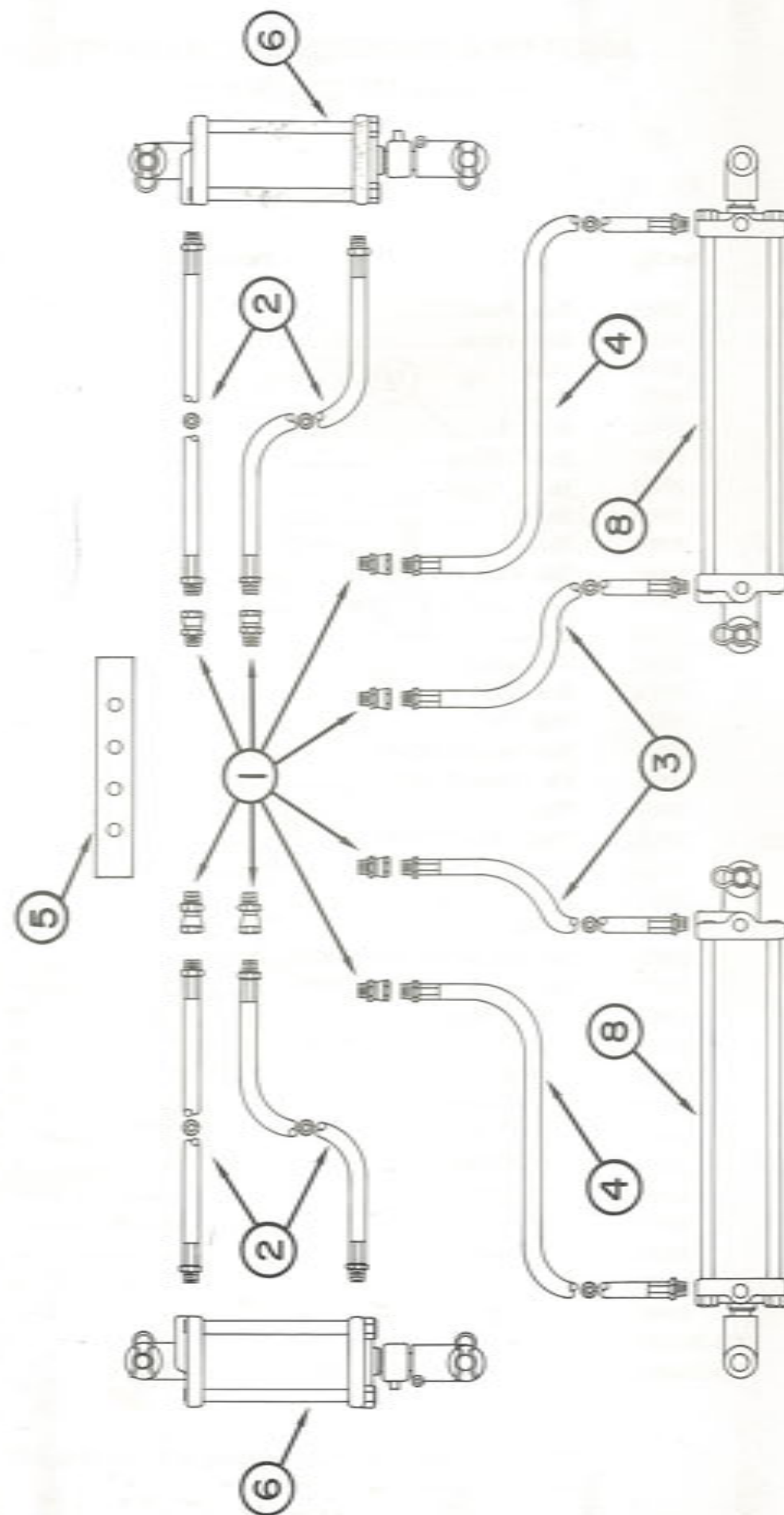
HYDRAULIC CYLINDER

AMCO F25 & J25 SERIES DISK HARROW
HYDRAULIC CYLINDERS

Ref. No.	Part No.	Description	No. Req'd	
			4 x 8	4 x 24
1	10965	Rod - Piston	1	—
1	10950	Rod - Piston	—	1
2	10966	Tube	1	—
2	10951	Tube	—	1
3	10952	Butt	1	1
4	10967	Head - Piston	1	—
4	10953	Head - Piston	—	1
5	10968	Piston	1	—
5	10954	Piston	—	1
6	10980	Nut - Lock 1" - 14 NF	1	—
6	10979	Nut - Lock 1-1/4" - 12 NF	—	1
7	11502	Clevis for 1-1/4 Dia. Pin	1	—
7	10942	Tee Casting	—	1
8	10970	Rod - Tie	4	—
8	10955	Rod - Tie	—	4
9	10139	Nut - Hex 5/8 NC, PL	4	4
17	10956	Pin - Clevis 1" x 4"	1	1
18	10957	Clip	3	2
19	10978	Plug - Pipe 1/2 NPT	1	1
20	10937	Control - Stroke	1	—
24	20053	Pin - 1-1/4 Dia.	1	—
25	11081	Fitting - Grease	1	1
21	10976	Kit - Seal Repair (prince #8600)	1	—
22	10977	Kit - Seal Repair (prince #9400)	—	1
10	10958	"O" Ring	2	2
11	10959	"O" Ring	1	1
12	10960	Washer	2	2
13	10971	"O" Ring	1	—
13	10961	"O" Ring	—	1
14	10972	"O" Ring	1	—
14	10962	"O" Ring	—	1
15	10973	Washer	1	—
15	10963	Washer	—	1
16	10974	Wiper	1	—
16	10964	Wiper	—	1
	BB-20-0004	4 x 8 Cylinder Complete (prince #8608)		
	BD-20-0002	Bundle 4 x 24 Cylinder Complete (prince #9424)		

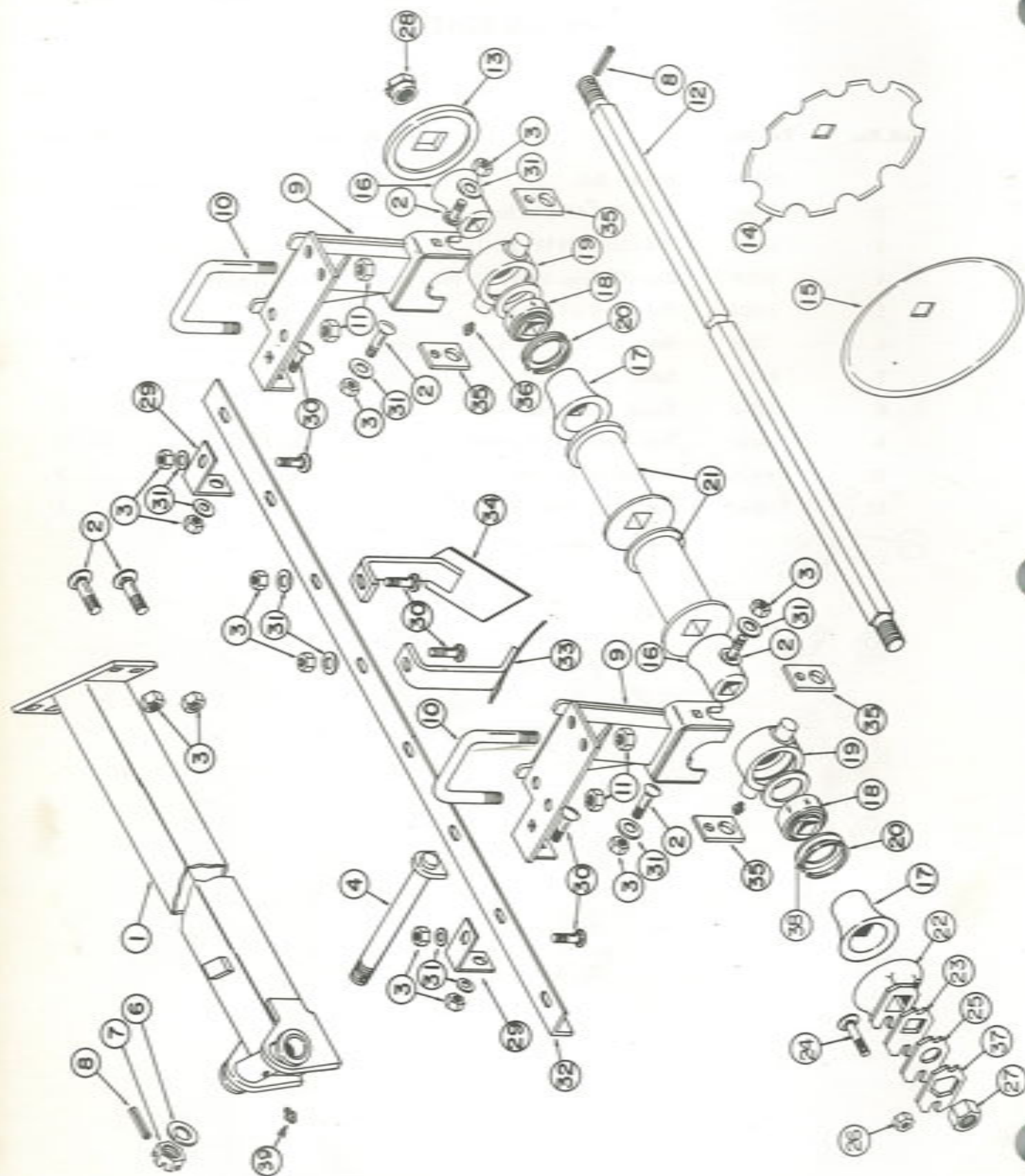
NOTE: Seal Repair Kit Parts Available in Repair Kits only
(Ref. No. 10-16)

HYDRAULIC CIRCUIT DIAGRAM

AMCO F25 & J25 SERIES DISK HARROW
HYDRAULICS

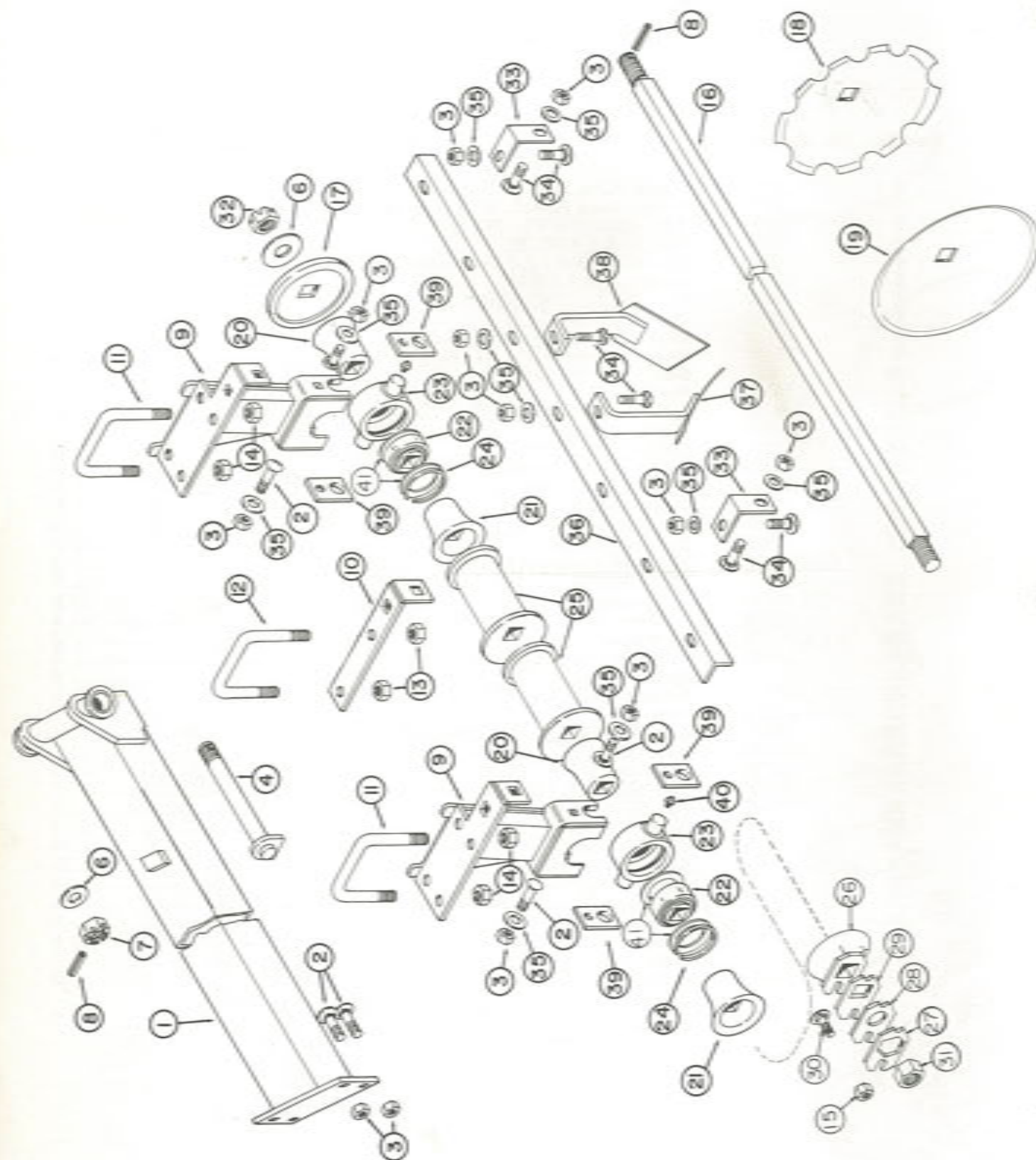
Ref. No.	Part No.	Description	No. Req'd
1	10932	Restrictor	8
2	10924	Hose - 3/8 x 70 w/ 1/2 NPT Fittings	4
3	10926	Hose - 3/8 x 84 w/ 1/2 NPT Fittings	2
4	10927	Hose - 3/8 x 108 w/ 1/2 NPT Fittings	2
5	9751	Manifold	1
6	BB-20-0004	Cylinder - Hydraulic 4 x 8	2
8	BD-20-0002	Cylinder - Hydraulic 4 x 24	2
	11462	Pipe Sealant - 6CC Tube (not shown)	1

FRONT INSIDE GANG — F25

AMCO F25 SERIES DISK HARROW
FRONT INSIDE GANG

Part No.	Ref. No.	Description	No. Req'd
1	0578	Frame - Gang Front R. H., Rear L. H.	1
1	0579	Frame - Gang Front L. H., Rear L. H.	1
2	10665	Bolt - Carriage 5/8 x 2 NC, PL, GR5	8
3	10299	Nut - Lock 5/8 NC, PL	22
4	0593	Pin - Wing Pivot 1-1/2 Dia. x 13-1/2	1
6	10872	Washer - Cut 1-3/8 PL	1
7	10232	Nut - Hex 1-1/2 NC, Slotted	1
8	10910	Pin - Roll 5/16 x 2-1/4	2
9	0590A	Riser - Bearing Front R. H., Rear L. H.	3
9	0591A	Riser - Bearing Front L. H., Rear R. H.	3
10	9752	Bolt - "U" 7/8 Dia.	6
11	10396	Nut - Lock 7/8 NC, PL	12
12	9444	Bolt - Gang 7/8-5/8 Long	1
13	9578	Washer - Bumper	1
14	3275	Blade - 22 Dia. 1/4 C. O.	8
15	3276	Blade - 22 Dia. 1/4 Plain	8
14	11571	Blade - 24 Dia. 1/4 C. O.	8
15	11572	Blade - 24 Dia. 1/4 Plain	8
16	9901	End Bell - Small	3
17	9902	End Bell - Large	3
	FB-09-0013	Sub. Assy. Bearing & Housing	3
18	G11071	Bearing - (Fafnir GW211PP3)	1
19	16003	Housing	1
20	11064	Ring - Snap	1
38	100104	Washer 100mm	2
36	10606	Fitting - Grease 1/8 NPT Straight	1
21	0522	Spool - Spacer	4
22	1222A	Washer - End Gang	1
23	5622A	Plate - Lock	1
24	10870	Bolt - Carriage 1/2 x 1-1/2 NC, PLT, GR5	1
25	100098	Plate - Bearing	1
26	10395	Nut - Lock 1/2 NC, PL	1
27	10489	Nut - Gang Bolt 1-1/2 NF	1
28	9577	Nut - Gang Bolt, Special	1
29	9211	Bracket - Scraper Bar	3
30	10135	Bolt - Carriage 5/8 x 1-3/4 NC, PL	14
31	10059	Washer - Cut 5/8 PL	20
32	9353	Bar - Scraper 8 Blade 69-3/4 Long	1
33	0459	Scraper - Front L. H., Rear R. H.	8
34	0460	Scraper - Front R. H., Rear L. H.	8
35	9628	Clamp - Trunion	6
37	100099	Plate - Spacer	1
39	11081	Fitting - Grease	3

REAR INSIDE GANG — F25

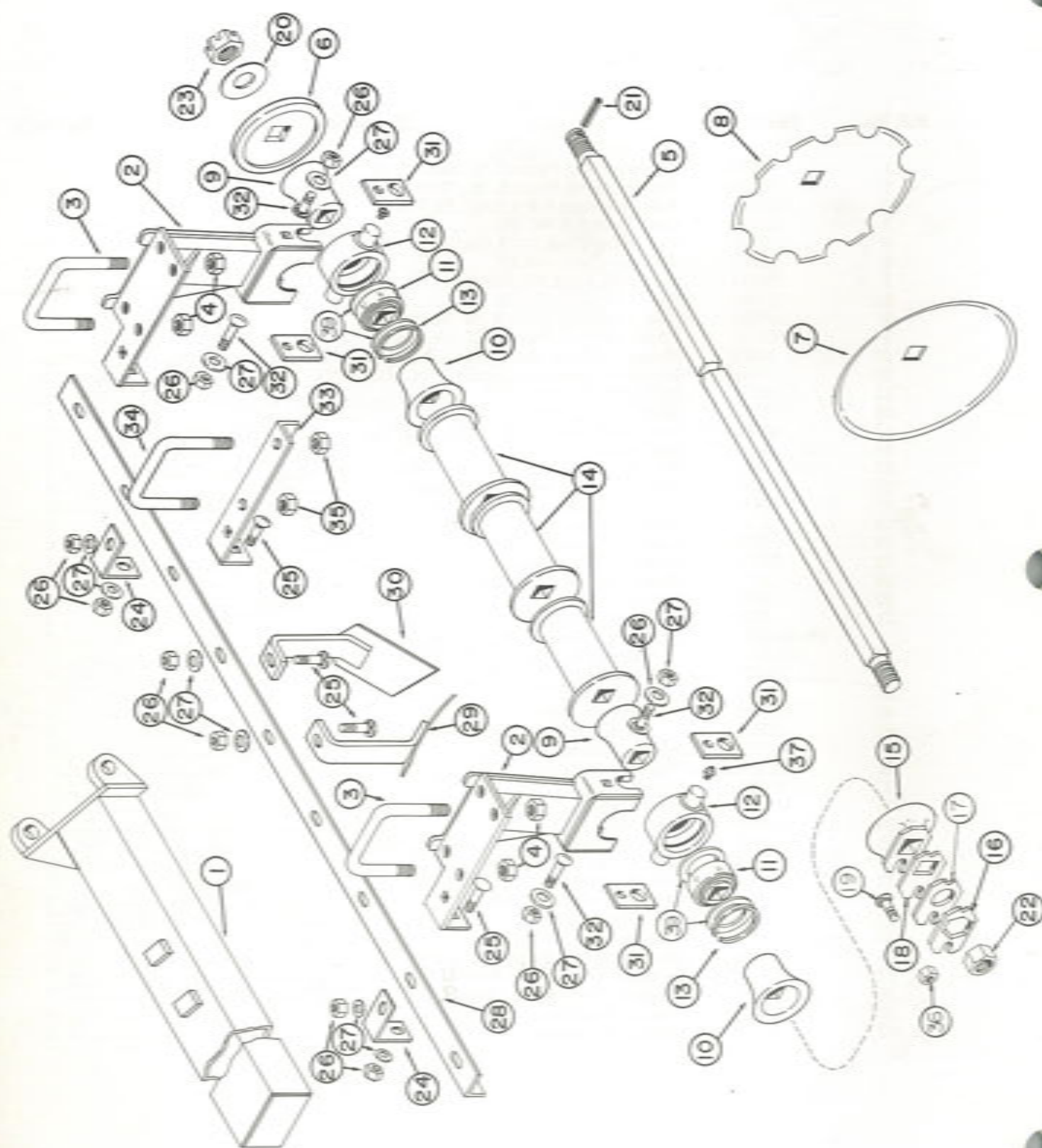


AMCO F25 SERIES DISK HARROW

REAR INSIDE GANG

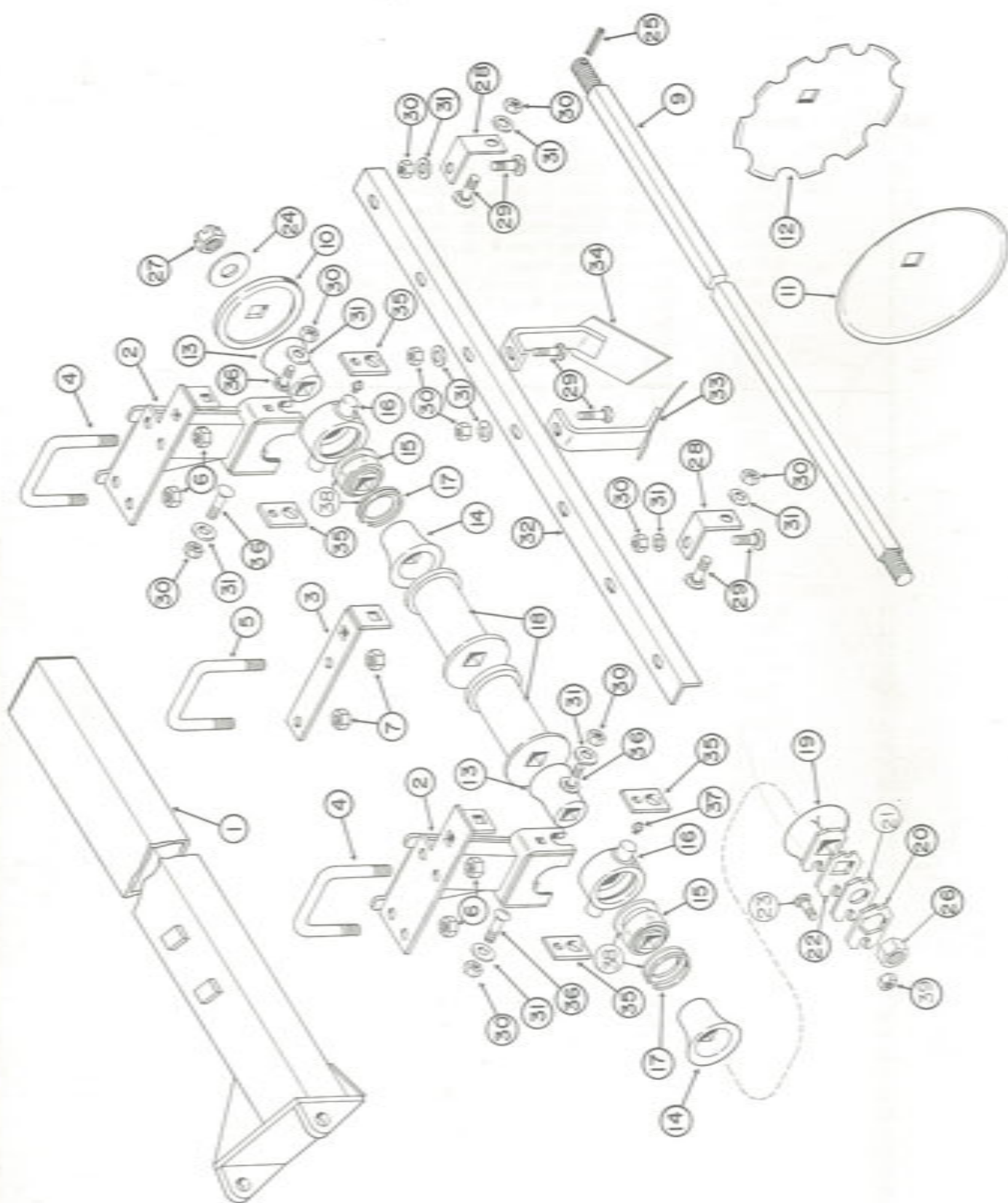
Ref. No.	Part No.	Description	No. Req'd
1	0579	Frame - Gang Front L. H., Rear R. H.	1
1	0578	Frame - Gang Front R. H., Rear L. H.	1
2	10665	Bolt - Carriage 5/8 x 2 NC, PL, GR5	6
3	10299	Nut - Lock 5/8 NC, PL	19
4	0593	Pin - Wing Pivot 1-1/2 Dia. x 13-1/2	2
6	10872	Washer - Cut 1-3/8 PL	2
7	10232	Nut - Hex 1-1/2 NC, Slotted	1
8	10910	Pin - Roll 5/16 x 2-1/4	2
9	0590A	Riser - Bearing Front R. H., Rear L. H.	2
9	0591A	Riser - Bearing Front L. H., Rear R. H.	2
10	0462	Mount - Scraper Bar, Front L. H., Rear R. H.	1
10	0461	Mount - Scraper Bar, Front R. H., Rear L. H.	1
11	9752	Bolt - "U" 7/8 Dia.	4
12	9212	Bolt - "U" 3/4 Dia.	1
13	10300	Nut - Lock 3/4 NC, PL	2
14	10396	Nut - Lock 7/8 NC, PL	8
15	10395	Nut - Lock 1/2 NC, PLT	1
16	9443	Bolt - Gang 7 Blade 61-3/8 Long	1
17	2404	Washer - Bumper	1
18	3275	Blade - 22 Dia. 1/4 C. O.	6
19	3276	Blade - 22 Dia. 1/4 Plain	6
18	11571	Blade - 24 Dia. 1/4 C. O.	6
19	11572	Blade - 24 Dia. 1/4 Plain	6
20	9901	End Bell - Small	2
21	9902	End Bell - Large	2
22	FB-09-0013	Sub. Assy. Bearing & Housing	2
22	G11071	Bearing (Fafnir GW211PP3)	1
23	16003	Housing	1
24	11064	Ring - Snap	1
41	100104	Washer 100mm	2
40	10606	Grease Fitting 1/8 NPT Straight	1
25	0522	Spool - Spacer	4
26	1222A	Washer - End Gang	1
27	5622A	Plate - Lock	1
28	100098	Plate - Bearing	1
29	100099	Plate - Spacer	1
30	10870	Bolt - Carriage 1/2 x 1-1/2 NC, PL, GR5	1
31	10489	Nut - Gang Bolt 1-1/2 NF	1
32	10226	Nut - Gang Bolt 1-1/2 NF, Slotted	1
33	9211	Bracket - Scraper Bar	3
34	10135	Bolt - Carriage 5/8 x 1-3/4 NC, PL	13
35	10059	Washer - Cut 5/8 PL	17
36	9214	Bar - Scraper 7 Blade 60-1/2 Long	1
37	0459	Scraper - Front R. H., Rear L. H.	7
38	0460	Scraper - Front L. H., Rear R. H.	7
39	9628	Clamp - Trunion	4
42	11081	Fitting - Grease (not shown)	1

FRONT WING GANG — F25

AMCO F25 SERIES DISK HARROW
FRONT WING GANG

Ref. No.	Part No.	Description	No. Required		
			9 Blade	10 Blade	12 Blade
1	0580A	Frame - Gang Front R. H., Rear L. H.	1	—	—
1	0581A	Frame - Gang Front L. H., Rear R. H.	1	—	—
1	0582A	Frame - Gang Front R. H., Rear L. H.	—	1	—
1	0583A	Frame - Gang Front L. H., Rear R. H.	—	1	—
1	0586A	Frame - Gang Front R. H., Rear L. H.	—	—	1
1	0587A	Frame - Gang Front L. H., Rear R. H.	—	—	1
2	0590A	Riser - Bearing Front R. H., Rear L. H.	3	3	3
2	0591A	Riser - Bearing Front L. H., Rear R. H.	3	3	3
3	9752	Bolt - 7/8 Dia.	6	6	6
4	10396	Nut - Lock 7/8 NC, PL	12	12	12
5	9445	Bolt - Gang 9 Blade 79-7/8 Long	2	—	—
5	9446	Bolt - Gang 10 Blade 89-1/8 Long	—	2	—
5	9448	Bolt - Gang 12 Blade 107-5/8 Long	—	—	2
6	2404	Washer - Bumper	1	1	1
7	3276	Blade - 22 Dia. 1/4 Plain	8	9	11
7	11572	Blade - 24 Dia. 1/4 Plain	8	9	11
7	9481	Blade - 20 Dia. 3/16 Plain	1	1	1
8	3275	Blade - 22 Dia. 1/4 C. O.	8	9	11
8	11571	Blade - 24 Dia. 1/4 C. O.	8	9	11
8	9487	Blade - 20 Dia. 3/16 C. O.	1	1	1
9	9901	End Bell - Small	3	3	3
10	9902	End Bell - Large	3	3	3
	FB-09-0013	Sub. Assy. Bearing & Housing	3	3	3
11	G11071	Bearing (Fafnir GW211PP3)	1	1	1
12	106003	Housing - Bearing	1	1	1
13	11064	Ring - Snap	1	1	1
39	100104	Washer - 100mm	2	2	2
37	10606	Fitting - Grease 1/8 NPT Straight	1	1	1
14	0522	Spool - Spacer	5	6	8
15	1222A	Washer - End Gang	1	1	1
16	5622A	Plate - Lock	1	1	1
17	100098	Plate - Bearing	1	1	1
18	100099	Plate - Spacer	1	1	1
19	10870	Bolt - Carriage 1/2 x 1-1/2 NC, PL, GR5	1	1	1
20	10872	Washer - Cut 1-3/8 PL	1	1	1
21	10910	Pin - Roll 5/16 x 2-1/4	1	1	1
22	10489	Nut - Gang Bolt 1-1/2 NF	1	1	1
23	10226	Nut - Gang Bolt 1-1/2 NF, Slotted	1	1	1
24	9211	Bracket - Scraper Bar	3	3	5
25	10135	Bolt - Carriage 5/8 x 1-3/4 NC, PL	15	16	22
26	10299	Nut - Lock 5/8 NC, PL	21	22	28
27	10059	Washer - Cut 5/8 PL	21	22	28
28	9307	Bar - Scraper 9 Blade 79" Long	1	—	—
28	9273	Bar - Scraper 10 Blade 88-1/4" Long	—	1	—
28	9306	Bar - Scraper 12 Blade 106-3/4" Long	—	—	1
29	0459	Scraper - Front L. H., Rear R. H.	9	10	12
30	0460	Scraper - Rear L. H., Front R. H.	9	10	12
31	9628	Clamp - Trunnion	6	6	6
32	10665	Bolt - Carriage 5/8 x 2 NC, PL, GR5	6	6	6
33	0461	Mount - Scraper Bar, Front R. H., Rear L. H.	—	—	2
33	0462	Mount - Scraper Bar, Rear R. H., Front L. H.	—	—	2
34	9212	Bolt - "U" 3/4 Dia.	—	—	2
35	10300	Nut - Lock 3/4 NC, PL	—	—	4
36	10395	Nut - Lock 1/2 NC, PL	1	1	1
38	3278	Blade - 10 x 11 Ga. Plain Back-Up (not shown)	1	1	1

REAR WING GANG — F25

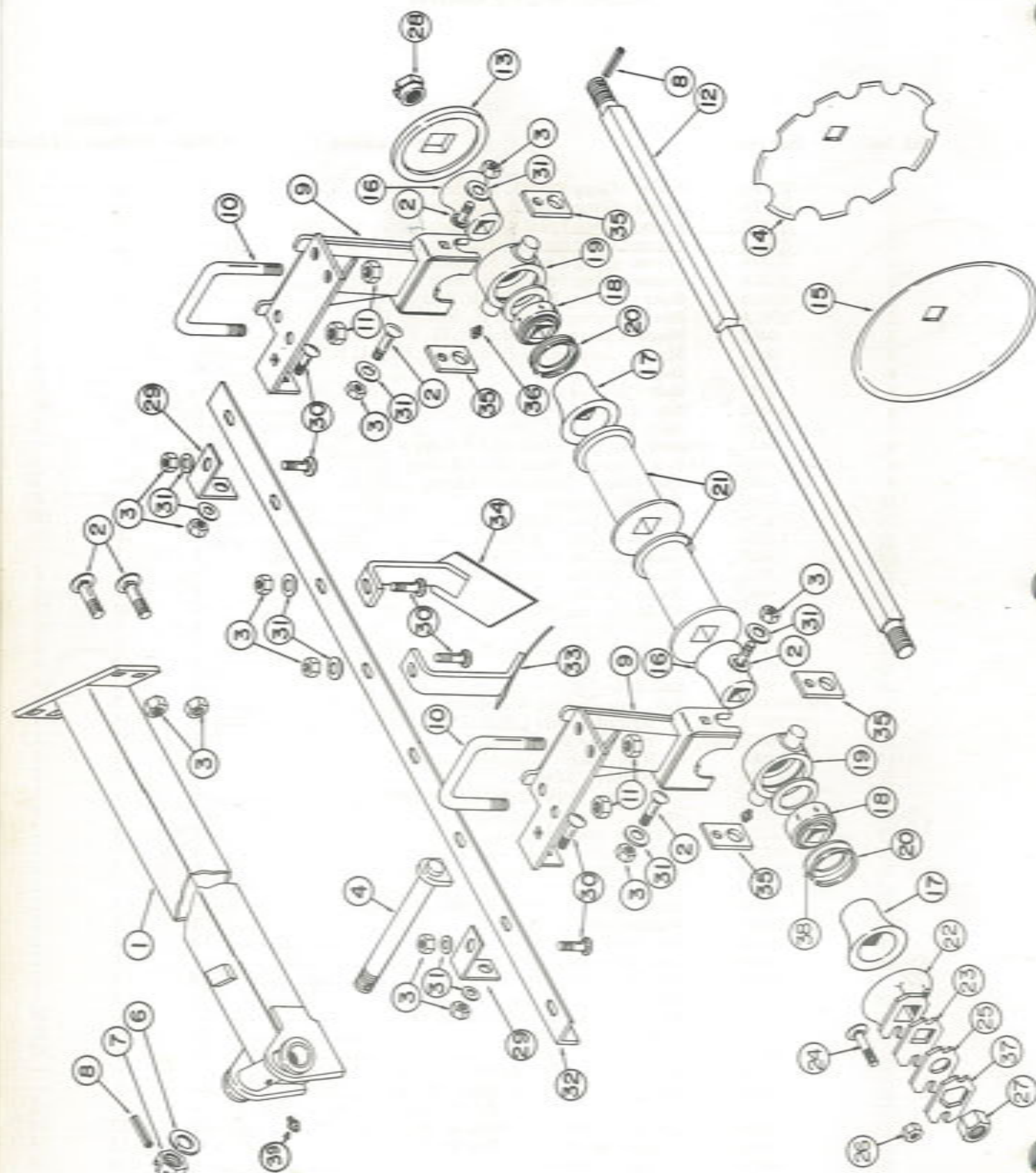


AMCO F25 SERIES DISK HARROW

REAR WING GANG

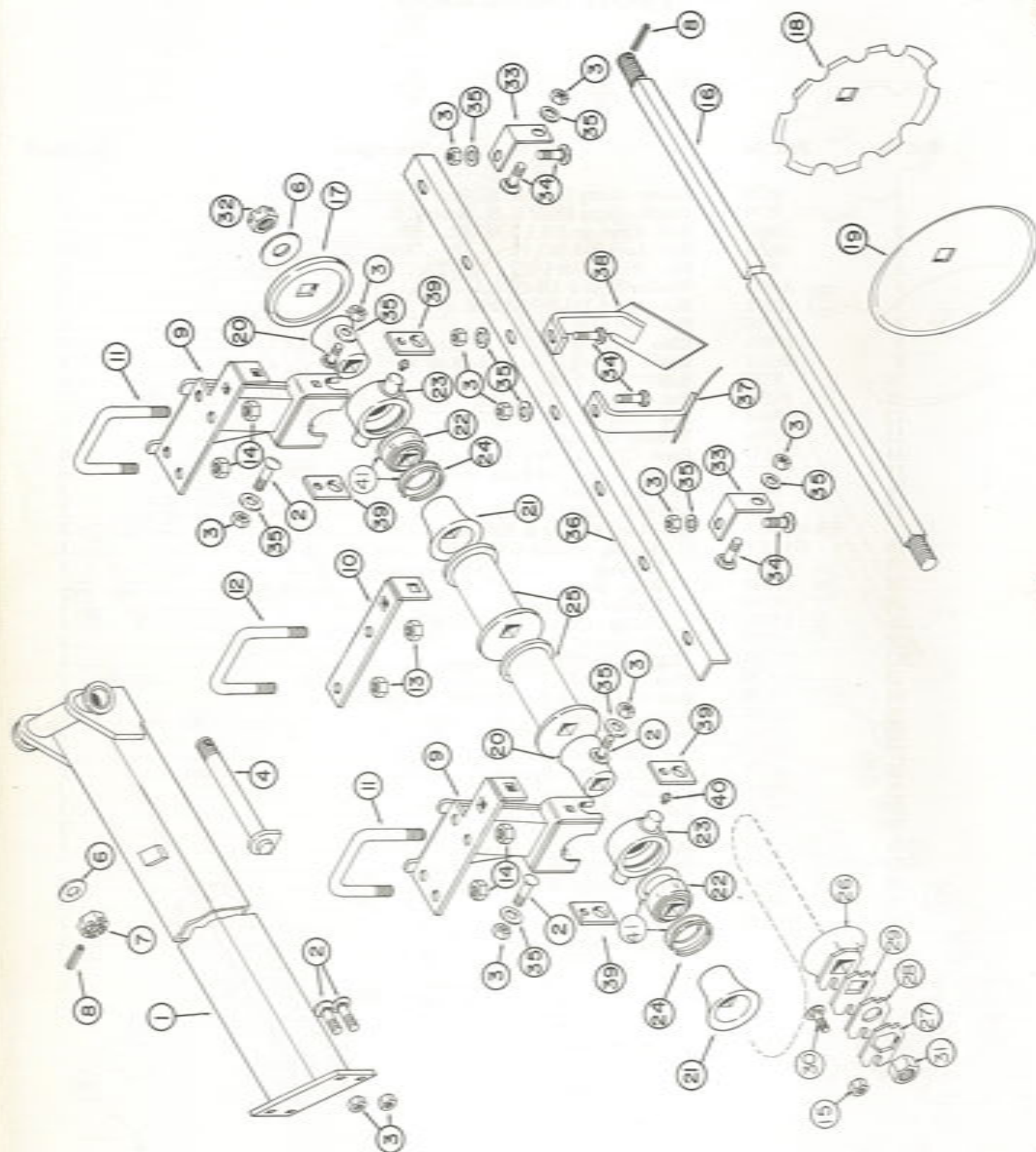
Ref. No.	Part No.	Description	No. Required		
			9 Blade	10 Blade	12 Blade
1	0583A	Frame - Gang Front L. H., Rear R. H.	1	—	—
1	0582A	Frame - Gang Front R. H., Rear L. H.	1	—	—
1	0585A	Frame - Gang Front L. H., Rear R. H.	—	1	—
1	0584A	Frame - Gang Front R. H., Rear L. H.	—	1	—
1	0589A	Frame - Gang Front L. H., Rear R. H.	—	—	1
1	0588A	Frame - Gang Front R. H., Rear L. H.	—	—	1
2	0590A	Riser - Bearing Front R. H., Rear L. H.	3	3	4
2	0591A	Riser - Bearing Front L. H., Rear R. H.	3	3	4
3	0462	Mount - Scraper Bar Rear R. H., Front L. H.	—	1	1
3	0461	Mount - Scraper Bar Front R. H., Rear L. H.	—	—	1
4	9752	Bolt - "U" 7/8 Dia.	6	6	8
5	9212	Bolt - "U" 3/4 Dia.	—	1	1
6	10396	Nut - Lock 7/8 NC, PL	12	12	16
7	10300	Nut - Lock 3/4 NC, PL	—	2	2
9	9447	Bolt - Gang 11 Blade 98-3/8 Long	1	—	—
9	9448	Bolt - Gang 12 Blade 107-5/8 Long	—	1	—
9	9443	Bolt - Gang 7 Blade 61-3/8 Long	—	—	2
10	2404	Washer - Bumper	1	1	2
11	3276	Blade - 22 Dia. 1/4 Plain	9	10	12
11	11572	Blade - 24 Dia. 1/4 Plain	8	9	11
11	9481	Blade - 20 Dia. 5/16 Plain	1	1	1
11	3055	Blade - 16 Dia. 9 Ga. Plain	1	1	1
11	9482	Blade - 18 Dia. 8 Ga. Plain	1	1	1
12	3275	Blade - 22 Dia. 1/4 C. O.	9	10	12
12	11571	Blade - 24 Dia. 1/4 C. O.	8	9	11
12	9487	Blade - 20 Dia. 3/16 C. O.	1	1	1
13	9901	End Bell - Small	3	3	4
14	9902	End Bell - Large	3	3	4
15	FB-09-0013	Sub. Assy. Bearing & Housing	3	3	4
16	G11071	Bearing (Fafnir GW211PP3)	1	1	1
16	16003	Housing - Bearing	1	1	1
17	11064	Ring - Snap	1	1	1
38	100104	Washer - 100mm	2	2	2
37	10606	Fitting - Grease 1/8 NPT Straight	1	1	1
18	0522	Spool - Spacer	7	8	8
19	1222A	Washer - End Gang	1	1	2
20	5622A	Plate - Lock	1	1	2
21	100098	Plate - Bearing	1	1	2
22	100099	Plate - Spacer	1	1	2
23	10870	Bolt - Carriage 1/2 x 1-1/2 NC, PL, GR5	1	1	2
24	10872	Washer - Cut 1-3/8 PL	1	1	2
25	10910	Pin - Roll 5/16 x 2-1/4	1	1	2
26	10489	Nut - Gang Bolt 1-1/2 NF	1	1	2
27	10226	Nut - Gang Bolt 1-1/2 NF, Slotted	1	1	2
28	9211	Bracket - Scraper Bar	3	4	5
29	10135	Bolt - Carriage 5/8 x 1-3/4 NC, PL	17	20	24
30	10299	Nut - Lock 5/8 NC, PL	23	26	32
31	10059	Washer - Cut 5/8 PL	23	26	32
32	9305	Bar - Scraper 11 Blade 97-1/2 Long	1	—	—
32	9306	Bar - Scraper 12 Blade 106-3/4 Long	—	1	—
32	9214	Bar - Scraper 7 Blade 60-1/2 Long	—	—	2
33	0459	Scraper - Front L. H., Rear R. H.	11	12	14
34	0460	Scraper - Front R. H., Rear L. H.	11	12	14
35	9628	Clamp - Trunion	6	6	8
36	10665	Bolt - Carriage 5/8 x 2 NC, PL, GR5	6	6	8
39	10395	Nut - Lock 1/2 NC, PL	1	1	2

FRONT INSIDE GANG — J25

AMCO J25 SERIES DISK HARROW
FRONT INSIDE GANG

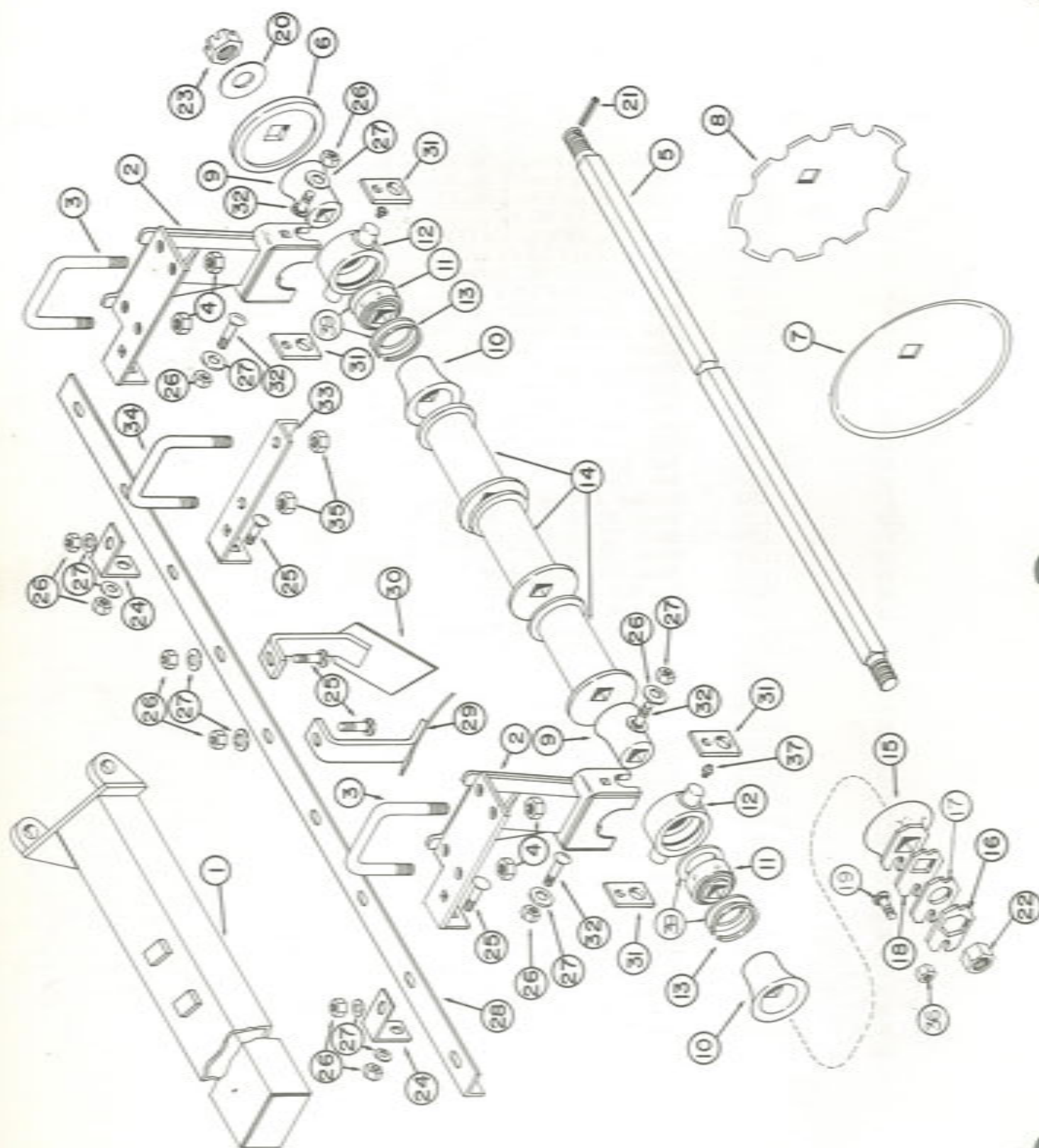
Ref. No.	Part No.	Description	No. Req'd
1	0578	Frame - Gang Front R. H., Rear L. H.	1
1	0579	Frame - Gang Front L. H., Rear R. H.	1
2	10665	Bolt - Carriage 5/8 x 2 NC, PL, GR5	8
3	10299	Nut - Lock 5/8 NC, PL	21
4	0593	Pin - Wing Pivot 1-1/2 x 13-1/2	1
6	10872	Washer - Cut 1-3/8 PL	1
7	10232	Nut - Hex 1-1/2 NC, Slotted	1
8	10910	Pin - Roll 5/16 x 2-1/4	2
9	0590A	Riser - Bearing Front R. H., Rear L. H.	3
9	0591A	Riser - Bearing Front L. H., Rear R. H.	3
10	9752	Bolt - "U" 7/8 Dia.	6
11	10396	Nut - Lock 7/8 NC, PL	12
12	9444	Bolt - Gang 70-5/8 Long	1
13	9578A	Washer - Bumper	1
14	11571	Blade - 24 Dia. 1/4 C. O.	8
15	11572	Blade - 24 Dia. 1/4 Plain	8
16	5481	End Bell - Small	3
17	5482	End Bell - Large	3
	FB-09-0013	Sub. Assy. Bearing & Housing	3
18	G11071	Bearing - (Fafnir GW211PP3)	1
19	16003	Housing	1
20	11064	Ring - Snap	1
38	100104	Washer 100mm	2
36	10606	Fitting - Grease 1/8 NPT Straight	1
21	0523	Spool - Spacer	3
22	1222A	Washer - End Gang	1
23	5622A	Plate - Lock	1
24	10870	Bolt - Carriage 1/2 x 1-1/2 NC, PLT, GR5	1
25	100098	Plate - Bearing	1
26	10395	Nut - Lock 1/2 NC, PLT	1
27	10489	Nut - Gang Bolt 1-1/2 NF	1
28	9577	Nut - Gang Bolt, Special	1
29	9211	Bracket - Scraper Bar	3
30	10135	Bolt - Carriage 5/8 x 1-3/4 NC, PL	13
31	10059	Washer - Cut 5/8 PL	19
32	9274	Bar - Scraper 68-3/4 Long	1
33	0459	Scraper - Front L. H., Rear R. H.	7
34	0460	Scraper - Front R. H., Rear L. H.	7
35	9628	Clamp - Trunion	6
37	100099	Plate - Spacer	1
39	11081	Fitting - Grease	1

REAR INSIDE GANG — J25

AMCO J25 SERIES DISK HARROW
REAR INSIDE GANG

Ref. No.	Part No.	Description	No. Req'd
1	0579	Frame - Gang Front L. H., Rear R. H.	1
1	0578	Frame - Gang Front R. H., Rear L. H.	1
2	10665	Bolt - Carriage 5/8 x 2 NC, PL, GR5.	6
3	10299	Nut - Lock 5/8 NC, PL	18
4	0593	Pin - Wing Pivot 1-1/2 x 13-1/2	1
6	10872	Washer - Cut 1-3/8 PL	2
7	10232	Nut - Hex 1-1/2 NC, Slotted	1
8	10910	Pin - Roll 5/16 x 2-1/4	2
9	0590A	Riser - Bearing Front R. H., Rear L. H.	2
9	0591A	Riser - Bearing Front L. H., Rear R. H.	2
10	0462	Mount - Scraper Bar, Front L. H., Rear R. H.	1
10	0461	Mount - Scraper Bar, Front R. H., Rear L. H.	1
11	9752	Bolt - "U" 7/8 Dia.	4
12	9212	Bolt - "U" 3/4 Dia.	1
13	10300	Nut - Lock 3/4 NC, PL	2
14	10396	Nut - Lock 7/8 NC, PL	8
15	10395	Nut - Lock 1/2 NC, PL	1
16	9451	Bolt - Gang 60-1/4 Long	1
17	2404	Washer - Bumper	1
18	3275	Blade - 22 Dia. 1/4 C. O.	1
19	3276	Blade - 22 Dia. 1/4 Plain	1
18	11571	Blade - 24 Dia. 1/4 C. O.	5
19	11572	Blade - 24 Dia. 1/4 Plain	5
20	5481	End Bell - Small	2
21	5482	End Bell - Large	2
	FB-09-0013	Sub. Assy. Bearing & Housing	2
22	G11071	Bearing (Fafnir GW211PP3)	1
23	16003	Housing	1
24	11064	Ring	1
40	10606	Fitting - Grease 1/8 NPT Straight	1
41	100104	Washer 100mm	2
25	0523	Spool - Spacer	3
26	1222A	Washer - End Gang	1
27	5622A	Plate - Lock	1
28	100098	Plate - Bearing	1
29	100099	Plate - Spacer	1
30	10870	Bolt - Carriage 1/2 x 1-1/2 NC, PL, GR5	1
31	10489	Nut - Gang Bolt 1-1/2 NF	1
32	10226	Nut - Gang Bolt 1-1/2 NF Slotted	1
33	9211	Bracket - Scraper Bar	3
34	10135	Bolt - Carriage 5/8 x 1-3/4 NC, PL	12
35	10059	Washer - Cut 5/8 PL	16
36	9403	Bar - Scraper 58-1/8 Long	1
37	0459	Scraper - Front L. H., Rear R. H.	6
38	0460	Scraper - Front R. H., Rear L. H.	6
39	9628	Clamp - Trunion	4
40	11081	Fitting - Grease	1

FRONT WING GANG — J25

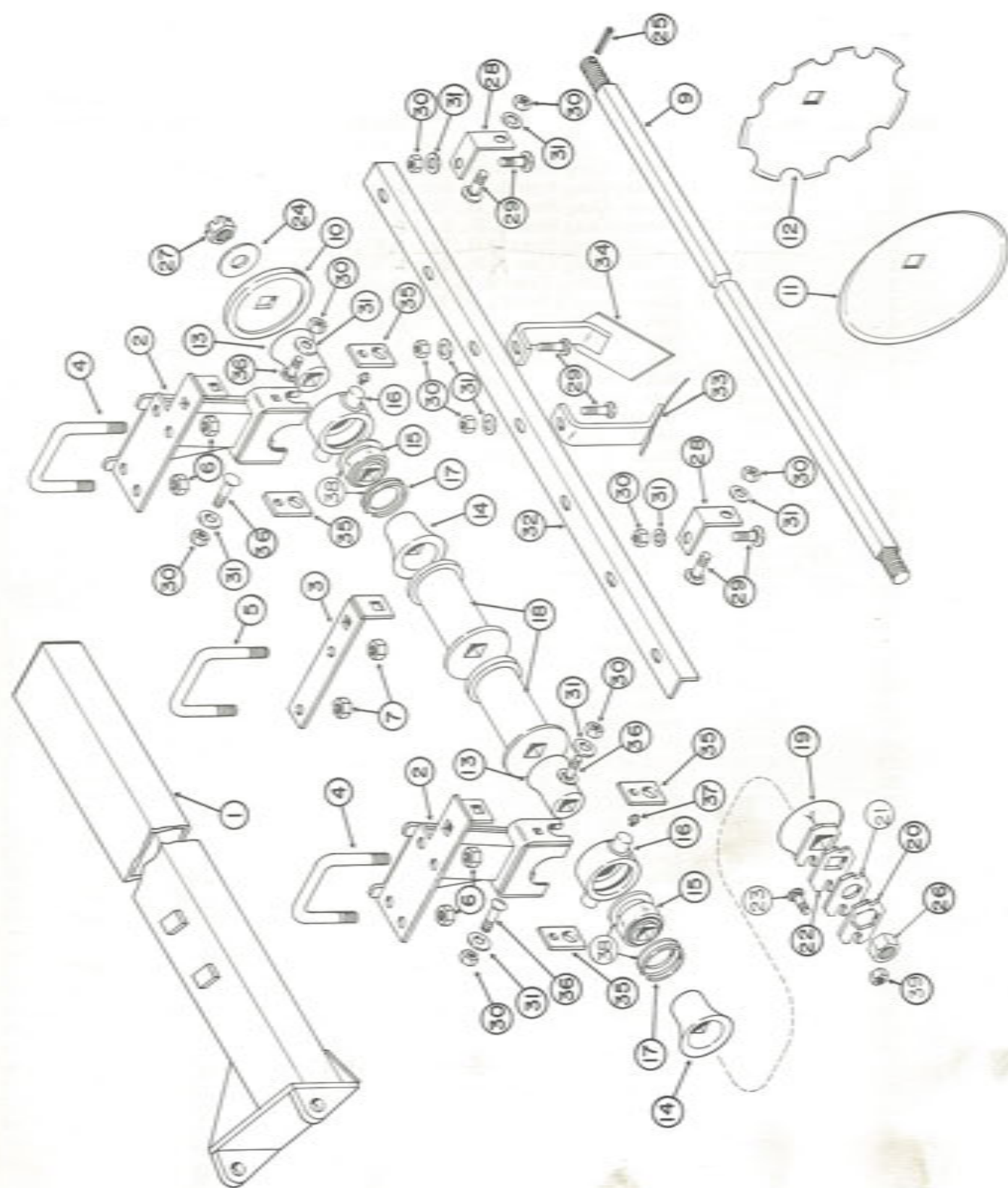


AMCO J25 SERIES DISK HARROW

FRONT WING GANG

Ref. No.	Part No.	Description	No. Required		
			9 Blade	10 Blade	12 Blade
1	0580A	Frame - Gang Front R. H., Rear L. H.	1	—	—
1	0581A	Frame - Gang Front L. H., Rear R. H.	1	—	—
1	0582A	Frame - Gang Front R. H., Rear L. H.	—	1	—
1	0583A	Frame - Gang Front L. H., Rear R. H.	—	1	—
1	0584A	Frame - Gang Front R. H., Rear L. H.	—	—	1
1	0585A	Frame - Gang Front L. H., Rear R. H.	—	—	1
2	0590A	Riser - Bearing Front R. H., Rear L. H.	3	3	3
2	0591A	Riser - Bearing Front L. H., Rear R. H.	3	3	3
3	9752	Bolt - "U" 7/8 Dia.	6	6	6
4	10396	Nut - Lock 7/8 NC, PL	12	12	12
5	9453	Bolt - Gang 81-3/4 Long	1	—	—
5	9454	Bolt - Gang 92-1/2 Long	—	1	—
5	9455	Bolt - Gang 103-1/4 Long	—	—	1
6	2404	Washer - Bumper	1	1	1
7	3276	Blade - 22 Dia. 1/4 Plain	1	1	1
7	11572	Blade - 24 Dia. 1/4 Plain	7	8	9
8	3275	Blade - 22 Dia. 1/4 C. O.	1	1	1
8	11571	Blade - 24 Dia. 1/4 C. O.	7	8	9
9	5481	End Bell - Small	3	3	3
10	5482	End Bell - Large	3	3	3
	FB-09-0013	Sub. Assy. Bearing & Housing	3	3	3
11	G11071	Bearing (Fafnir GW211PP3)	1	1	1
12	16003	Housing - Bearings	1	1	1
13	11064	Ring - Snap	1	1	1
39	100104	Washer - 100mm	2	2	2
37	10606	Fitting - Grease 1/8 NPT Straight	1	1	1
14	0523	Spool - Spacer	4	5	6
15	1222A	Washer - End Gang	1	1	1
16	5622A	Plate - Lock	1	1	1
17	100098	Plate - Bearing	1	1	1
18	100099	Plate - Spacer	1	1	1
19	10870	Bolt - Carriage 1/2 x 1-1/2 NC, PL, GR5	1	1	1
20	10872	Washer - Cut 1-3/8 PL	1	1	1
21	10910	Pin - Roll 5/16 x 2-1/4	1	1	1
22	10489	Nut - Gang Bolt 1-1/2 NF	1	1	1
23	10226	Nut - Gang Bolt 1-1/2 NF, Slotted	1	1	1
24	9211	Bracket - Scraper Bar	3	3	5
25	10135	Bolt - Carriage 5/8 x 1-3/4 NC, PL	14	15	20
26	10299	Nut - Lock 5/8 NC, PL	20	21	26
27	10059	Washer - Cut 5/8 PL	20	21	26
28	9275	Bar - Scraper 79-3/8 Long	1	—	—
28	9277	Bar - Scraper 90 Long	—	1	—
28	9460	Bar - Scraper 100-5/8 Long	—	—	1
29	0459	Scraper - Front L. H., Rear R. H.	8	9	10
30	0460	Scraper - Front R. H., Rear L. H.	8	9	10
31	9628	Clamp - Trunnion	6	6	6
32	10665	Bolt - Carriage 5/8 x 2 NC, PL, GR5	6	6	6
33	0461	Mount - Scraper Bar Front R. H., Rear L. H.	—	—	6
33	0462	Mount - Scraper Bar Front L. H., Rear R. H.	—	—	2
34	9212	Bolt - "U" 3/4 Dia.	—	—	2
35	10300	Nut - Lock 3/4 NC, PL	—	—	4
36	10395	Nut - Lock 1/2 NC, PL	1	1	1
38	3278	Blade - 10 x 11 Ga. Plain Back-Up (not shown)	1	1	1

REAR WING GANG — J25

AMCO J25 SERIES DISK HARROW
REAR WING GANG

Ref. No.	Part No.	Description	No. Required		
			62 Blade	66 Blade	70 Blade
1	0582A	Frame - Gang Front R. H., Rear L. H.	1	—	—
1	0583A	Frame - Gang Front L. H., Rear R. H.	1	—	—
1	0586A	Frame - Gang Front R. H., Rear L. H.	—	1	—
1	0587A	Frame - Gang Front L. H., Rear R. H.	—	1	—
1	0588A	Frame - Gang Front R. H., Rear L. H.	—	—	1
1	0589A	Frame - Gang Front L. H., Rear R. H.	—	—	1
2	0590A	Riser - Bearing Front R. H., Rear L. H.	3	3	4
2	0591A	Riser - Bearing Front L. H., Rear R. H.	3	3	4
4	9752	Bolt - "U" 7/8 Dia.	6	6	8
6	10396	Nut - Lock 7/8 NC, PL	12	12	16
9	9455	Bolt - Gang 103-1/4 Long	1	—	—
9	9456	Bolt - Gang 114 Long	—	1	—
9	9451	Bolt - Gang 60-1/4 Long	—	—	2
10	2404	Washer - Bumper	1	1	2
11	3276	Blade - 22 Dia. 1/4 Plain	1	1	1
11	11572	Blade - 24 Dia. 1/4 Plain	8	9	10
11	9482	Blade - 18 Dia. 8 Ga. Plain	1	1	1
12	3275	Blade - 22 Dia. 1/4 C. O.	1	1	1
12	11571	Blade - 24 Dia. 1/4 C. O.	8	9	10
13	5481	End Bell - Small	3	3	4
14	5482	End Bell - Large	3	3	4
	FB-09-0013	Sub. Assy. Bearing & Housing	3	3	4
15	G11071	Bearing (Fafnir GW211PP3)	1	1	1
16	16003	Housing - Bearing	1	1	1
17	11064	Ring - Snap	1	1	1
38	100104	Washer 100mm	2	2	2
37	10606	Fitting - Grease 1/8 NPT Straight	1	1	1
18	0523	Spool - Spacer	6	7	6
19	1222A	Washer - End Gang	1	1	2
20	5622A	Plate - Lock	1	1	2
21	100098	Plate - Bearing	1	1	2
22	100099	Plate - Spacer	1	1	2
23	10870	Bolt - Carriage 1/2 x 1-1/2 NC, PL, GR5	1	1	2
24	10872	Washer - Cut 1-3/8 PL	1	1	2
25	10910	Pin - Roll 5/16 x 2-1/4	1	1	2
26	10489	Nut - Gang Bolt 1-1/2 NF	1	1	2
27	10226	Nut - Gang Bolt 1-1/2 NF, Slotted	1	1	2
28	9211	Brackett - Scraper Bar	3	3	4
29	10135	Bolt - Carriage 5/8 x 1-3/4 NC, PL	16	17	20
30	10299	Nut - Lock 5/8 NC, PL	22	23	28
31	10059	Washer - Cut 5/8 PL	22	23	28
32	9460	Bar - Scraper 100-5/8 Long	1	—	—
32	9461	Bar - Scraper 111-1/4 Long	—	1	—
32	9403	Bar - Scraper 58-1/8 Long	—	—	2
33	0459	Scraper - Front L. H., Rear R. H.	10	11	12
34	0460	Scraper - Front R. H., Rear L. H.	10	11	12
35	9628	Clamp - Trunnion	6	6	8
36	10665	Bolt - Carriage 5/8 x 2 NC, PL, GR5	6	6	8
39	10395	Nut - Lock 1/2 NC, PL	1	1	2

DECALS

①



②



③

MAINTENANCE INSTRUCTIONS

1. Keep all bolts tight.
 - A. Visually inspect all bolts daily.
 - B. Check after first 50 hours or one week's operations.
2. Keep wheel bearings properly adjusted.
 - A. Clean and repack each season or every 300 hours.
 - B. Replace all worn or damaged parts when repairing.
3. Do not run with loose disk blades. Keep gang bolts tight! Tighten after first day's operation.
4. Keep scrapers properly adjusted 1/16" - 1/8" from blades.
5. Grease gang bearings every week or 50 hours, at the start of each season, and at the end of each season. Apply with low pressure, low volume hand grease gun. Use a good, clean lithium base grease, Shell Alvania No. 3 or equal. Rotate gangs while greasing for best results.

10997

④

AMCO F25 & J25 SERIES DISK HARROW
DECALS

Ref. No.	Part No.	Description	No. Req'd
1	11465	Decal — AMCO	4
2	11233	Decal — Warning	1
3	10997	Decal — Maintenance	1
4	11232	Decal — Warning	1

assembly instructions

AMCO F25 — J25
HARROW

The AMCO F25 or J25 Harrows are shipped from the factory with maximum pre-assembly. The following bundles are required for a complete harrow:

- A. Bundle Pull Tongue (with tongue jack)
- B. Bundle Main Frame (with rockshafts)
- C. Six 15 x 10 Six Bolt Wheels
- D. Two 4 x 8 Hydraulic Cylinders
- E. Two 4 x 24 Hydraulic Cylinders
- F. Bundle Wing Main Frame — Right Hand (with Rockshaft)
- G. Bundle Wing Main Frame — Left Hand (with Rockshaft)
- H. Bundle Hydraulic Kit with Operators Manual
- I. Bundle Front Right Hand Inside Gang and Gang Frame
- J. Bundle Front Left Hand Inside Gang and Gang Frame
- K. Bundle Rear Right Hand Inside Gang and Gang Frame
- L. Bundle Rear Left Hand Inside Gang and Gang Frame
- M. Bundle Front Right Hand Wing Gang and Gang Frame
- N. Bundle Front Left Hand Wing Gang and Gang Frame
- O. Bundle Rear Right Hand Wing Gang and Gang Frame
- P. Bundle Rear Left Hand Wing Gang and Gang Frame

Step 1.

Select a clear level area to assemble the harrow. Place all parts and bundles where they will be readily accessible during assembly.

Step 2.

Place the center main frame "right side up" on sturdy stands at least 36" High.



CAUTION Use sturdy stands to prevent frame from falling.

Step 3.

Attach the two inside front gangs and gang frames to the center main frame. Clamp in place with the 1 x 3 bolts and straps. These gangs have three bearings. The gangs should be located to throw soil away from the center of the harrow. Leave the bolts snug but not tight.

Step 4.

Attach the two inside rear gangs to the center main frame. Clamp in place with the 1 x 3 bolts and straps. These gangs have two bearings. The gangs should be located to throw soil toward the center of the harrow. Leave the bolts snug but not tight.

Step 5.

Attach the two front wing gang frames to the inside front gang frames. Use the 1-1/2" diameter wing pivot pins. Tighten the nuts snug but not tight.



CAUTION When working on disk harrows care should be exercised in handling or tightening bolts near disk blades to avoid injury. All hydraulically or mechanically elevated components must be blocked or lowered to prevent accidents when servicing the harrow.

Step 6.

Attach the two rear wing gang frames to the inside rear gang frames. Use the 1-1/2" diameter wing pivot pins. Tighten the nuts snug but not tight.

Step 7.

Mount six 12.5L x 15 eight ply tires on the six 15 x 10 wheels. Inflate to 40-50 PSI. Mount four wheels on the center rockshafts. Tighten hub bolts tight. Remove all stands from underneath the main frame.

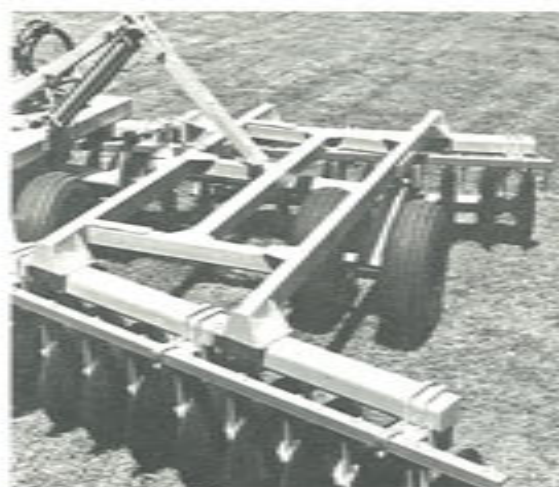
Step 8.

Clamp the wing main frames to the wing gang frames using the 7/8 "U" Bolts and lock nuts.

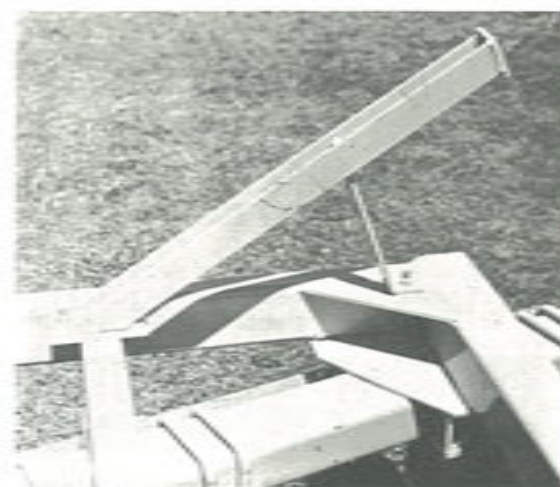
Shift gangs as required to align all holes. **Thoroughly tighten all twenty-four, 1 x 3, clamp bolts and all 16 "U" bolts.** Tighten four 1-1/2" diameter wing pivot pins. Secure the four wing pivot pins with 5/16 x 2-1/4 Roll Pins.



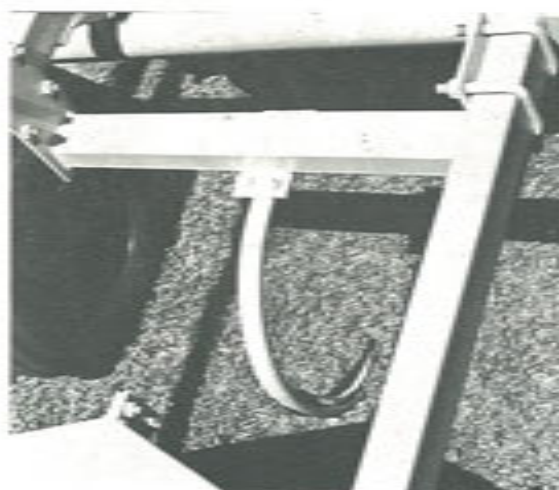
CAUTION When working on disk harrows, care should be exercised in handling or tightening bolts near disk blades to avoid injury.



WING MAIN FRAME



WING STAND



CENTER TOOTH ATTACHMENT



WHEEL MOUNTS

Step 9.

Install the turnbuckle sub. assemblies between the center rockshafts and the wing rockshafts. Adjust turnbuckles to 18" length before installation. Tighten 1-3/8 NC jam nut.

Install four wing stands on center main frame. Refer to photo on adjacent page.

Step 10.

Mount two 12.5L x 15 eight ply tires on wing rockshafts. Tighten hub bolts tight.

Step 11.

Install the two 4" x 8" hydraulic cylinders on the center main frame and the center rockshaft. The rod end should be attached to the rockshaft.

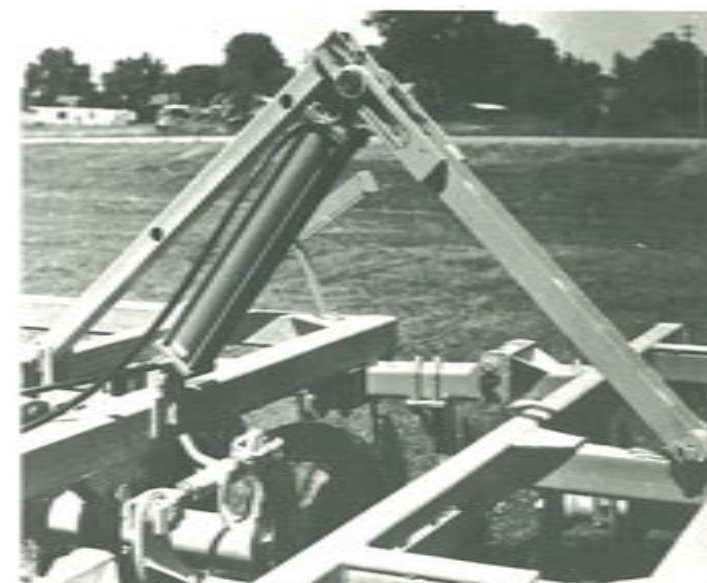
Step 12.

Install the two 4" x 24" hydraulic cylinders. Turn ports to front on both cylinders. Check plug on bottom of butt casting on each cylinder. It must be tight!

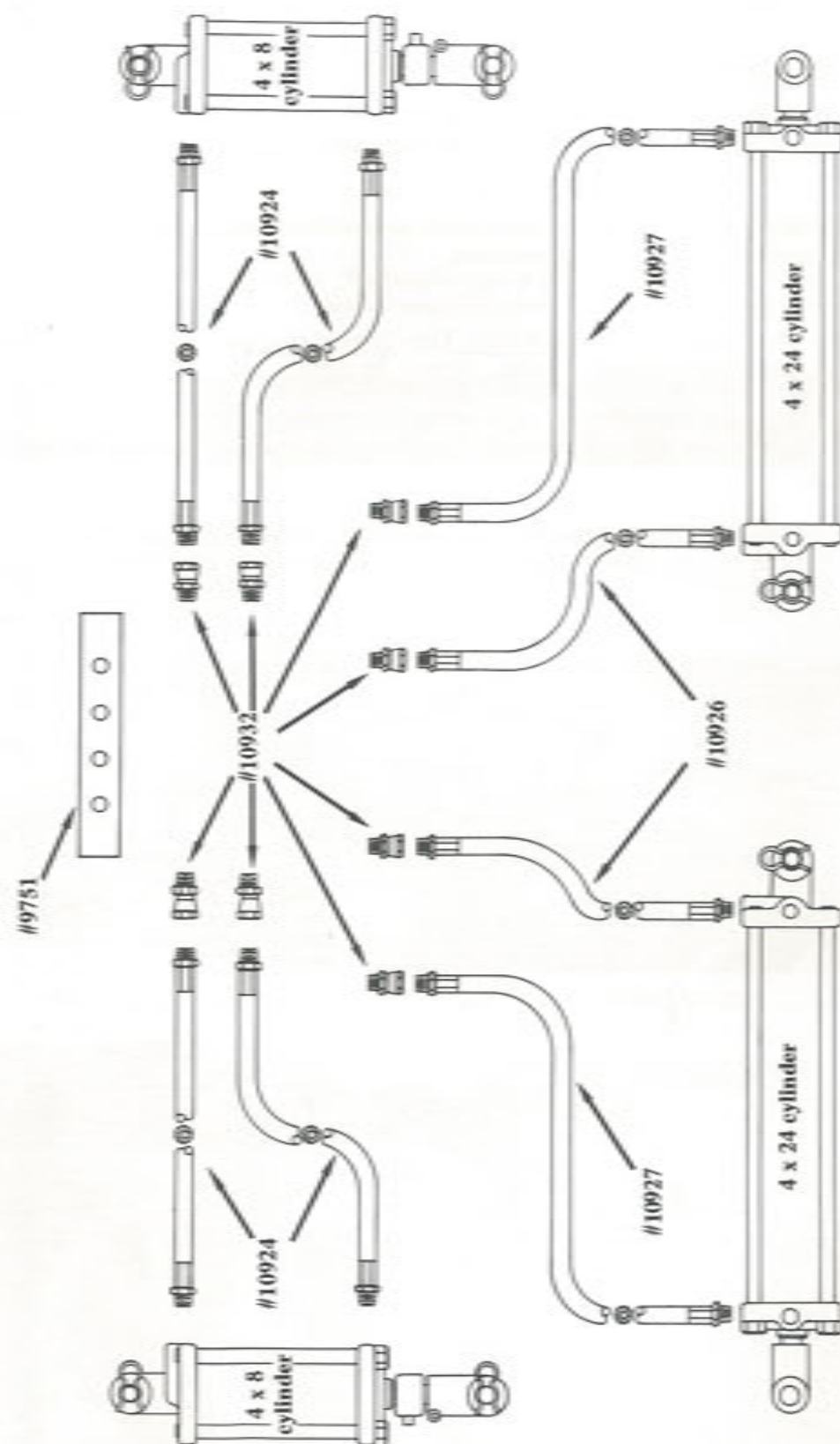
Step 13.

Connect wing lift linkages to main frame and wing main frame. Refer to photos for proper installation.

Attach center tooth attachment behind center rockshaft on center main frame. Use lower set of holes for harrows with 22" disk blades. The upper set of holes should be used when the harrow has 24" disk blades.

4 X 8 CYLINDER
INSTALLATION4 X 24 CYLINDER
INSTALLATION

HYDRAULIC CIRCUIT DIAGRAM



Step 14.

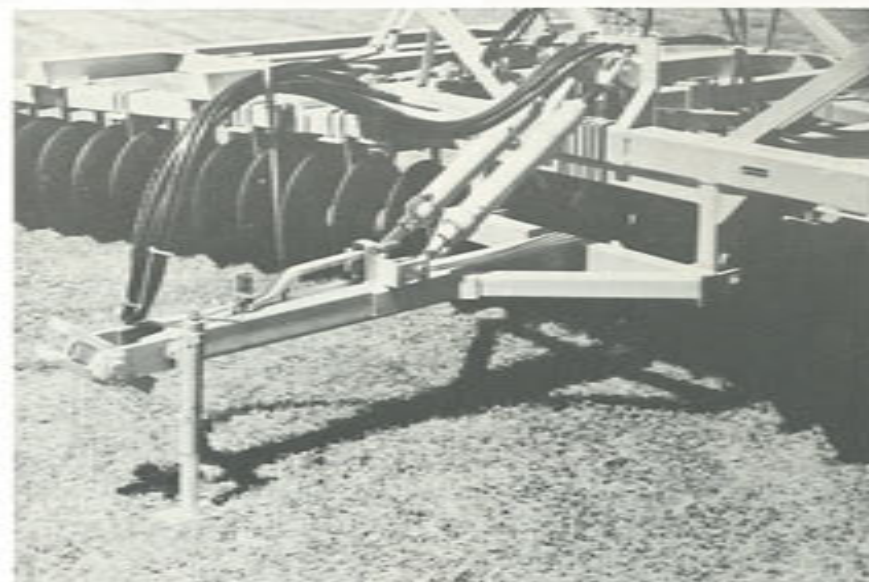
Install Hydraulic Fittings as Follows:

- Install four #10921 1/2" Male to 1/2" Female swivel elbows into the ports on the 4" x 8" cylinders. Use small amount of pipe sealant on each fitting to eliminate fluid seeps. Tighten fittings!
- Install #9751 manifold on front center of main frame. Remove plugs from ports.
- Install eight #10932 1/2 male to 1/2 female restrictors in top and rear ports of manifold.
- Connect cylinder with hoses as follows:
 - 2 #10926 3/8 x 84" hoses connect the butt ends of both 4 x 24 cylinders to first top and rear ports on the manifold.
 - 2 #10927 3/8 x 108" hoses connect the rod ends of both 4 x 24 cylinders to second top and rear ports on the manifold.
 - 2 #10924 3/8 x 70" hoses connect the rod ends of both 4 x 8 cylinders to third top and rear ports on the manifold.
 - 2 #10924 3/8 x 70" hoses connect the butt ends of both 4 x 8 cylinders to fourth top and rear ports on the manifold.

Use a small amount of pipe sealant on each hydraulic fluid fitting to eliminate fluid seeps. Tighten fittings! Route hoses through wing stands and tie with hose ties to prevent hose damage.

Step 15.

Install pull tongue. Install stabilizer barrel sub assemblies.



Step 16.

Attach four 1/2" x 12' or 3/8" x 12' SAE 100R2 or SAE 100R8 Double Braid Hydraulic hoses to the manifold on the main frame. Attach quick couplers. (Hoses and couplers are available as optional equipment). Attach harrow and hoses to tractor.

Step 17.
Final Grooming and Check Points.

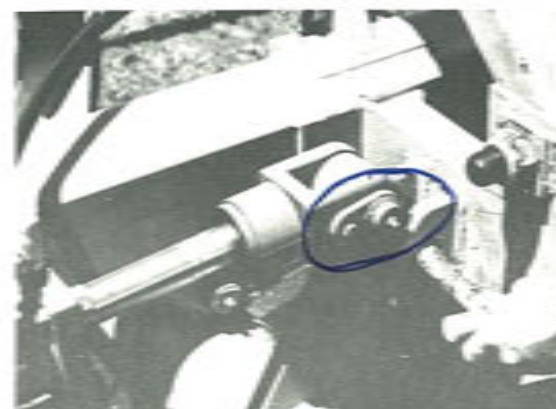
- A. Check inside front gangs. The bumper washers should clear by $3/8$ to $5/8$ ". This can be adjusted by shifting the gangs on the gang frames. It is important that the bumper washers clear by at least $3/8$ ".
- B. Check the inside rear gangs. The front tips of the inside blades should be 26" to 30" apart on the F25 Harrows and 34" to 38" apart on the J25 Harrows. Shift gangs on gang frames as required to obtain this spacing.



- C. Check the spacing between the blades on the center gangs and wing gangs. This spacing should be $9-1/4$ " to $9-3/4$ " on F25 Harrows and $10-1/2$ " to 11" on J25 Harrows.
- D. Check scraper adjustment. Scrapers should be adjusted to run $1/16$ " to $1/8$ " from disk blades.
- E. Raise and lower harrow 4 or 5 times with 4 x 8 cylinders to be sure hoses are properly routed. Check transport locks to see if they function properly. Tie hoses in position with hose ties.
- F. Check adjustment of turnbuckles between center and wing rockshafts. Both 4" x 8" cylinders must be fully retracted. Extend or retract turnbuckles for equal ground clearance under all four tires. Extending the turnbuckles will raise the wing gauge wheels. Retracting the turnbuckles will lower the wing gauge wheels. The turnbuckles should never be extended to over 19" in length. They should never be retracted to under 16" in length. Always tighten the jam nut to prevent the turnbuckles from moving during use.



CAUTION Stand clear when disk wings are being raised or lowered. Do not work or stand under disk wings unless wing lock pins are installed. Accidental operation of hydraulic lever or failure of any hydraulic component could cause wing to drop, causing serious injury or damage.



- G. Fold and unfold the wings 4 or 5 times. Check hose routing to be certain hoses will not be damaged in normal operation. Check wings to be sure they fold properly. Make sure the transport lock pins are stored in the holes on the wing fold linkage. The pins should easily slip into the holes to lock the wing in transport position. See Photo!
- H. Fully extend the 4 x 8 cylinders and raise the harrow for transport. Adjust the stabilizer barrels to level the harrow for transport. Adjust both barrels evenly for best results.
- I. Check all hydraulic hoses and fittings for leaks. Repair as required.
- J. Raise harrow for transport as described above. Use a good grade of **clean** Lithium soap base chassis grease to grease the entire harrow. This is very important if the harrow will be kept in inventory for several weeks before being placed in service. Grease the harrow as follows:
 - (1) Grease the eight rockshaft pivot pins until grease appears at the ends of the pivot journals. It will take several strokes to initially fill the pivot journals.
 - (2) Grease the two turnbuckles between the center rockshafts and wing rockshafts. Fill the cavity until grease appears around the threads. Again, it will take several strokes to initially fill the cavity. Grease the four wing pivot pins.



- (3) Grease the two fittings on the tongue stabilizer barrels.
- (4) Grease the clevis pins on the two 4 x 8 hydraulic cylinders.
- (5) Grease the gang bearings with 4 or 5 shots of grease to purge any condensation that has accumulated during shipment and storage.

K. If the harrow is in storage for four to six months, the entire harrow should again be lubricated before placing in service. It should also be greased every 50 hours while in use, at the end of each season and at the start of each season.

Check decals to be certain they are in place and in good condition. Touch up paint as required before delivery. Place Operators Manual in the heavy plastic shipping bag. Tape bag to main frame so the Operators Manual will be delivered to your customer along with the harrow.

L. Check all bolts for proper torque.

Step 18.

Review all steps of the assembly process to be certain the harrow is properly assembled. Check all bolts to be sure they are properly torqued. Visually inspect the harrow for any missing, damaged, or defective parts. Repaint any areas that need improvements.

Remember, a little extra attention to details at this time can prevent problems after the harrow is placed in service.

NOTES:

lubrication

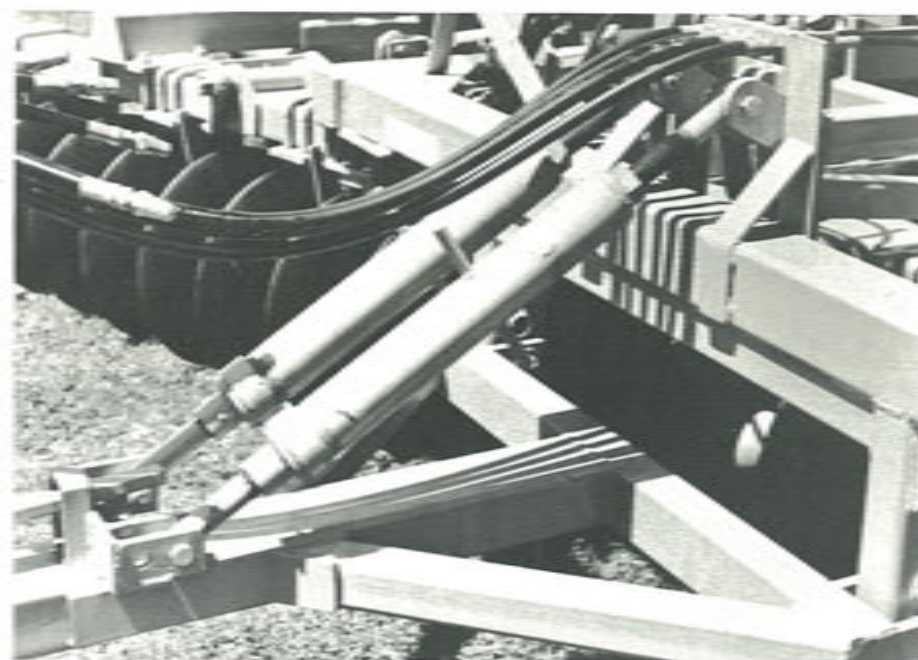
Careful and regular attention to lubrication will greatly increase the life of the harrow. For economical and efficient operation, the proper lubrication of frame fittings, gang bearings, and wheel bearings is essential.

Be sure fittings are free of dirt before greasing. If a fitting is lost or damaged, replace it immediately. Lubricate all parts thoroughly with a good grade No. 2 gun grease (Lithium Base).

Miscellaneous working parts not provided with lubrication fittings should be oiled occasionally with a good grade of lubrication oil.

ROCKSHAFT PIVOT PINS: A high carbon steel pin with a grease fitting joins each rockshaft to the main frame in two places. The 8 pins should be greased every 50 hours of operation. They should also be greased at the beginning and end of the disking season. A good grade of Lithium soap base grease is recommended.

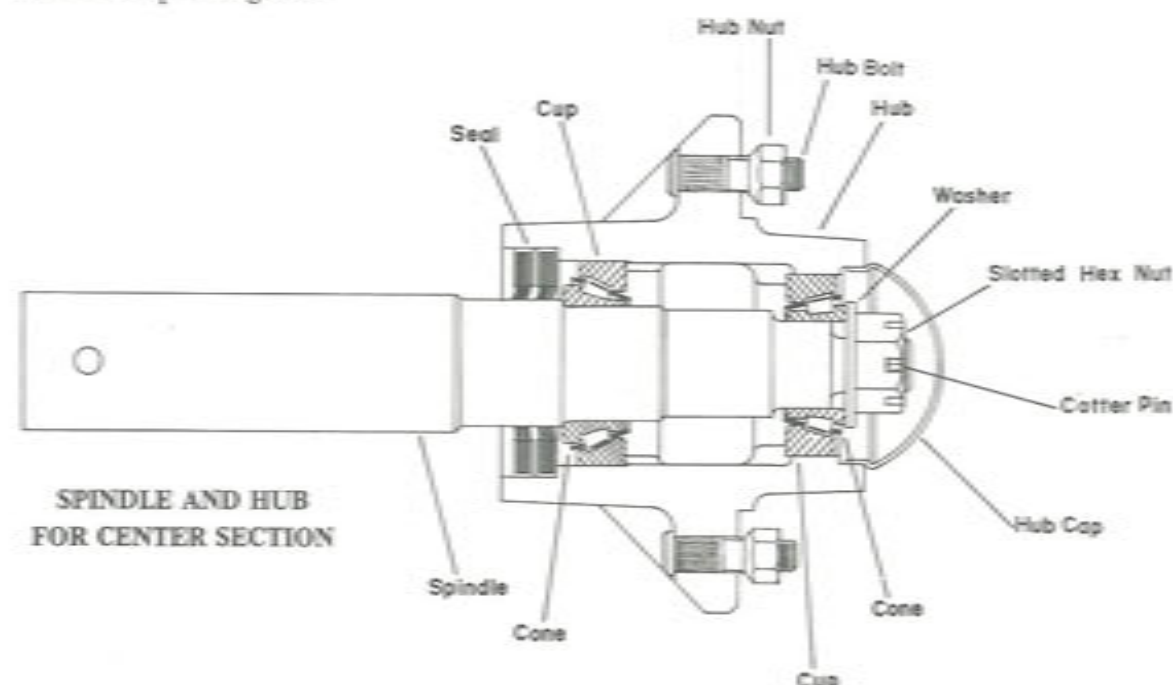
TONGUE STABILIZER BARRELS: The two stabilizer barrels on the tongue should be greased every 50 hours of operation. Also, at the beginning and end of each disking season. The threads on the rod should be cleaned and oiled occasionally for smooth operation.



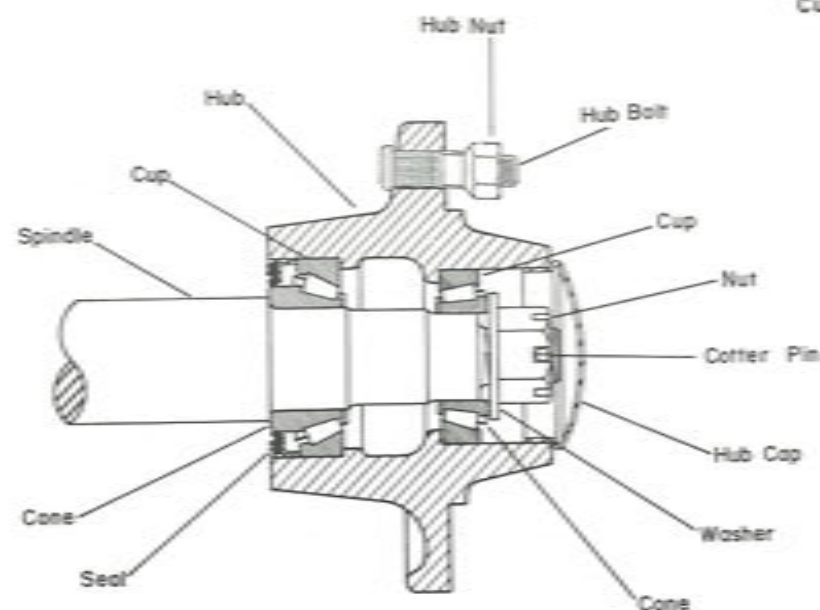
GANG BEARINGS: The AMCO Gangs are equipped with regreasable Protect-O-Shield ball bearings. The grease fitting is located on the rear of each bearing housing. They should be greased every 50 hours of operation with a good grade of lithium soap base chassis grease, preferably with a low volume-low pressure hand operated grease gun. All bearings should be greased at the beginning and end of each disking season. To protect the seals from the elements, raise the harrow on its wheels and slowly spin the gangs so the grease wraps around the seals.

More frequent greasing is recommended when working in very sandy or wet conditions.

WHEEL HUB BEARINGS: The wheel hubs are equipped with tapered roller bearings. These hubs are packed with grease and adjusted at the factory. They should be repacked and the spindle nut properly adjusted each disking season or every 300 hours of operation. Use a good grade of clean Lithium soap base grease.



SPINDLE AND HUB
FOR CENTER SECTION



SPINDLE AND HUB
FOR WING SECTION

WING PIVOT PINS: The hydraulically folded wings pivot on four 1-1/2" diameter high carbon steel pins. These pivot pins should be greased each week or every 50 hours of operation.



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

ROCKSHAFT TURNBUCKLES: The center rockshafts and wing rockshafts are connected with turnbuckles. The threads should be periodically cleaned and lubricated to assure smooth operation. They should also be greased each week or every 50 hours of operation.

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 procedure is recommended.

Clean off all foreign matter, and thoroughly lubricate the harrow.
(See LUBRICATION INSTRUCTIONS)

Tighten loose bolts and replace any damaged or missing parts.

Repaint the harrow where the original paint has worn off.

Coat the disk blades and hydraulic cylinder rods with a good rust preventative. Retracting all hydraulic cylinder rods will eliminate the need for coating the rods with a rust preventative.

Store in a dry place, with the gangs resting on boards to remove weight from the tires.

Carefully rotate each gang and check for worn or damaged blades, bent gang shafts, worn scrapers, damaged bearings and other parts which may need replacing.

Whenever disk blades or bearings are replaced, the gang shaft nuts must be torqued to 1200 foot pounds.



CAUTION All hydraulically or mechanically elevated operating 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 Hydraulic systems are highly pressurized. Escaping hydraulic oil, even an invisible pinhole leak, can penetrate body tissues causing serious injury. Use a piece of wood or cardboard when looking for leaks—never use the hands or other parts of the body.

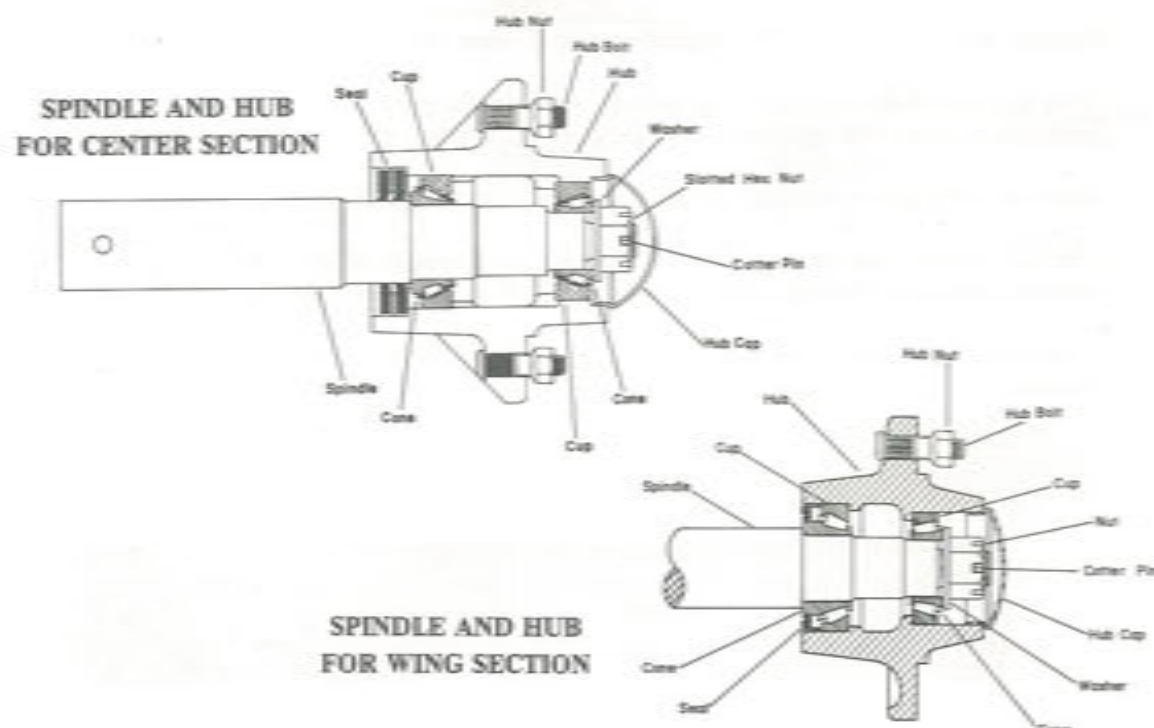
Relieve hydraulic pressure before disconnecting circuits. When reassembling, make absolutely certain that all connections are tight.

If injured by hydraulic oil escaping under pressure, see a doctor immediately. Serious infection or reaction may occur if medical attention is not given at once.

maintenance

WHEEL BEARING REPAIR: Wheel bearings should be repacked with grease and adjusted annually. Under extreme conditions, they should be serviced more frequently. Check occasionally for excessive end play.

To disassemble the hub, remove the dust cap by prying around it. Remove the cotter pin, slotted nut and flat washer. Carefully remove the hub and bearings from the spindle. Inspect all parts for wear and replace if necessary.



Use the following procedure when repairing or servicing wheel hubs:

1. Clean all parts that are to be re-used.
2. Carefully inspect the metal case on the grease seal. Discard seal if case is bent or damaged. Check seal lips for cuts, tears or excessive wear. The hubs on the wing depth gauges use the inner bearing race as the sealing surface. Make sure the seal fits snugly on this surface. The seal must be replaced if excessively worn. The hubs on the center section have two seals that seal on the spindle. Check the seals and the spindle for good sealing surfaces. Particular attention must be paid to cleaning the spindle prior to reassembly. Use emery cloth to smooth the grease seal seats and provide a smooth sealing surface.
3. Carefully inspect both sets of bearings cones. Bearing bore and rollers must be smooth and free of nicks and scratches. Replace cones if damaged.
4. Inspect hub to make sure the hub bolts have a good thread. Bearing cups must be smooth and free of surface blemishes. Cups must be removed from the hub and replaced if damaged. Cups should be fully pressed into the hub and rest squarely against the shoulder inside the hub. Hub cap and grease seal should fit snugly inside the hub. Severely damaged hubs should be replaced.
5. Threads on spindle must be in good condition. Bearing cone seats must be smooth and free of blemishes. Bearing cones must fit squarely on spindle.

6. Spindle washer, slotted nut, cotter pin and hub cap must be in good condition. Replace if worn or damaged.
7. To reassemble the hub, repack each bearing cone with grease and fill the hub cavity 1/3 full of grease. Place inner bearing assembly in hub, press grease seal into the hub and carefully re-install the hub on the spindle. Install the outer bearing assembly into the hub, and replace the spindle washer and slotted nut. Tighten the slotted nut, to seat the bearings, until the hub binds when rotated. Check seal lips to be certain they are turned out to exclude contamination.

Back the slotted nut off to the nearest slot. Rotate the hub five or six revolutions in each direction to seal all parts. Re-tighten the slotted nut while rotating the hub. When the hub binds, back the slotted nut off to the nearest slot and secure with a cotter pin. Install dust cap and re-mount wheel on hub.

GANG REPAIR:



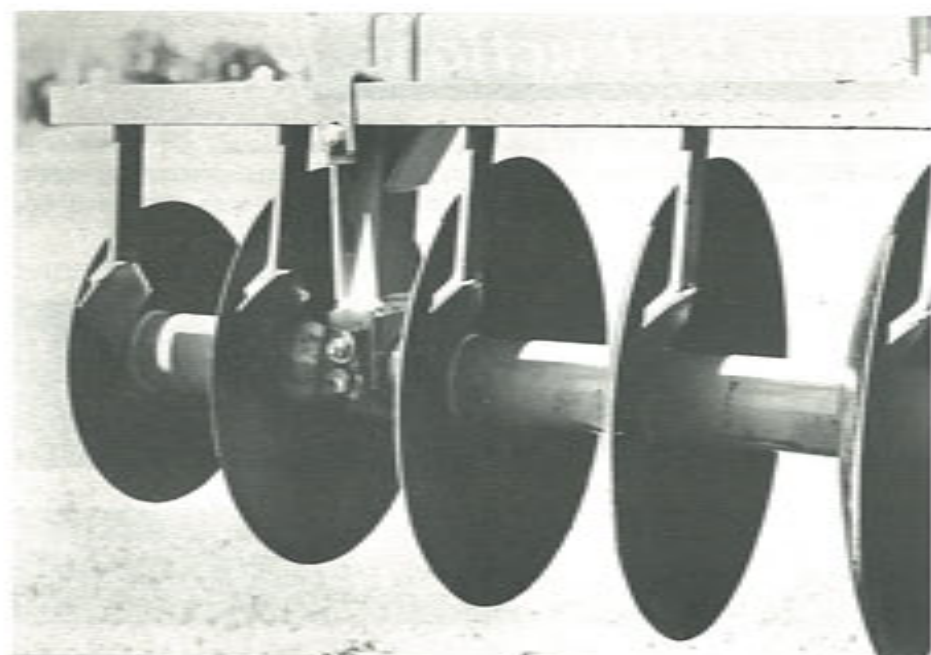
CAUTION When working on disk harrows, care should be exercised in handling or tightening bolts near disk blades to avoid injury.

1. With the harrow in its "down" or working position, loosen the gang bolt nut. It is helpful to clean the threads of all bolts with a wire brush and apply penetrating oil before removing the nuts.
2. Remove the nuts that secure the gang to the bearing riser.
3. Remove the trunion clamps.
4. Raise the harrow on its wheels. The entire gang can then be rolled away from the harrow. In most cases time can be saved by removing the scraper bars and scrapers.
5. Remove the gang bolt nut and end washer.
6. Remove the blades, spacer spools and bearings being careful not to damage the threads on the gang bolt.
7. Tear the entire gang down and clean all parts. Check disk axle for straightness. Bowed, bent or worn axles must be replaced.
8. Check spacer spools for damage caused by running disk with loose gangs or hitting underground obstructions. Replace spools if they are damaged.
9. Carefully check all end bells. The large end must contact the disk blade around the entire circumference of the end bell. The small end must be smooth and perpendicular to the axle. The end bells must be replaced if they are cracked or worn on the surface adjacent to the bearing.
10. Check all disk blades for cracks, wear and other damage. Replace worn or damaged disk blades.
11. Check all the bearings on the gang. Running a harrow for one hour or more after a bearing failure will seriously damage other bearings on the gang. This damaged bearing will then fail within a few hours after the failed bearing has been replaced. Continued operation with this failed bearing will damage the new bearing thus it will fail after a few hours use. In most cases it will be best to replace all bearings on a gang when it is torn down for repairs. A triple lip sealed bearing should always be used for bearing replacement. Also, a regreasable type bearing should always be used.

12. To replace a bearing, the snap ring must be removed. The old bearing should then be pressed out of the housing. Clean and wash out old grease and carefully check the housing. Replace the housing if it is damaged. Check the Protect-O-Shield washers. They should fit snug in the bearing housing requiring a few light taps with a hammer to remove or install them. If they are loose or show signs of wear, near the inner race of the bearing, they should be replaced. Do not use the harrow without the washers being installed. Press the new bearing straight into the housing. Always press against the outer race of the bearing. NEVER press against the seal or inner race of the bearing. Check location of the grease hole in the outer race of the bearing. This hole must align with the grease groove in the bearing housing. Rotate the bearing in the housing after it is pressed in to be sure it turns freely. Install the snap ring in the housing.
13. After cleaning, checking and replacing all damaged parts, the gang should be assembled. Be sure the grease fittings in the bearing housing face to the rear. Be sure the snap ring in the bearing housing is turned toward the convex (back) side of the disk blades. The 1-1/2" square gang bolt nut should be torqued to 1200 FT/LBS. The axle nut should be locked in place with the lock strap.
14. After the gang is assembled it should be attached to the harrow. The bearing risers should be carefully spaced to match the bearing housings. Poorly spaced bearing risers will overload the bearings and cause premature failure. The gang should be rotated 4 or 5 complete revolutions to be sure that all parts are aligned and the gangs turn freely.
15. The bearings should be greased each week or every 50 hours of use with a good grade of clean, lithium soap base grease. Use of dirty grease or a grease with metallic additives will reduce bearing life.
16. It is essential that gang bolts be kept tight to prevent axle bending, blade breakage, spacer spool breakage and damage to other gang parts. Gang parts tend to wear on a bevel when the harrow is operated with a loose gang bolt. This reduces the area of contact between mating gang parts. Therefore, it is often difficult to keep a gang bolt tight if it has been operated in a loose condition. After such a gang bolt has been properly torqued it should be retorqued after about 30 minutes of operation, again after 4 or 5 hours of operation and again after 8 to 10 hours of use. This will assure that proper gang bolt tension is maintained while the mating components are reseating. If the gang bolt will not stay tight, the gang should be completely disassembled and all parts carefully inspected. All damaged parts should be replaced before reassembling the gang.



CAUTION: When working on disk harrows care should be exercised in handling or tightening bolts near disk blades to avoid injury. All hydraulically or mechanically elevated components must be blocked or lowered to prevent accidents when servicing the harrow.



ROCKSHAFT PIVOT PIN REPAIR: The rockshafts are equipped with replaceable, regreasable, bronze bushings. If properly lubricated they should last for several seasons. The bushings should be checked each disking season for excessive pivot pin or bushing wear. Worn bushings and pivot pins should be replaced. Failure to replace worn or damaged parts will damage other parts.

HYDRAULIC CYLINDER REPAIR:

- A. Remove hoses and fittings from cylinder.
- B. Remove cylinder from harrow and clean outside of cylinder.
- C. Dis-assemble cylinder by removing the rods and nut from end of cylinder rod. Slip piston and gland off cylinder rod.
- D. Carefully clean and inspect all parts for wear or damage. Small nicks, scratches or blemishes on rod and inside of barrel should be smoothed with fine steel wool or emory cloth. Replace parts that cannot be repaired.
- E. Remove all O' Rings from piston and gland. Replace all seals with new parts.
- F. Assemble cylinder using care to prevent damage to O' Rings and Seals.
- G. Replace cylinder on harrow and attach hoses. Check cylinder for leaks.

GENERAL:

Keep all bolts tight. Check all bolts after 50 hours operation and each season thereafter. Visually inspect all bolts daily. Do not run with loose gang bolts. Keep the gang bolts torqued to 1200 FT/LBS.

operating instructions

TRANSPORTING THE DISK: Extreme caution is required when transporting any machinery on roads or highways. Remember you are responsible for compliance with State and Local laws regarding lighting, reflectors, and SMV emblems as well as length and width.



CAUTION When transporting farm implements on public roads after dusk, it is the responsibility of the operator to provide lighting and reflectors on the rear of the implement in accordance with your state law.



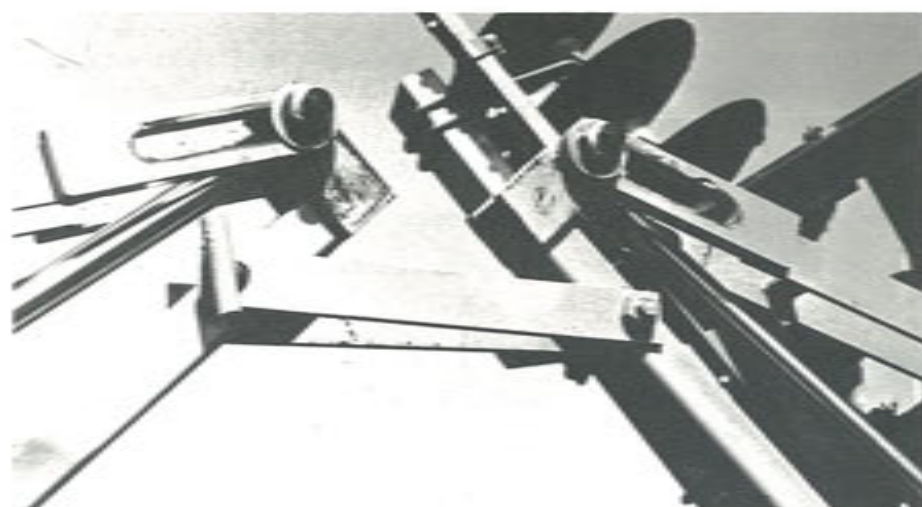
CAUTION When transporting machinery over public roads, comply with your local and state laws regarding length, width and lighting.



CAUTION Be sure the area is clear of any personnel before safely driving tractor with disk attached.

Before transporting the disk check your tires for proper inflation. Be sure that hub bolts and nuts are tight. Wheel bearings should be checked for proper adjustment and lubrication prior to roading the disk over long distances.

The harrow is equipped with a transport pin and straps for the wing main frames. The pin and straps should be used to lock the wings during transport.



CAUTION Always secure for transport by using the transport lock and wing hold pins.

Each of the 4 x 8 hydraulic cylinders used for lifting the harrow is equipped with a transport pin. When the harrow is on its wheels in the transport position these pins can be used to prevent the cylinders retracting. These pins should always be used when the harrow is transported.

The drawbar pin should be in good condition and strong enough to secure the disk to the tractor. Secure the drawbar pin to keep it in place. The drawbar should be secured to prevent swinging.

FIELD ADJUSTMENTS: By using the tongue stabilizer barrels, level the harrow from front to rear. This compensates for different drawbar heights and soil conditions. They are used to adjust the disk for proper soil penetration and leveling. After a few minutes of operation any minor adjustments needed will be apparent. Use the stroke control devices on the 4" x 8" hydraulic cylinders to regulate cutting depth. These stroke controls should be adjusted evenly. Disc as deep as necessary to do a satisfactory job, but, trying to disk excessively deep exerts undue strain on the tractor, wastes fuel, puts strain on the disk frame and shortens the bearing life. Never let soil "Bulldoze" over or in front of the spacer spools.

With the center section disking at the proper depth and running level the wings can be adjusted to give uniform penetration and leveling across the entire harrow width. If the wings are cutting deeper than the center section, shorten the turnbuckles that connect the wing rockshafts to the center rockshafts. If more penetration is desired on the wings, lengthen the turnbuckles. The turnbuckle length should be approximately 18 inches. The turnbuckles should always be between 16" and 19" in length.

TIPS FOR LEVEL DISKING: Five factors must be considered when level disking is required. They are (1) depth of cut (2) tractor speed (3) tongue stabilizer barrel length (4) wing rockshaft turnbuckle adjustment and (5) soil conditions. Improper adjustments and tractor speeds above 6 MPH contributes to ridging and furrowing.

When a center ridge is left behind the disk you should shorten the tongue stabilizer barrels to put less weight on the rear gangs, adjust the inside rear gang outward slightly, or reduce tractor speed. Perhaps, a combination of all three adjustments will be required.

A center furrow may be corrected by lengthening the tongue stabilizer barrels to put more weight on the rear gangs. The inside rear gangs may be shifted inward slightly if necessary.

Outer ridges or furrows are usually the opposite action of ridges or furrows in the center. Therefore, most can be corrected by adjusting the tongue stabilizer barrels. In other cases it may be necessary to adjust the turnbuckle between the main frame and wing frames to prevent the wing tips from digging in and throwing up a ridge.

SUMMARY:

The harrow has three adjustments that can be used to "set" the disk for proper operation. They are: (1) stroke control on the lift cylinders (2) turnbuckles to control wing cutting depth and (3) tongue stabilizer barrels to level the disk front to rear. These are the only components that will normally need to be adjusted to match field conditions. In extremely loose soil (dry powder), it may be necessary to shift the rear gangs laterally to get good level disking.



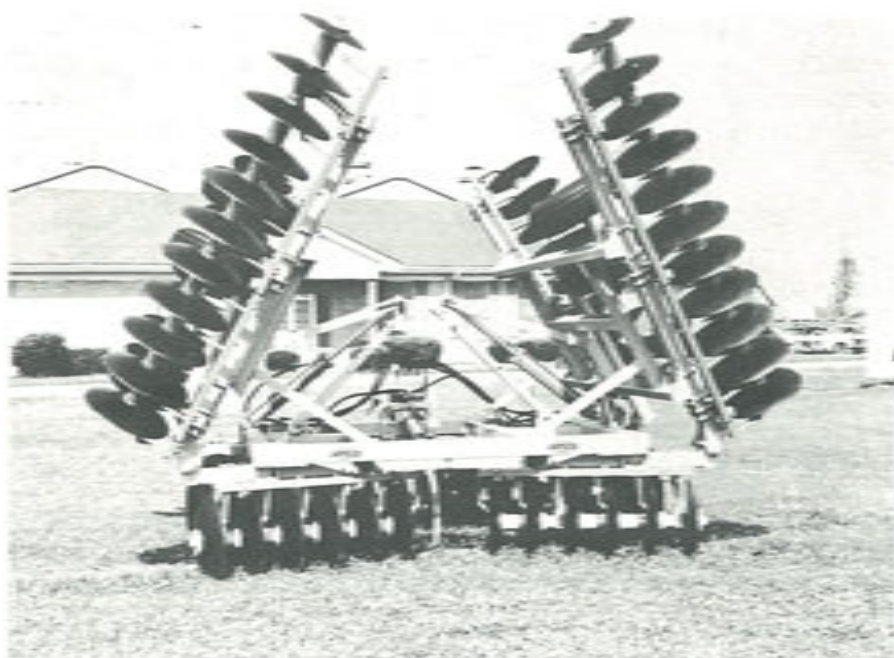
CAUTION Never clean, adjust or lubricate a disk harrow that is in motion.

If the harrow is not leveling properly, after making these adjustments, you should go back to the assembly section and carefully check the entire harrow for proper assembly.

operating tips

OPERATING TIPS FOR LONG LIFE AND SATISFACTORY PERFORMANCE

1. Match the harrow with the proper size tractor. Too much horsepower and speed will result in excessive maintenance cost.
2. Lubricate with clean grease at the recommended intervals.
3. Use good quality tires, hoses, and hydraulic cylinders.
4. Use the tongue stabilizer barrels, wing rockshaft turnbuckles, proper cutting depth, and travel speed to get level disking and smooth fields.
5. Wash corrosive materials such as fertilizer and herbicides from the disk when it is not in use.
6. Insist on genuine AMCO replacement parts. Items such as bearings and blades look alike but are not as reliable as original equipment.
7. Never allow unsafe conditions or operating practices. Your safety is of prime importance.
8. Raise the disk harrow on its transport wheels when turning. Failure to do so will result in broken blades, bent axles, and excessive strain on the tongue and main frame.
9. Reduce operating speed in areas containing stumps or rocks to reduce blade breakage.
10. Do not operate disk with wings folded. Operating disk with wings folded will cause excessive blade breakage, bent axles and undue strain on related parts.



MOST OFTEN ENCOUNTERED DISK BLADE FAILURES

Most disk blade failures can be prevented by selecting the correct blade size 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.

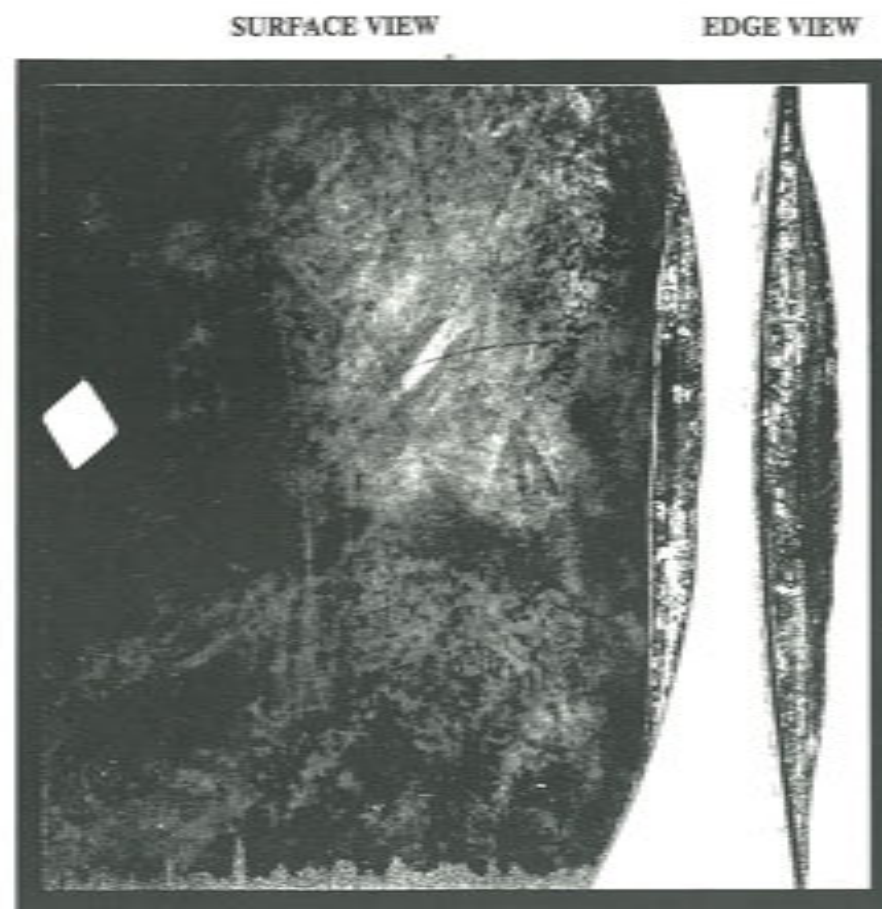
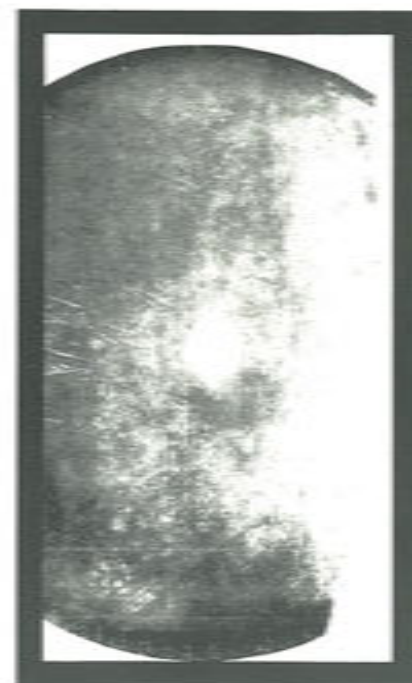


FIGURE 2 — Straight directional break caused by defective steel. Eligible for warranty consideration.



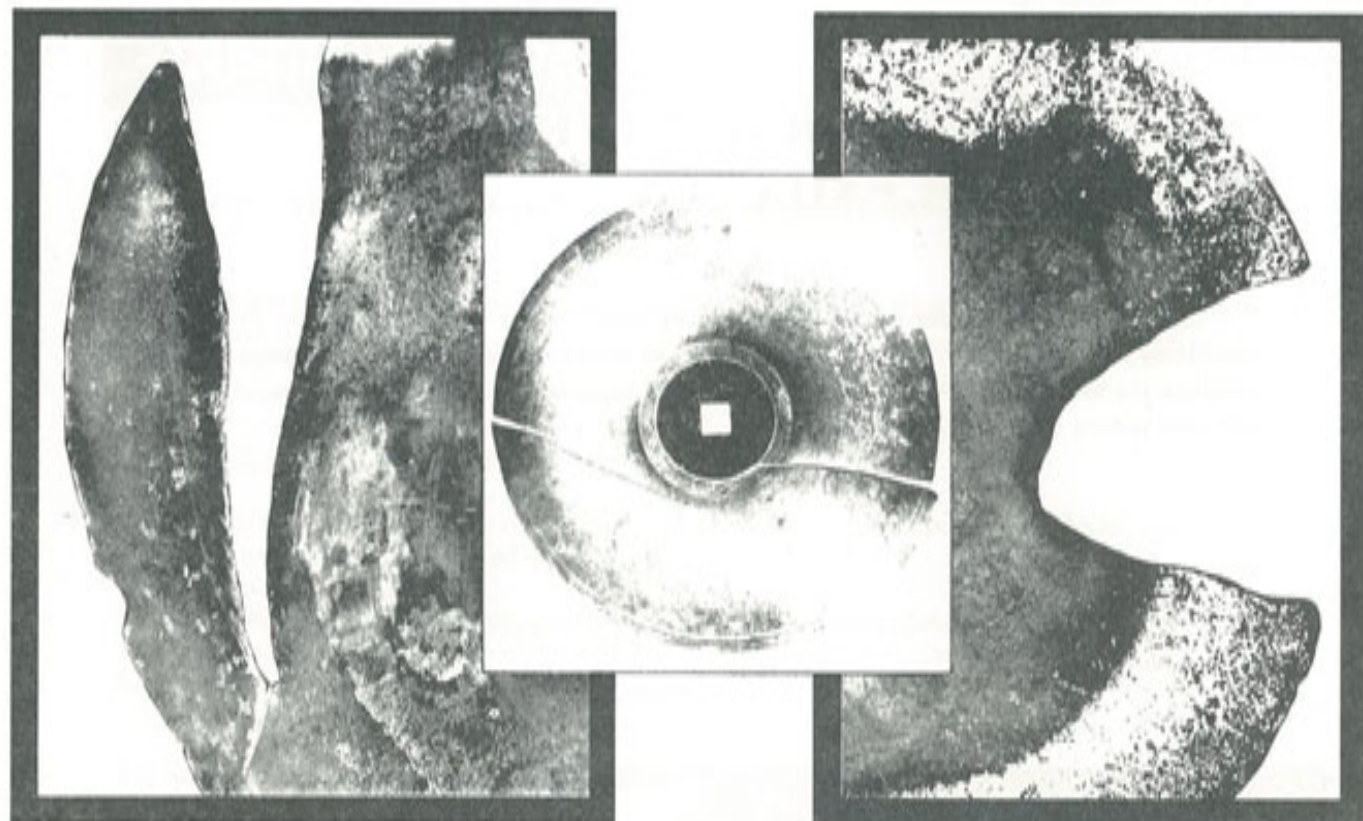


FIGURE 3, 4, 5 — Irregular breaks caused by contact against rocks or stumps. Not covered by warranty.



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 shown that this is usually caused by loose bolts, excessive flexing, or by contact with rocks and stumps. Not covered by warranty.