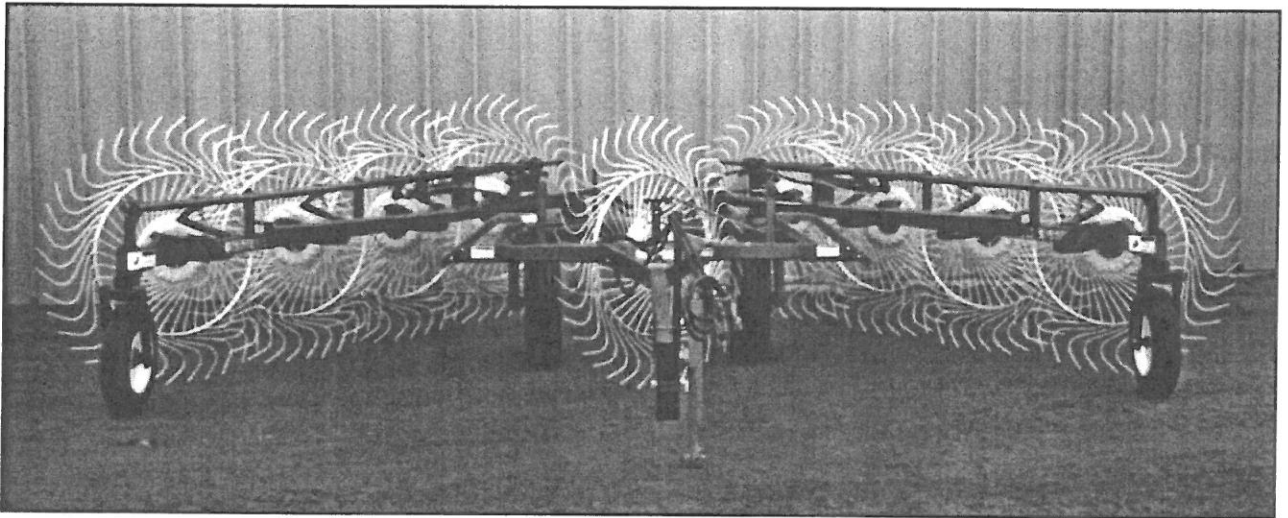


H&S

DELUXE

8 WHEEL

BI-FOLD RAKE



WARNING READ AND UNDERSTAND THIS MANUAL BEFORE OPERATING THIS EQUIPMENT.

UNSAFE OPERATION OR MAINTENANCE OF THIS EQUIPMENT CAN RESULT IN SERIOUS INJURY OR DEATH.

OPERATOR'S MANUAL

and

PARTS LIST

2-09-04

Manufactured By

H&S MANUFACTURING CO., INC.

P.O. BOX 768 • (715) 387-3414 FAX (715) 384-5463

MARSHFIELD, WISCONSIN 54449

H&S
EIGHT WHEEL
DELUXE BI-FOLD RAKE
PARTS AND OPERATOR'S MANUAL

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WARRANTY

Mr. Owner: Before Operating—Read and Understand Operating and Safety Instructions

H&S Manufacturing Co., Inc. truly believes you have made a wise choice and a sound and lasting investment. Many years of development have made available these quality machines to assure you the performance and reliability you need. **We ask you to read the following agreement and warranty as this unit is subject to this warranty and agreement and no other.**

THE H&S WARRANTY

H&S Manufacturing Co., Inc. warrants this unit to be free from breakage or malfunctions due to defects in material and or workmanship for a period of one year from date of original sale on parts and limited labor. Should such breakage or malfunction occur within warranty period the liability of H&S, its employees, agents, authorized distributors, and dealers (Hereinafter collectively referred to as sellers) is hereby expressly limited to repairing or, at its option, replacing free of charge at its factory, any such defective part or parts. Sellers liability is further expressly limited with respect to components manufactured by others, such as universal joints, bearings, detachable link and roller chains, tires, belts or trade accessories, to the extent of such warranties as are extended thereon to sellers by these manufacturers.

THIS WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING BUT NOT LIMITED TO WARRANTIES OF MERCHANTABILITY OR APPLICABLE FOR ANY PARTICULAR PURPOSE, AND THE OBLIGATION AND LIABILITY OF SELLERS UNDER THIS WARRANTY, DOES NOT EXTEND TO LOSS OF CROPS, LOSS BECAUSE OF DELAY IN HARVESTING OR ANY EXPENSE OR LOSS INCURRED FOR LABOR, SUPPLIES, SUBSTITUTE MACHINERY OR RENTAL MACHINERY, TRANSPORTATION OR OTHER CHARGES, OR ANY OTHER INDIRECT OR CONSEQUENTIAL LOSS.

H&S Mfg. Co., Inc. reserves the right to make changes in design and components or material or to utilize available materials which it deems satisfactory, in order to improve its products. Also H&S reserves the right to make changes in the construction or design of any parts without any incurring obligations to install these improvements or changes on previously delivered units.

This warranty shall be void if any part or parts not manufactured or supplied by H&S are used either in servicing and maintaining the unit, and sellers obligation to repair or replace parts are then voided. This warranty shall be void if in the judgement of H&S, repairs are made in such a manner to affect this unit in a materially adverse manner or if this unit is operated unsafely or while in a state of disrepair.

The terms and conditions of this warranty cannot be altered, modified, or waived by any seller without the expressed, written consent of an officer of H&S Mfg. Co., Inc.

NOTICE

H&S Manufacturing Co., Inc. disclaims any liability for the operation of the equipment with the safety guards removed or modified. The nature of this product requires that it be operated in a safe way only, and in good repair by qualified persons. Each purchaser, through the process of purchasing this equipment, agrees with H&S Manufacturing Co., Inc. to operate it in a safe manner and in accordance with applicable state and federal laws and agrees to indemnify and hold harmless H&S Manufacturing Co., Inc. from any loss to any person or persons caused by purchaser's failure to do so. Each purchaser further agrees to bring to the attention this notice to each subsequent purchaser, and to obtain his agreement thereto as a condition of resale or transfer.

IMPORTANT

TO MAKE THIS WARRANTY EFFECTIVE, THE OWNERS WARRANTY REGISTRATION FURNISHED WITH EACH MACHINE MUST BE FILLED OUT AND SENT TO H&S MANUFACTURING CO., INC. IF PURCHASER DOES NOT ACCEPT THIS WARRANTY AND AGREEMENT, HE MAY RESCIND THE SALE BY NOTIFYING ANY OF THE SELLERS IN WRITING OF THAT FACT WITHIN TEN DAYS FROM DATE OF SALE AND/OR PRIOR TO ANY USE OF THE EQUIPMENT WITHIN THIS 10 DAYS.

HR - 10/10/02

**FILL OUT AND MAIL
IMMEDIATELY TO MAKE
WARRANTY EFFECTIVE**



WARRANTY REGISTRATION

Date of Purchase _____

Purchaser _____ Address _____

City _____ State _____ Zip _____

Product _____ Model # _____ Serial # _____

Dealer _____ Address _____

City _____ State _____ Zip _____

Signature of original buyer

IMPORTANT!

Tear on dotted line, provide the information requested on the card. The H&S Warranty is valid **“only”** after this card is received and recorded at H&S Mfg. Co. Mail at once. No postage is required in the U.S.A.

This Is Your Warranty Card
Please Fill Out
And Mail Immediately

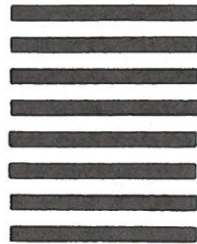


NO POSTAGE
NECESSARY
IF MAILED
IN THE
UNITED STATES

BUSINESS REPLY MAIL
FIRST CLASS MAIL Permit No. 195 Marshfield, WI 54449

POSTAGE WILL BE PAID BY ADDRESSEE

H&S Manufacturing Co., Inc.
PO Box 768
Marshfield WI 54449-9963



AFTER COMPLETION, DEALER SHOULD REMOVE AND RETAIN FOR RECORDS

**H&S
DEALER PRE-DELIVERY CHECK LIST**

After the Bi-Fold Rake has been completely set-up, check to be certain it is in correct operating order before delivering to the customer. The following is a list of points to inspect. Check off each item as you have made the proper adjustments and found the item operating satisfactorily.

- All grease fittings have been lubricated
(See lubrication guide in this manual)
- All mechanisms are operating trouble free.
- Rake wheels touch ground in unison when lowered into raking position.
(rake sitting level)
- All bolts and fasteners are tight.
- All decals are in place and legible.

Dealer's Name	Model Number
	Serial Number
Signature of Pre-Delivery Inspector	Inspection Date

DEALER DELIVERY CHECK LIST

This check list that follows is an important reminder of valuable information that should be passed on to the customer at the time this Bi-Fold Rake is delivered.

Check off each item as you explain it to the customer.

This pre-delivery check list, when properly filled out and signed assures the customer that the pre-delivery service was satisfactorily performed.

- Explain to the customer that the pre-delivery inspection was made.
- Explain to the customer all the safety precautions they must exercise when operating this unit.
- Explain raking and windrow width adjustments.
- Explain to customer that regular lubrication is required for proper operation and long life of machine. Show customer the lubrication section of Owner's Manual.
- Give the customer Owner's Manual and make sure he reads and understands all operating and service instructions.
- Record Serial Number on Page 14 of this Manual.
- Have customer sign a completed "Warranty Registration," and mail it promptly.

Date Delivered _____ Dealer's Name _____

By _____

Signature of Original Buyer

Note: Warranty is not valid until warranty card is completed and returned to H&S Mfg. Co., Inc.

Remove Dealers File Copy At Perforation



**BE
ALERT!**

**YOUR SAFETY
IS INVOLVED.**

THIS SYMBOL IS USED THROUGHOUT THIS BOOK WHENEVER YOUR PERSONAL SAFETY IS INVOLVED. TAKE TIME TO BE CAREFUL. REMEMBER: THE CAREFUL OPERATOR IS THE BEST OPERATOR. MOST ACCIDENTS ARE CAUSED BY HUMAN ERROR. CERTAIN PRECAUTIONS MUST BE OBSERVED TO PREVENT THE POSSIBILITY OF INJURY OR DAMAGE.

TRACTORS

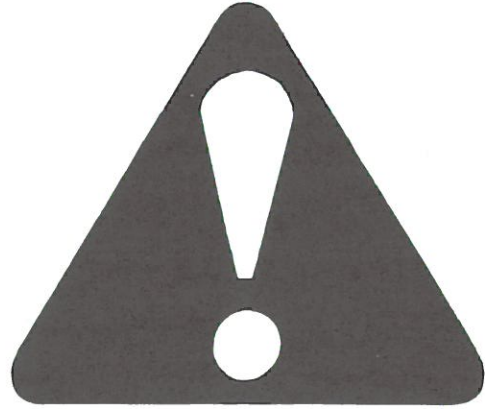
This operator's manual uses the term "Tractor" when identifying the power source for towing and lifting rake.

H&S MANUFACTURING CO. INC.

RECOGNIZE SAFETY INFORMATION

This is the safety-alert symbol. When you see this symbol on your machine or in this manual, be alert to the potential for personal injury.

Follow recommended precautions and safe operating practices.



UNDERSTAND SIGNAL WORDS

A signal word—DANGER, WARNING, or CAUTION—is used with the safety-alert symbol. DANGER identifies the most serious hazards.

Safety signs with signal word DANGER or WARNING are typically near specific hazards.

General precautions are listed on CAUTION safety signs.



WARNING



CAUTION



FOLLOW SAFETY INSTRUCTIONS

Carefully read all safety messages in this manual, and all safety signs on your machine. Follow all recommended precautions and safe operating procedures.

Keep signs in good condition. Immediately replace any missing or damaged signs.

! WARNING

HELP AVOID INJURY

- READ & UNDERSTAND THE OPERATORS MANUAL PROVIDED WITH THIS MACHINE. IF MISPLACED CALL H & S MANUFACTURING AT **715-387-3414** WITH MODEL AND SERIAL NUMBER.
- UNDERSTAND ALL SAFETY WARNINGS AND FUNCTION OF CONTROLS.
- KEEP SAFETY DEVICES IN PLACE AND WORKING.
- KEEP YOURSELF AND OTHERS WELL CLEAR OF MOVING PARTS.
- DISCONNECT ALL POWER BEFORE SERVICING OR CLEANING THIS MACHINE.
- DO NOT EXCEED 20 MPH

72203A



11694A

! DANGER

STAY CLEAR OF RAKE WHEN OPENING OR CLOSING.

FAILURE TO HEED THIS WARNING MAY RESULT IN PERSONAL INJURY OR DEATH

KEEP CLOTHING, YOURSELF AND OTHERS WELL CLEAR.




! WARNING

DO NOT GO NEAR LEAKS

- High pressure oil easily punctures skin causing serious injury, gangrene or death.
- If injured, seek emergency medical help. Immediate surgery is required to remove oil.
- Do not use finger or skin to check for leaks.
- Lower load or relieve hydraulic pressure before loosening fittings.

11599

! DANGER

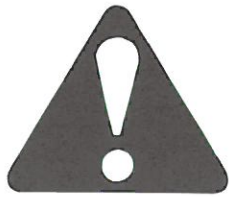


11694B

STAY CLEAR OF RAKE WHEN OPENING OR CLOSING.

FAILURE TO HEED THIS WARNING MAY RESULT IN PERSONAL INJURY OR DEATH. KEEP CLOTHING, YOURSELF AND OTHERS WELL CLEAR.

H&S 8 WHEEL DELUXE BI-FOLD RAKE



WARNING

TO PREVENT SERIOUS INJURY OR DEATH

BEFORE YOU ATTEMPT TO OPERATE THIS EQUIPMENT, READ AND STUDY THE FOLLOWING INFORMATION. IN ADDITION, MAKE SURE THAT EVERY INDIVIDUAL WHO OPERATES OR WORKS WITH THIS EQUIPMENT, WHETHER FAMILY MEMBER OR EMPLOYEE, IS FAMILIAR WITH THESE SAFETY PRECAUTIONS.

DO NOT attempt to perform maintenance or repair with tractor running.

DO NOT step up on machine at any time.

DO NOT allow minors to operate or be near the machine.

DO NOT ALLOW PERSONNEL OTHER THAN THE QUALIFIED OPERATOR NEAR THE MACHINE.

Loose or floppy clothing should not be worn by the operator.

Stop the tractor engine and allow all mechanisms to stop before cleaning, working, or adjusting on machine.

Stay clear of hydraulic lines, they may be under extreme pressure or heat.

Stay clear of rake when opening or closing main rake arm beams, or raising or lowering rake wheels.

For transport, always make sure that the hair pins (BFR137) at the front of the lift pipes, and the transport locks (BFR363) are securely locked in place.

To reduce stress on rake arms, lift pipe, springs and spring brackets, reduce oil flow from tractor to lift cylinders whenever possible.

Be sure to raise rake wheels before closing to transport position.

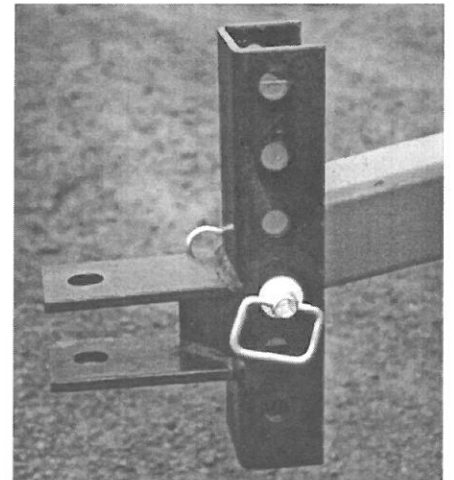
H&S Mfg. Co. always takes the operator and his safety into consideration and guards exposed moving parts for his protection. However, some areas cannot be guarded or shielded in order to assure proper operation. In addition, the operator's manual and decals on the machine itself warn you of further danger and should be read and observed closely.

Study The Above Safety Rules

ATTENTION - BE ALERT - YOUR SAFETY IS INVOLVED

OPERATION

1. Check for proper assembly and adjustment and make sure that all bolts are tightened. Securely retighten after a few hours of operation as bolts can loosen up on new machinery. Check wheel bolts upon delivery and periodically thereafter. Wheel bolts should be tightened at 85-95 ft./lbs. of torque.
2. Check tires and inflate to recommended pressure.
3. Adjust the tractor hitch (13 to 17 inches above ground) and attach rake to tractor with a hitch pin that has a safety locking device.
4. Remove weight from lift jack. Remove jack from pipe mount and place on convenient storage mount located on hitch gusset near main frame of rake.
5. Connect hydraulic hose for raising and lowering rake wheels from rake to single or double acting valve on the tractor.
6. Connect hydraulic hoses for opening and closing the rake to double acting valve on the tractor.
7. Lubricate the machine completely.
8. On all rake wheels, tooth bolts must be torqued to 40 ft. lbs. to help prevent excessive tooth breakage. Re-torque rake tooth bolts after the first 100 acres. (Part No. T175). Check periodically thereafter.



ADJUSTMENTS

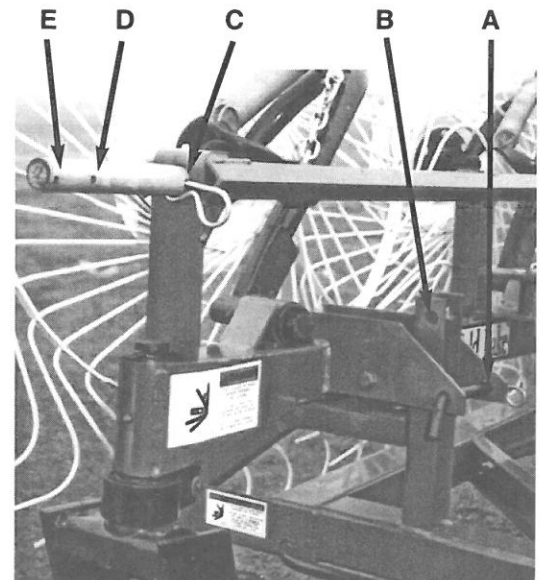
HITCH

There are ten different positions to adjust the hitch on your new Bi-Fold Rake. Hitch should be adjusted so main frame of the rake is level or parallel to the ground.

TRANSPORT LOCKS

There are two transport locks on the Bi-Fold Rake. Located on both sides of rake at the front of the main rake frame are the transport lock pins (part # BFR363) which lock main rake beams. During transport and storage this pin should be in position (A) to prevent rake from opening.

Located on both sides at the front of the rake on the lift tube is the second transport lock (part # BFR137) which locks rake wheels in up position. During transport and storage this pin should be in position (C) to prevent rake wheels from lowering. When you are ready to rake, activate hydraulics to close rake and also to raise rake wheels. Remove pin (A) (BFR363) and place in convenient storage position (B). Remove hair pin (C) (BFR137)

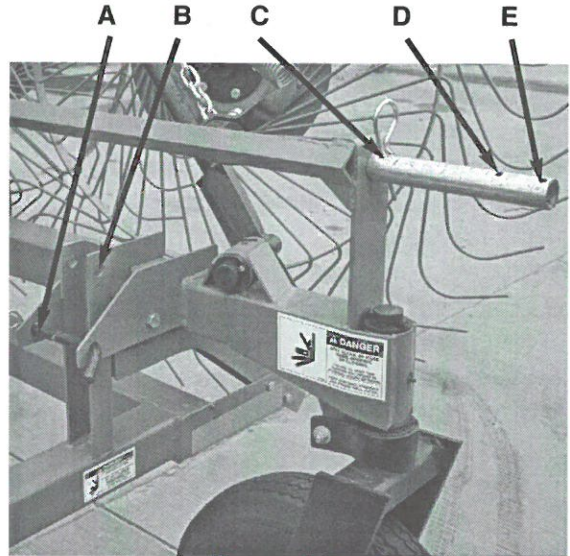


ADJUSTMENTS (Continued)

and place in hole position (E). Open rake to desired raking width (See Raking Width Adjustment) and lower rake wheels until cylinders are completely collapsed. Rake wheels are now on the ground and you are ready to rake. In this position, rake wheels have the widest floatation range both up and down for raking on hilly or uneven ground.

On flat level ground, you may experience excess ground pressure on the rake wheels. This pressure can be eliminated by placing lock pin in the second hole (D) from the end of the lift pipe. In this position downward movement of rake wheels is lessened.

Raking with one side only can be accomplished by leaving the opposite side of the rake in the transport position. Both pins (BFR363 and BFR137) must be placed in the transport lock positions (A and C) respectively on the side of the rake you are not using. This will prevent that side of the rake from opening and the rake wheels from lowering.



RAKING WIDTH ADJUSTMENTS

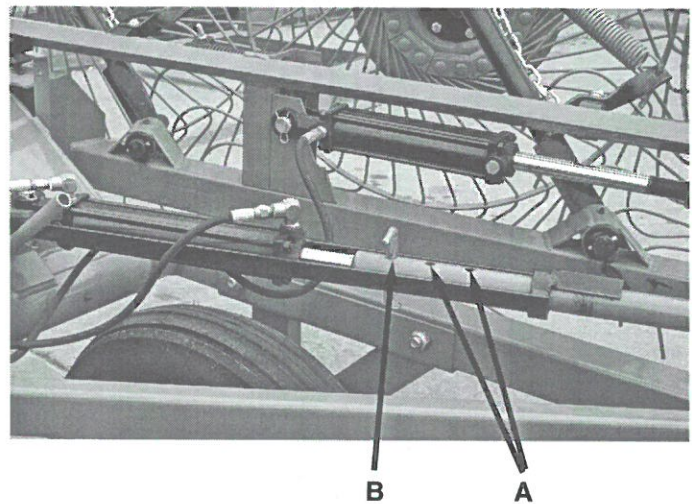
There are three raking width adjustments (A) on each bank of rake wheels. As you can set either side in any of the positions (not necessarily both sides in same position) this offers a wide range of raking widths from 13 feet to 17 feet 2 inches. Preset rake to proper raking width by removing adjustment pin (B) and placing in desired position. Hydraulic cylinders will now open rake to this preset raking width.



⚠ WARNING

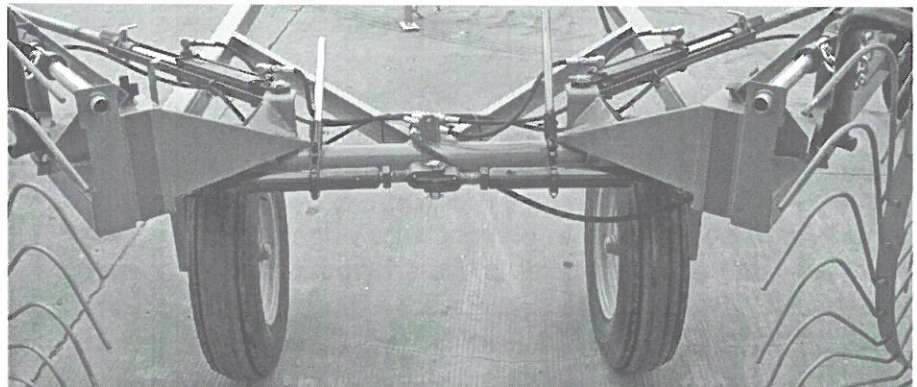
DO NOT GO NEAR LEAKS

- High pressure oil easily punctures skin causing serious injury, gangrene or death.
- If injured, seek emergency medical help. Immediate surgery is required to remove oil.
- Do not use finger or skin to check for leaks.
- Lower load or relieve hydraulic pressure before loosening fittings.



WINDROW WIDTHS

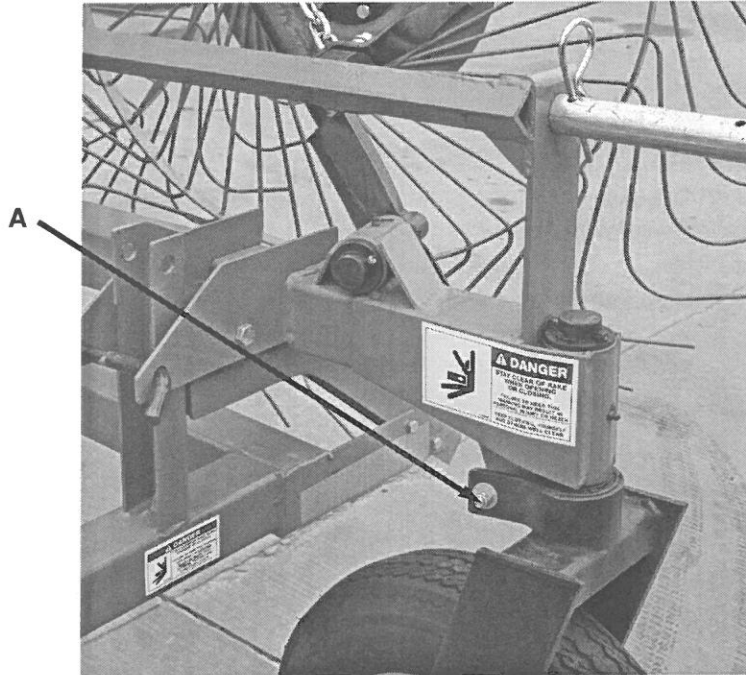
Located at the rear of the rake are two ratchet jack assemblies to adjust windrow width. Each jack controls one side of the rake and can be adjusted independent of the other. This allows for various windrow widths from 36 inches to 60 inches.



ADJUSTMENTS *(Continued)*

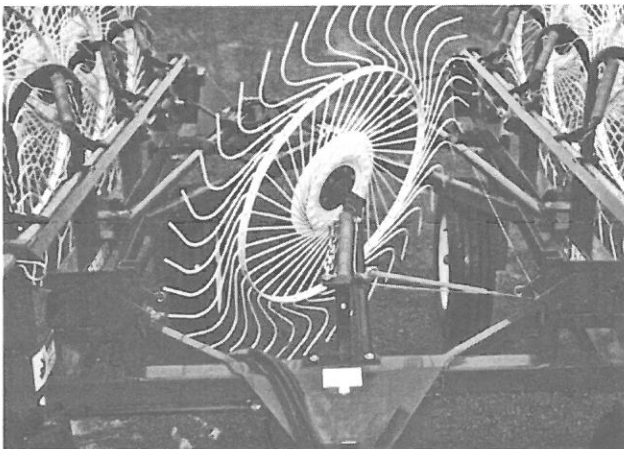
GAUGE WHEELS

Outboard gauge wheels are standard equipment on the eight wheel Deluxe Bi-Fold Rake. These gauge wheels support the rake wheel beams and allow the rake wheels to better follow the contour of the ground. Located on the gauge wheel pivot spindle is an adjustable brake assembly. Adjust brake by tightening bolt (A). Brake should have enough tension to prevent zig-zag motion at raking speeds, but still allow wheel to pivot when making corners.

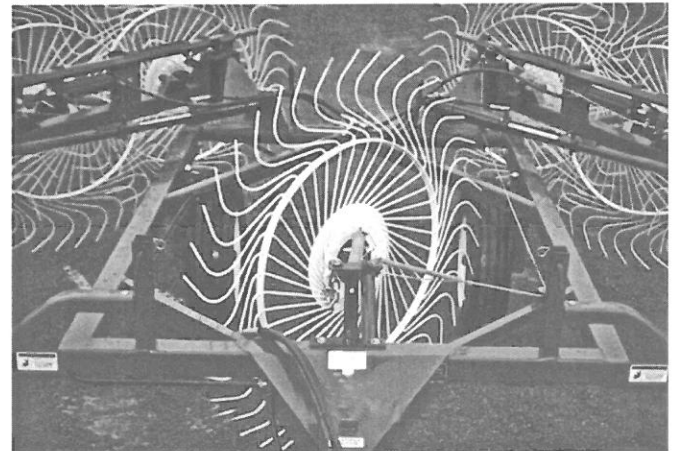


CENTER KICKER WHEEL

An optional center kicker wheel is available for the Deluxe Bi-Fold Rake. If the hay is laying out flat, this extra wheel allows you to raise the hay laying in the center of the rake out of stubble for easier baler pick-up. Attached to the lift cylinder with a cable, the center kicker wheel will raise and lower when hydraulics are activated to raise and lower left and right hand banks of rake wheels. Kicker wheel may be locked in up position when not needed.



RAISED



LOWERED

LUBRICATION GUIDE

GREASE FITTINGS

There are twenty grease fittings on your eight wheel Deluxe Bi-Fold Rake. Twenty-one grease fittings if equipped with optional center kicker wheel. If these are lubricated properly and often enough it will prolong the life of the Bi-Fold Rake. Grease daily during normal use and before and after storage. Use a good grade of high quality grease. Make sure grease comes out around the shaft on the sleeve type bearings. Wipe off excess grease to prevent accumulation of chaff or grit around the bearings.

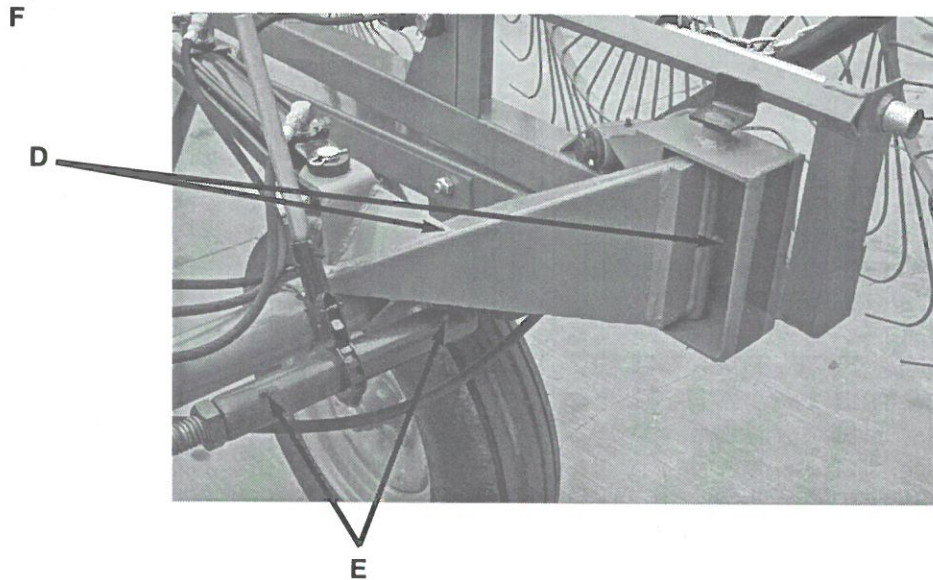
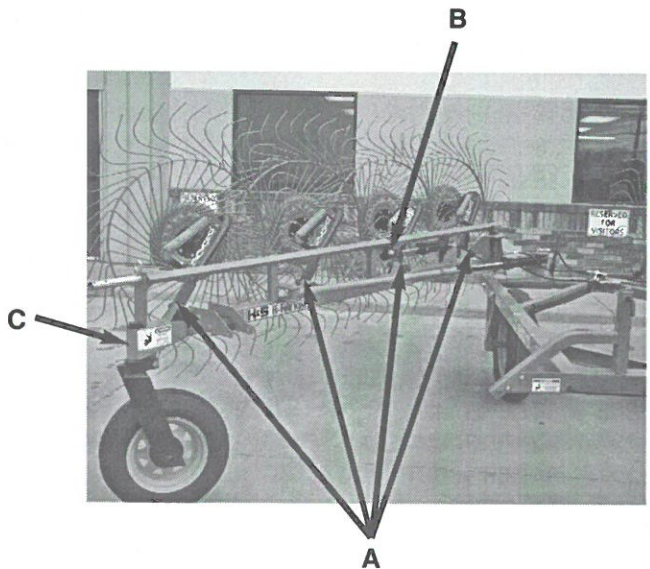
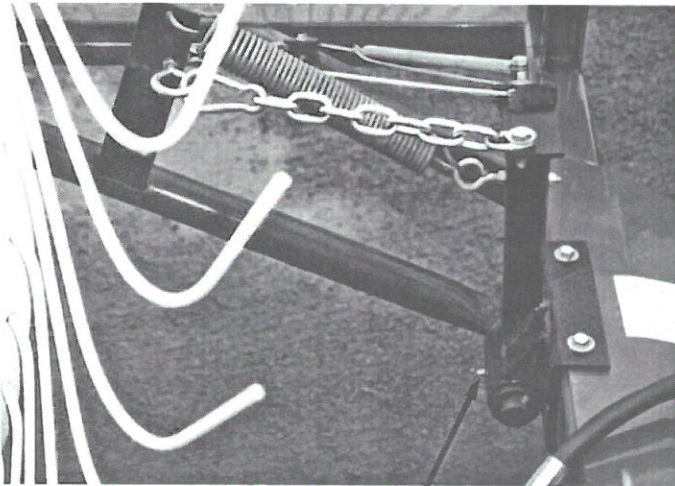
LOCATION

Listed and shown below are the description and location of the grease fittings.

- A. (8) one on each rake wheel arm pivot tube
- B. (2) one on each hydraulic lift bracket
- C. (2) one on each gauge wheel swivel point
- D. (4) two on each rear pivot hinge
- E. (4) two on each window adjustment ratchet jack

OPTION

- F. (1) one on center kicker wheel pivot



DECAL LOCATION

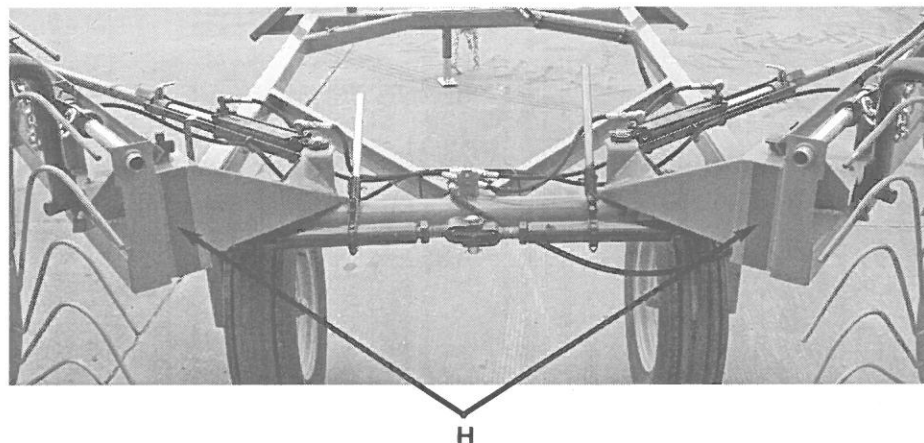
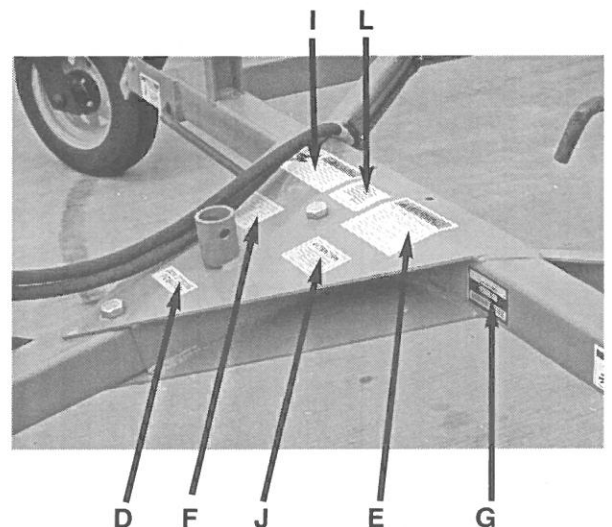
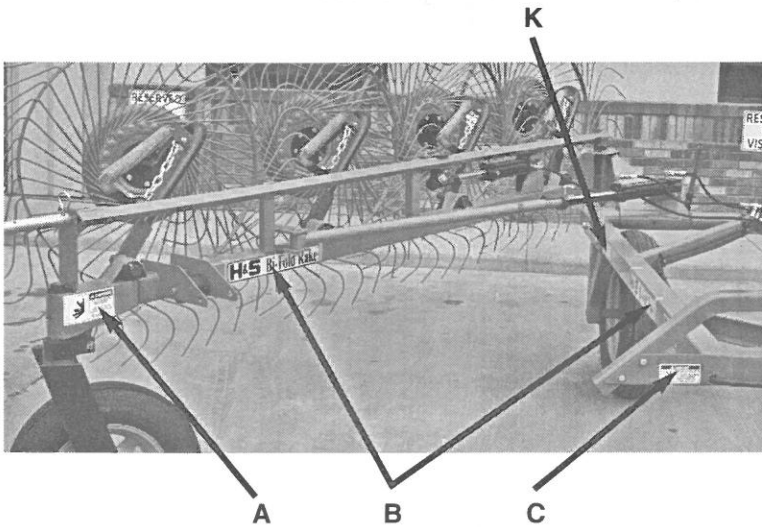
Your H&S Deluxe Bi-Fold Rake was manufactured with operator safety in mind. Located on the Bi-Fold Rake are various decals to aid in operation, and warn of danger or caution areas. Pay close attention to all the decals on your Bi-Fold Rake.



DO NOT REMOVE ANY OF THESE DECALS. IF DECALS ARE LOST, DAMAGED, OR IF BI-FOLD RAKE IS REPAINTED, REPLACE DECALS. REMEMBER: DECALS ARE FOR YOUR PROTECTION AND INFORMATION.

Listed below are the decals on your H&S Deluxe Bi-Fold Rake. These decals may be ordered individually by part number or by ordering complete set.

ITEM	PART NO.	DESCRIPTION
A	11694A	(2) DANGER - Stay Clear
B		(4) H&S Bi-Fold Rake
C	11694B	(2) DANGER - Stay Clear
D	71188B	Jack Storage
E	72203A	Help Avoid Injury
F	H&S	Patent Numbers
G		Model/Serial Number
H		(2) Red Reflector
I	11599	Warning - Do Not Go Near Leaks
J	121797A	Attention: Raise Rake Wheels
K		(3) Amber Reflector (1 left front, 1 each side of frame)
L		Made in USA Flag Decal
	209048H	Complete Set of Decals



INSTRUCTIONS FOR ORDERING PARTS

All service parts should be ordered through your authorized H&S dealer. He will be able to give you faster service if you will provide him with the following:

1. Model & Serial Number can be located on the front left center of your unit.
2. All reference to left or right apply to the machine as viewed from the rear.
3. Parts should not be ordered from illustration only. Please order by complete part number.
4. If your dealer has to order parts - give shipping instructions:

VIA truck - large pieces (please specify local truck lines)

VIA United Parcel Service (include full address)

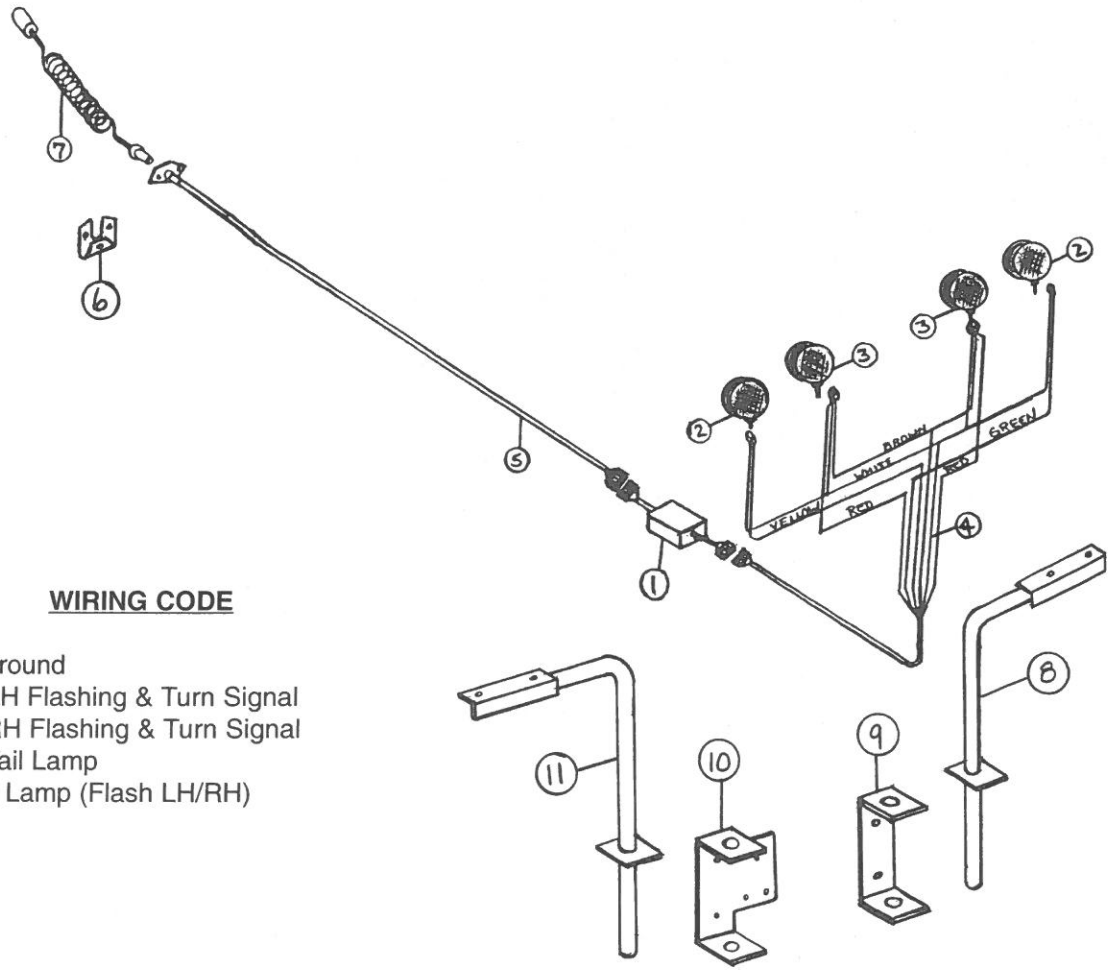
H&S MFG. CO. INC.	
MARSHFIELD, WIS.	
MOD. NO.	<input type="text"/>
SER. NO.	<input type="text"/>
DESCR.	<input type="text"/>

PLEASE RECORD NUMBERS FOR YOUR UNIT FOR QUICK REFERENCE

ABOUT IMPROVEMENTS

H&S IS CONTINUALLY STRIVING TO IMPROVE ITS' PRODUCTS.

We must therefore, reserve the right to make improvements or changes whenever it becomes practical to do so, without incurring any obligation to make changes or additions to the equipment previously sold.



WIRING CODE

- White - Ground
- Yellow - LH Flashing & Turn Signal
- Green - RH Flashing & Turn Signal
- Brown - Tail Lamp
- Red - Tail Lamp (Flash LH/RH)

8 Wheel Deluxe Optional Rake Lighting

ITEM	PART NO.	DESCRIPTION
1.	S441	Light Module
2.	DWM129	Amber Light
3.	BFR675	Red Light
4.	BFR695	Light Harness (6 Wire)
5.	BFR687	8 Wheel Light Harness
6.	BFR659	Mounting Bracket
7.	S317	Optional Tractor Cord
8.	BFR683	Mounting Bracket RH
9.	BFR686	Right Rear Light Arm
10.	BFR684	Mounting Bracket LH
11.	BFR685	Left Rear Light Arm
*	BFR690	8 Wheel Deluxe Comp. Light Harness Kit Less Opt. Tractor Cord

NOTE:* (Includes All Items Above, Less #7)

FIGURE 1

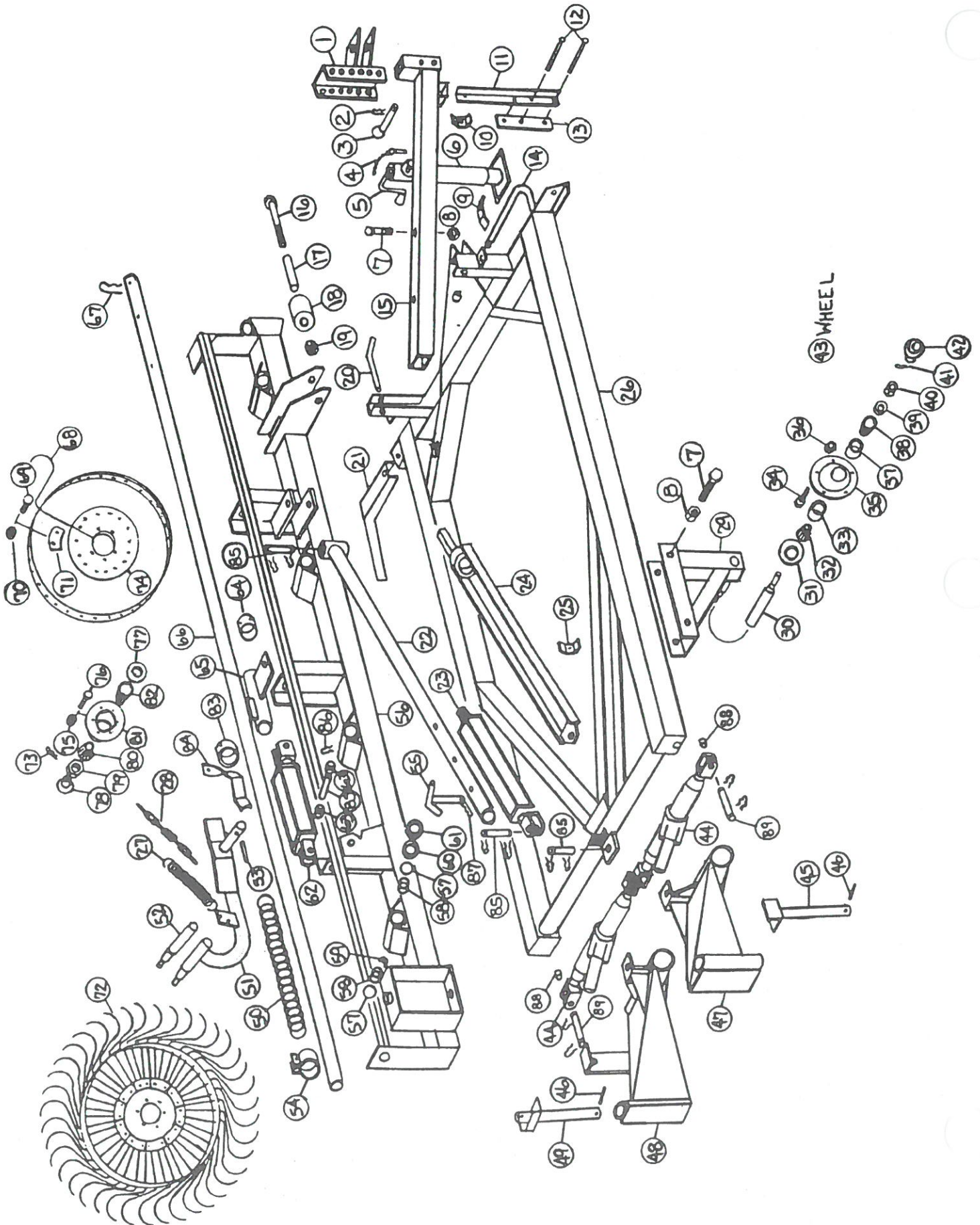


FIGURE 1
H&S 8 WHEEL DELUXE BI-FOLD RAKE
MAIN FRAME

ITEM	PART NO.	DESCRIPTION	ITEM	PART NO.	DESCRIPTION
1.	BFR129	Hitch	46.	T72	Cotter Pin
2.	BFR7	Hair Pin	47.	BFR352	Beam Hinge RH
3.	BFR5	Hitch Pin	48.	BFR353	Beam Hinge LH
4.	12N13	Jack Pin & Chain	49.	BFR251	Hinge Pin LH
5.	12N12	Jack Handle	50.	BFR84	Compression Spring
6.	12N11	Jack	51.	BFR265A	Rake Arm LH
7.	HE6	3/4" x 4-1/2" Bolt GR.5	*	BFR266A	Rake Arm RH
8.	HE7	Lock Nut	52.	BFR36	Rake Wheel Spindle
9.	23N67	Hose Bracket	53.	3G22	Roll Pin
10.	HE42	Front Hose Bracket	54.	BFR34	Pipe Clamp
11.	BFR336	Hose Angle	55.	BFR354	Width Adjustment Pin
12.	RG36	Bolt 3/8" x 4"	56.	BFR355	Rake Beam LH
13.	BFR337	Hose Holder	*	BFR356	Rake Beam RH
14.	BFR347	Hydraulic Pipe	57.	S99	"O" Ring
15.	BFR676	Pole	58.	G16	Bushing
16.	T157	1/2" x 5-1/2" Bolt GR.5	59.	BFR230	Spacer
17.	BFR360	Roller Axle	60.	BFR221	Poly Washer
18.	BFR226	Poly Roller	61.	BFR229	Steel Washer
19.	R29	1/2" Nut	62.	BFR69	Hydraulic Lift Cylinder
20.	BFR363	Locking Pin	63.	BFR47	Spacer
21.	BFR231	Ramp LH	64.	BFR83	Hydraulic Lift Clamp
*	BFR232	Ramp RH	65.	BFR357	Hydraulic Lift Bracket LH
22.	BFR348	Cylinder Rod	*	BFR358	Hydraulic Lift Bracket RH
23.	BFR349	Cylinder Complete	66.	BFR145	Lifting Pipe
24.	BFR350	Cylinder Stop	67.	BFR137	Hair Pin
25.	BFR257	Hose Bracket	68.	T176	Rake Wheel Tooth
26.	BFR351	Main Frame	69.	T175	10mm x 25mm Carriage Bolt
27.	BFR138	Spring	70.	T166	10mm Nut
28.	BFR140	Chain	71.	T178	Rake Tooth Clip
29.	BFR148	Axle Assembly RH	72.	T174	Rake Wheel LH
*	BFR149	Axle Assembly LH	*	BFR31	Rake Wheel RH
30.	BFR56	Spindle	73.	T169	Cotter Pin
31.	BFR57	Seal	74.	T179	Rake Wheel Center
32.	BFR58	Inner Bearing	75.	T166	10mm Nut
33.	BFR59	Inner Race	76.	T168	10mm x 25mm Bolt
34.	BFR143	Stud Bolt	77.	T163	Seal
35.	BFR60	Hub	78.	T173	Hub Cap
36.	BFR144	Nut	79.	T172	Nut
37.	BFR61	Outer Race	80.	T170	Outer Bearing
38.	BFR62	Outer Bearing	*	T171	Outer Race
39.	BFR63	Washer	81.	BFR32	Rake Wheel Hub
40.	BFR64	Nut	82.	T164	Inner Bearing
41.	BFR65	Cotter Pin	*	T165	Inner Race
42.	BFR66	Hub Cap	83.	BFR82	Pipe Clamp
43.	BFR67	Wheel 5 x 15	84.	BFR255	Spring Bracket LH
44.	T138	Ratchet Jack	*	BFR256	Spring Bracket RH
*	T139	Ratchet Jack Handle	85.	T143	Hydraulic Cylinder Pin
*	T140	Ratchet Jack Pawl	86.	T144	Clip Pin
*	T141	Ratchet Jack Spring	87.	X97	Hair Pin
45.	BFR248	Hinge Pin RH	88.	BFR367	Ratchet Jack Spacer
	NOTE: *	(Means Not Shown)	89.	BFR368	Ratchet Jack Pin

**FIGURE 2
H&S 8 WHEEL DELUXE BI-FOLD RAKE
HYDRAULICS**

ITEM	PART NO.	DESCRIPTION
1.	BFR347	Hydraulic Pipe
2.	BFR362	Hydraulic Hose 100"
3.	BFR69	Hydraulic Lift Cylinder
4.	23N234	3/8" Street Elbow
5.	BFR349	Hydraulic Open Cylinder
6.	BFR286	Hydraulic Hose 30"
7.	BFR74	3/8" Female Tee
8.	BFR315	Hydraulic Hose 20"
9.	BFR46	Hydraulic Hose 48"
10.	BFR287	Hydraulic Hose 36"
11.	BFR555	Adapter
12.	BFR554	Flow Valve
13.	JB82	Bushing

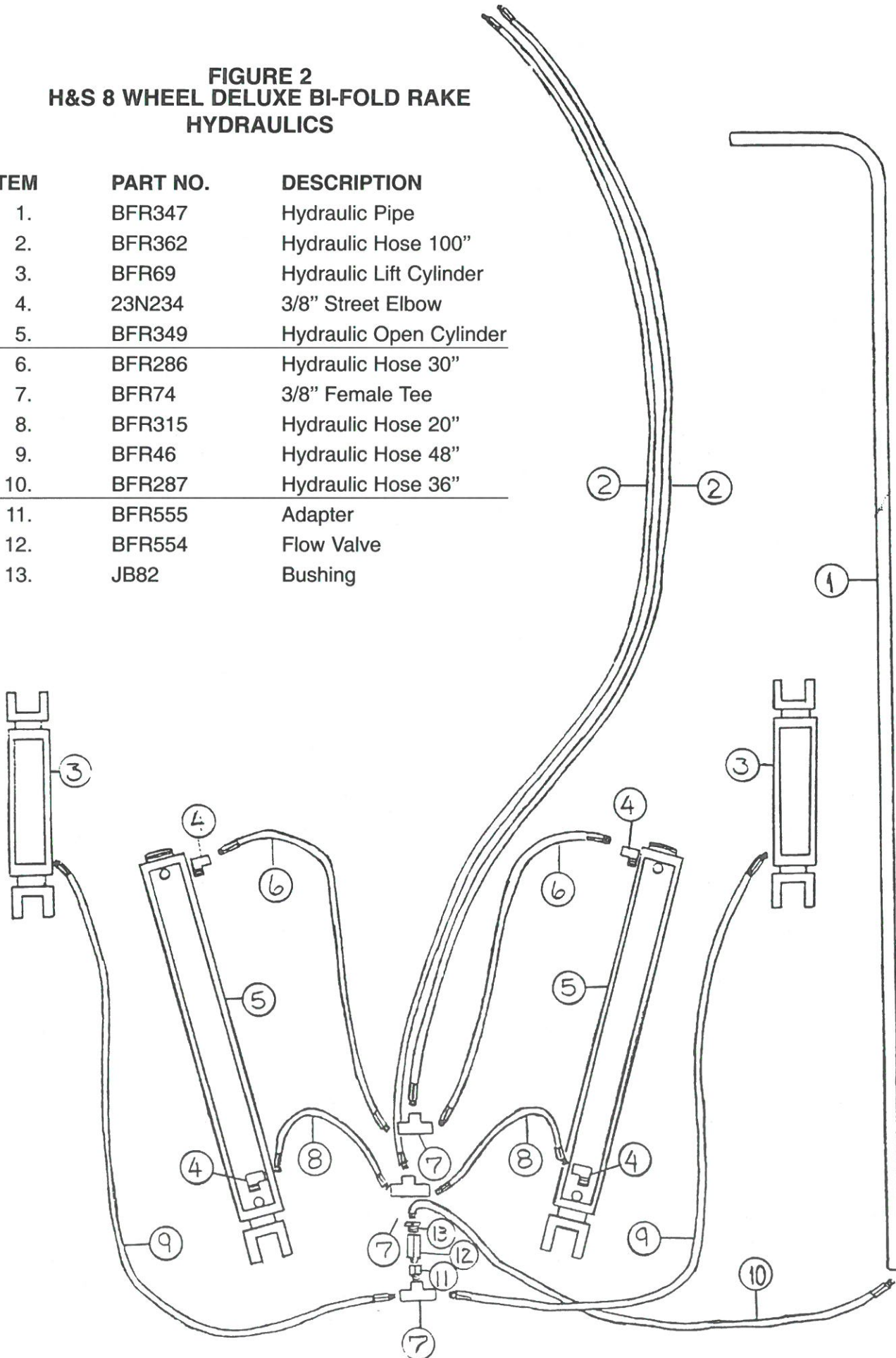


FIGURE 3
H&S 8 WHEEL DELUXE BI-FOLD RAKE
OUTBOARD GAUGE WHEEL

ITEM	PART NO.	DESCRIPTION
1.	BFR179	Washer
2.	BFR625	Bronze Bushing
3.	BFR267	Brake Pad
4.	BFR268	Brake
5.	BFR269	Bronze Washer
6.	F26	Roll Pin
7.	BFR270	Complete Fork
8.	BFR271	1" Nylon Lock Nut
9.	BFR272A	Spacer
10.	BFR273	Seal
11.	BFR274	Bearing
12.	BFR275	Race
13.	BFR276	Hub
14.	BFR277	Tire
15.	BFR278A	Spacer
16.	BFR279	Axle Shaft
17.	BFR280A	Wheel
18.	BFR325	Lug Bolt

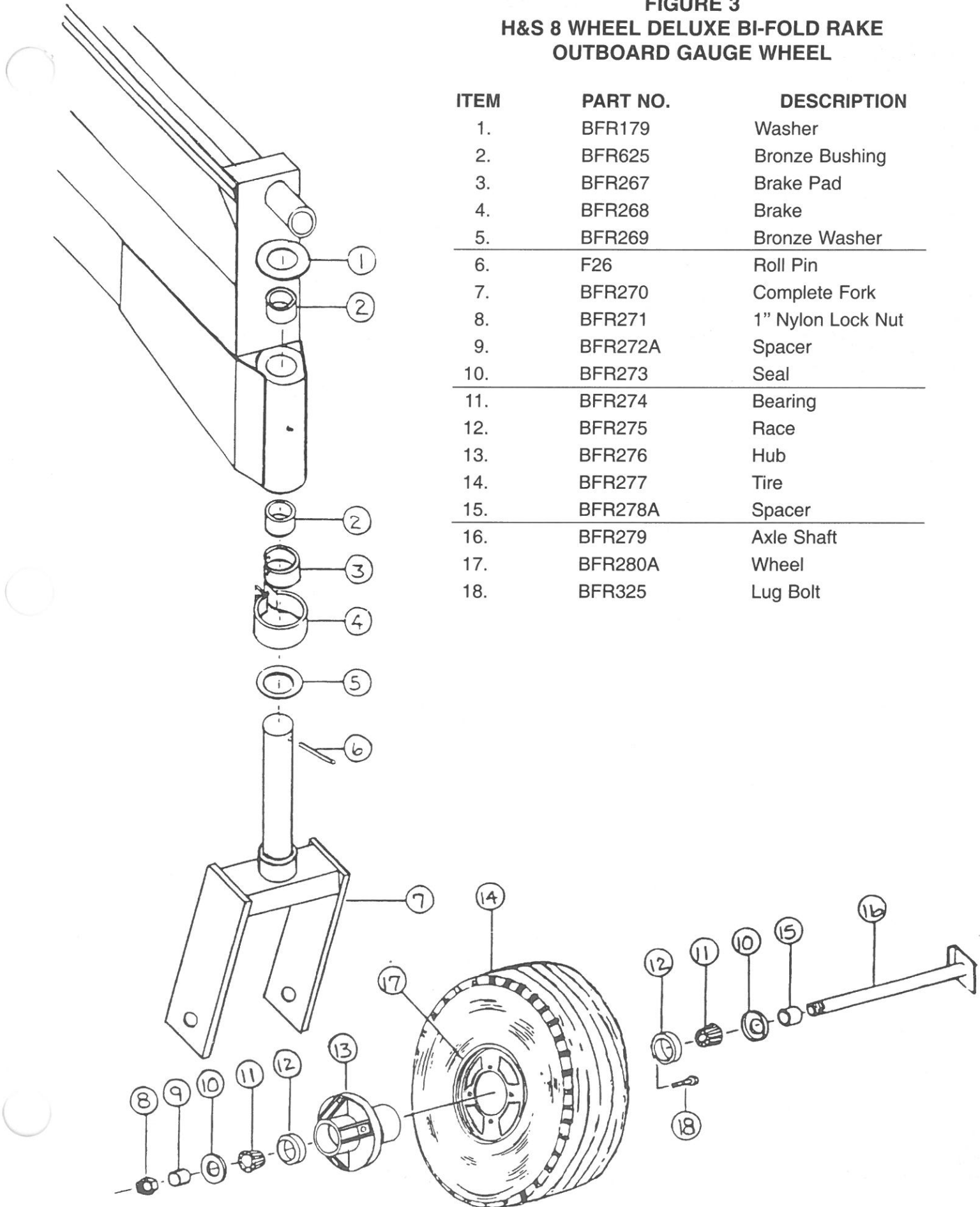
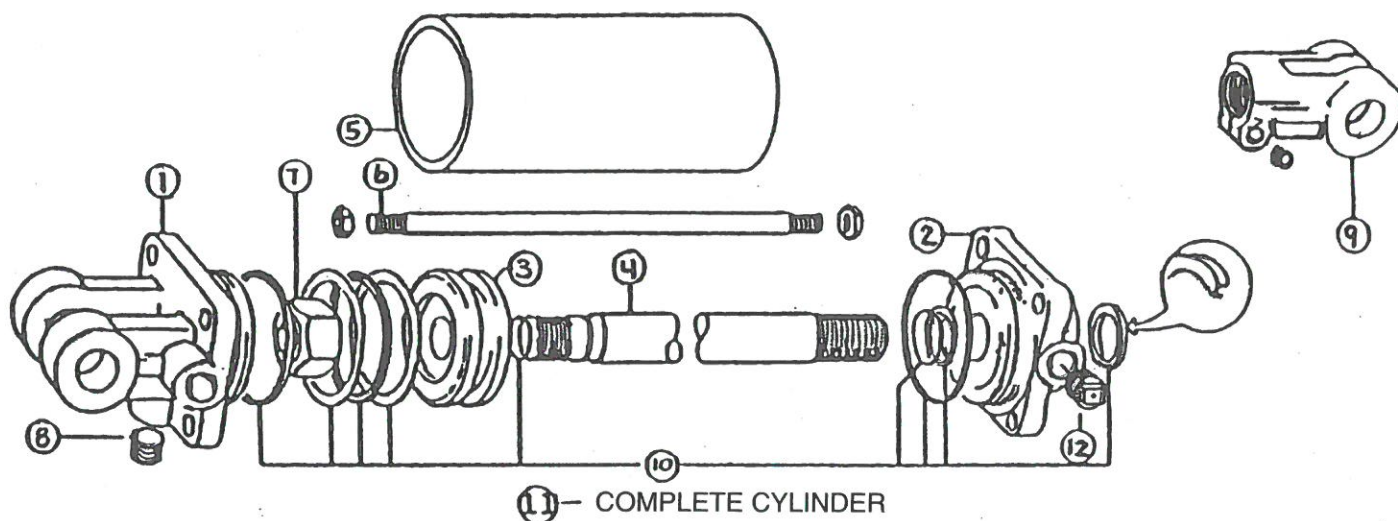


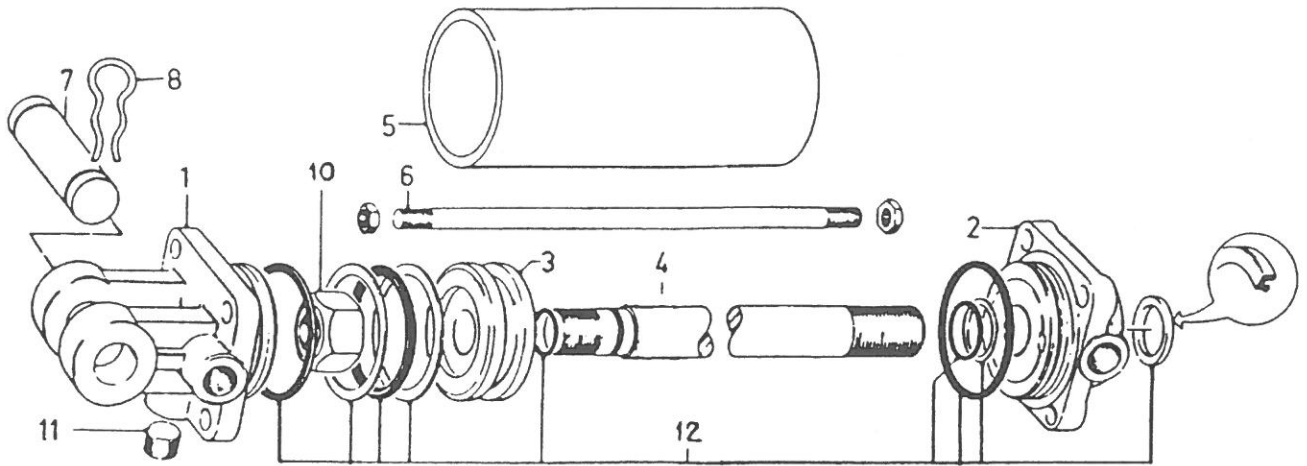
FIGURE 4



**H&S 8 WHEEL DELUXE BI-FOLD RAKE
HYDRAULIC LIFT CYLINDER**

ITEM	PART NO.	DESCRIPTION
1.	23N142A	Clevis Cap
2.	23N143A	Rod Cap
3.	23N144	Piston
4.	T184A	Rod
5.	BFR68	Cylinder Tube
6.	T186	Tie Rod
7.	23N148	Piston Nut
8.	23N149	Plug
9.	23N150A	Rod Clevis
10.	23N151	Seal Kit
11.	BFR69A	Complete Cylinder
12.	BFR70	Vent Plug

FIGURE 5



9- COMPLETE CYLINDER

**H&S 8 WHEEL DELUXE BI-FOLD RAKE
HYDRAULIC OPENING CYLINDER**

ITEM	PART NO.	DESCRIPTION
1.	23N142A	Clevis Cap
2.	23N143A	Rod Cap
3.	23N144	Piston
4.	16SV168A	Rod
5.	16SV169	Cylinder Tube
6.	16SV170	Tie Rod
7.	T143	Pin
8.	T144	Clip Pin
9.	BFR349A	Complete Cylinder
10.	23N148	Piston Nut
11.	23N149	Plug
12.	23N151	Seal Kit

FIGURE 6

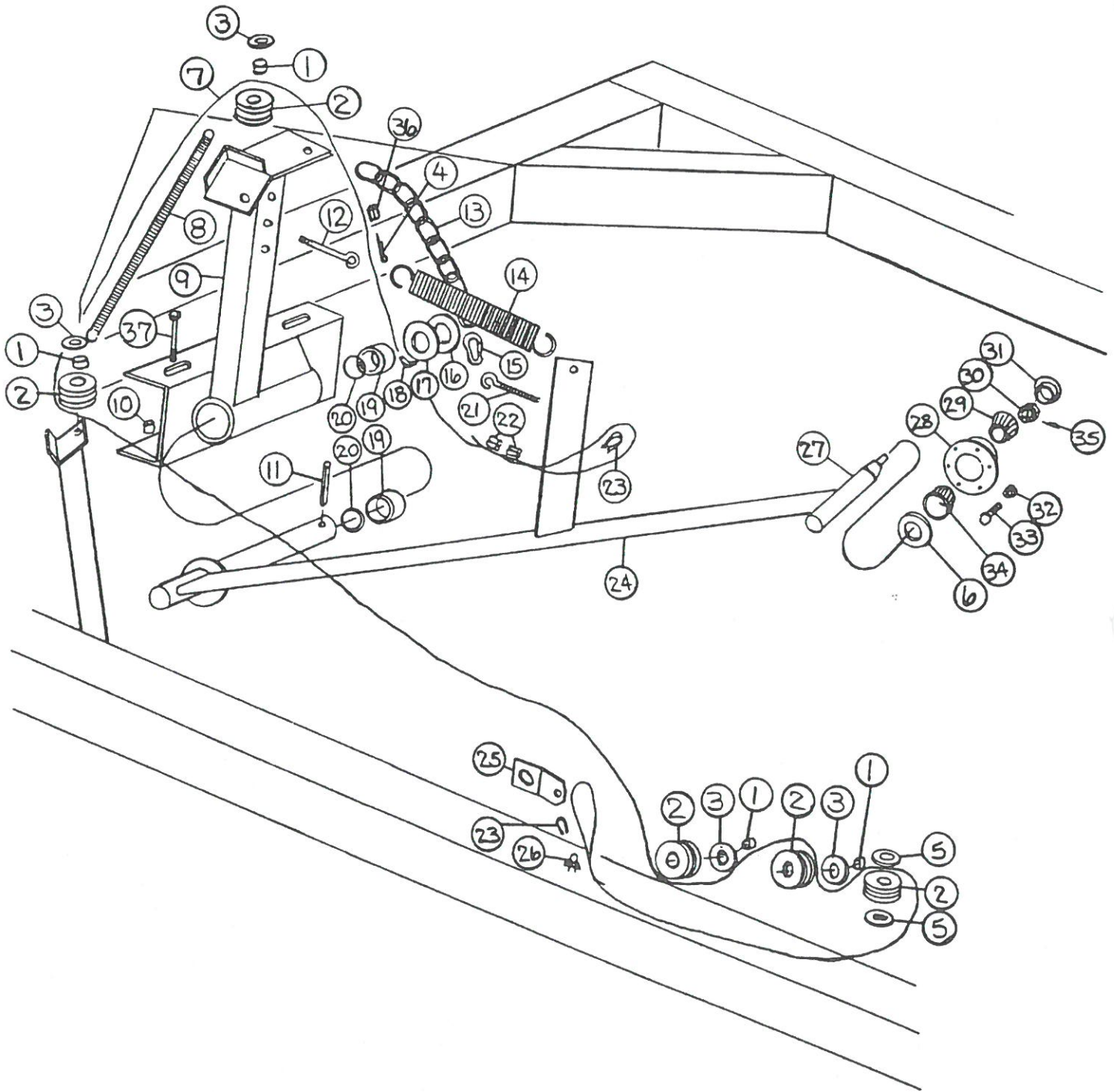


FIGURE 6
H&S 8 WHEEL DELUXE BI-FOLD RAKE
OPTIONAL CENTER KICKER WHEEL

ITEM	PART NO.	DESCRIPTION
1.	ST81	Spacer
2.	BFR292	Poly Pulley
3.	X67	3/8" Flat Washer
4.	T56	5/32"x1 1/2" Cotter Key
5.	T73	Washer
6.	T163	Seal
7.	BFR359	Cable
8.	23N187	Spring
9.	BFR293	Lift Tower
10.	BFR361	Spacer
11.	3G22	Roll Pin
12.	ES10	"I" Bolt
13.	BFR294	Kicker Arm Chain
14.	BFR138	Spring
15.	BFR295	Snap Hook
16.	BFR229	Steel Washer
17.	BFR221	Poly Washer
18.	BFR230	Spacer
19.	G16	Bushing
20.	S99	"O" Ring
21.	16SV255	3/8" x 2" I-Bolt
22.	ES15	Heavy Cable Clamp (crimped)
23.	ES14	Thimble
24.	BFR215	Kicker Arm
25.	BFR281	Cable End Bracket
26.	BFR220	Cable Clamp
27.	BFR36	Spindle
28.	BFR32	Hub
29.	T170	Outer Bearing
*	T171	Outer Race
30.	T172	Nut
31.	T173	Hub Cap
32.	T166	10mm Nut
33.	T168	10mm x 25mm Bolt
34.	T164	Inner Bearing
*	T165	Inner Race
35.	T169	Cotter Pin
*	BFR31	Rake Wheel RH
36.	ES5	Cable Clamp
37.	T20	Bolt 3/8" x 6" GR.5

NOTE: * (Means Not Shown)

H&S DELUXE BI-FOLD RAKE

Your new H&S Deluxe Rake has been manufactured of the finest quality materials and components. The performance you get from your machine is largely dependent upon how well you read and understand this manual and apply this knowledge. There is a right and a wrong way to do everything. Please do not assume that you know how to operate and maintain your Bi-Fold Rake before reading this manual carefully. Keep this manual available for ready reference.

8 WHEEL DELUXE BI-FOLD SPECIFICATIONS

Overall Width - Transport	116"
Overall Length - Transport	210"
Width Outside Tires	52"
Height to Bottom of Frame	26"
Weight	1670 lbs.
Adjustable Hitch	10 Positions
Number of Rake Wheels	8
Number of Teeth per Rake Wheel	40
Overall Diameter of Rake Wheel	55"
Raking Widths	13'-17' 2"
Windrow Widths	36" - 60"
Swing Away Jack w/Storage Position	Standard
Gauge Wheels (2)	Standard
Tire Size	15"

Warranty

One Year-Parts & Limited Labor

NOTE

Determine right or left side of Deluxe Rake by viewing it from the rear. If instructions or parts lists call for hardened bolts, they are identified as Grade 5 by three lines on the head.

H&S MANUFACTURING CO. INC.

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P.O. Box 768 - Telephone (715) 387-3414
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MARSHFIELD, WI 54449



H&S WAREHOUSE Rt. #5 and 76
P.O. Box 1260 - Telephone (716) 736-7595
FAX (716) 736-7596
RIPLEY, NY 14775

H&S MFG. CO.

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