

HD Double Offset Flexwing Tandem Disk Harrow

Operator's Manual – 28, 31, 34 & 39' Models





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To The Purchaser

The care you give your new AMCO HD disk harrow will greatly determine the satisfaction and service you obtain. By observing the instructions and suggestions in this manual, your AMCO HD 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 HD 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 HD 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:_____

AMCO HD Series Disk Harrow Standard Specifications - 28, 31, 34 and 39' Models

Cang Bolt:	2" Dia hig	h carbon cold	rolled steel		Hydraulic I	Josos.	3/8" SAE	100 P 2 1;#	evlinders
Bladosi	2 Dia. Ing.	lain with feat	hering blades		fryuraune f	105CS. 4000 DSI V	Working pres	rook2 - Liit	cymucis
Diaues. Diado Spaci	20 X 1/4 1	10 1/ "	incring blades			1/4" SAE	100 P2 Wi	suic a fold avlin	dors
Cana Angla	ng.	10 /2 Eived 21°	front and 10°	roor		1/4 SAE 100 K2 - wing tota cylinders			
Gang Angle	: Drotoot O ($\frac{110111}{14}$ and $\frac{19}{14}$	Ical		1/2" SAE	100P2 Dial	ssuie	
bearings:	graagabla b	silleid®, 2 11	10 Dia. Doie			1/2 SAE	Vorking pro		
	greasable b	an type, togg	ie mounted,		Wheels He	5300 PSI			
					wheels, Hu	bs & Tires -	- 28 & 31 M	lodels:	1.5
Bearing Riser: 1 ¹ / ₄ x 2 1/2" Spring steel					4 - 15 x 10	8-Bolt whee	els & 12.5L	-15	
a	Shock abso	orber shank				Farm high	way service	tires on cente	er
Scrapers:	High carbo	n replaceable	blades, sprin	g steel		section			
	shanks, GR	5 bolts & 3	$x = 2 \times 3/8$ high			4 - 15 x 10	6-bolt whee	els & 12.5L -	- 15
	Carbon ang	gle iron bars				Tires on w	ing section		
Wrenches:	2 For gan	g bolts			Wheels, Hu	bs & Tires -	- 34 & 39' M	lodels:	
Tongue:	115" long v	with 7000# to	ngue jack, Ca	it. IV		4 - 16.1 x	14" 8-Bolt w	heels & 16.5	5L - 16.1
	ductile iron	hitch and 1/2	2 x 56 safety	chain		Farm high	way service	tires on	
Hydraulic C	ylinders - 28	& 31' Mode	els:			center sect	ion		
	$2 - 4 \ge 12$ (Center lift &	$2 - 3\frac{1}{2} \times 12$ v	ving lift		4 - 15 x 10	" 8-bolt whe	els & 12.5L	-15
	$4 - 4 \ge 24$	Wing fold				Tires on w	ing section	_	
$1 - 3 \frac{1}{2} \ge 6$ Frame leveling Walking Tandems: Walking tandem type where $1 - 3 \frac{1}{2} \ge 6$ Frame leveling Walking tandem type where $1 - 3 \frac{1}{2} \ge 6$ Frame leveling Walking tandem type where $1 - 3 \frac{1}{2} \ge 6$ Frame leveling Walking tandem type where $1 - 3 \frac{1}{2} \ge 6$ Frame leveling Walking tandem type where $1 - 3 \frac{1}{2} \ge 6$ Frame leveling Walking tandem type where $1 - 3 \frac{1}{2} \ge 6$ Frame leveling Walking tandem type where $1 - 3 \frac{1}{2} \ge 6$ Frame leveling Walking tandem type where $1 - 3 \frac{1}{2} \ge 6$ Frame leveling Walking tandem type where $1 - 3 \frac{1}{2} \ge 6$ Frame leveling Walking tandem type where $1 - 3 \frac{1}{2} \ge 6$ Frame leveling Walking tandem type where $1 - 3 \frac{1}{2} \ge 6$ Frame leveling Walking tandem type where $1 - 3 \frac{1}{2} \ge 6$ Frame leveling Walking tandem type where $1 - 3 \frac{1}{2} \ge 6$ Frame leveling Walking tandem type where $1 - 3 \frac{1}{2} \ge 6$ Frame leveling Walking tandem type where $1 - 3 \frac{1}{2} \ge 6$ Frame leveling tandem type where $1 - 3 \frac{1}{2} \ge 6$ Frame leveling tandem type where $1 - 3 \frac{1}{2} \ge 6$ Frame leveling tandem type where $1 - 3 \frac{1}{2} \ge 6$ Frame leveling tandem type where $1 - 3 \frac{1}{2} \ge 6$ Frame leveling tandem type where $1 - 3 \frac{1}{2} \ge 6$ Frame leveling tandem type where $1 - 3 \frac{1}{2} \ge 6$ Frame leveling tandem type where $1 - 3 \frac{1}{2} \ge 6$ Frame leveling tandem type where $1 - 3 \frac{1}{2} \ge 6$ Frame leveling tandem tandem type where $1 - 3 \frac{1}{2} \ge 6$ Frame leveling tandem tand				wheel					
Hydraulic C	Hydraulic Cylinders - 34 & 39' Models:				mounts on center and wing rockshafts				
	$2 - 4 \times 16$ Center lift & 2 - 3 $\frac{1}{2} \times 16$ wing lift			Wing Gauge Wheels: Two swivel type adjustable					
	$4 - 4 \times 36$	Wing fold			depth gauge wheels with 5-bolt hubs				os
	$1 - 3 \ 1/2 \ x$	6 Frame leve	ling		and 20 - 8 x 10 tires				
	All cylinde	rs have 3000	PSI working	pressure	Light Kit: Mounting brackets, wiring harness,				
Depth Cont	rol:	Stroke con	trol valve & s	screw type		two LED a	umber warnir	ng/turn signa	l lights
	crank for o	ne point dept	h control adju	stment		and two Ll	ED red tail li	ghts	
	Cutting	No. of	No. of	Transport	Transport	Approx	Lbs Per	Lbs Per	Approx
Model	Width	Blades	Bearings	Width	Height	Weight	Blade	Foot	PTO HP
	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	Blueb	Bearings	,, in the second s	mengine		Blude	1000	110111
96" Wide cer	nter main fran	ne and 51" w	ide wing main	n frames					
UD ((2 9	201		22	15 41	12.01	17 500	265	(25	275 275
HD-6628	28	66	22	15.4	12.9	17,500	265	625	275 - 375
HD-/431	31.4	/4	24	15.4	14.3	19,000	257	605	325 - 425
134" Wide c	enter main fra	ume and 70" v	wide wing ma	in frames					
HD-8234	34 8'	82	26	18.8'	14 3'	22 000	268	630	400 - 500
HD-9439	39.3'	94	32	18.8'	16.3'	24,000	255	610	475 - 575
110 (45)	57.5	74	52	10.0	10.5	24,000	233	010	475 575
		Optional 1 26" x 1/4" 24" x 1/4" 24" x 1/4"	E quipment: (6mm) Cut Or (6mm) Plain b (6mm) Cut Or	ut blades in lieu blades in lieu of ut blades in lieu	of standard standard of standard		Note: tractors w than recor increase re	Use of disl ith higher than nmended HF epair cost an	k on an 9 will d
HD-01-0025		Rear mour	ted hitch for	pull type implen	nent		void your	warranty.	

Specifications subject to change without notice



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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.
Â	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.

AMCO HD Series Disk Harrow

Parts List – 28, 31, 34 and 39' Models

Pull Tongue Group



Pull Tongue Group

Reference	Part	urt		Number Required		
Number	Number	Part Description	28 & 31'	34 & 39'		
1	20699	Assy. Hose Support	1	1		
2	6513	U Bolt - 3/4 Dia.	2	2		
3	10300	Lock Nut 3/4 - NC, PL	4	4		
4	12464	Operators Manual Storage Tube	1	1		
5	12465	Screw 1/4 x 1 Weather Guard	5	5		
6	12534	Plug Holder	1	1		
7	20675	Assy. Pull Tongue	1	-		
7	20752	Assy. Pull Tongue	-	1		
8	10304	Hex Cap Screw 1 x 6 ¹ / ₂ - NC, GR 5, PL	2	2		
9	10868	Lock Nut 1 - NC, PL	3	3		
10	11025	Hex Cap Screw 1 x 3 - NC, GR 5, PL	1	1		
11	12459	Clevis - Cat. IV	1	1		
12	12456	Clevis Adaptor with 3/4 x 6 - NC, GR 8, PL	1	1		
		Hex Cap Screw and Lock Nut				
13	12496	Safety Chain 1/2 x 56	1	1		
14	12474	Tongue Jack and Mounting Pin	1	1		
15	100683	Lock Pin 3/4 Dia.	1	1		
16	10317	Klik Pin - ¼	1	1		
17	103002	Wrench	1	1		
18	103003	Gang Bolt Wrench	1	1		
19	20755	Assy. Cylinder Pin 1 1/2 Dia. x 6 7/8 Long	1	1		
20	10226	Slotted Hex Nut 1 1/2 - 12 NF, PL	1	1		
21	10910	Roll Pin 5/16 x 2 ¹ / ₄	1	1		

Main Frame Group



Main Frame Group

Reference	Part		Number	Required
Number	Number	Part Description	28 & 31'	34 & 39'
1	20685	Assy. Center Main Frame - RH	1	-
1	20749	Assy. Center Main Frame - RH	-	1
2	20684	Assy. Center Main Frame – LH	1	-
2	20748	Assy. Center Main Frame – LH	-	1
3	11692	Hex Cap Screw 7/8 x 2 - NC, GR 5, PL	24	24
4	12525	Hex Cap Screw 7/8 x 2 1/2 - NC, GR 5, PL	13	13
5	11691	Flange Lock Nut 7/8 - NC, PL	38	38
6	10833	Hex Cap Screw 1/2 x 3 1/2 - NC, GR 5, PL	2	2
7	10395	Lock Nut ¹ / ₂ - NC, PL	2	2
8	12384	Grease Fitting 1/8 - 27 NPT	4	4
9	12476	Bronze Bushing 2.25 OD x 2 ID x 2.5 Long	8	8
10	102914	Pull Pin 1 3/4 Dia. x 7 ³ / ₄ Long	2	2
11	20706	Assy. Transport Bar	2	-
11	20756	Assy. Transport Bar	-	2
12	102948	Lock Pin 5/8 Dia.	2	2
13	10317	Klik Pin - ¼	2	2
14	12529	Hex Cap Screw 7/8 x 3 ¹ / ₂ - NC, GR 5, PL	1	1



Tongue Control Linkage Group

Reference	Part		Number
Number	Number	Part Description	Required
1	10910	Roll Pin 5/16 x 2 ¹ / ₄	10
2	10226	Slotted Hex Nut 1 1/2 - 12 NF, PL	2
3	12384	Grease Fitting 1/8 - 27 NPT	5
4	20703	Assy. Tongue Pivot Bracket	1
5	10299	Lock Nut 5/8 - NC, PL	2
6	10663	Hex Cap Screw 5/8 x 2 - NC, GR 5, PL	2
7	102941	Trunion Clamp 3/8 x 2 ¹ / ₂ - 4 7/8 Long	2
8	103004	Mounting Pin 1 Dia. x 8 3/8 Long	1
9	102939	Stabilizer Swivel	1
10	10179	Slotted Hex Nut 1 3/8 - 12 NF, PL	2
11	10872	Flat Washer 1 3/8 PL	2
12	10460	Spring	4
13	20696	Assy. Pivot Bracket Rod 1 1/2 Dia. x 22 7/8	1
14	20702	Assy. Tongue Control Rod	2
15	7397	Pin 1 Dia. x 4 3/8 Long	2
16	20357	Assy. Yoke – RH	1
17	10053	Hex Jam Nut 1 3/8 - 6 NC	1
18	20705	Assy. Link Connector	1
19	20358	Assy. Yoke – LH	1
20	20755	Assy. Cylinder Pin 1 1/2 Dia. x 6 7/8 Long	1

Wing Main Frame Group



Wing Main Frame Group

Reference	Part	'art		Number Required		
Number	Number	Part Description	28 & 31'	34 & 39'		
1	20686	Assy. Wing Main Frame - LH – Shown	1	-		
1	20750	Assy. Wing Main Frame - LH – Shown	-	1		
1	20687	Assy. Wing Main Frame - RH – Opposite	1	-		
1	20751	Assy. Wing Main Frame - RH – Opposite	-	1		
2	20714	Assy. Cylinder Mount	1	1		
3	12523	Hex Nut 1 $1/2 - 12$ NF, PL	2	2		
4A	10910	Roll Pin 5/16 x 2 ¹ / ₄	1	1		
4B	10910	Roll Pin 5/16 x 2 ¹ / ₄	1	-		
4B	12495	Roll Pin 3/8 x 3	-	1		
5	10226	Slotted Hex Nut 1 $1/2 - 12$ NF, PL	1	-		
5	12493	Slotted Hex Nut $2 - 12$ NF, PL	-	1		
6	11692	Hex Cap Screw 7/8 x 2 - NC, GR 5, PL	16	16		
7	20693	Assy. Rockshaft Mounting Pin 1 1/2 Dia. x 15	1	-		
7	20757	Assy. Rockshaft Mounting Pin 2 Dia. x 18 3/8	-	1		
8	20690	Assy. Wing Rockshaft	1	-		
8	20747	Assy. Wing Rockshaft	-	1		
9	11691	Flange Lock Nut 7/8 – NC, PL	16	16		
10	10299	Lock Nut 5/8 - NC, Pl	1	1		
11	102965	Mounting Pin 2 ¹ / ₄ Dia. x 12 ³ / ₄	1	-		
11	102957	Mounting Pin 2 1/4 Dia. x 14 7/8	-	1		
12	12522	Hex Cap Screw 5/8 x 4 - NC, PL	1	1		
13	20718	Assy. Walking Tandem - Wing - LH - Shown	1	-		
13	20719	Assy. Walking Tandem - Wing - RH - Opposite	1	-		
13	20707	Assy. Walking Tandem - Center - LH - Shown	-	1		
13	20708	Assy. Walking Tandem - Center - RH - Opposite	-	1		
14	12477	Split Steel Bushing 2.5 OD x 2.25 ID x 2 Long	2	2		
15	12384	Grease Fitting 1/8 - 27 NPT	2	2		
16	9270	Bushing 1.75 OD x 1.5 ID x 2 Long	4	-		
16	12476	Bushing 2.25 OD x 2 ID x 2.5 Long	-	4		

Wing Stands



Reference Part			Number Required	
Number	Number	Part Description	28 & 31'	34 & 39'
1	20723	Assy. Wing Stand RH Rear	1	-
1	20754	Assy. Wing Stand RH Rear	-	1
2	20704	Assy. Wing Stand	3	-
2	20753	Assy. Wing Stand	-	3
3	100683	Transport Lock Pin - 3/4 Dia.	4	4
4	10317	Klik Pin - ¼	4	4
5	10670	Hex Cap Screw 3/4 x 2 - NC, GR 5, PL	16	16
6	10300	Lock Nut 3/4 - NC, PL	16	16

Center Rockshafts

Reference	Part	art		Number Required		
Number	Number	Part Description	28 & 31'	34 & 39'		
1	20688	Assy. Center Rockshaft - LH (Shown)	1			
1	20745	Assy. Center Rockshaft - LH (Shown)		1		
1	20689	Assy. Center Rockshaft - RH (Not Shown)	1			
1	20746	Assy. Center Rockshaft - RH (Not Shown)		1		
2	102957	Mounting Pin 2 1/4 Dia. x 14 7/8 Long	2			
2	102936	Mounting Pin 2 1/4 Dia. x 14 7/8 Long		2		
3	12522	Hex Cap Screw 5/8 x 4 - NC, GR 5, PL	2	2		
4	10299	Lock Nut 5/8 - NC, PL	2	2		
5	12477	Split Steel Bushing 2.5 OD x 2.25 ID x 2 Long	4	4		
6	20707	Assy. Walking Tandem - Center - LH (Shown)	1			
6	20743	Assy. Walking Tandem - Center - LH (Shown)		1		
6	20708	Assy. Walking Tandem - Center - RH (Not Shown)	1			
6	20744	Assy. Walking Tandem - Center - RH (Not Shown)		1		
7	102909	Pivot Pin 2 Dia. x 9 1/8 Long	4	4		
8	10833	Hex Cap Screw 1/2 x 3 1/2 - NC, GR 5, PL	4	4		
9	10395	Lock Nut 1/2 - NC, PL	4	4		
10	12384	Grease Fitting 1/8 - 27 NPT	2	2		
11	12585	Split Steel Bushing 1.25 OD X 1.00 ID X 1 1/4 Long	3	3		
		Note: Use 3 Bushings on Left Hand				
		Rockshaft and 1 on Right Hand Rockshaft				

Number	Part Number	Part Description	Required
1	20676	Assy. Left Front Inside Gang Frame - Shown	1
	20677	Assy. Right Front Inside Gang Frame	1
2	20694	Assy. Wing Pivot Pin 1 1/2 Dia. x 11 5/8 Long	1
3	10232	Slotted Hex Nut 1 1/2 - NC, PL	1
4	10910	Roll Pin 5/16 x 2 1/4	1
5	11500	Split Steel Bushing 1 3/4 OD x 1 1/2 ID x 2 Long	2

Inside Front Gang and Gang Frame - 28 and 31' Models

Reference Number	Part Number	Part Description	Number Required
6	101054	U Bolt 7/8 Dia.	6
7	10396	Lock Nut 7/8 - NC, PL	12
9	10300	Lock Nut 3/4 - NC, PL	3
11	101057	Clamp Plate $1/2 \ge 6 \ge 13 = 3/4$	3
12	101056	Clamp Plate $3/4 \ge 6 \ge 97/8$	3
13	11522A	Flex Gang Shank 1 1/4 x 2 1/2	3
14	10320	Hex Cap Screw 3/4 x 3 1/2 - NC, GR 5, PL	3
15	12069	Flange Lock Nut 3/4 - NC, PL	6
16	103096	Scraper Support	3
17	102541	Wear Guard	3
18	10135	Carriage Bolt 5/8 x 1 3/4 - NC, GR 5, PL	10
19	10299	Lock Nut 5/8 - NC. PL	6
20	11647	Flange Lock Nut 5/8 - NC. PL	7
21	20620	Assy. Grease Fitting Guard	3
22	0945	Assy. Trunion Mount	3
23	12532	Carriage Bolt $3/4 \times 3 1/2$ - NC, GR 5	6
24	12493	Slotted Hex Nut 2 - 12 NF. PL	2
25	12495	Roll Pin 3/8 x 3	2
26	12478	End Collar - 2 1/32 Dia	2
27	102987	Spacer Washer - 1/4"	As Required
28	102988	Spacer Washer - 1/2"	As Required
29	12483	Disk Blade 26 x 1/4 Plain	7
	12484	Disk Blade 26 x 1/4 Cut Out	7
	12485	Disk Blade 24 x 1/4 Plain	7
	12486	Disk Blade 24 x 1/4 Cut Out	7
30	17004	End Bell - Small	3
31	FB-09-0016	Sub Assembly Bearing & Housing (Items A, B, C, D & E)	3
А	16014	Bearing Housing - 125 mm	1
В	12384	Grease Fitting 1/8 - 27 NPT	1
С	100105	Washer - 125 mm	2
D	11504	Bearing - GW214PP3	1
Е	11072	Retainer Ring	1
32	103000	Sleeve - 2 11/16 OD x 10 1/4 Long	3
33	17005	End Bell - Large	3
34	20715	Assy. Spacer Spool	3
35	102994	Gang Bolt - 7 Blade 2 Dia. x 71 1/4 Long	1
36	101104	Scraper Bar 3 x 2 x 3/8 Angle - 69 5/8 Long	1
	20069	Assy. Scraper - LH (Items 37, 38, 40 & 41) - Shown	3
	20068	Assy. Scraper - RH (Items 37, 38, 40 & 41)	3
	20113	Assy. Special Scraper - LH (Items 38, 39, 40 & 41) - Shown	1
	20112	Assy. Special Scraper - RH (Items 38, 39, 40 & 41)	1
37	101049	Scraper Shank 3/8 x 2	1
38	101019	Scraper Blade 3/16 x 6 x 8	1
39	101173	Scraper Shank - Special 3/8 x 3	1
40	10870	Carriage Bolt 1/2 x 1 1/2 - NC, PL, GR 5 (2 Per Scraper)	2
41	11646	Flange Lock Nut 1/2 - NC, PL (2 Per Scraper)	2
42	103097	Scraper Blade - LH (Left Front Gang) - Shown	3
42	103098	Scraper Blade - RH (Right Front Gang)	3
43	10722	Carriage Bolt 5/8 x 2 1/2 - NC, GR 5, PL	1
44	10665	Carriage Bolt 5/8 x 2 - NC, GR 5, PL	2

Reference	Part		Number
Number	Number	Part Description	Required
1	20678	Assy. Left Rear Inside Gang Frame	1
	20679	Assy. Right Rear Inside Gang Frame - Shown	1
2	20694	Assy. Wing Pivot Pin 1 1/2 Dia. x 11 5/8 Long	1
3	10232	Slotted Hex Nut 1 1/2 - NC, PL	1
4	10910	Roll Pin 5/16 x 2 1/4	1
5	11500	Split Steel Bushing 1 3/4 OD x 1 1/2 ID x 2 Long	2

Inside Rear Gang and Gang Frame - 28 and 31' Models

Reference	Part		Number
Number	Number	Part Description	Required
6	101054	U Bolt 7/8 Dia.	4
7	10396	Lock Nut 7/8 - NC, PL	8
8	9212	U Bolt 3/4 Dia.	1
9	10300	Lock Nut 3/4 - NC, PL	4
10	100969	Support 1/2 x 3 - 13 7/8 Long	1
11	101057	Clamp Plate $1/2 \ge 6 \ge 13 = 3/4$	2
12	101056	Clamp Plate $3/4 \ge 6 \ge 97/8$	2
13	11522A	Flex Gang Shank 1 1/4 x 2 1/2	2
14	10320	Hex Cap Screw 3/4 x 3 1/2 - NC, GR 5, PL	2
15	12069	Flange Lock Nut 3/4 - NC, PL	4
16	103096	Scraper Support	2
17	102541	Wear Guard	2
18	10135	Carriage Bolt 5/8 x 1 3/4 - NC, GR 5, PL	8
19	10299	Lock Nut 5/8 - NC, PL	4
20	11647	Flange Lock Nut 5/8 - NC, PL	7
21	20620	Assy. Grease Fitting Guard	2
22	0945	Assy. Trunion Mount	2
23	12532	Carriage Bolt 3/4 x 3 1/2 - NC, GR 5	4
24	12493	Slotted Hex Nut 2 - 12 NF, PL	2
25	12495	Roll Pin 3/8 x 3	2
26	12478	End Collar - 2 1/32 Dia.	2
27	102987	Spacer Washer - 1/4"	As Required
28	102988	Spacer Washer - 1/2"	As Required
29	12483	Disk Blade 26 x 1/4 Plain	5
	12484	Disk Blade 26 x 1/4 Cut Out	5
	12485	Disk Blade 24 x 1/4 Plain	5
	12486	Disk Blade 24 x 1/4 Cut Out	5
30	17004	End Bell - Small	2
31	FB-09-0016	Sub Assembly Bearing & Housing (Items A, B, C, D & E)	2
А	16014	Bearing Housing - 125 mm	1
В	12384	Grease Fitting 1/8 - 27 NPT	1
С	100105	Washer - 125 mm	2
D	11504	Bearing - GW214PP3	1
Е	11072	Retainer Ring	1
32	103000	Sleeve - 2 11/16 OD x 10 1/4 Long	2
33	17005	End Bell - Large	2
34	20715	Assy. Spacer Spool	3
35	102993	Gang Bolt - 6 Blade 2 Dia. x 60 1/2 Long	1
36	103001	Scraper Bar 3 x 2 x 3/8 Angle - 64 5/16 Long	1
	20069	Assy. Scraper - LH (Items 37, 38, 40 & 41) - Shown	3
	20068	Assy. Scraper - RH (Items 37, 38, 40 & 41)	3
	20113	Assy. Special Scraper - LH (Items 38, 39, 40 & 41) - Shown	1
	20112	Assy. Special Scraper - RH (Items 38, 39, 40 & 41)	1
37	101049	Scraper Shank 3/8 x 2	1
38	101019	Scraper Blade 3/16 x 6 x 8	1
39	101173	Scraper Shank - Special 3/8 x 3	1
40	10870	Carriage Bolt 1/2 x 1 1/2 - NC, PL, GR 5 (2 Per Scraper)	2
41	11646	Flange Lock Nut 1/2 - NC, PL (2 Per Scraper)	2
42	103097	Scraper Blade - LH (Left Front & Right Rear) - Shown	2
42	103098	Scraper Blade - RH (Right Front & Left Rear)	2
43	10665	Carriage Bolt 5/8 x 2 - NC, GR 5, PL	3
44	12485	Disk Blade 24 x 1/4 Plain	1
	12486	Disk Blade 24 x 1/4 Cut Out	1
	12487	Disk Blade 22 x 1/4 Plain	1
	12489	Disk Blade 22 x 1/4 Cut Out	1
	Note: Inside re	ar blade is 2" less than standard.	

Front Wing Gang and Gang Frames - 28 and 31' Model

			Number	Required
Reference	Part		28' Model	31' Model
Number	Number	Part Description	HD-6628	HD-7431
1	20682	Assy Laft Front Wing Gong From 01"	1	
1	20082	Assy Left Front Wing Gang Frame 113"	1	-
	20080	Assy Dight Front Wing Cong Frome 01"	-	1
	20085	Assy. Right Front Wing Cong Frame - 91	1	-
6	20081	Assy. Right Floht wing Gang Flame - 115	-	1
0 7	101034	U DOIL //O DIA. Look Nut 7/9 NC DI	0	0
/	10390	LOCK Mul 7/8 - NC, PL LI Dolt 2/4 Die	12	12
0	9212	U BOIL $3/4$ DIa. Look Nut $2/4$ NC DI	1	2 5
9	100060	LOCK INUL $5/4$ - INC, PL Support $1/2 \times 2 = 12.7/8$ Long	4	3
10	101057	Support $1/2 \times 5 = 15 //6$ Long	1	2
12	101057	Clamp Plate $\frac{1}{2} \times 6 \times 0.7/9$	2	3
12	115224	Elay Cang Shank $1.1/4 \times 2.1/2$	2	2
13	10220	Here Can Serow $\frac{2}{4} \times \frac{2}{12}$ MC CP 5 DI	2	3
14	10320	Flange Look Nut 2/4 NC DI	5	5
15	12009	Fidilge Lock Nut 5/4 - NC, FL	0	0
10	102541	Wear Guard	3	3
17	102341	Corrigge Dolt 5/8 x 1 2/4 NC CD 5 DI	11	12
10	10133	Lock Nut 5/8 NC DI	6	13
20	11647	Elange Lock Nut 5/8 NC PI	0	12
20	20620	Assy Grease Fitting Guard	3	3
21	20020	Assy Trunion Mount	3	3
22	12532	Carriage Bolt $3/4 \ge 31/2$ - NC GR 5	6	5
23	12/03	Slotted Hey Nut 2 - 12 NF PI	2	2
24	12495	Roll Pin 3/8 v 3	$\frac{2}{2}$	$\frac{2}{2}$
25	12475	End Collar - 2 1/32 Dia	2	2
20	102987	Spacer Washer - 1/4"	As Required	As Required
28	102988	Spacer Washer - 1/2"	As Required	As Required
20	12483	Disk Blade 26 x 1/4 Plain	8	10
2)	12485	Disk Blade $26 \times 1/4$ Cut Out	8	10
	12485	Disk Blade $24 \times 1/4$ Plain	8	10
	12486	Disk Blade $24 \times 1/4$ Cut Out	8	10
30	17004	End Bell - Small	3	3
31	FB-09-0016	Sub Assembly Bearing & Housing (Items A, B, C, D & E)	3	3
A	16014	Bearing Housing - 125 mm	1	1
В	12384	Grease Fitting 1/8 - 27 NPT	1	1
С	100105	Washer - 125 mm	2	2
D	11504	Bearing - GW214PP3	1	1
Е	11072	Retainer Ring	1	1
32	103000	Sleeve - 2 11/16 OD x 10 1/4 Long	3	3
33	17005	End Bell - Large	3	3
34	20715	Assy. Spacer Spool	5	7
35	102996	Gang Bolt - 9 Blade 2 Dia. x 92 3/4 Long	1	-
	102998	Gang Bolt - 11 Blade 2 Dia. x 114 1/4 Long	-	1
36	101051	Scraper Bar 3 x 2 x 3/8 Angle - 91 Long	1	-
	101053	Scraper Bar 3 x 2 x 3/8 Angle - 112 3/8 Long	-	1
	20069	Assy. Scraper - LH (Items 37, 38, 39 & 40) - Shown	5	7
	20068	Assy. Scraper - RH (Items 37, 38, 39 & 40)	5	7
37	101049	Scraper Shank 3/8 x 2	1	1
38	101019	Scraper Blade 3/16 x 6 x 8	1	1
39	10870	Carriage Bolt 1/2 x 1 1/2 - NC, PL, GR 5 (2 Per Scraper)	2	2
40	11646	Flange Lock Nut 1/2 - NC, PL (2 Per Scraper)	2	2
41	103097	Scraper Blade - LH (Left Front & Right Rear) - Shown	3	3
	103098	Scraper Blade - RH (Right Front & Left Rear)	3	3
42	10665	Carriage Bolt 5/8 x 2 - NC, GR 5, PL	4	5
43	12482	Disk Blade - Backup - 10 X 3/16 Plain	1	1
44	12485	Disk Blade 24 x 1/4 Plain	1	1
	12486	Disk Blade 24 x 1/4 Cut Out	1	1
	12487	Disk Blade 22 x 1/4 Plain	1	1
	12489	Disk Blade 22 x 1/4 Cut Out	1	1
	Note: Blade is 2	2" Less than standard		

			Number Keyun cu	
Reference	Part		28' Model	31' Model
Number	Number	Part Description	HD-6628	HD-7431
1	20729	Assy. Left Rear Wing Gang Frame - 107"	1	-
	20727	Assy. Left Rear Wing Gang Frame - 128"	-	1
	20730	Assy. Right Rear Wing Gang Frame - 107"	1	-
	20728	Assy. Right Rear Wing Gang Frame - 128"	-	1
6	101054	U Bolt 7/8 Dia.	6	8

Rear Wing Gang and Gang Frames - 28 and 31' Model

			Number	Required
Reference	Part		28' Model	31' Model
Number	Number	Part Description	HD-6628	HD-7431
7	10306	Lock Nut 7/8 NC PI	12	16
8	9212	U Bolt 3/4 Dia	2	10
0	10200	$\int Bolt 5/4 D I d$.	2	1
9	100060	LOCK INUL $3/4$ - INC, FL Summart $1/2$ is $2 = 12.7/9$ Long	2	1
10	100969	Support $1/2 \times 3 = 13 //8 \text{Long}$	2	1
11	101057	Champ Plate $1/2 \times 6 \times 13 \times 3/4$	3	4
12	101056	Clamp Plate $3/4 \times 6 \times 9 //8$	3	4
13	11522A	Flex Gang Shank 1 1/4 x 2 1/2	3	4
14	10320	Hex Cap Screw 3/4 x 3 1/2 - NC, GR 5, PL	3	4
15	12069	Flange Lock Nut 3/4 - NC, PL	6	8
16	103096	Scraper Support	3	4
17	102541	Wear Guard	3	4
18	10135	Carriage Bolt 5/8 x 1 3/4 - NC, GR 5, PL	14	17
19	10299	Lock Nut 5/8 - NC, PL	6	8
20	11647	Flange Lock Nut 5/8 - NC, PL	13	14
21	20620	Assy. Grease Fitting Guard	3	4
22	0945	Assy. Trunion Mount	3	4
23	12532	Carriage Bolt 3/4 x 3 1/2 - NC, GR 5	6	8
24	12493	Slotted Hex Nut 2 - 12 NF, PL	2	4
25	12495	Roll Pin 3/8 x 3	2	4
26	12478	End Collar - 2 1/32 Dia.	2	4
27	102987	Spacer Washer - 1/4"	As Required	As Required
28	102988	Spacer Washer - 1/2"	As Required	As Required
29	12483	Disk Blade $26 \ge 1/4$ Plain	9	11
	12484	Disk Blade $26 \times 1/4$ Cut Out	9	11
	12485	Disk Blade $24 \times 1/4$ Plain	9	11
	12405	Disk Blade $24 \times 1/4$ Fut Out	9	11
30	17004	End Ball Small	3	11
30	EP 00 0016	Sub Assembly Dearing & Housing (Itoms A, D, C, D, & E)	2	4
51	ГD-09-0010 16014	Bearing Housing 125 mm	5	4
A	10014	Dealing Housing - 125 min	1	1
В	12384	Grease Fitting 1/8 - 2/ NP1	1	1
	100105	washer - 125 mm	2	2
D	11504	Bearing - Gw214PP3	1	1
E	110/2	Retainer Ring	1	1
32	103000	Sleeve - 2 11/16 OD x 10 1/4 Long	3	4
33	17005	End Bell - Large	3	4
34	20715	Assy. Spacer Spool	7	7
35	102998	Gang Bolt - 11 Blade 2 Dia. x 114 1/4 Long	1	-
	102993	Gang Bolt - 6 Blade 2 Dia. x 60 1/2 Long	-	1
	102994	Gang Bolt - 7 Blade 2 Dia. x 71 1/4 Long	-	1
36	103015	Scraper Bar 3 x 2 x 3/8 Angle - 107 1/16 Long	1	-
	103016	Scraper Bar 3 x 2 x 3/8 Angle - 128 7/8 Long	-	1
	20069	Assy. Scraper - LH (Items 37, 38, 40 & 41) - Shown	7	8
	20068	Assy. Scraper - RH (Items 37, 38, 40 & 41)	7	8
	20113	Assy. Special Scraper - LH (Items 38, 39, 40 & 41) - Shown	1	1
	20112	Assy. Special Scraper - RH (Items 38, 39, 40 & 41)	1	1
37	101049	Scraper Shank 3/8 x 2	1	1
38	101019	Scraper Blade 3/16 x 6 x 8	1	1
39	101173	Scraper Shank - Special 3/8 x 3	1	1
40	10870	Carriage Bolt 1/2 x 1 1/2 - NC PL GR 5 (2 Per Scraper)	2	2
41	11646	Flange Lock Nut 1/2 - NC PL (2 Per Scraper)	2	2
42	103007	Scraper Blade I H (Left Front & Pight Pear) Shown	2	2
42	102008	Scraper Diade - DH (Deft Front & Loft Poor)	2	4
12	105096	Corriges Dalt 5/8 x 2 NC CD 5 DI	5	4
45	10000	Carriage Doll 5/0 X 2 - INC, UK 3, PL Dials Dlada, 24 yr 1/4 Dlain	5	5
44	12485	Disk Diade 24 x 1/4 Plain Dial Diade 24 x 1/4 Cret Ort	1	1
	12480	Disk Diade $24 \times 1/4$ Cui Uui	1	1
	12487	DISK Blade $22 \times 1/4$ Plain Disk Blade $22 \times 1/4$ Plain	1	1
	12489	Disk Blade 22 x 1/4 Cut Out	1	1
	Note: Blade is 2	" Less than standard.		
45	12490	Disk Blade 20 x 3/16 Plain	1	1
	12491	Disk Blade 18 x 3/16 Plain	1	1
	Note: Featherin	g Blade is 6" less than standard.		

Gang Assembly - 28 and 31' Models

Inside Front Gang - 7 Blades with 3 Bearings

Leading blade is 2" less than standard

Inside Rear Gang - 6 Blades with 2 Bearings

10" Diameter back-up blade on leading blade

Front Wing Gang - 28' Model - 9 Blades with 3 Bearings

Blade is 2" less than standard

Rear Wing Gang - 28' Model - 11 Blades with 3 Bearings

Gang Assembly - 28 and 31' Models

Front Wing Gang - 31' Model - 11 Blades with 3 Bearings

than standard

Rear Wing Gang - 31' Model

Number	Part Number	Part Description	Required
1	20731	Assy. Left Front Inside Gang Frame - Shown	1
	20732	Assy. Right Front Inside Gang Frame	1
2	20694	Assy. Wing Pivot Pin 1 1/2 Dia. x 11 5/8 Long	1
3	10232	Slotted Hex Nut 1 1/2 - NC, PL	1
4	10910	Roll Pin 5/16 x 2 1/4	1
5	11500	Split Steel Bushing 1 3/4 OD x 1 1/2 ID x 2 Long	2

Inside Front Gang and Gang Frame - 34 and 39' Models

Reference Number	Part Number	Part Description	Number Required
6	101054	U Bolt 7/8 Dia.	6
7	10396	Lock Nut 7/8 - NC, PL	12
8	9212	U Bolt 3/4 Dia.	1
9	10300	Lock Nut 3/4 - NC, PL	5
10	100969	Support 1/2 x 3 x 13 7/8	1
11	101057	Clamp Plate 1/2 x 6 x 13 3/4	3
12	101056	Clamp Plate 3/4 x 6 x 9 7/8	3
13	11522A	Flex Gang Shank 1 1/4 x 2 1/2	3
14	10320	Hex Cap Screw 3/4 x 3 1/2 - NC, GR 5, PL	3
15	12069	Flange Lock Nut 3/4 - NC, PL	6
16	103096	Scraper Support	3
17	102541	Wear Guard	3
18	10135	Carriage Bolt 5/8 x 1 3/4 - NC, GR 5, PL	12
19	10299	Lock Nut 5/8 - NC, PL	6
20	11647	Flange Lock Nut 5/8 - NC, PL	10
21	20620	Assy. Grease Fitting Guard	3
22	0945	Assy. Trunion Mount	3
23	12532	Carriage Bolt $3/4 \times 3 1/2$ - NC, GR 5	6
24	12493	Slotted Hex Nut 2 - 12 NF. PL	2
25	12495	Roll Pin 3/8 x 3	$\overline{2}$
26	12478	End Collar - 2 1/32 Dia	$\frac{1}{2}$
27	102987	Spacer Washer - 1/4"	As Required
28	102988	Spacer Washer - 1/2"	As Required
29	12483	Disk Blade 26 x 1/4 Plain	7
	12484	Disk Blade $26 \times 1/4$ Cut Out	7
	12485	Disk Blade $24 \times 1/4$ Plain	7
	12486	Disk Blade $24 \times 1/4$ Cut Out	7
30	17004	End Bell - Small	3
31	FB-09-0016	Sub Assembly Bearing & Housing (Items A B C D & E)	3
A	16014	Bearing Housing - 125 mm	1
В	12384	Grease Fitting 1/8 - 27 NPT	1
С	100105	Washer - 125 mm	2
D	11504	Bearing - GW214PP3	1
Е	11072	Retainer Ring	1
32	103000	Sleeve - 2 11/16 OD x 10 1/4 Long	3
33	17005	End Bell - Large	3
34	20715	Assy. Spacer Spool	5
35	102996	Gang Bolt - 9 Blade 2 Dia. x 92 3/4 Long	1
36	101051	Scraper Bar 3 x 2 x 3/8 Angle - 91 Long	1
	20069	Assy. Scraper - LH (Items 37, 38, 40 & 41) - Shown	5
	20068	Assy. Scraper - RH (Items 37, 38, 40 & 41)	5
	20113	Assy, Special Scraper - LH (Items 38, 39, 40 & 41) - Shown	1
	20112	Assy. Special Scraper - RH (Items 38, 39, 40 & 41)	1
37	101049	Scraper Shank 3/8 x 2	1
38	101019	Scraper Blade 3/16 x 6 x 8	1
39	101173	Scraper Shank - Special 3/8 x 3	1
40	10870	Carriage Bolt 1/2 x 1 1/2 - NC. PL. GR 5 (2 Per Scraper)	2
41	11646	Flange Lock Nut 1/2 - NC. PL (2 Per Scraper)	$\overline{2}$
42	103097	Scraper Blade - LH (Left Front Gang) - Shown	3
42	103098	Scraper Blade - RH (Right Front Gang)	3
43	10722	Carriage Bolt 5/8 x 2 1/2 - NC. GR 5. PL	1
44	10665	Carriage Bolt 5/8 x 2 - NC, GR 5, PL	3

Reference Number	Part Number	Part Description	Number Required
1	20733	Assy. Left Rear Inside Gang Frame - Shown	1
	20734	Assy. Right Rear Inside Gang Frame	1
2	20694	Assy. Wing Pivot Pin 1 1/2 Dia. x 11 5/8 Long	1
3	10232	Slotted Hex Nut 1 1/2 - NC, PL	1
4	10910	Roll Pin 5/16 x 2 1/4	1
5	11500	Split Steel Bushing 1 3/4 OD x 1 1/2 ID x 2 Long	2

Inside Rear Gang and Gang Frame - 34 and 39' Models

Reference	Part		Number
Number	Number	Part Description	Required
6	101054	U Bolt 7/8 Dia.	6
7	10396	Lock Nut 7/8 - NC, PL	12
8	9212	U Bolt 3/4 Dia.	1
9	10300	Lock Nut 3/4 - NC, PL	5
10	100969	Support 1/2 x 3 x 13 7/8	1
11	101057	Clamp Plate $1/2 \ge 6 \ge 13 = 3/4$	3
12	101056	Clamp Plate $3/4 \ge 6 \ge 97/8$	3
13	11522A	Flex Gang Shank 1 1/4 x 2 1/2	3
14	10320	Hex Cap Screw 3/4 x 3 1/2 - NC, GR 5, PL	3
15	12069	Flange Lock Nut 3/4 - NC, PL	6
16	103096	Scraper Support	3
17	102541	Wear Guard	3
18	10135	Carriage Bolt 5/8 x 1 3/4 - NC, GR 5, PL	11
19	10299	Lock Nut 5/8 - NC, PL	6
20	11647	Flange Lock Nut 5/8 - NC, PL	10
21	20620	Assy. Grease Fitting Guard	3
22	0945	Assy. Trunion Mount	3
23	12532	Carriage Bolt $3/4 \times 3 1/2$ - NC, GR 5	6
24	12493	Slotted Hex Nut 2 - 12 NF. PL	2
25	12495	Roll Pin 3/8 x 3	2
26	12478	End Collar - 2 1/32 Dia.	2
27	102987	Spacer Washer - 1/4"	As Required
28	102988	Spacer Washer - 1/2"	As Required
29	12483	Disk Blade 26 x 1/4 Plain	7
	12484	Disk Blade $26 \times 1/4$ Cut Out	7
	12485	Disk Blade 24 x 1/4 Plain	7
	12486	Disk Blade 24 x 1/4 Cut Out	7
30	17004	End Bell - Small	3
31	FB-09-0016	Sub Assembly Bearing & Housing (Items A, B, C, D & E)	3
A	16014	Bearing Housing - 125 mm	1
В	12384	Grease Fitting 1/8 - 27 NPT	1
С	100105	Washer - 125 mm	2
D	11504	Bearing - GW214PP3	1
Е	11072	Retainer Ring	1
32	103000	Sleeve - 2 11/16 OD x 10 1/4 Long	3
33	17005	End Bell - Large	3
34	20715	Assy. Spacer Spool	4
35	102995	Gang Bolt - 8 Blade 2 Dia. x 82 Long	1
36	101401	Scraper Bar 3 x 2 x 3/8 Angle - 85 11/16 Long	1
	20069	Assy. Scraper - LH (Items 37, 38, 40 & 41) - Shown	4
	20068	Assy. Scraper - RH (Items 37, 38, 40 & 41)	4
	20113	Assy. Special Scraper - LH (Items 38, 39, 40 & 41) - Shown	1
	20112	Assy. Special Scraper - RH (Items 38, 39, 40 & 41)	1
37	101049	Scraper Shank 3/8 x 2	1
38	101019	Scraper Blade 3/16 x 6 x 8	1
39	101173	Scraper Shank - Special 3/8 x 3	1
40	10870	Carriage Bolt 1/2 x 1 1/2 - NC, PL, GR 5 (2 Per Scraper)	2
41	11646	Flange Lock Nut 1/2 - NC, PL (2 Per Scraper)	2
42	103097	Scraper Blade - LH (Left Front & Right Rear) - Shown	3
42	103098	Scraper Blade - RH (Right Front & Left Rear)	3
43	10665	Carriage Bolt 5/8 x 2 - NC, GR 5, PL	4
44	12485	Disk Blade 24 x 1/4 Plain	1
	12486	Disk Blade 24 x 1/4 Cut Out	1
	12487	Disk Blade 22 x 1/4 Plain	1
	12489	Disk Blade 22 x 1/4 Cut Out	1
	Note: Inside re	ar blade is 2" less than standard.	

Front Wing Gang and Gang Frames - 34 and 39' Model

Front Wing Gang and Gang Frames - 34 and 39' Model

Reference Part Description 34' Model 39' Model 1 20735 Assy. Left Front Wing Gang Prame - 113" 1 - 20736 Assy. Right Front Wing Gang Prame - 145" - 1 20737 Assy. Right Front Wing Gang Prame - 145" - 1 6 101644 U Dolt 78 Dia. 6 10 7 9202 L Dolt 78 Dia. 6 10 9 10300 Lock Nut 34 - NC, PL 2 20 9 10000 Support 1/2 x 3 - 13 78 Long 3 5 12 101057 Clamp Plate 1/2 x 6 x 13 34 3 5 13 1522A Plex Gang Shank 1/4 x 21 /2 NC, GR 5, PL 3 5 14 10307 Hex Cap Shank 1/4 x 31 /2 NC, GR 5, PL 13 18 19 10299 Lock Nu 34 - NC, PL 6 10 21 10457 Camp Blate 1/2 N N 34 - NC, PL 12 14 10350 Camp Blate 1/2 N N 34 - NC, PL 6 10 21 104 N Mag G				Number	Required
Number Part Description HD-8234 HD-9439 1 20735 Assy. Let Front Wing Gang Frame - 113" 1 - 20736 Assy. Rept Front Wing Gang Frame - 113" 1 - 6 101651 U.Bok Ning Sang Frame - 113" 1 - 7 10395 Lock Nin 78 No. C.P. 12 20 8 91030 U.Bok Nin 78 No. C.P. 12 20 10 100560 Clamp Plate 34A ock 9 778 3 5 12 1010560 Clamp Plate 34A ock 9 778 3 5 13 11522A Flex Cap Strew 34A 31/2 - NC, GR 5, PL 12 14 101050 Clamp Plate 34A s 10/2 - NC, GR 5, PL 13 5 5 14 10200 Hex Cap Strew 34A 31/2 - NC, GR 5, PL 12 14 10130 Clamiplae 14A v 3/A 31/2 - NC, GR 5, PL 13 5 17 10241 Ward Gand 3 5 18 10135 Clamiplae 14A v 3/A 31/2 - NC, GR 5, PL 14 16	Reference	Part		34' Model	39' Model
1 20735 Assy. Left Front Wing Gang Frame - 113" 1 - 20736 Assy. Right Front Wing Gang Frame - 145" - 1 30738 Assy. Right Front Wing Gang Frame - 145" - 1 30738 Assy. Right Front Wing Gang Frame - 145" - 1 30738 Assy. Right Front Wing Gang Frame - 113" - - 30738 Assy. Right Front Wing Gang Frame - 113" - - 1 30739 Assy. Right Front Wing Gang Frame - 113" - - 1 30739 Lobol NUT 30. C.PL 2 2 0 9 10300 Lock Nut 34. NC, PL 2 1 - 10101057 Clamp Plate 24. X 6 x 9 78. 3 5 - 12 1010157 Clamp Plate 24. X 6 x 9 78. 3 5 13 11522A Place Gang Stamk. 114 x 2. NC, GR 5, PL 13 18 10135 Cariage Bolt 5% x 134 - NC, GR 5, PL 13 18 10 12 100409 Scoraret Filling Ganzt	Number	Number	Part Description	HD-8234	HD-9439
1 2073 Assy Left Front Wing Gang France - 113" 1 - 30737 Assy Left Front Wing Gang France - 113" 1 1 30738 Assy Left Front Wing Gang France - 113" 1 1 30739 Assy Left Front Wing Gang France - 113" 1 1 6 1001654 U.Bolt 78: DNL 12 20 8 9212 U.Bolt 37: DNL 2 1 10 100969 Support 1/2: A3: 137: IG Long 2 1 11 101056 Clamp Plate: A4: 6: A 97: 8 3 5 12 101056 Clamp Plate: A4: 6: A 97: 8 3 5 13 11522.0 Flex Gang Stark 1: 14: 8: 21:2 3 5 14 1032.0 Flex Gang Stark 4: 31:2 - NC, GR 5, PL 1 3 5 15 12069 Flange Lock Nat: 34: -NC, GR 5, PL 13 18 10135 Carriage Bobt 5: 8x: 134 - NC, GR 5, PL 13 18 10135 Carriage Bobt 5: 8x: 134 - NC, GR 5 1 14 <td< td=""><td>1</td><td>20725</td><td>Acry Left Event Wing Cong Evenue 112"</td><td>1</td><td></td></td<>	1	20725	Acry Left Event Wing Cong Evenue 112"	1	
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	1	20733	Assy, Left Front Wing Gang Frame 145"	1	-
		20737	Assy, Left Floit Wing Gang Flatte - 145	-	1
$\begin{array}{cccccccccccccccccccccccccccccccccccc$		20730	Assy. Right Front Wing Gang Frame 115	1	-
b 0 0 0 0 7 10394 Lock Nrt 78-NC, PL 1 1 8 920 LD BA 3Da. 2 1 9 10 LD BA 3Da. 2 1 10 LD BA NT 3A-NC, PL 3 5 11 LD BA NT 3A-S NC, PL 3 5 12 LD BA A 6A 9-78 3 5 13 LD SZA Camp Shank 1 14x 2 1/2 3 5 14 LD 3D0 Flang Lock Nut 3A-NC, PL 12 14 16 D 3D0 Scrapper Support NC, PL 12 14 16 D 3D0 Carriage Bolt 5% x 1 34-NC, PL 13 18 10 10 Lock Nut 58-NC, PL 6 10 12 14 12 20 Lock Nut 58-NC, PL 12 14 12 14 12 14 12 124 12 14 12 13 18 10 13 12 12 <td< td=""><td>6</td><td>20/38</td><td>Assy. Right From whig Gang France - 145</td><td>-</td><td>10</td></td<>	6	20/38	Assy. Right From whig Gang France - 145	-	10
1 0.030 1.04, 10, 10, 10, 10, 10, 10, 10, 10, 10, 10	0 7	101054	U BOIL //8 DIa. Look Nut 7/9 NC DI	0	10
s 52.12 D Boll 34 Dift. 2 1 9 10000 Lack Nu 34 - NC, PL 7 7 10 100690 Support 1/2 x 3 - 13 78 Long 2 1 11 101650 Clamp Plate 1/2 x 6 × 13 3 N 4 3 5 11 101650 Clamp Plate 1/2 x 6 × 13 3 N 4 3 5 12 10126 Clamp Plate 1/2 x 6 × 13 3 N 4 3 5 13 10120 Files Cans Smart 4/4 3 1/2 3 5 14 10320 Files Cans Smart 4/4 3 1/2 12 14 10320 Carriage Bolt 5/8 x 1 3/4 - NC, PL 12 14 10396 Carriage Bolt 5/8 x 1 3/4 - NC, GR 5, PL 13 18 10135 Carriage Bolt 5/8 x 1 3/4 - NC, GR 5 6 10 21 20c20 Assy Trainon Mount 3 5 22 0945 Assy Trainon Mount 2 4 23 12478 Rol Plain 3/8 x 3 2 4 24 12493 SitoteH Hex Ni	/	10390	LOCK NUL $1/8$ - NC, PL	12	20
9 100 Lock Nut $34 - 30c, PL 7 7 7 10 100969 Support 17.2 × 3.1378 Long 2 1 11 101057 Clamp Plate 1/2 × 6.1334 3 5 12 101056 Clamp Plate 1/2 × 6.1334 3 5 13 11522A Flox Gang Stank 114 × 21/2 3 5 14 10200 Hex Cap Sterve 3/4 × 31/2 - NC, GR 5, PL 3 5 16 10206 Scraper Support 3 5 17 102541 Wear Guard 3 5 18 10135 Carriage Bolt 58 × 1 3/4 - NC, GR 5, PL 12 14 20 Lock Nut 58 - NC, PL 12 14 2 21 20000 Assy. Trunom Momt 3 5 5 22 04/5 Ass. 7 1/2 1/2 1/3 2 4 23 12352 Carriage Bolt 3/4 × 3 1/2 - NC, GR 5 6 10 13 23 12452 Bolt 3/4 × 3 1/2 - NC, GR 5 6$	8	9212	\cup Bolt 5/4 Dia.	2	1
10 000090 Support 1/2 X S + 13 3/4 2 1 11 010057 Clamp Plate 3/4 x 6 × 13 3/4 3 5 12 101056 Clamp Plate 3/4 x 6 × 13 3/4 3 5 13 11522A Plex Gang Shank 11/4 × 1/2 3 5 14 10320 Hex Cap Screw 3/4 x 3/2 - NC, GR 5, PL 1 1 16 100096 Scraper Support 3 5 17 102541 Wear Guard 3 5 18 10135 Carrage Bolt 5/8 × 13/4 - NC, GR 5, PL 1 1 1 10 10209 Lock Nut 5/8 - NC, PL 6 10 10 21 Jock Nut 5/8 - NC, PL 2 4 10 13 15 22 0445 Assy, Grass Fitting Guard 3 5 10 10 13 23 12352 Carriage Bolt 3/4 x 3 1/2 - NC, GR 5 6 10 10 13 24 12495 Roll Pin 3/4 x 3 1/2 - NC, GR 5 6 10	9	10300	LOCK NUT $3/4$ - NC, PL	/	/
11 100157 Clamp Plate 1/2 X or X 15 3/4 3 5 12 100156 Clamp Plate 3/4 x 6 X 9.78 3 5 13 11322A Flex Gang Shank 11/4 x 21/2 3 5 14 10200 Hex Cap Server 3/4 x 31/2 - NC, GR 5, PL 3 5 15 12009 Flaxe Quard 3 5 16 10396 Scraper Support 3 5 17 102541 Wear Quard 3 5 18 10135 Carriage Bolt 58 x 1 3/4 - NC, GR 5, PL 13 18 20 11647 Flamp Lock Nut 5/8 - NC, PL 12 14 21 20620 Assy. Grease Fitting Guard 3 5 22 0445 Assy. Grease Fitting Guard 3 5 23 12323 Carriage Bolt 3/4 x 3 1/2 - NC, GR 5 6 10 24 12493 Solted Her. Nut 2 - 12 N-P, PL 2 4 26 12478 Bend Collar - 1/2 As Required As Required 28 10298 Spacer Washer - 1/2 As Required As Required <td>10</td> <td>100969</td> <td>Support $1/2 \ge 3 - 13 //8$ Long</td> <td>2</td> <td>l c</td>	10	100969	Support $1/2 \ge 3 - 13 //8$ Long	2	l c
12 01005 Clamp Plate 34 x 0 × 39 //8 3 5 13 11322A Flex Gag Stank 11/4 × 21/2 3 5 14 10320 Hex Cap Strew 3/4 × 31/2 - NC, GR 5, PL 3 5 15 12069 Flange Lock Nut 3/8 - NC, PL 12 14 16 10096 Scraper Support 3 5 17 102541 Wear Guard 3 5 18 10135 Carrage Bolt 5/8 × 13/4 - NC, GR 5, PL 6 10 20 11647 Flange Lock Nut 5/8 - NC, PL 6 10 21 20620 Assy. Grass Fitting Guard 3 5 22 0445 Assy. Trunion Mount 3 5 23 12532 Carrage Bolt 3/4 × 31/2 - NC, GR 5 6 10 24 12493 Stotted Hex Nut 2 - 122 NP, PL 2 4 26 12493 Stotted Hex Nut 2 - 122 NP, PL 2 4 27 102987 Spacer Washer - 14" As Required As Required 28 1029988 Spacer Washer - 14" As Required As Re	11	101057	Clamp Plate $1/2 \times 6 \times 13 3/4$	3	5
13 1122A Pick Cap Sensity 2-NC, GR 5, PL 3 5 14 10320 Hex Cap Serves 3/4 x 3/2 - NC, GR 5, PL 12 14 16 103096 Scraper Support 3 5 17 102241 Wear Guard 3 5 18 10135 Carriage Bolt 5/8 x 13/4 - NC, GR 5, PL 13 18 19 10299 Lock Nut 5/8 - NC, PL 12 14 21 20620 Assy, Grease Fitting Guard 3 5 22 0945 Assy, Truino Mount 3 5 23 12532 Carriage Bolt 3/4 x 3 1/2 - NC, GR 5 6 10 24 12493 Slotted Hex Nut 2 - 12 Dia, 2 4 25 12495 Roll Pin 3/8 x 3 12 - NC, GR 5 2 4 26 12477 End Collar - 1/3/2 As Required As Required As Required 28 102987 Spacer Washer - 1/2" As Required As Required As Required 29 12483 Disk Bide 20 x 1/4 Cut Out 10 13 14 124845 </td <td>12</td> <td>101056</td> <td>Clamp Plate $3/4 \times 6 \times 9 //8$</td> <td>3</td> <td>5</td>	12	101056	Clamp Plate $3/4 \times 6 \times 9 //8$	3	5
14 1030 Hex Cap Serve 34 x 5 1/2 - NC, OR S, PL 3 5 15 12069 Flange Lock Nut 34 - NC, CP, L 12 14 16 103096 Seraper Support 3 5 17 102541 War Guard 3 5 18 10135 Carriage Bolt 5% x 13/4 - NC, GR 5, PL 13 18 19 10299 Lock Nut 5% - NC, PL 6 10 20 11647 Flange Lock Nut 5% - NC, PL 12 14 21 20620 Assy, Grease Fitting Guard 3 5 22 0445 Assy, Trunion Mount 3 5 23 12532 Carriage Bolt 3/k 3 1/2 - NC, GR 5 6 10 24 12493 Stotted Hex Nut 2 - 12 NF, PL 2 4 26 12478 End Collar - 2 1/32 Dia. 2 4 27 102987 Spacer Washer - 1/2" As Required As Required 28 102988 Spacer Washer - 1/2" As Required As Required 29 12483 Disk Blade 25x 1/4 Cut Out 10 13<	13	11522A	Flex Gang Shank 1 1/4 x 2 1/2	3	5
15 12099 Finge Lock Nut 34 - NC, PL 12 14 16 103096 Scraper Support 3 5 17 102541 Wear Guard 3 5 18 10135 Carriage Bolt 58 x 13/4 - NC, GR 5, PL 13 18 19 10299 Lock Nut 58 - NC, PL 12 14 20 11647 Flange Lock Nut 58 - NC, PL 12 14 21 20620 Assy, Grease Fitting Guard 3 5 22 0945 Assy, Truino Mount 3 5 23 12532 Carriage Bolt 3/4 x 3 1/2 - NC, GR 5 6 10 24 12495 Roll Pin 3/8 x 3 2 4 26 12478 End Collar - 2 1/32 Dia, 2 4 27 102987 Spacer Washer - 1/2" As Required As Required 28 102988 Spacer Washer - 1/2" As Required As Required 29 12483 Disk Blade 20 x 1/4 Qui Out 10 13 12484 Disk Blade 24 x 1/4 Qui Out 10 13 14 <tr< td=""><td>14</td><td>10320</td><td>Hex Cap Screw $3/4 \times 3 1/2$ - NC, GR 5, PL</td><td>3</td><td>5</td></tr<>	14	10320	Hex Cap Screw $3/4 \times 3 1/2$ - NC, GR 5, PL	3	5
16 10.0906 Scraper Support 3 5 17 102541 Wear Guard 3 5 18 10135 Carriage Bolt 5/8 x 13/4 - NC, GR 5, PL 13 18 19 10299 Lock Nut 5/8 - NC, PL 12 14 21 20620 Assy, Grease Fitting Guard 3 5 22 0945 Assy, Tranion Mount 3 5 23 12532 Carriage Bolt 3/4 x 31/2 - NC, GR 5 6 10 24 12493 Stotted Hex Nut 2-12 NF, PL 2 4 26 12478 End Collar - 21/32 Dia. 2 4 27 102987 Spacer Washer - 1/2" As Required As Required 28 102988 Spacer Washer - 1/2" As Required As Required 29 12485 Disk Blade 26 x 1/4 Plain 10 13 12486 Disk Blade 24 x 1/4 Cut Out 10 13 12486 Disk Blade 24 x 1/4 Cut Out 10 13 12486 <td< td=""><td>15</td><td>12069</td><td>Flange Lock Nut 3/4 - NC, PL</td><td>12</td><td>14</td></td<>	15	12069	Flange Lock Nut 3/4 - NC, PL	12	14
1/ 102,241 Wear Guard 5 5 18 10135 Carriage Bolt 5/8 x 13/4 - NC, GR 5, PL 13 18 19 10299 Lock Nut 5/8 - NC, PL 12 14 21 20620 Assy, Crease Fitting Guard 3 5 22 0945 Assy, Trainoin Mount 3 5 23 12332 Carriage Bolt 3/4 x 3 1/2 - NC, GR 5 6 10 24 12493 Shoted Hex Nut 2 - 12 NF, PL 2 4 25 12495 Roll Pin 3/8 x 3 2 4 26 12478 End Coltra - 2 1/32 Dia. 2 4 27 102987 Spacer Washer - 1/2" As Required As Required 28 102988 Spacer Washer - 1/2" As Required 10 13 12484 Disk Blade 26 x 1/4 Plain 10 13 12 12485 Disk Blade 24 x 1/4 Plain 10 13 12 12486 Disk Blade 24 x 1/4 Plain 10 13 14 12486 Disk Blade 24 x 1/4 Plain 10 13 14 <td>16</td> <td>103096</td> <td>Scraper Support</td> <td>3</td> <td>5</td>	16	103096	Scraper Support	3	5
18 10135 Carrage Holt 5/8 N, C, PL 13 18 19 10290 Lock Nut 5/8 - NC, PL 6 10 20 11647 Flange Lock Nut 5/8 - NC, PL 12 14 21 20620 Assy, Tranion Mount 3 5 22 0945 Assy, Tranion Mount 3 5 23 12432 Slorted Hex Nut 2 - 12 NF, PL 2 4 24 12493 Slorted Hex Nut 2 - 12 NF, PL 2 4 26 12478 End Collar - 2 1/32 Dia. 2 4 27 102987 Spacer Washer - 1/2" As Required As Required 28 102988 Spacer Washer - 1/2" As Required As Required 29 12484 Disk Blade 26 x 1/4 Cut Out 10 13 12484 Disk Blade 24 x 1/4 Cut Out 10 13 12485 Disk Blade 24 x 1/4 Cut Out 10 13 12486 Disk Blade 24 x 1/4 Cut Out 10 13 12485 Disk Blade 24 x 1/4 Cut Out 10 13 12486 Graese Fitting 1/8 -	17	102541	Wear Guard	3	5
19 10299 Lock Nut 58 - NC, PL 6 10 20 11647 Flange Lock Nut 58 - NC, PL 12 14 21 20620 Assy. Grease Fitting Guard 3 5 22 0945 Assy. Trainon Mount 3 5 23 12532 Carriage Bolt 3/4 x 3 1/2 - NC, GR 5 6 10 24 12493 Stoted Hex Nut 2 - 12 NF, PL 2 4 25 12495 Roll Pin 3/8 x 3 2 4 26 1278 End Coller - 2 1/3 2 Dia. 2 4 27 102987 Spacer Washer - 1/2" As Required As Required 28 102988 Spacer Washer - 1/2" As Required As Required 29 12483 Disk Blade 26 x 1/4 Plain 10 13 12486 Disk Blade 24 x 1/4 Plain 10 13 12486 Disk Blade 24 x 1/4 Plain 10 13 12486 Disk Blade 24 x 1/4 Plain 10 13 12486 Disk Blade 24 x 1/4 Plain 1 1 1 B 12844 <t< td=""><td>18</td><td>10135</td><td>Carriage Bolt 5/8 x 1 3/4 - NC, GR 5, PL</td><td>13</td><td>18</td></t<>	18	10135	Carriage Bolt 5/8 x 1 3/4 - NC, GR 5, PL	13	18
20 11647 Finage Lock Nut 5/8 - NC, PL 12 14 21 20620 Assy, Trunion Mount 3 5 23 12532 Carriage Bolt 3/4 x3 1/2 - NC, GR 5 6 10 24 12493 Slotted Hex Nut 2 - 12 NF, PL 2 4 25 12495 Roll Fin 3/8 x3 2 4 26 12478 End Collar - 2 1/32 Dia. 2 4 27 102987 Spacer Washer - 1/2" As Required As Required 28 102988 Spacer Washer - 1/2" As Required As Required 29 12484 Disk Blade 26 x 1/4 Cut Out 10 13 12484 Disk Blade 24 x 1/4 Cut Out 10 13 12485 Disk Blade 24 x 1/4 Cut Out 10 13 12484 Grease Fitting 1/8 - 27 NPT 1 1 1 1 1 1 1 12484 Grease Fitting 1/8 - 27 NPT 1 1 1 1 1 1 1 1 1 1 1 1	19	10299	Lock Nut 5/8 - NC, PL	6	10
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	20	11647	Flange Lock Nut 5/8 - NC, PL	12	14
22 0945 Assy, Tunion Mount 3 5 23 12532 Carriage Bolt 3/4 × 3/2 - NC, GR 5 6 10 24 12493 Slotted Hex Nut 2 - 12 NF, PL 2 4 25 12495 Roll Pin 3/8 × 3 2 4 26 12478 End Collar - 2 1/32 Dia. 2 4 27 102987 Spacer Washer - 1/2" As Required As Required 28 102988 Spacer Washer - 1/2" As Required As Required 29 12484 Disk Blade 26 × 1/4 Cut Out 10 13 12484 Disk Blade 26 × 1/4 Cut Out 10 13 12485 Disk Blade 24 × 1/4 Cut Out 10 13 12486 Disk Blade 27 × 1/4 Cut Out 10 13 30 17004 End Bell - Small 1 1 8 12384 Grease Fitting 1/8 - 27 NPT 1 1 1 1 1 1 1 1 20 11504 Bearing Housing 1/2 Smm 2 2 1 1102 Retaire Bhous 2	21	20620	Assy. Grease Fitting Guard	3	5
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	22	0945	Assy. Trunion Mount	3	5
24 12493 Slotted Hex Nut 2 - 12 NF, PL 2 4 25 12495 Roll Pin 3/8 x3 2 4 26 12478 End Collar - 2 1/32 Dia. 2 4 27 102987 Spacer Washer - 1/4" As Required As Required 28 102988 Spacer Washer - 1/2" As Required As Required 29 12484 Disk Blade 26 x 1/4 Cut Out 10 13 12484 Disk Blade 24 x 1/4 Cut Out 10 13 12485 Disk Blade 24 x 1/4 Cut Out 10 13 30 17004 End Bell - Small 3 5 31 FB-09-0016 Sub Assembly Bearing 4Uosing (Items A, B, C, D & E) 3 5 31 FB-09-0016 Sub Assembly Bearing 4Uosing (Items A, B, C, D & E) 3 5 32 10000 Sue - 21 NF 1 1 1 4 1017 Retainer Housing - 125 mm 2 2 33 17005 End Bell - Large 3 5 34 20715 A sty S, Spacer Spool 7 7 </td <td>23</td> <td>12532</td> <td>Carriage Bolt 3/4 x 3 1/2 - NC, GR 5</td> <td>6</td> <td>10</td>	23	12532	Carriage Bolt 3/4 x 3 1/2 - NC, GR 5	6	10
25 12495 Roll Pin 3/8 x 3 2 4 26 12478 End Collar - 2 1/3 Dia. 2 4 27 102987 Spacer Washer - 1/2" As Required As Required 28 102988 Spacer Washer - 1/2" As Required As Required 29 12483 Disk Blade 26 x 1/4 Plain 10 13 12484 Disk Blade 24 x 1/4 Cut Out 10 13 12485 Disk Blade 24 x 1/4 Plain 10 13 30 17004 End Bell - Small 3 5 31 FB-09-0016 Sub Assembly Bearing & Housing (Items A, B, C, D & E) 3 5 A 16014 Bearing Housing -125 mm 1 1 C 100105 Washer -125 mm 2 2 D 11504 Bearing - GW214PP3 1 1 1 21 103000 Sleeve - 2 11/16 OD x 10 1/4 Long 3 5 33 17005 End Bell - Large 3 5 34 20715 Assy, Spacer Spool 7 7 102993	24	12493	Slotted Hex Nut 2 - 12 NF, PL	2	4
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	25	12495	Roll Pin 3/8 x 3	2	4
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	26	12478	End Collar - 2 1/32 Dia.	2	4
28 102988 Spacer Washer - 1/2" As Required As Required 29 12483 Disk Blade 26 x 1/4 Plain 10 13 12484 Disk Blade 26 x 1/4 Cut Out 10 13 12485 Disk Blade 24 x 1/4 Cut Out 10 13 12486 Disk Blade 24 x 1/4 Cut Out 10 13 30 17004 End Bell - Small 3 5 31 FB-09-0016 Sub Assembly Bearing & Housing (Items A, B, C, D & E) 3 5 A 16014 Bearing Housing - 125 mm 1 1 B 12384 Grease Fitting 1/8 - 27 NPT 1 1 1 C 100105 Washer - 125 mm 1 1 1 1 B 12384 Grease Fitting 1/8 - 27 NPT 1<	27	102987	Spacer Washer - 1/4"	As Required	As Required
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	28	102988	Spacer Washer - 1/2"	As Required	As Required
$ \begin{array}{ c c c c c c } 12484 & Disk Blade 26 x 1/4 Cut Out & 10 & 13 \\ 12485 & Disk Blade 24 x 1/4 Cut Out & 10 & 13 \\ 12486 & Disk Blade 24 x 1/4 Cut Out & 10 & 13 \\ 12486 & Disk Blade 24 x 1/4 Cut Out & 10 & 13 \\ 130 & 17004 & End Bell - Small & 3 & 5 \\ 31 & FB-09-0016 & Sub Assembly Bearing & Housing (Items A, B, C, D & E) & 3 & 5 \\ A & 16014 & Bearing Housing - 125 mm & 1 & 1 \\ B & 12384 & Grease Fitting 1/8 - 27 NPT & 1 & 1 \\ C & 100105 & Washer - 125 mm & 2 & 2 \\ D & 11504 & Bearing - GW214PP3 & 1 & 1 \\ E & 11072 & Retainer Ring & 1 & 1 \\ 132 & 103000 & Sleeve - 2 11/16 OD x 10 1/4 Long & 3 & 5 \\ 33 & 17005 & End Bell - Large & 3 & 5 \\ 34 & 20715 & Assy. Spacer Spool & 7 & 7 \\ 35 & 102993 & Gang Bolt - 6 Blade 2 Dia x 60 1/2 Long & - & 1 \\ 102998 & Gang Bolt - 1 Blade 2 Dia x 14 1/4 Long & 1 & - \\ 102998 & Gang Bolt - 1 Blade 2 Dia x 14 1/4 Long & 1 & - \\ 101053 & Scraper Bar 3 x 2 x 3/8 Angle - 88 15/16 Long & - & 1 \\ 101053 & Scraper Bar 3 x 2 x 3/8 Angle - 80 5/16 Long & - & 1 \\ 101053 & Scraper Bar 3 x 2 x 3/8 Angle - 80 5/16 Long & - & 1 \\ 101053 & Scraper Bar 3 x 2 x 3/8 Angle - 80 5/16 Long & - & 1 \\ 101053 & Scraper Bar 3 x 2 x 3/8 Angle - 12 3/8 Long & 1 & - \\ 20069 & Assy. Scraper - LH (Items 37, 38, 39 & 40) - Shown & 7 & 8 \\ 20069 & Assy. Scraper - RH (Items 37, 38, 39 & 40) - Shown & 7 & 8 \\ 20069 & Assy. Scraper - RH (Items 37, 38, 39 & 40) - Shown & 7 & 8 \\ 20069 & Assy. Scraper Blade 3/16 x 6 x 8 & 1 & 1 \\ 138 & 101019 & Scraper Blade 3/16 x 6 x 8 & 1 & 1 \\ 340 & 11646 & Flange Lock Nut 1/2 - NC, PL (2 Per Scraper) & 2 & 2 \\ 400 & 11646 & Flange Lock Nut 1/2 - NC, PL (2 Per Scraper) & 2 & 2 \\ 410 & 103098 & Scraper Blade - HH (Right Front & Left Rear) & 3 & 5 \\ 103098 & Scraper Blade - RH (Right Front & Left Rear) & 3 & 5 \\ 103098 & Scraper Blade - RH (Right Front & Left Rear) & 3 & 5 \\ 103098 & Scraper Blade - 2X 1/4 Plain & 1 & 1 \\ 12487 & Disk Blade 22 x 1/4 Plain & 1 & 1 \\ 12487 & Disk Blade 22 x 1/4 Plain & 1 & 1 \\ 12489 & Disk Blade 22 x 1/4 Plain & 1 & 1 \\ 12489 & Disk Blade 22 x 1/4 C$	29	12483	Disk Blade 26 x 1/4 Plain	10	13
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $		12484	Disk Blade 26 x 1/4 Cut Out	10	13
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $		12485	Disk Blade 24 x 1/4 Plain	10	13
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$		12486	Disk Blade 24 x 1/4 Cut Out	10	13
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	30	17004	End Bell - Small	3	5
A 16014 Bearing Housing - 125 mm 1 1 B 12384 Grease Fitting 1/8 - 27 NPT 1 1 C 100105 Washer - 125 mm 2 D 11504 Bearing - GW214PP3 1 1 E 11072 Retainer Ring 1 1 32 103000 Sleeve - 2 11/16 OD x 10 1/4 Long 3 5 33 17005 End Bell - Large 3 5 34 20715 Assy. Spacer Spool 7 7 102995 Gang Bolt - 8 Blade 2 Dia. x 60 1/2 Long - 1 102995 Gang Bolt - 8 Blade 2 Dia. x 114 1/4 Long 1 - 101050 Scraper Bar 3 x 2 x 3/8 Angle - 58 15/16 Long - 1 101053 Scraper Bar 3 x 2 x 3/8 Angle - 12 3/8 Long 1 - 20069 Assy. Scraper - LH (Items 37, 38, 39 & 40) - Shown 7 8 37 101049 Scraper Bard 3/16 x 6 x 8 1 1 38 101019 Scraper Blade 3/16 x 6 x 8 1 1 39 10870 Carriage Bolt 1/2 x 1/2 -	31	FB-09-0016	Sub Assembly Bearing & Housing (Items A, B, C, D & E)	3	5
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $	Α	16014	Bearing Housing - 125 mm	1	1
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	В	12384	Grease Fitting 1/8 - 27 NPT	1	1
D 11504 Bearing - GW214PP3 1 1 E 11072 Retainer Ring 1 1 32 103000 Sleeve - 211/16 OD x 10 1/4 Long 3 5 33 17005 End Bell - Large 3 5 34 20715 Assy. Spacer Spool 7 7 35 102993 Gang Bolt - 6 Blade 2 Dia. x 60 1/2 Long - 1 102995 Gang Bolt - 8 Blade 2 Dia. x 60 1/2 Long - 1 102998 Gang Bolt - 11 Blade 2 Dia. x 82 Long - 1 101050 Scraper Bar 3 x 2 x 3/8 Angle - 58 15/16 Long - 1 101053 Scraper Bar 3 x 2 x 3/8 Angle - 80 5/16 Long - 1 101053 Scraper Text 3 X 2 x 3/8 Angle - 12 3/8 Long 1 - 20069 Assy. Scraper - LH (Items 37, 38, 39 & 40) 7 8 37 101049 Scraper Shank 3/8 x 2 1 1 38 101019 Scraper Blade 3/16 x 6 x 8 1 1 39 10870 Carriage Bolt 1/2 x 1 1/2 - NC, PL, GR 5 (2 Per Scraper) 2 2 40 </td <td>С</td> <td>100105</td> <td>Washer - 125 mm</td> <td>2</td> <td>2</td>	С	100105	Washer - 125 mm	2	2
E 11072 Retainer Ring 1 1 32 103000 Sleeve - 2 11/16 OD x 10 1/4 Long 3 5 33 17005 End Bell - Large 3 5 34 20715 Assy. Spacer Spool 7 7 35 102993 Gang Bolt - 6 Blade 2 Dia. x 60 1/2 Long - 1 102995 Gang Bolt - 8 Blade 2 Dia. x 82 Long - 1 102998 Gang Bolt - 11 Blade 2 Dia. x 114 1/4 Long 1 - 36 101103 Scraper Bar 3 x 2 x 3/8 Angle - 58 15/16 Long - 1 101050 Scraper Bar 3 x 2 x 3/8 Angle - 80 5/16 Long - 1 - 20069 Assy. Scraper - LH (Items 37, 38, 39 & 40) - Shown 7 8 20068 Assy. Scraper Bard 3/6 x 6 x 8 1 1 37 101049 Scraper Blade 3/16 x 6 x 8 1 1 38 101019 Scraper Blade 3/16 x 6 x 8 1 1 39 10870 Carriage Bolt 1/2 x 1 1/2 - NC, PL, QE P Scraper) 2 2 40 11646 Flange Lock Nut 1/2 - NC, PL (2 Per Scraper) 2<	D	11504	Bearing - GW214PP3	1	1
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	E	11072	Retainer Ring	1	1
33 17005 End Bell - Large 3 5 34 20715 Assy. Spacer Spool 7 7 35 102993 Gang Bolt - 6 Blade 2 Dia. x 60 1/2 Long - 1 102995 Gang Bolt - 8 Blade 2 Dia. x 82 Long - 1 102998 Gang Bolt - 11 Blade 2 Dia. x 114 1/4 Long 1 - 36 101103 Scraper Bar 3 x 2 x 3/8 Angle - 58 15/16 Long - 1 36 101050 Scraper Bar 3 x 2 x 3/8 Angle - 80 5/16 Long - 1 101053 Scraper Bar 3 x 2 x 3/8 Angle - 112 3/8 Long - - 2 20069 Assy. Scraper - RH (Items 37, 38, 39 & 40) - Shown 7 8 37 101049 Scraper T-RH (Items 37, 38, 39 & 40) 7 8 37 101049 Scraper Blade 3/16 x 6 x 8 1 1 38 101019 Scraper Blade 3/16 x 6 x 8 1 1 39 10870 Carriage Bolt 1/2 x 1 1/2 - NC, PL, GR 5 (2 Per Scraper) 2 2 40 11646 Flange Lock Nut 1/2 - NC, PL (2 Per Scraper) 2 2 41 103097 </td <td>32</td> <td>103000</td> <td>Sleeve - 2 11/16 OD x 10 1/4 Long</td> <td>3</td> <td>5</td>	32	103000	Sleeve - 2 11/16 OD x 10 1/4 Long	3	5
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	33	17005	End Bell - Large	3	5
35 102993 Gang Bolt - 6 Blade 2 Dia. x 60 1/2 Long - 1 102995 Gang Bolt - 8 Blade 2 Dia. x 82 Long - 1 102998 Gang Bolt - 11 Blade 2 Dia. x 114 1/4 Long 1 - 36 101103 Scraper Bar 3 x 2 x 3/8 Angle - 58 15/16 Long - 1 101050 Scraper Bar 3 x 2 x 3/8 Angle - 80 5/16 Long - 1 101050 Scraper Bar 3 x 2 x 3/8 Angle - 112 3/8 Long 1 - 20069 Assy. Scraper - LH (Items 37, 38, 39 & 40) - Shown 7 8 20068 Assy. Scraper - RH (Items 37, 38, 39 & 40) 7 8 37 101049 Scraper Blade 3/16 x 6 x 8 1 1 38 101019 Scraper Blade 3/16 x 6 x 8 1 1 39 10870 Carriage Bolt 1/2 x 1 1/2 - NC, PL, GR 5 (2 Per Scraper) 2 2 40 11646 Flange Lock Nut 1/2 - NC, PL (2 Per Scraper) 2 2 41 103097 Scraper Blade - LH (Left Front & Right Rear) - Shown 3 5 103098 Scraper Blade - LH (Left Front & Left Rear) 3 5 42 10665	34	20715	Assy. Spacer Spool	7	7
102995 Gang Bolt - 8 Blade 2 Dia. x 82 Long - 1 36 101103 Scraper Bar 3 x 2 x 3/8 Angle - 80 5/16 Long - 1 36 101103 Scraper Bar 3 x 2 x 3/8 Angle - 80 5/16 Long - 1 101050 Scraper Bar 3 x 2 x 3/8 Angle - 80 5/16 Long - 1 101051 Scraper Bar 3 x 2 x 3/8 Angle - 112 3/8 Long 1 - 20069 Assy. Scraper - LH (Items 37, 38, 39 & 40) - Shown 7 8 20068 Assy. Scraper - RH (Items 37, 38, 39 & 40) 7 8 37 101049 Scraper Blade 3/16 x 6 x 8 1 1 38 101019 Scraper Blade 3/16 x 6 x 8 1 1 39 10870 Carriage Bolt 1/2 x 1 1/2 - NC, PL (GR 5 (2 Per Scraper) 2 2 40 11646 Flange Lock Nut 1/2 - NC, PL (2 Per Scraper) 2 2 41 103097 Scraper Blade - LH (Left Front & Right Rear) - Shown 3 5 103098 Scraper Blade - NR (Right Front & Left Rear) 3 5 6 42 10665 Carriage Bolt 5/8 x 2 - NC, GR 5, PL 5 6 <	35	102993	Gang Bolt - 6 Blade 2 Dia. x 60 1/2 Long	-	1
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$		102995	Gang Bolt - 8 Blade 2 Dia. x 82 Long	-	1
$\begin{array}{cccccccccccccccccccccccccccccccccccc$		102998	Gang Bolt - 11 Blade 2 Dia. x 114 1/4 Long	1	-
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	36	101103	Scraper Bar 3 x 2 x 3/8 Angle - 58 15/16 Long	-	1
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$		101050	Scraper Bar 3 x 2 x 3/8 Angle - 80 5/16 Long	-	1
$\begin{array}{cccccccccccccccccccccccccccccccccccc$		101053	Scraper Bar 3 x 2 x 3/8 Angle - 112 3/8 Long	1	-
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$		20069	Assy. Scraper - LH (Items 37, 38, 39 & 40) - Shown	7	8
37 101049 Scraper Shank 3/8 x 2 1 1 38 101019 Scraper Blade 3/16 x 6 x 8 1 1 39 10870 Carriage Bolt 1/2 x 1 1/2 - NC, PL, GR 5 (2 Per Scraper) 2 2 40 11646 Flange Lock Nut 1/2 - NC, PL (2 Per Scraper) 2 2 41 103097 Scraper Blade - LH (Left Front & Right Rear) - Shown 3 5 103098 Scraper Blade - RH (Right Front & Left Rear) 3 5 42 10665 Carriage Bolt 5/8 x 2 - NC, GR 5, PL 5 6 43 12482 Disk Blade - Backup - 10 X 3/16 Plain 1 1 44 12485 Disk Blade 24 x 1/4 Plain 1 1 12486 Disk Blade 22 x 1/4 Plain 1 1 1 12487 Disk Blade 22 x 1/4 Plain 1 1 1 12489 Disk Blade 22 x 1/4 Plain 1 1 1 12489 Disk Blade 22 x 1/4 Cut Out 1 1 1 12489 Disk Blade 22 x 1/4 Cut Out 1 1 1 Note: Blade is 2" Lees than standard<		20068	Assy. Scraper - RH (Items 37, 38, 39 & 40)	7	8
38 101019 Scraper Blade 3/16 x 6 x 8 1 1 39 10870 Carriage Bolt 1/2 x 1 1/2 - NC, PL, GR 5 (2 Per Scraper) 2 2 40 11646 Flange Lock Nut 1/2 - NC, PL (2 Per Scraper) 2 2 41 103097 Scraper Blade - LH (Left Front & Right Rear) - Shown 3 5 103098 Scraper Blade - RH (Right Front & Left Rear) 3 5 42 10665 Carriage Bolt 5/8 x 2 - NC, GR 5, PL 5 6 43 12482 Disk Blade - Backup - 10 X 3/16 Plain 1 1 44 12485 Disk Blade 24 x 1/4 Plain 1 1 12486 Disk Blade 24 x 1/4 Plain 1 1 12487 Disk Blade 22 x 1/4 Plain 1 1 12489 Disk Blade 22 x 1/4 Plain 1 1 12489 Disk Blade 22 x 1/4 Cut Out 1 1 12489 Disk Blade 22 x 1/4 Cut Out 1 1 12489 Disk Blade 22 x 1/4 Cut Out 1 1 Note: Blade is 2" Less than standard 1 1	37	101049	Scraper Shank 3/8 x 2	1	1
39 10870 Carriage Bolt 1/2 x 1 1/2 - NC, PL, GR 5 (2 Per Scraper) 2 2 40 11646 Flange Lock Nut 1/2 - NC, PL (2 Per Scraper) 2 2 41 103097 Scraper Blade - LH (Left Front & Right Rear) - Shown 3 5 103098 Scraper Blade - RH (Right Front & Left Rear) 3 5 42 10665 Carriage Bolt 5/8 x 2 - NC, GR 5, PL 5 6 43 12482 Disk Blade - Backup - 10 X 3/16 Plain 1 1 44 12485 Disk Blade 24 x 1/4 Plain 1 1 12486 Disk Blade 24 x 1/4 Plain 1 1 1 12487 Disk Blade 22 x 1/4 Plain 1 1 1 12489 Disk Blade 22 x 1/4 Vut Out 1 1 1 12489 Disk Blade 22 x 1/4 Vut Out 1 1 1 Note: Blade is 2" Less than standard 1 1 1	38	101019	Scraper Blade $3/16 \ge 6 \ge 8$	1	1
40 11646 Flange Lock Nut 1/2 - NC, PL (2 Per Scraper) 2 2 41 103097 Scraper Blade - LH (Left Front & Right Rear) - Shown 3 5 103098 Scraper Blade - RH (Right Front & Left Rear) 3 5 42 10665 Carriage Bolt 5/8 x 2 - NC, GR 5, PL 5 6 43 12482 Disk Blade - Backup - 10 X 3/16 Plain 1 1 44 12485 Disk Blade 24 x 1/4 Plain 1 1 12486 Disk Blade 24 x 1/4 Cut Out 1 1 1 12487 Disk Blade 22 x 1/4 Plain 1 1 1 12489 Disk Blade 22 x 1/4 Plain 1 1 1 12489 Disk Blade 22 x 1/4 Cut Out 1 1 1 12489 Disk Blade 22 x 1/4 Cut Out 1 1 1 Note: Blade is 2" Less than standard 1 1 1	39	10870	Carriage Bolt 1/2 x 1 1/2 - NC, PL, GR 5 (2 Per Scraper)	2	2
41 103097 Scraper Blade - LH (Left Front & Right Rear) - Shown 3 5 42 10665 Carriage Bolt 5/8 x 2 - NC, GR 5, PL 5 6 43 12482 Disk Blade - Backup - 10 X 3/16 Plain 1 1 44 12485 Disk Blade 24 x 1/4 Plain 1 1 12486 Disk Blade 24 x 1/4 Cut Out 1 1 12487 Disk Blade 22 x 1/4 Plain 1 1 12489 Disk Blade 22 x 1/4 Cut Out 1 1 12489 Disk Blade 22 x 1/4 Cut Out 1 1	40	11646	Flange Lock Nut 1/2 - NC PL (2 Per Scraper)	2	2
103098 Scraper Blade - RH (Right Front & Left Rear) 3 5 42 10665 Carriage Bolt 5/8 x 2 - NC, GR 5, PL 5 6 43 12482 Disk Blade - Backup - 10 X 3/16 Plain 1 1 44 12485 Disk Blade 24 x 1/4 Plain 1 1 12486 Disk Blade 24 x 1/4 Cut Out 1 1 12487 Disk Blade 22 x 1/4 Plain 1 1 12489 Disk Blade 22 x 1/4 Cut Out 1 1 12489 Disk Blade 22 x 1/4 Cut Out 1 1 12489 Disk Blade 22 x 1/4 Cut Out 1 1	41	103097	Scraper Blade - LH (Left Front & Right Rear) - Shown	3	5
42 10665 Carriage Bolt 5/8 x 2 - NC, GR 5, PL 5 6 43 12482 Disk Blade - Backup - 10 X 3/16 Plain 1 1 44 12485 Disk Blade 24 x 1/4 Plain 1 1 12486 Disk Blade 24 x 1/4 Plain 1 1 12487 Disk Blade 22 x 1/4 Plain 1 1 12489 Disk Blade 22 x 1/4 Plain 1 1 12489 Disk Blade 22 x 1/4 Cut Out 1 1 Note: Blade is 2" Less than standard 1 1	71	103098	Scraper Blade - RH (Right Front & Left Rear)	3	5
43 12482 Disk Blade - Backup - 10 X 3/16 Plain 1 1 44 12485 Disk Blade 24 x 1/4 Plain 1 1 12486 Disk Blade 24 x 1/4 Plain 1 1 12487 Disk Blade 22 x 1/4 Plain 1 1 12489 Disk Blade 22 x 1/4 Plain 1 1 12489 Disk Blade 22 x 1/4 Cut Out 1 1 12489 Disk Blade 22 x 1/4 Cut Out 1 1 12489 Disk Blade 22 x 1/4 Cut Out 1 1	42	10665	Carriage Bolt 5/8 x 2 - NC GR 5 PI	5	6
44 12485 Disk Blade 24 x 1/4 Plain 1 1 12486 Disk Blade 24 x 1/4 Plain 1 1 12487 Disk Blade 22 x 1/4 Plain 1 1 12489 Disk Blade 22 x 1/4 Plain 1 1 12489 Disk Blade 22 x 1/4 Cut Out 1 1 12489 Disk Blade 22 x 1/4 Cut Out 1 1 Note: Blade is 2" Less than standard 1 1	43	12482	Disk Blade - Backup - 10 X 3/16 Plain	1	1
12465 Disk Blade 24 x 1/4 full 1 1 12486 Disk Blade 24 x 1/4 Cut Out 1 1 12487 Disk Blade 22 x 1/4 Plain 1 1 12489 Disk Blade 22 x 1/4 Cut Out 1 1 12489 Disk Blade 22 x 1/4 Cut Out 1 1 Note: Blade is 2" Less than standard 1 1	44	12485	Disk Blade 24 x 1/4 Plain	1	1
12460Disk Blade 22 x 1/4 Cut Out1112487Disk Blade 22 x 1/4 Plain1112489Disk Blade 22 x 1/4 Cut Out11Note: Blade is 2" Less than standard11	77	12405	Disk Blade $24 \times 1/4$ Cut Out	1	1
12467Disk Blade 22 x 1/4 right1112489Disk Blade 22 x 1/4 Cut Out11Note: Blade is 2"Less than standard11		12400	Disk Blade 27 v $1/4$ Plain	1	1
Note: Blade is 2" Less than standard		12407	Disk Blade 22 x $1/4$ Cut Out	1	1
		Note: Rlade is 1	" Less than standard	1	1

Rear Wing Gang and Gang Frames - 34 and 39' Model

			Number Required	
Reference Number	Part Number	Part Description	34' Model HD-8234	39' Model HD-9439
1	20739	Assy. Left Rear Wing Gang Frame - 128"	1	-
	20741	Assy. Left Rear Wing Gang Frame - 160"	-	1
	20740	Assy. Right Rear Wing Gang Frame - 128"	1	-
	20742	Assy. Right Rear Wing Gang Frame - 160"	-	1
6	101054	U Bolt 7/8 Dia.	8	10
Rear Wing Gang and Gang Frames - 34 and 39' Model

			Number	Required
Reference	Part		34' Model	39' Model
Number	Number	Part Description	HD-8234	HD-9439
_		1		
7	10396	Lock Nut 7/8 - NC, PL	16	20
8	9212	U Bolt 3/4 Dia.	2	2
9	10300	Lock Nut 3/4 - NC, PL	8	9
10	100969	Support 1/2 x 3 - 13 7/8 Long	2	2
11	101057	Clamp Plate 1/2 x 6 x 13 3/4	4	5
12	101056	Clamp Plate $3/4 \ge 6 \ge 97/8$	4	5
13	11522A	Flex Gang Shank 1 1/4 x 2 1/2	4	5
14	10320	Hex Can Screw $3/4 \ge 31/2$ - NC GR 5 PL	4	5
15	12069	Flange Lock Nut 3/4 - NC PL	8	10
16	103096	Scraper Support	4	5
17	102541	Wear Guard	4	5
19	10125	Corrigge Dolt $5/8 \times 1.2/4$ NC CD 5 DI	17	21
10	10155	Look Nut 5/8 NC DI	0	21
19	10299	Lock Inut 5/6 - INC, PL	0	10
20	1104/	Flange Lock Nut 5/8 - NC, PL	15	18
21	20620	Assy. Grease Fitting Guard	4	5
22	0945	Assy. Trunion Mount	4	5
23	12532	Carriage Bolt 3/4 x 3 1/2 - NC, GR 5	8	10
24	12493	Slotted Hex Nut 2 - 12 NF, PL	4	4
25	12495	Roll Pin 3/8 x 3	4	4
26	12478	End Collar - 2 1/32 Dia.	4	4
27	102987	Spacer Washer - 1/4"	As Required	As Required
28	102988	Spacer Washer - 1/2"	As Required	As Required
29	12483	Disk Blade 26 x 1/4 Plain	11	14
	12484	Disk Blade 26 x 1/4 Cut Out	11	14
	12485	Disk Blade 24 x 1/4 Plain	11	14
	12486	Disk Blade 24 x 1/4 Cut Out	11	14
30	17004	End Ball Small	11	5
21	ED 00 0016	Sub Assembly Deering & Housing (Items A, D, C, D, & E)	4	5
51	FD-09-0010	Sub Assembly Bearing & Housing (items A, D, C, D & E)	4	5
A	10014	Bearing Housing - 125 mm $C_{\rm H} = 1/9 - 27$ NDT	1	1
В	12384	Grease Fitting 1/8 - 2/ NPT	1	1
C	100105	Washer - 125 mm	2	2
D	11504	Bearing - GW214PP3	1	1
E	11072	Retainer Ring	1	1
32	103000	Sleeve - 2 11/16 OD x 10 1/4 Long	4	5
33	17005	End Bell - Large	4	5
34	20715	Assy. Spacer Spool	7	9
35	102993	Gang Bolt - 6 Blade 2 Dia. x 60 1/2 Long	1	1
	102994	Gang Bolt - 7 Blade 2 Dia. x 71 1/4 Long	1	-
	102997	Gang Bolt - 10 Blade 2 Dia. x 103 1/2 Long	-	1
36	103001	Scraper Bar 3 x 2 x 3/8 Angle - 64 5/16 Long	-	1
	101051	Scraper Bar 3 x 2 x 3/8 Angle - 91 Long	-	1
	103016	Scraper Bar 3 x 2 x 3/8 Angle - 128 7/8 Long	1	-
	20069	Assy Scraper - I H (Items 37, 38, 40 & 41) - Shown	8	10
	20009	Assy Scraper - BH (Items 37, 38, 40 & 41) Shown	8	10
	20000	Assy Special Scremer I.H. (Items 38, 30, 40 & 41) Shown	1	10
	20113	Assy Special Scraper - DH (Items 38, 39, 40 & 41) - Shown	1	1
27	20112	Assy. Special Sciaper - KII (itellis 36, 37, 40 & 41) $S_{\text{converses}}$ (here) - 2/9 = 2	1	1
3/	101049	Scraper Shank 5/8 x 2	1	1
38	101019	Scraper Blade 3/16 x 6 x 8	1	1
39	1011/3	Scraper Shank - Special 3/8 x 3	1	1
40	108/0	Carriage Bolt 1/2 x 1 1/2 - NC, PL, GR 5 (2 Per Scraper)	2	2
41	11646	Flange Lock Nut 1/2 - NC, PL (2 Per Scraper)	2	2
42	103097	Scraper Blade - LH (Left Front & Right Rear) - Shown	4	5
	103098	Scraper Blade - RH (Right Front & Left Rear)	4	5
43	10665	Carriage Bolt 5/8 x 2 - NC, GR 5, PL	6	7
44	12485	Disk Blade 24 x 1/4 Plain	1	1
	12486	Disk Blade 24 x 1/4 Cut Out	1	1
	12487	Disk Blade 22 x 1/4 Plain	1	1
	12489	Disk Blade 22 x $1/4$ Cut Out	1	1
	Note: Blade is ?	"Less than standard	1	ĩ
45	12/00	Disk Blade 20 x 3/16 Plain	1	1
7.7	12490	Disk Blade 18 v $3/16$ Plain	1	1
	12471 Noto: Faatharin	a Diada is 6" loss than standard	1	1
	inoic. reatherin	g Diauc is U 1055 than Stanual U.		

Gang Assembly - 34 and 39' Models



Inside Front Gang - 9 Blades with 3 Bearings



Leading blade is 2" less than standard

Inside Rear Gang - 8 Blades with 3 Bearings



Front Wing Gang - 34' Model - 11 Blades with 3 Bearings



Rear Wing Gang - 34' Model

Gang Assembly - 34 and 39' Models



Front Wing Gang - 39' Model



Rear Wing Gang - 39' Model

Center Section of 28 and 31' Models

Wing Section of 34 and 39' Models



Center Section of 28 and 31' Models

Wing Section of 34 and 39' Models

Reference Number	Part Number	Part Description	Number Required
	BC-05-0331	Spindle and Hub Complete	4
		Includes items 3 – 17	
		#BC-05-0331 Common to center	
		section of 28 and 31' models and	
		wing section of 34 and 39' models	
1	10834	Hex Cap Screw 1/2 x 4 - NC, GR 5, PL	1
1	10754	Hex Cap Screw 1/2 x 5 - NC, GR 5, PL	1
2	10395	Lock Nut 1/2 - NC, PL	1
3	12164	Spindle 2 3/4 Dia. x 14 3/4 Long	1
4	12191	Grease Seal - Outer 3.75 OD x 2.75 ID	1
5		Grease Seal - Inner 3.75 OD x 2.75 ID	1
		Part #12191 includes item 4 & 5	
6	12188	Inner Bearing LM506849 1.164 ID	1
7	12189	Inner Cup JLM506810	1
8	12251	Grease Fitting 1/4 - 28 SAE	1
9	12190	Outer Cup LM501310	1
10	12192	Lug Bolt 5/8 x 2 1/4 – 18 UNF, PL	8
11	12193	Lug Nut 5/8 – 18 UNF, PL	8
12	12187	Outer Bearing JLM501349 1.625 ID	1
13	12195	Spindle Washer 1"	1
14	12197	Cotter Pin 3/16 x 1 15/16	1
15	12196	Spindle Nut 1 - 14 SAE, Slotted	1
16	12198	Hub Cap	1
17	12186-1	Hub - 8-Bolt with 2 Cups, 8 Lug Bolts &	1
		8 Lug Nuts (Items 7 - 11)	
18	12305	Wheel 15 x 10 - 8-Bolt	4

Center Section of 34 and 39' Models



Center Section of 34 and 39' Models

Reference Number	Part Number	Part Description	Number Required
	HD-05-0081	Spindle and Hub Complete	4
		Includes items $3 - 15$	
		#HD-05-0081 Common to center	
		section of 34 and 39' models	
1	10067	Hex Cap Screw 5/8 x 5 1/2 - NC, GR 5, PL	1
2	10299	Lock Nut 5/8 – NC, PL	1
3	12528	Spindle 3 5/8 Dia. x 17 1/2 Long	1
4	12568	Grease Seal 4.840 OD x 3.500 ID	1
5	12569	Inner Bearing #39581 2.25 ID	1
6	12570	Inner Cup #39520 4.438 OD	1
7	12384	Grease Fitting 1/8 - 27 NPT	1
8	12571	Lug Bolt 9/16 x 1 1/2 - 18 UNF, PL	8
9	12572	Outer Cup #3525 3.438 OD	1
10	12573	Outer Bearing #3585 1.525 ID	1
11	12573	Spindle Washer 1 ¹ / ₄	1
12	12574	Spindle Nut 1 1/4 - 12 SAE, Slotted	1
13	12575	Cotter Pin 1/4 x 2 PL	1
14	12576	Hub Cap	1
15	12526	Hub - 8-Bolt with 2 Cups & 8 Lug Bolts	1
		Includes Items 6,7, 8 & 9	
16	12527	Wheel 16.1 x 14 - 8-Bolt	4

Wing Section of 28 and 31' Models



Wing Section of 28 and 31' Models

Reference	Part		Number
Number	Number	Part Description	Required
	BC-05-0098	Spindle and Hub Complete	4
		Includes items 3 – 16	
		#BC-05-0098 Common to wing	
		section of 28 and 31' models	
1	10773	Hex Cap Screw 3/8 x 3 1/2 - NC, GR 5. PL	1
2	10509	Lock Nut 3/8 - NC, PL	1
3	10880	Spindle 50 mm Dia. x 13 Long	1
4	10256	Grease Seal 3.153 OD x 2.293 ID	1
5	10258	Inner Bearing #342A 1.625 Bore	1
6	10257	Inner Cup #332 3.150 OD	1
7	12251	Grease Fitting 1/4 - 28 SAE	1
8	11046	Lug Nut 1/2 - 20 SAE, PL	6
9	10261	Outer Cup #14276 2.715 OD	1
10	10262	Outer Bearing #14137A 1.375 Bore	1
11	10263	Spindle Washer 7/8	1
12	10264	Spindle Nut 7/8 - 14 SAE, Slotted	1
13	10291	Cotter Pin 5/32 x 1 1/4	1
14	10242	Hub Cap	1
15	11299	Lug Bolt 1⁄2 x 1 7/8 - 20 SAE, PL	6
16	11297	Hub - 6-Bolt with 2 Cups, 6 Lug Bolts &	1
		6 Lug Nuts (Items 6, 7, 8, 9 & 15)	
17	11236	Wheel 15 x 10 - 6-Bolt	4



Wing Depth Gauge Wheel

Reference	Part		Number
Number	Number	Part Description	Required
1	20709	Assy. Adjusting Journal	1
2	20710	Assy. Gauge Rod	1
3	10149	Hex Nut 1 1/4 - NC, PL	2
4	12384	Grease Fitting 1/8 - 27 NPT	2
5	20711	Assy. Linkage	2
6	10693	Hex Cap Screw 1 x 8 - NC, GR5, PL	2
7	12517	Hex Cap Screw 1 x 2 1/2 - NC, GR5, PL	4
8	10868	Lock Nut 1 - NC, PL	6
9	12495	Roll Pin 3/8 x 3	1
10	12494	Slotted Hex Nut 2 1/4 - NF, PL	1
11	12477	Split Steel Bushing 2.5 OD x 2.25 ID x 2 Long	2
12	20713	Assy. Pivot Journal	1
13	20720	Assy. Depth Gauge Arm - LH - Shown	1
	20721	Assy. Depth Gauge Arm - RH	1
	10915	Spindle 1 3/4 Dia. x 12 Long	
14	11017	Grease Seal 2.718 OD x 1.75 ID	1
15	10353	Inner Bearing #LM48548 1.375 Bore	1
16	10252	Inner Cup LM48510 2.562 OD	1
17	10351	Hub - 5-Bolt with 2 Cups, 5 Lug Bolts and Nuts (Items 16, 17, 18, 20 & 21)	1
18	10293	Outer Cup LM67010 2.327 OD	1
19	10295	Outer Bearing LM67048 1.250 Bore	1
20	11299	Lug Bolt 1/2 x 1 7/8 - 20 UNF	5
21	11046	Lug Nut 1/2 - 20 UNF	5
22	10291	Cotter Pin 5/32 x 1 1/4	1
23	10263	Spindle Washer 7/8	1
24	10264	Spindle Nut 7/8 - 14 NF, PL	1
25	10356	Hub Cap	1
26	12172	Tire & Wheel 20 - 8 x 10 5-Bolt	1



Reference Part **Number Required** 4 x 24 Number Number **Part Description** 4 x 36 Hydraulic Cylinder 4 x 24 x 1 ³/₄ _ Note: Rod mounting pin not included Hydraulic Cylinder 4 x 36 x 2 Note: Rod mounting pin not included Butt Lock Nut 1 1/8 - 12 UNF Piston - 4" Cylinder Head - 4" _ Cylinder Head - 4" Cylinder Rod - 4 x 24 x 1 ³/₄ _ Cylinder Rod - 4 x 36 x 2 _ Seal Repair Kit – 4 x 24 x 1 ³/₄ _ Seal Repair Kit – 4 x 36 x 2 _ Wear Ring - 4" OD Piston Seal - 4" OD O-Ring - 3 7/8" OD O-Ring Head Seal - 4" OD Back-Up Washer - 4" OD Rod Seal - 1 ³/₄" ID _ Rod Seal - 1 ³/₄" ID _ Rod Wiper – 2" ID _ Rod Wiper - 2" ID _ Note: Items 6 - 12 sold in repair kit only Cylinder Barrel 4 x 24 _ Cylinder Barrel 4 x 36 _ Tie Rod - 5/8 - 18 UNF Tie Rod - 5/8 - 18 UNF _ Lock Nut 5/8-18 UNF Plug 3/4 - 16 ORB Cylinder Pin 1 Dia. Pin Clip Grease Fitting 1/4 - 28 SAE Set Screw 3/8 x 3/8 - 16 NC Rod Clevis (Includes #12552 set screw) Flat Washer 1 1/4 Cylinder Pin 1 1/4 x 5 7/8 Roll Pin 5/16 x 2 ¹/₄

4 x 24 and 4 x 36 Wing Fold Cylinders

Note: 4 x 24 Cylinders used to fold wings on 28 and 31' models

4 x 36 Cylinders used to fold wings on 34 and 39' models



Reference	Part		Number Required	
Number	Number	Part Description	3 1/2 x 12	3 1/2 x 16
	12469	Hydraulic Cylinder $3 \frac{1}{2} \times 12 \times 1\frac{1}{2}$	2	-
		Note: Mounting pins not included		
	12471	Hydraulic Cylinder $3 \frac{1}{2} \times 16 \times 1\frac{1}{2}$	-	2
		Note: Mounting pins not included		
1	12547	Assy. Barrel - $3\frac{1}{2} \times 12$	1	-
1	12548	Assy. Barrel - $3\frac{1}{2} \times 16$	-	1
2	12549	Lock Nut 1 - 14 UNF	1	1
3	12394	Piston - 3 1/2"	1	1
4	12396	Cylinder Head - 3 1/2"	1	1
5	12397	Assy. Rod - 3 1/2 x 12	1	-
5	12550	Assy. Rod - 3 1/2 x 16	-	1
	12366	Seal Repair Kit – 3 ¹ / ₂ "	1	1
6		Wear Ring - 3 ¹ / ₂ " OD	1	1
7		Piston Seal - 3 ¹ / ₂ " OD	1	1
8		O-Ring - 3 3/8" OD	1	1
9		O-Ring Head Seal – 3 1/2" OD	1	1
10		Back-Up Washer - 3 1/2" OD	1	1
11		Rod Seal - 1 ¹ / ₂ " ID	1	1
12		Rod Wiper - 1 ¹ / ₂ " ID	1	1
		Note: Items 6 – 12 sold in repair kit only		
13	10910	Roll Pin 5/16 x 2 ¹ / ₄	2	2
14	100574	Pin 1 1/4 Dia. x 6 7/8	1	-
14	103082	Pin 1 1/4 Dia. x 8 1/8	-	1
15	20697	Assy. Cylinder Rod Pin 1 1/4 Dia. x 7 1/8	1	-
15	20698	Assy. Cylinder Rod Pin 1 1/4 Dia. x 8 3/4	-	1
16	10397	Lock Nut 1 1/4 - NC, PL	1	1
17	12551	Grease Fitting 1/4 – 28 SAE	1	1
18	12277	Plug 3/4 - 16 ORB	1	1
	Note: 3 1/2	2 x 12 Cylinders used on wing section of 28 an	d 31' models	

$\frac{1}{2}$ x 12 and 3 $\frac{1}{2}$ x 16 Hydraulic Cylinders

 $\frac{1}{2}$ x 16 Cylinders used on wing section of 34 and 39' models



Reference	Part		Number	Number Required	
Number	Number	Part Description	4 x 12	4 x 16	
	12470	Hydraulic Cylinder 4 x 12 x 2	2	-	
		Note: Mounting pins not included			
	12472	Hydraulic Cylinder 4 x 16 x 2	-	2	
		Note: Mounting pins not included			
1	12553	Assy. Barrel - 4 x 12	1	-	
1	12554	Assy. Barrel - 4 x 16	-	1	
2	12555	Lock Nut 1 1/8 - 12 UNF	1	1	
3	12403	Piston - 4"	1	1	
4	12405	Cylinder Head - 4"	1	1	
5	12406	Assy. Rod - 4 x 12	1	-	
5	12556	Assy. Rod - 4 x 16	-	1	
	12367	Seal Repair Kit - 4"	1	1	
6		Wear Ring - 4" OD	1	1	
7		Piston Seal - 4" OD	1	1	
8		O-Ring - 3 7/8" OD	1	1	
9		O-Ring Head Seal – 4" OD	1	1	
10		Back-Up Washer - 4" OD	1	1	
11		Rod Seal - 2" ID	1	1	
12		Rod Wiper - 2" ID	1	1	
		Note: Items 6 – 12 sold in repair kit only			
13	10910	Roll Pin 5/16 x 2 ¹ / ₄	2	2	
14	100575	Pin 1 1/4 Dia. x 7 3/8	1	1	
15	20698	Assy. Cylinder Rod Pin 1 1/4 Dia. x 8 3/4	1	1	
16	10397	Lock Nut 1 ¹ / ₄ - NC, PL	1	1	
17	12551	Grease Fitting 1/4 – 28 SAE	1	1	
18	12277	Plug 3/4 - 16 ORB	1	1	
	Note: 4 x	12 Cylinders used on center section of 28 and 3	1' models		

4 x 12 and 4 x 16 Hydraulic Cylinders

 $4\ x\ 16$ Cylinders used on center section of 34 and 39' models



3	$\frac{1}{2}$	x 6	X	1 3/4	Frame	Leveling	Cylinder
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Reference Number	Part Number	Part Description	Number Required
	12530	Hydraulic Cylinder 3 1/2 x 6 x 1 ³ / ₄	1
		Note: Mounting pins not included	
1	12559	Assy. Barrel - $3\frac{1}{2} \ge 6$	1
2	12549	Lock Nut 1 - 14 UNF	1
3	12394	Piston - 3 1/2"	1
4	12560	Cylinder Head - 3 1/2"	1
5	12561	Assy. Rod - 3 1/2 x 6 x 1 ³ / ₄	1
	12562	Seal Repair Kit - 3 1/2" Dia. x 1 3/4 Rod	1
6		Wear Ring $-3 1/2$ " OD	1
7		Piston Seal $-3 1/2$ " OD	1
8		O-Ring - 3 3/8" OD	1
9		O-Ring Head Seal - 3 1/2" OD	1
10		Back-Up Washer – 3 1/2" OD	1
11		Rod Seal - 1 3/4" ID	1
12		Rod Wiper – 1 3/4" ID	1
		Note: Items 6 – 12 sold in repair kit only	
13	10320	Hex Cap Screw ³ / ₄ x 3 ¹ / ₂ - NC, PL GR5	2
14	10866	Flat Washer 3/4 PL	4
15	10300	Lock Nut $3/4 - NC$, PL	2
16	103087	Bushing 1 OD x 13/16 ID x 2 1/16 Long	2
17	12551	Grease Fitting 1/4 - 28 SAE	2
18	20758	Assy. Indicator Journal	1
19	20759	Assy. Indicator Linkage	1
20	11662	Decal – Tilt Indicator 7/8 x 10 1/8	1



Hydraulic Hoses and Fittings - Wing Fold Cylinders

28 and 31' Models

Reference Number	Part Number	Part Description	Number Required
1	20726	Assy. Center Hose Support	2
		Mount to rear hole in Main Frame	
		Connector Plates	
2	103054	Manifold 2 X 3 X 5 3/4	1
3	10786	Split Lock Washer 1/2 PL	2
4	10855	Hex Cap Screw 1/2 - NC, GR 5, PL	2
5	12538	Swivel Union 3/4 - 16UNF ORB Male	5
		to 1/2 - NPT Female	
6	12537	Swivel Union 3/4 - 16UNF ORB Male	8
		to 1/4 - NPT Female	
7	12165	Swivel Elbow - 90 degrees 3/4 - 16UNF ORB	8
		Male to 1/4 - NPT Female	
8	12479	Hose 1/4 X 180 1/4 NPT Male - 1/4 NPT Male	4
		Manifold to Rear Wing Fold Cylinders	
9	12578	Hose 1/4 X 78 1/4 NPT Male - 1/4 NPT Male	1
		Manifold to rod end of left front	
		Wing Fold Cylinder	
10	11167	Hose 1/4 X 60 1/4 NPT Male - 1/4 NPT Male	1
		Manifold to rod end of right front	
		Wing fold Cylinder	
11	11165	Hose 1/4 X 42 1/4 NPT Male - 1/4 NPT Male	1
		Manifold to butt end of left front	
		Wing fold Cylinder	
12	11174	Hose 1/4 X 30 1/4 NPT Male - 1/4 NPT Male	1
		Manifold to butt end of right front	
		Wing fold Cylinder	
13	11394	Hose 1/2 X 192 1/2 NPT Male - 1/2 NPT Male	2
		Manifold to Tractor	

Hydraulic Hoses and Fittings - Lift and Transport Cylinders



Hydraulic Hoses and Fittings - Lift and Transport Cylinders

28 and 31' Models

Reference	Part		Number
Number	Number	Part Description	Required
1	20700	Assy. Hose Retainer	2
		Attach to scraper bar support	
2	12497	Remote Stroke Control Valve	1
3	11284	Reducer 1/2 NPT Male to 1/4 NPT Female	2
4	12165	Swivel Elbow - 90 degrees 3/4 - 16UNF ORB	2
		Male to 1/4 - NPT Female	
5	12180	Swivel Elbow - 90 degrees 3/4 - 16UNF ORB	11
		Male to $1/2$ - NPT Female	
6	11801	Hose 1/4 X 192 1/4 NPT Male - 1/4 NPT Male	2
		Frame Leveling Cylinder to Tractor	
7	11394	Hose 1/2 X 192 1/2 NPT Male - 1/2 NPT Male	2
		Manifold to Tractor	
		Remote Stroke Control Valve to Tractor	
8	11310	Hose 3/8 X 156 1/2 NPT Male - 1/2 NPT Male	1
		Remote Stroke Control Valve to butt of	
		Right Hand 4 X 12 Cylinder	
9	11307	Hose 3/8 X 120 1/2 NPT Male - 1/2 NPT Male	1
		Remote Stroke Control Valve to butt of	
		Left Hand 4 X 12 Cylinder	
10	11315	Hose 3/8 X 216 1/2 NPT Male - 1/2 NPT Male	3
		Rod end of LH 4 X 12 Cylinder to butt end	
		of LH 3 1/2 X 12 Cylinder	
		Rod end of RH 4 X 12 Cylinder to butt end	
		of RH 3 1/2 X 12 Cylinder	
		Rod end of RH 3 1/2 X 12 Cylinder to top	
		RH port on Manifold	
11	11577	Hose 3/8 X 222 1/2 NPT Male - 1/2 NPT Male	1
		Rod end of LH 3 1/2 X 12 Cylinder to top	
		LH port on Manifold	



Reference	Part		Number
Number	Number	Part Description	Required
1	20717	Assy. Adjusting Crank	1
2	20716	Assy. Inner Linkage	1
3	103008	Striker Pin 1 Dia. x 10 3/4 Long	1
4	12498	Spring 1.46 Dia. x 5 1/4 Long	1
5	103009	Pin Keeper 1 1/2 OD x 3/4 Long	1
6	12519	Hex Cap Screw 1/2 x 2 - NC, PL GR5	1
7	12520	Lock Nut 1/4 - NC, PL	1
8	12518	Hex Cap Screw 5/16 x 2 1/2 - NC, PL GR5	2
9	12521	Lock Nut 5/16 - NC, PL	2
10	12497	Remote Stroke Control Valve	1
11	11662	Decal 1 x 10	1
12	12384	Grease Fitting 1/8 - 27 NPT	1

Lights, Mounting Brackets and Wiring Harness



Reference	Part		Number
Number	Number	Part Description	Required
1	20724	Assy. Support Bracket	2
2	20722	Assy. Rear Bracket	1
3	103017	Angle Bolt 1/2 Dia.	6
4	11646	Flange Lock Nut 1/2 - NC, PL	12
5	12536	Red Light with Nut & Washer - Brake and Tail Light	2
		Connect to wiring harness with Red, Brown	
		and white wire	
6	12535	Amber Light with Nut & Washer	1
		Left Turn and Flashing Warning	
		Connect to wiring harness with Yellow & White Wire	
7	12535	Amber Light with Nut & Washer	1
		Right Turn and Flashing Warning	
		Connect to wiring harness with Green & White Wire	
8	12500	Wiring Harness with 7 Terminal Connector	1

SMV Emblem, Decals and Reflectors







#HD-12-0007 SMV Emblem - 1 Required

Mount on rear main frame cross bar

#12539 Yellow Reflective Strip 2 X 9" 12 Required

Install vertically on front of Main Frame Install on front and rear of Main Frame side rails Install on front and rear of Wing Main Frame side rails Install vertically on front of light support brackets

#12541 Red Reflective Strip 2 X 9" - 4 Required

Install on left and right rear corners of Main Frame Install vertically on back of light support brackets

#12540 Red-Orange Non-reflective Strip 2 X 9" 4 Required

Install on left and right rear corners of Main Frame Install vertically on back of light support brackets

PARTS CATALOG OPERATION-MAINTENANCE-SET UP INSTRUCTIONS READ BEFORE OPERATING DISC 12468

#12468 Decal - Parts Catalog 3 X 7" 1 Required

Install on Operator's Manual storage tube

SMV Emblem, Decals and Reflectors



#11743 Decal - Warning Folding Wings 3 X 7" - 1 Required



#11741 Decal - Warning Before Operation 3 X 7" - 1 Required

Install decals on front cross bar on right side of Center Main Frame

MAINTENANCE INSTRUCTIONS

- Keep all bolts tight. Check after first 50 hours or one weeks's operation. Visually inspect all bolts daily.
- Keep wheel bearings properly adjusted. Clean and repack each season or every 300 hours. Replace <u>all</u> worn or damaged parts when repairing.
- 3. Keep gang bolts tight! Tighten after first day's operation. Do not run with loose disk blades. If gang bolts have been operated in a loose condition, retighten, then tighten again after 30 minutes use, again after 4 to 5 hours, and again after 8 to 10 hours.

Refer to operator's manual for other important maintenance instructions.

11716

 Grease gang bearings <u>daily</u> with a hand grease gun and a good grade of clean, number 2, lithium soap base grease. Always wipe fittings clean before greasing. Apply grease until old or dirty grease is purged from bearings. Avoid high-pressure greasing.

 Inspect for damaged or misaligned parts if gangs do not turn smoothly by hand. Bearings will fail prematurely if operated with misaligned or damaged gang parts. If a gang is operated for one or more hours following a bearing failure, replace all

bearings on the gang.

#11716 Decal - Maintenance Instructions 2 1/2 x 9 7/8" - 1 Required

Install decal on front cross bar on right side of Center Main Frame

ANCO YAZOO CITY, MS

#12546 AMCO Decal 4 1/2 X 10 7/8" - 2 Required

Install on cross bar on left front and right rear of Main Frame

HD-7431

Model Number Decal 4 X 12 7/8" - 2 Required

#12542 HD-6628 #12543 HD-7431 #12544 HD-8234 #12545 HD-9439

Install on cross bar on left front and right rear of Main Frame

Rear Implement Hitch



Reference	Part Number	Part Description	Number Required
Number			
1	20725	Assy. Rear Hitch	1
2	20712	Assy. Connector Pin 1" Dia.	1
3	12524	Hitch Pin Clip	1
4	20701	Assy. Hitch Bar	1
5	102928	U Bolt 7/8 Dia.	4
6	10396	Lock Nut 7/8 - NC, PL	8

AMCO HD Series Disk Harrow

Assembly Instructions – 28, 31, 34 and 39' Models

The AMCO HD disk is shipped in the following bundles:

Main Frame Bundles: Pull Tongue, Left Hand Center Main Frame, Right Hand Center Main Frame, Left Hand Wing Main Frame and Right Hand Wing Main Frame

Gang and Gang Frame Bundles: Left Front Inside, Right Front Inside, Left Rear Inside, Right Rear Inside, Left Front Wing, Right Front Wing, Left Rear Wing and Right Rear Wing

Tires – 28 & 31' Models: Four 12.5L - 15 Farm Highway Service tires with eight bolt wheels for the center section and four 12.5L - 15 tires with six bolt wheels for the wing section.

Tires – 34 & 39' Models: Four 16.5L - 16.1 Farm Highway Service tires with eight bolt wheels for the center section and four 12.5L - 15 tires with eight bolt wheels for the wing section.

Boxes of Parts: One box contains the wheel hubs and other parts. The second box contains the hydraulic cylinders, hydraulic hoses and other parts.

All bundles should be placed in a clear, level area where they will be readily available during assembly. The items in the shipping boxes should also be placed where they will be available when needed. Contact AMCO immediately if any items are missing or damaged.

Please Note: The term **"Left Hand"** refers to the left side of the disk as you face the direction of travel. The term **"Right Hand"** refers to the right side of the disk as you face the direction of travel.



Step 1: Place center main frames on four sturdy stands. The stands must be at least 36" high and each stand must be capable of supporting at least 5000 pounds.

Step 2: Connect the Center Main Frames With the $7/8 \ge 2\frac{1}{2}$ hex cap screws and flange lock nuts. The $7/8 \ge 3\frac{1}{2}$ hex cap screw should be used to install the two #20726 Center Hose Supports. This hex cap screw should be installed in the top rear hole of the front connector plates. Evenly tighten all Main Frame connection bolts. Refer to torque chart in back of manual for torque recommendations.





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



Step 4: Install the two #20700 hydraulic hose retainers. The hose retainers should be installed on the inside front gang frames near the wing pivot pin. The $5/8 \ge 2\frac{1}{2}$ scraper bar mounting bolt on the bearing riser should be used to secure the hose retainers.

Step 5: Install the two 4" dia. transport cylinders on the center rockshafts. Tighten the lock nut on the 1 $\frac{1}{4} \times 8 \frac{3}{4}$ Rod pin and install two 5/16 x 2 $\frac{1}{4}$ roll pins in the 1 $\frac{1}{4} \times 7 \frac{3}{8}$ pin on the butt end. The hose port on the rod end should be turned up. The hose port on the butt end should face the center of the disk. Tighten the plug in the other butt port.



Step 3: Attach the four center gang & gang frames to the main frame with the the $7/8 \times 2$ hex cap screws and flange lock nuts. These fasteners should not be tightened at this time.





Step 6: Install the spindles and 8-bolt hubs on the center rockshafts. Tighten the spindle mounting bolts. Install 4 tires on the center section and tighten all hub bolts. Refer to the torque chart in the back of the manual for torque recommendations. Install the two transport bars and secure with the 5/8 dia. lock pin and ¹/₄ klik pin.

Step 7: Install the four wing fold hydraulic cylinders. The hose ports should be turned to the rear on the left front cylinder and forward on the other three cylinders. Secure the cylinders to the center main frames with the 1 dia. mounting pins.



Step 8: Install 4 wing stands with the $\frac{3}{4}$ x 2 hex cap screws and lock nuts. The wing stand with the tail light mounting bracket should be installed on the right rear. The $\frac{3}{4}$ dia. #100783 transport lock pin and $\frac{1}{4}$ klik pin should be installed in the storage hole on the wing stands.





Step 9: Install the depth control linkage linkage and adjusting crank. Thread the crank through the angle iron bracket on the left front of the main frame. Install the two tongue control rods with the 4 springs and trunion. Attach the rods to the left hand rockshaft with the 1 x 8 3/8 mounting pin and $5/16 \ge 2\frac{1}{4}$ roll pins. Also attach the depth control linkage with this pin.

Step 10: Install the tongue pivot bracket with the 1 $\frac{1}{2}$ x 22 7/8 pin and slotted hex nut. Secure the nut with the 5/16 x 2 $\frac{1}{4}$ roll pin. The trunion on the tongue control rods should be connected to the bottom of the tongue pivot bracket with two 5/8 x 2 hex cap screws.





Step 11: Install the link connector and connect the two center rockshafts. The mounting pins should be installed in the top holes on the rockshafts. The 1 x 4 3/8 pins should be secured with the 5/16 x 2 $\frac{1}{4}$ roll pins. The length of the connector link should be 22" from pin center to pin center. Tighten the 1 3/8 jam nut on the adjusting rod when finished.

Step 12: Remove the four stands from the center main frame. Attach the four wing gang & gang frames to the center gang and gang frames. The $1\frac{1}{2}$ slotted hex nuts on the $1\frac{1}{2}$ x 11 5/8 wing pivot pins should not be tightened at this time.

Step 13: Install the left and right hand wing main frames and tighten all 7/8 x 2 gang frame mounting bolts on the center and wing main frames. Refer to the torque chart in the back of the manual for torque recommendations. Tighten the $1 \frac{1}{2} \times 11 \frac{5}{8}$ wing pivot pins and secure with the $5/16 \times 2 \frac{1}{4}$ roll pins.

Step 14: Install two 3 1/2" dia. transport cylinders on the wing rockshafts. Tighten the lock nut on the 1 $\frac{1}{4}$ " dia. rod pin and install $5/16 \ge 1/4$ roll pins in the 1 $\frac{1}{4}$ " dia. pin on the butt end. The hose port on the rod end of the hydraulic cylinder should be turned up. On the 28 and 31' disk the hose port on the butt end should face the center of the disk. Tighten the plug in the other butt port.



Step 15: Install spindles and hubs on the wing rockshafts. Tighten the spindle mounting bolts. Install four $12.5L \ge 5$ tires on the wing section and tighten all hub bolts. Refer to the torque chart in the back of the manual for torque recommendations.

Step 16: Attach the pull tongue to the center main frames with the 1 $\frac{3}{4}$ dia. x 7 3/4 pins and secure with the 1/2 x 3 1/2 cap screws. The tongue should be installed in the lower mounting holes. Install the 3 $\frac{1}{2}$ x 6 frame leveling cylinder and secure with the 1 $\frac{1}{2}$ slotted hex nuts and 5/16 x 2 1/4 roll pins. The hose ports on the cylinder should be turned up. Also, install the indicator linkage at this time.



Step 17: Install the hose support on the right front of the pull tongue and tighten the $\frac{3}{4}$ U bolts. Also, install the operator's manual storage tube and plug holder. Secure with the five $\frac{1}{4}$ x 1 weather guard screws. The five screws are inside the operator's manual storage tube.

Step 18: Install the left rear tail light mounting bracket. This bracket should be installed on the rear cross bar of the center main frame, 10" from the left rear corner. The mounting bracket for the right rear tail light is welded into the right rear wing stand.



Step 19: The mounting bracket for the left hand turn signal light should be clamped to the outer rail of the center main frame, 40 - 42" from the left rear corner. The mounting bracket for the right hand turn signal light should be clamped to the outer rail of the center main frame, 18 - 20" from the right rear corner. The brackets should be mounted with the yellow reflective strip facing forward. The red reflective strip and red-orange non-reflective strip should be facing to the rear.

Step 20: Attach the two red tail lights to the mounting brackets that are attached to the rear main frame cross bar. The two amber turn signal lights should be installed on the brackets attached to the main frame side rails.

Step 21: The wiring harness should be routed through the #20699 hose support, the three supports on the pull tongue plus the supports on the front, right side and rear of the main frame. The connections for the turn signal lights should be threaded through the mounting brackets. The connection block should be located near the right rear tail light. The main wiring harness should be shifted and any excess wire routed through the supports to the front of the pull tongue. Connect the lights to the wiring harness after it is properly positioned.

Left Hand Turn Signal: White and Yellow Wires Rear Tail Lights: White, Brown and Red Wires Right Hand Turn Signal: White and Green Wires

Step 22: Connect the rod end of the wing fold hydraulic cylinders to the wing main frames with the 1 $\frac{1}{4} \times 57/8$ pin and $\frac{5}{16} \times 2\frac{1}{4}$ roll pins. The four washers should be placed on each side of the slots in the mounting plates.




Step 23: Install the hydraulic manifold on the mounting bracket located on the right front of the center main frame. Use the two $\frac{1}{2} \times 1$ hex cap screws and lock washers. The top of the manifold has single holes on the sides.

Step 24: Mount the stroke control valve on the left front of the center main frame. Turn the hose port forward and the actuating pin to the rear. Tighten the two $5/16 \ge 2\frac{1}{2}$ hex cap screws.



Step 25: Install hydraulic fittings in the manifold, stroke control valve and hydraulic cylinders. Do not tighten the swivel elbows at this time. The swivel unions should be tightened at this time. The plugs on the butt end of all hydraulic cylinders should be checked and tightened if required.

- Install eight ³/₄ ORB male to ¹/₄ NPT female swivel unions in the lower four holes on each side of the manifold.
- Install five ³/₄ ORB male to ¹/₂ NPT female swivel unions in the other five ports on the manifold.
- Install three ³/₄ ORB male to ¹/₂ NPT female swivel elbows in the ports on the stroke control valve. The female end of the elbow on the right side should be turned up. The female end of the elbow on the left should be turned to the rear. The female end of the elbow on the front should be turned to the right

- Install two ³/₄ ORB male to ¹/₄ NPT female swivel elbows in the ports of the frame leveling cylinder. The female end of the elbows should be turned to the right.
- Install two ³/₄ ORB male to ¹/₄ NPT female swivel elbows in each of the wing fold cylinders.
- Install two ³/₄ ORB male to ¹/₂ NPT female swivel elbows in each of the 3 ¹/₂ and 4 dia. lift cylinders.

Step 26: Remove all hydraulic hoses from the shipping box. The $\frac{1}{4}$ " hoses should be arranged in order from the shortest to the longest. The $\frac{3}{8}$ " hoses should also be arranged in order from the shortest to the longest. All hoses should be routed through the hose supports to protect the hoses from damage. Install all hydraulic hoses and tighten the fittings.

Hoses for Wing Fold Cylinders - 28 and 31' Disks:

- #12479 ¼ x 180 Hose Middle front port on Left Hand side of Manifold to butt end of Left Hand rear 4 x 24 cylinder.
- #12479 ¼ x 180 Hose Bottom front port on Left Hand side of Manifold to rod end of Left Hand rear 4 x 24 cylinder.
- #12479 ¼ x 180 Hose Middle front port on Right Hand side of Manifold to butt end of Right Hand rear 4 x 24 cylinder.
- #12479 ¼ x 180 Hose Bottom front port on Right Hand side of Manifold to rod end of Right Hand rear 4 x 24 cylinder.
- #12578 ¼ x 78 Hose Bottom rear port on Left Hand side of Manifold to rod end of Left Hand front 4 x 24 cylinder.
- #11167 ¼ x 60 Hose Bottom rear port on Right Hand side of Manifold to rod end of Right Hand front 4 x 24 cylinder.
- #11165 ¼ x 42 Hose Middle rear port on Left Hand side of Manifold to butt end of Left Hand front 4 x 24 cylinder.
- $\#11174 \frac{1}{4} \times 30$ Hose Middle rear port on Right Hand side of Manifold to butt end of Right Hand front 4 x 24 cylinder.



Carefully check the hose routing. The hoses must be routed through the hose supports to protect the hoses from damage. The swivel elbows must be in line with the hoses to prevent kinking or binding when the cylinders are extended or retracted. The hoses from the rod end of the four cylinders must connect to the four bottom ports on the manifold. The hoses from the butt end of the four cylinders must connect to the four middle ports on the manifold.

Hoses for Transport Cylinders - 28 and 31' Disks:

- #12577 3/8 x 222 Hose Top port on Left Hand side of Manifold to rod end of Left Hand 3 1/2 x 12 Cylinder.
- #11315 3/8 x 216 Hose Rod end of Left Hand 4 x 12 Cylinder to butt end of Left Hand 3 ½ x 12 cylinder.
- #11315 3/8 x 216 Hose Rod end of Right Hand 4 x 12 Cylinder to butt end of Right Hand 3 ¹/₂ x 12 cylinder.
- #11315 3/8 x 216 Hose Top port on Right Hand side of Manifold to rod end of Right Hand 3 1/2 x 12 Cylinder.
- #11310 3/8 x 156 Hose Right Hand port on Stroke Control Valve to butt end of Right Hand 4 x 12 Cylinder.
- #11307 3/8 x 120 Hose Left Hand port on Stroke Control Valve to butt end of Left Hand 4 x 12 Cylinder.



Hoses from Disk to Tractor:

Remove the 6 hoses from the shipping box and install hydraulic couplers on one end. The $\frac{1}{4}$ NPT female to $\frac{1}{2}$ NPT male swivel adaptors should be installed on the two $\frac{1}{4}$ hoses. The couplers are not included as standard equipment on the AMCO HD disk.



- #11801 ¼ x 192 Hose Butt end of 3 ½ X
 6 Frame Leveling Cylinder to tractor.
- #11801 ¼ x 192 Hose Rod end of 3 ½ X
 6 Frame Leveling Cylinder to tractor.
- #11394 1/2 x 192 Hose Front port on Stroke Control Valve to tractor.
- #11394 1/2 x 192 Hose Bottom front port on Manifold to tractor.
- #11394 1/2 x 192 Hose Middle front port on Manifold to tractor.
- #11394 1/2 x 192 Hose Top front port on Manifold to tractor.

Step 27: Install wing depth gauge wheels on wing main frames. Connect the #20711 linkage to the lower mounting hole on the wing main frame with a 1 x 8 hex cap screw. The spacers should be turned toward the front. The gauge rod should also be installed at this time.



Mount the $20 - 8 \ge 10$ tire and wheel to the 5-bolt hub and tighten the hub bolts. Adjust the gauge rod so the bottom of the tire is one inch below the bottom of the spacer spools. Tighten the nut on the adjusting rod when finished. Connect the second #20711 linkage to the upper hole on the wing main frame with two 1 x 2 $\frac{1}{2}$ hex cap screws. The spacers should be turned toward the rear.

Connect the pivot journal to the lower linkage with two $1 \ge 2\frac{1}{2}$ hex cap screws. The $1 \ge 8$ hex cap screw should be used to connect the upper linkage and the gauge rod to the pivot journal.





Step 28: Install the SMV emblem on the rear of the main frame. A bracket is located slightly left of center for installing the SMV emblem.

Step 29: Place the two gang bolt wrenches in the mounting bracket on the left side of the pull tongue and secure with the ³/₄ dia. lock pin and klik pin.





Step 30: Install the tongue jack on the mounting tube located near the center of the pull tongue and secure with the mounting pin.

Pre-delivery Checks and Adjustments:

Step 1: Connect the disk to a tractor and operate all cylinders several times to remove all air from the system. Check the hose routing if the disk will not raise and lower or the wings will not fold properly. Check the system for hydraulic fluid leaks and repair as required.





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.

Pre-delivery checks and adjustments:



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

- **Step 2:** Raise the disk, fold the wings and check the transport lock bars to assure proper function. Also, check the transport lock pins on the wing stands. Unfold the wings and lower the disk after checking the hydraulic system.
- Step 3: Check all hydraulic hoses and fittings for binding or wear. Hydraulic fittings should be oriented to prevent binding or damage to hoses.



to

- **Step 4:** Check the tractor hydraulic fluid level after checking the disk. It will take approximately 8 gallons of hydraulic fluid to fill the hydraulic system on the 28 and 31' disk. The 34 and 39' disk will require approximately 12 gallons of hydraulic fluid.
- **Step 5:** Check the lights to be certain the red tail lights and amber flashing turn signal lights are functioning properly. The amber lights must flash while the disk is in transport as well as signal for turning.



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



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

Step 6: Check the overlap of the inside front blades. The front edge of the inside front blade should extend $1\frac{3}{4} - 2\frac{1}{4}$ " over the center line. Shift the gangs on the gang frames if necessary.

Pre-delivery checks and adjustments:

Step 7:	Check the center spacing of the rear blades. The front edge of the inside rear blade should be $15 - 16$ ° from the center line. Shift the gangs on the gang frames if necessary.
Step 8:	Check the spacing between the blades on the center and wing gangs. The spacing should be $10\frac{1}{2} - 11$ ". Shift the wing gangs if necessary.
Step 9:	The scraper blades should be $1/16 - 1/8$ " from the disk blades. If required, adjust the scrapers or loosen the scraper bar mounting bolts and shift the scraper bar.
Step 10:	Rotate all disk gangs to be certain they will turn freely and the scrapers are not dragging on the disk blades.
Step 11:	Lubricate all grease fittings – refer to section on lubrication for more detailed information. If the disk has been stored for 90 days or more, it should be greased prior to delivery.
Step 12:	Check the hub bolts on all wheels for proper torque. Refer to the torque chart in the back of the manual for torque recommendations. With the transport cylinders retracted, rotate all tires to be certain they rotate freely. Also, check for excessive slack in the hub bearings and adjust if required. Visually inspect all tires for cuts or damage. Check air pressure in all tires. The $12.5L - 15$ tires on the center section should be inflated to 90 PSI. The $16.5L - 16.1$ tires on the center section should be inflated to 60 PSI. The $12.5L - 15$ tires on the wing rockshaft should be inflated to 45 PSI and the 20 x 8 – 10 tires on the wing depth gauges should be inflated to 30 PSI. Do not over inflate the tires.
Step 13:	Adjust the rear cylinder mount for the wing rockshaft. With the cylinder fully retracted, the bottom of the tire should be even with the bottom of the spacer spools. Tighten the nuts on the adjusting rod when finished.
Step 14:	Check the link connector that connects the left and right hand center rockshafts. The length should be 22" from pin center to pin center. Tighten the 1 3/8 jam nut on the adjusting rod when finished.
Step 15:	Check decals, reflectors and SMV emblem to be certain they are in place and in good condition. Replace any items that are damaged or missing.

Pre-delivery checks and adjustments:

- **Step 16:** Review all steps of the assembly process to be certain the harrow is properly assembled. Check the harrow for any missing or damaged parts. Check all bolts to be certain they are properly torqued. Refer to the torque chart in the back of the manual for torque recommendations. Repaint any areas that need improvement.
- **Step 17:** Place the operator's manual and parts list in the storage tube located on the hose support near the front of the disk.



AMCO HD Series Disk Harrow

Operators Manual – 28, 31, 34 and 39' Models

Operators Manual

Lubrication:

Careful attention to proper lubrication will increase the life of your AMCO disk. For economical and efficient operation, the lubrication of all frame fittings, gang bearings and wheel hubs is essential.

Before greasing, the grease fittings should be thoroughly cleaned. If a fitting is lost or damaged, it should be immediately replaced. A good grade of multi-purpose EP grease is recommended.

Lubrication Interval: All grease fittings on the AMCO HD disk 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.

Grease Fitting Locations:

- Gang Bearings One per bearing on the rear of each bearing housing
- Wheel Hubs One grease fitting on each of the eight transport hubs
- Rockshafts One grease fitting on each of the six rockshaft pivots
- Hydraulic Cylinders One grease fitting located on rod end of the four transport cylinders. Two grease fittings on frame leveling cylinder. One grease fitting located on rod end of the four wing fold cylinders.
- Wing Pivot Pins One grease fitting on each of four pivot pins
- Walking Tandems One grease fitting on each of four walking tandems
- Wing Depth Gauge Grease fittings located on adjusting rod and swivel
- Link Connector One grease fitting located on connection linkage for center rockshafts
- Tongue Control Rod Two grease fittings located on trunion used to mount tongue control rod
- Tongue Pivot Bracket Two grease fittings located on top of tongue pivot bracket
- Depth Control Adjusting Crank One grease fitting on left hand side

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.





Wheel Hubs: The eight transport wheel hubs are equipped with grease fittings. Care should be used when greasing the wheel hubs to avoid damage to the seals. After greasing, the hub should be rotated to evenly distribute the grease.

The hubs should be cleaned and repacked every two years or every 300 hours of operation. See section on hub repair for information on cleaning, inspecting and repacking the wheel hubs.

The grease fitting on the 8-bolt hubs is on the outside of the hub near the hub cap. the grease fitting on the 6-bolt hub is on the inside of the hub.

Rockshafts: The two center rockshafts rotate on 2" dia. bronze bushings. There are two grease fittings on the left hand center rockshaft and two grease fittings on the right hand center rockshaft. The grease fittings are on the front of the rockshaft mounts.

The two wing rockshafts also rotate on bronze bushings. Each rockshaft has a grease fitting which is on the front of the rockshaft pivot.





Hydraulic Cylinders: The four hydraulic cylinders used to raise and lower the disk have a grease fitting on the rod end to lubricate the mounting pin.

The hydraulic frame leveling cylinder has grease fittings to lubricate the butt and rod mounting pins.



The four hydraulic cylinders used to fold the wings have a grease fitting on the rod end to lubricate the mounting pins.

Wing Pivot Pins: A grease fitting is on each of four wing pivot pins





Walking Tandems: Each of the four rockshafts is equipped with a walking tandem wheel mount to evenly distribute the load. The walking tandems pivot on 2 ¹/₄ dia. heat treated steel bushings. Each walking tandem has one grease fitting to lubricate the bushings.

Wing Depth Gauge: A wing depth gauge wheel, located on the outside front of each wing is used to more accurately control the disk cutting depth. Grease fittings are located on the swivel and adjusting rod.

The threaded adjusting rods should be occasionally cleaned and coated with a rust preventative spray.





Link Connector: The two center rockshafts are connected with an adjustable linkage. The grease fitting is located on the center link connector.

The threaded adjusting rods should be occasionally cleaned and coated with a rust preventative spray.





Tongue Control Rod: The two tongue control rods are located on the front center of the disk immediately below the tongue pivot bracket. The trunion for mounting the rods has two grease fittings.

Tongue Pivot Bracket: The tongue pivot bracket is located near front center of the disk. Two grease fittings are located on top of the tongue pivot bracket.



Depth Control Adjusting Crank: Adjusting crank is located on left front of disk. One grease fitting is located on left side of crank housing.

Safety Chain: Your AMCO disk is equipped with a large safety chain. The chain should be carefully inspected before each use to be certain it is in good condition. The chain should be replaced or repaired if the chain or hooks become worn or damaged. The safety chain should be used whenever the disk is in service.

Clevis and Clevis adaptor: The Cat. IV clevis and clevis adaptor should be inspected before each use. The clevis and clevis adaptor



must be in good condition to assure safe transport. These parts should be replaced if they become worn or damaged. Before towing with a truck, the clevis adaptor should be bolted to the clevis with the $\frac{3}{4}$ x 6 Grade 8 hex cap screw and lock nut which is included with the AMCO disk.

Lighting System Repair and Maintenance: The AMCO HD disk is equipped with a lighting system which includes a wiring harness, two LED amber turn signal and warning lights and two red tail and brake lights. The entire lighting system should be inspected before each use to be certain the lights are clean, the system is in good condition and all lights function properly. A plug holder is mounted on the hose support. This plug holder must be in good condition to protect the plug while the disk is in storage. The plug holder must be replaced if it becomes damaged.

The plug on the wiring harness should be kept clean and in good condition to assure proper performance. The plug must be replaced if it becomes damaged. The wiring harness should be inspected before each use to be certain it is in good condition. The connectors on the wiring harness should also be checked.

The four rugged support brackets for the lights are designed to protect the lights from damage. However, the brackets and lights should be checked before each use to be certain they are in good condition and functioning properly.

Reflectors and Decals: Reflectors are installed on the center and wing main frames at the AMCO factory. Decals with safety messages are installed on the front cross bar of the center main frame. All decals and reflectors should be frequently checked. Damaged or missing reflectors and decals should be replaced.



SMV Emblem: The SMV emblem must be installed in the mounting bracket on the rear cross bar of the center main frame. The emblem should be kept clean and in good condition at all times. The emblem should be replaced if it is damaged.

Wheel Hub Repair: The wheel hub bearings should be cleaned, inspected, repacked with grease and adjusted every two years or 300 hours of operation. Under extreme conditions, they should be serviced annually or every 200 hours of operation.

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.



Wheel Hub Repair:

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 seal must be replaced if it is damaged or worn. 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 seat and provide a smooth sealing surface.
- 3. Carefully inspect both bearing cones. The bearing bore and rollers must be smooth and free of nicks and scratches. Replace the bearing cones if they are worn or damaged.
- 4. Inspect the hub to make sure that hub bolts and nuts have a good thread. Both bearing cups must be smooth and free of surface blemishes. The cups must be removed from the hub and replaced if worn or damaged. Cups should be fully pressed into the hub and rest squarely against the shoulder inside the hub. The hub cap and grease seal should fit snugly inside the hub. Worn or damaged hubs should be replaced.
- 5. The threads on the spindle must be in good condition. Bearing cone seats must be smooth and free of blemishes. The bearing cones must fit squarely on the spindle.
- 6. The 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 Lithium Base 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. The seal lips must be turned out to exclude contamination.

The 8-bolt hubs on the center of the 28 and 31' disks have two grease seals. The narrower seal must be installed first. The side with the metal case should be turned out. The wider seal with the metal case on both sides should be installed last. This 8-bolt hub is also used on the wing section of the 34 and 39' disk.

Install the outer bearing assembly in the hub, and replace the spindle washer and slotted nut. While rotating the hub, tighten the slotted hex nut until the hub binds when rotated.

Wheel Hub Repair:

Back the slotted nut off to the nearest slot. Rotate the hub five or six revolutions in each direction to seat 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.

- 8. Fill the dust cap with grease and install on hub.
- 9. Re-mount wheel on hub.

Disk Gang Repair:



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

- 1. Lower the harrow and remove the roll pin and loosen the gang bolt nut. The gang bolt threads should be cleaned with a wire brush and sprayed with penetrating oil before attempting to loosen 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 it will be best to remove 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. Clean all parts and check the gang bolt for straightness. Bowed, bent or worn gang bolts 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.

Disk Gang Repair:

- 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 <u>must be replaced</u> 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 bearings on the gang. Running the harrow after a bearing failure will seriously damage other bearings on the gang. It is recommended that all bearings on a gang be replaced. A triple lip sealed, greasable bearing should always be used.
- 12. To replace a bearing, clean the sleeve with a wire brush and emery cloth, then press the sleeve from the bearing. Clean the bearing housing and remove the snap ring. The bearing should then be pressed from the housing. Check the Protect-O-Shield washers. They should fit snug in the bearing housing. If they are loose or show signs of wear, they should be replaced. Do not operate the harrow without the washers.

Place a Protect-O-Shield washer in the bearing housing and press the new bearing straight into the housing. Always press against the outer race of the bearing. <u>NEVER</u> press against the seal or inner race of the bearing. Check the 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 Protect-O-Shield washer and snap ring in the bearing housing.

- 13. After <u>cleaning</u>, 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 2" gang bolt nut should be torqued to 2000 Ft/Lbs. The axle nut should be locked in place with the 3/8 x 3 roll pin.
- 14. After the gang is assembled, it should be installed on the harrow. The bearing risers should be <u>carefully</u> spaced to match the bearing housings. Poorly spaced bearing risers will overload the bearings and cause premature failure. If required, the bearing risers should be adjusted. Check the toggles on the bearing housings. The front and rear toggles should be centered in the trunion mount. The trunion mount can be adjusted if required. After mounting the gang, rotate the gang 4 or 5 complete revolutions to be sure that all parts are aligned and the gang turns freely.

Disk Gang Repair:

- 15. Replace the scrapers and scraper bar. Adjust the scrapers to within 1/16 1/8" of the disk blade.
- 16. The bearings should be greased at the start of each season, the end of each season and each week or every 50 hours while the disk is in use.
- 17. 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 torqued again after 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 reassembled and all parts carefully inspected. All damaged parts should be replaced before reassembling the gang.



Caution! 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.

Scraper Repair: Damaged scraper bars or shanks should be replaced or repaired if possible. The scraper blades should be replaced when they wear to the extent they are not performing properly. Keep the blades adjusted from 1/16" to 1/8" from the disk blades. The scraper blade can be adjusted or the entire scraper can be moved by loosening the mount bolt and sliding the scraper to the proper position then tightening the mount bolt. Additional adjustment can be obtained by loosening the scraper bar mount bolts and shifting the entire scraper bar. Do not allow the scraper blades to run on the spacer spools as immediate damage to the spool will occur.

Rockshaft Pivot Pin and Bushing Repair: The rockshafts are equipped with replaceable bronze bushings. If properly lubricated, they will provide several seasons of service. The bushings should be checked each season for excessive pivot pin and bushing wear. Worn bushings and pivot pins should be replaced. Failure to replace worn or damaged parts will damage other parts. See section on lubrication for recommendations on greasing.

Walking Tandem Repair: The center and wing rockshafts have a walking tandem system for equalizing the load on the tires, hubs and spindles. The walking tandem oscillates on a high carbon steel mounting pin and two heat treated spring steel bushings. The walking tandem should be periodically checked. The heat treated bushings and mounting pin should be replaced to eliminate excessive looseness. Failure to replace these parts on a timely basis will lead to damage of other parts. Greasing the bushings as recommended will extend the lift of these parts.

Wing Depth Gauge Repair: Wing depth gauges are located on the outside front of each wing to control cutting depth and assure a more even job. The gauge wheels swivel on a high carbon steel rod and two heat treated spring steel bushings. The large slotted hex nut on the gauge wheel arm should be checked periodically and adjusted as required. The bushings should be checked for wear and replaced when worn. Failure to replace the bushings on a timely basis will lead to damage of other parts. Greasing the bushings as recommended will extend the lift of these parts.

The threaded adjusting rod should be cleaned each season and coated with a rust preventative. All bolts on the mounting linkage should be kept tight.

Hydraulic Cylinder Repair: Tie Rod Type 4 x 24 and 4 x 36 Wing Fold Cylinders





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.

Hydraulic Cylinder Repair: Tie Rod Type 4 x 24 and 4 x 36 Wing Fold Cylinders

- 1. Remove hoses and fittings from cylinder.
- 2. Remove cylinder from harrow and clean outside of cylinder.
- 3. Disassemble cylinder by removing the nuts from one end of the four cylinder tie rods. Remove the cylinder rod, head and piston from the cylinder barrel. To prevent contamination, the cylinder should be repaired in a clean area.
- 4. Remove the nut from the end of the cylinder rod and remove the piston and head. Use care in holding the cylinder rod to prevent damage.
- 5. Remove all seals from piston and head. Check location of seals and place new seals in the same locations.
- 6. Carefully clean and inspect all parts for wear or damage. Small nicks, scratches or wear spots should be smoothed with steel wool or emery cloth. Replace parts that cannot be smoothed.
- 7. The piston should be installed on the cylinder rod with the smooth, front side turned toward the rod. The 1 1/8 12 UNF nut should be torqued to 400 500 foot-pounds. The rod should be secured in a vise to prevent damage.
- 8. Replace all seals with new parts. The small O-Ring should be installed under the piston seal. Use extreme caution to prevent damage to new seals.
- 9. The rod seal should be installed with the smooth side toward the rod end of the cylinder and the cups turned toward the piston. The rod wiper should be installed with the wiper seal turned toward the rod end.
- 10. The Back-Up washer on the head seal should be installed toward the rod end of the cylinder and the O-Ring seal toward the piston.
- 11. Assemble the cylinder using care to prevent damage to seals. The 5/8 18 UNF nuts on the tie rods should be torqued to 140 160 foot-pounds.
- 12. The 3/8 NC set screw on the rod clevis should be torqued to 20 foot pounds. The 3/4 - 16 ORB plug should be installed perpendicular to the butt pin and torqued to 18 - 22 foot pounds.
- 13. Replace cylinder on harrow, attach hoses and check cylinder.

Hydraulic Cylinder Repair: 3 1/2 and 4" Welded Cylinders





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.

Hydraulic Cylinder Repair: 3 ¹/₂ and 4" Welded Cylinders

- 1. Remove hoses and fittings from cylinder.
- 2. Remove cylinder from harrow and clean outside of cylinder.
- 3. Disassemble cylinder by unscrewing the cylinder head on the rod end of the cylinder. To prevent contamination, the cylinder should be repaired in a clean area.
- 4. Pull cylinder rod and slip rod, cylinder head and piston from barrel.
- 5. Remove nut on end of cylinder rod then slip piston and cylinder head off rod. Secure rod end fitting in vise and use care to avoid damaging rod while removing the nut.
- 6. Remove all "O" rings, seals and "U" cups from piston and head. Check location of seals and place new seals in the same locations.
- 7. Carefully clean and inspect all parts for wear or damage. Small nicks, scratches or wear spots on rod and inside of barrel should be smoothed with fine steel wool or emery cloth. Replace all parts that cannot be smoothed.
- 8. The piston should be installed on the cylinder rod with the smooth, front side turned toward the rod. The 1 14 UNF nut on the $3\frac{1}{2}$ cylinder rod should be torqued to 250 275 foot-pounds. The $1\frac{1}{8} 12$ UNF nut on the 4" cylinder rod should be torqued to 400 500 foot-pounds. The rod should be secured in a vise to prevent damage.
- 9. Replace all seals with new parts. The small O-Ring should be installed under the piston seal. Use extreme caution to prevent damage to new seals.
- 10. The rod seal should be installed with the smooth side toward the rod end of the cylinder and the cups turned toward the piston. The rod wiper should be installed with the wiper seal turned toward the rod end.
- 11. The Back-Up washer on the head seal should be installed toward the rod end of the cylinder and the O-Ring seal toward the piston.
- 12. Assemble the cylinder using care to prevent damage to seals. Three drops of Loctite #243, spaced 120 degrees apart, should be applied to the threads on the cylinder head prior to assembly. The head should be torqued to 250 275 foot-pounds.

Hydraulic Cylinder Repair: 3 1/2 and 4" Welded Cylinders

- 13. The $\frac{3}{4}$ 16 ORB plug on the butt end of the cylinder should be torqued to 18 22 foot-pounds.
- 14. Replace cylinder on harrow, attach hoses and check cylinder.

Operating Instructions

Before Going to the Field:

Read and Understand The Operator's Manual: It is important that you read and understand the operator's manual. Be aware of all safety considerations before proceeding.

Match Tractor to Disk: The tractor horsepower must match the disk. Check disk harrow specifications on page 3 for tractor horsepower recommendations. The disk will not perform properly if the tractor is too small. A tractor that is too large could damage the disk.

Tractor Ballast: Check the tractor operator's manual for recommendations on tractor ballasting. Proper ballast is essential for efficient, safe operation.

Connect Disk to Tractor: Raise the tractor three point lift arms and connect the disk to the tractor. Use the proper size drawbar pin.



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





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

Before Going to the Field:

Connect Hydraulic Hoses: Clean the hydraulic couplings and connect to tractor. If the harrow fails to raise level across its entire width you should check the assembly instructions for proper hose routing. The hoses from the rod end of the center section lift cylinders <u>must</u> go to the butt end of the wing lift cylinders. Hold the hydraulic control lever in the raising position for several minutes. This will allow the rephrasing type wing wheel hydraulic cylinders to be filled with hydraulic fluid. Raise and lower the disk several times to remove all air from the system. It may be necessary to rephrase the cylinders occasionally while disking. The cylinders can get out of phase if oil leaks out of the system through the valves on the tractor.

Fold and unfold the wings to check for proper function and purge air from the hydraulic system. The hoses on the butt ends of the four wing fold cylinders should be connected to the middle ports on the manifold. The hoses on the rod ends of these cylinders should be connected to the bottom ports on the manifold.

Check the tractor hydraulic system oil level after all cylinders have been filled with hydraulic fluid. The cylinders on the 28 and 31' models require approximately 8 gallons of hydraulic fluid. The cylinders on the 34 and 39' models require approximately 12 gallons of hydraulic fluid. The disk should be raised to maximum height while turning to keep the lift cylinders properly phased.

Check the wing fold cylinders to be certain the wings will fold and unfold properly. Check to be certain the hoses are connected to the proper hydraulic outlets on the tractor. Also, check the hose routing on the disk.





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

Transporting the Disk:

Extreme caution is required when transporting any machinery on state or local roads. Remember you are responsible for compliance with state and local laws regarding lighting, reflectors and SMV emblems as well as length, width and height.





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.



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

Transporting the Disk:

Check Tires and Wheel Hubs: Check air pressure in all tires. The 12.5L - 15 tires on the center section of the 28 and 31' disk should be inflated to 90 PSI. The 16.5L - 16.1 tires on the center section of the 34 and 39' disk should be inflated to 60 PSI. The 12.5L - 15 tires on the wing rockshaft should be inflated to 45 PSI and the 20 X 8 – 10 tires on the wing depth gauges should be inflated to 30 PSI. Do not over inflate the tires.

Be sure that hub bolts and nuts are tight. The wheel bearings should be checked for proper adjustment and lubrication prior to transporting the disk.

Transport Locks: The disk is equipped with two transport lock pins for each wing. These pins should be inserted to keep the wings secure during transport.





The Transport Lock Bars should be installed on the two 4" hydraulic lift cylinders. With the harrow raised in the transport position, these bars should be installed to prevent the cylinders retracting. Both Transport Lock Bars should be used at all times.

Field Adjustments:

Depth Control: Disc as deep as necessary to do a satisfactory job. Disking too deep will place a heavier load on the tractor thus using extra fuel. It will also add extra load to the disk frame. Never allow soil to "bulldoze" in front of the spacer spools or flow over the spools. Don not disk with the wings folded. Disking depth can be controlled by carrying

part of the disk weight on the wheels.

The HD disk is equipped with a stroke control valve. Cutting depth can be changed by adjusting the stop mechanism with a screw type crank located on the front center of the disk.

Cutting depth can be increased by turning the crank clockwise.





Leveling Center Main Frame:

The center main frame cab be leveled from side to side by adjusting the link connecter. This adjustable linkage connects the two center rockshafts. Extending the linkage will raise the right side of the main frame. Retracting the linkage will raise the left side of the main frame. The jam nut should be tightened after adjusting the linkage.

Leveling Wing Main Frame: The rear mount on the wing lift cylinder can be adjusted to level the wing main frame. Moving the cylinder mount toward the tire will raise the wing main frame and reduce the cutting depth of the wing. The jam nuts should be tightened after making this adjustment.



Field Adjustments:



Frame Leveling Cylinder: The center main frame can be leveled front to rear with the frame leveling cylinder. Extending this cylinder will raise the front of the main frame. Retracting the cylinder will lower the front of the main frame. Lowering the front of the main frame will increase penetration of the front gangs. Raising the front of the main frame will reduce penetration.

In certain situations the disk will not level properly in the center. If a ridge is being formed behind the center of the disk, it can be eliminated by tilting the front of the main frame downward with the frame leveling cylinder. In some situations, it may be necessary to reduce travel speed or shift the rear gangs outward on the gang frames. When this is done, care must be taken to properly space the gang risers. This will prevent bearing preload.

Tilting the frame to the rear, by extending the frame leveling cylinder will tend to fill the area behind the center of the disk.

After leveling the main frame, it will be best to make one or two passes and get off the tractor to fully evaluate the results.

Outer Ridge: In some conditions the disk will form small ridges on the overlap between passes. This can be corrected by lengthening the frame leveling cylinder or adjusting the wing depth gauge. The wing depth gauge wheel can be adjusted for precise depth control in rolling land, loose soil, soft wet soil or in other conditions. Extending the screw type adjustment adds weight to this gauge wheel thus reducing cutting depth. Retracting this screw reverses this effect. The jam nut should be tightened after making this adjustment.



Field Adjustments:

Tongue Height Adjustment: The tongue should be installed in the lower holes on the main frame. This position works best on most tractors. The tongue should be installed on the upper pull holes if the front gangs do not penetrate properly. The upper pull holes should also be used if the rear gangs are cutting too deep.

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.



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.

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