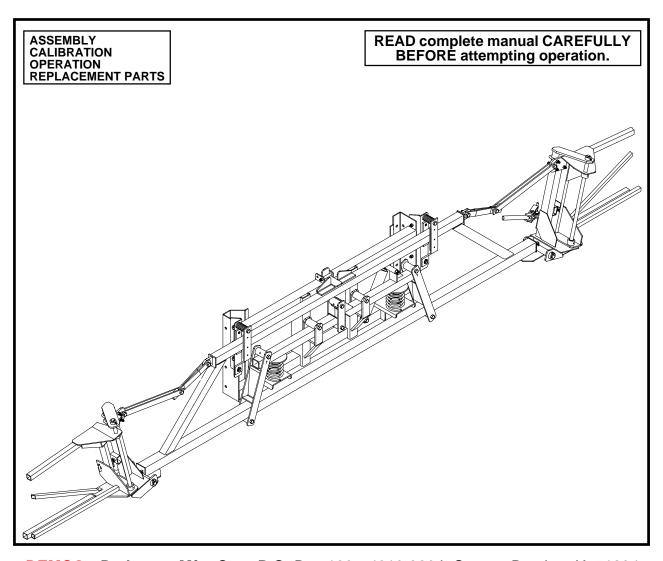


Doing Our Best to Provide You the Best

DFB 40', 45' & 50' FLOTATION BOOM OWNERS MANUAL



DEMCO • Dethmers Mfg. Co. • P.O. Box 189 • 4010 320th Street • Boyden, IA 51234 **PH**: (712) 725-2311 or (712) 725-2302 • **Toll Free**: 1-800-543-3626 • **FAX**: (712) 725-2380

Thank you for purchasing a Demco boom. We feel you have made a wise choice and hope you are completely satisfied with your new flotation boom.

Your new Demco boom features the newest and most up-to-date design of a boom it's type currently marketed. DEMCO believes this to be a durable, efficient, and easy to operate boom. If taken care of properly it should serve you for many years.

If you have any questions regarding the applications of certain solutions or chemicals, contact your chemical supplier and follow chemical manufacturer recommendations as well as all licensing and use restrictions or regulations. REMEMBER... Agricultural chemicals are dangerous. Know exactly what you're going to do and what is going to happen before attempting to work with these products. Improper selection or use can injure people, animals, plants and soil. Always wear protective clothing such as coveralls, goggles and gloves when working with chemicals or the boom.

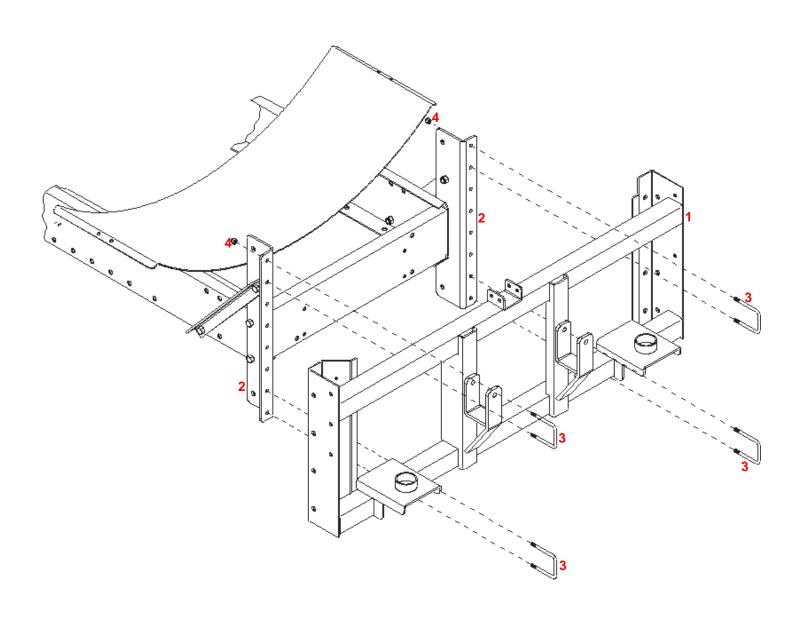
GENERAL INFORMATION

- Unless otherwise specified, high-strength (grade 5) (3 radial-line head markings) hex head bolts are used throughout assembly of this piece of equipment.
- 2. Whenever the terms "LEFT" and "RIGHT" are used in this manual it means from a position behind the machine and facing forward.
- 3. When placing a parts order, refer to this manual for proper part numbers and place order by part number and description.

INDEX

Mounting the Center Section	Page 1	
Mounting the Center Section With Hydraulic Height Adjust	Page 2	
Mounting the Center Section With Manual Height Adjust	Page 3	
Center Section Parts Breakdown and Parts List	Page 4	
Left Inner Wing Parts Breakdown and Parts List	Page 5	
Right Inner Wing Parts Breakdown and Parts List	Page 6	
Right and Left Outer Wing Parts Breakdown and Parts List	Page 7	
Tip Placement and Nozzle Parts Breakdown and Parts List	Page 8	
Adjustment Procedures	Page 9	
Adjustment and Folding Procedures	Page 10	J
Maintenance and Lubrication	Page 11	1
Optional Hydraulic Wing Leveling and Wheel Tip Protector	Page 12	2
Sprayer Calibration	Page 13	3
Sprayer Checklist	Page 14	4

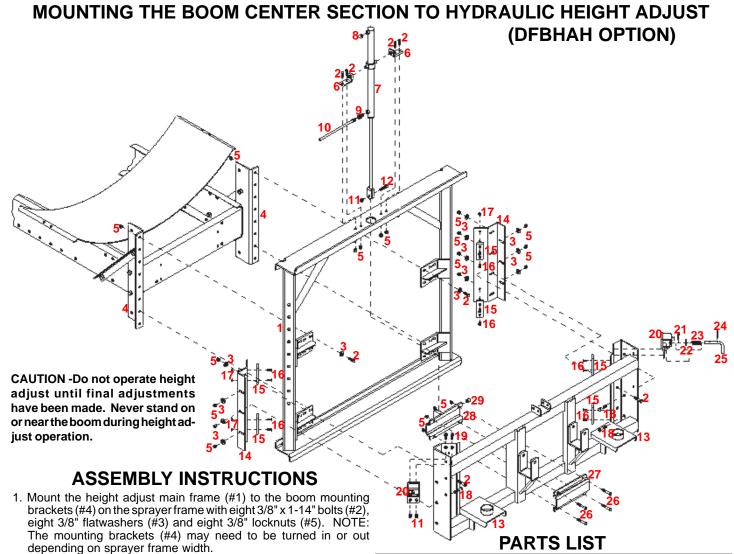
Begin by attaching the center section of the boom to the sprayer. With the center section on the sprayer, the boom can be assembled from the center section outward and final alignment made at that time.



MOUNTING THE BOOM CENTER SECTION

Normal sprayer frame, without Height Adjuster. (Shown Above)

1. Mount the Boom Carrier Center Section (#1) to the Mounting Angles (#2) on the back of the sprayer frame using four 3/8" x 2-1/2" square U-bolts (#3) and eight 3/8" nylon locknuts (#4). NOTE: The mounting brackets (#2) may need to be turned in or out depending on sprayer frame width.



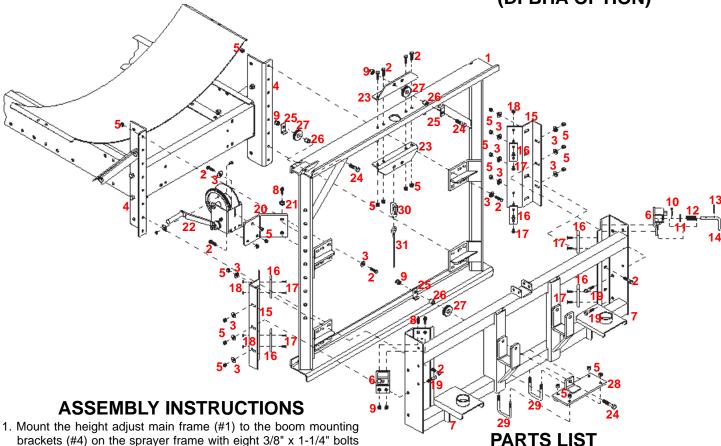
- 2. Mount the lock pin brackets (#20) to the boom carrier (#13), using four 1/2" x 1-1/4" bolts (#19) and four 1/2" locknuts (#11), make sure the bolts are inserted in the right direction as shown above. Place the lock pin (#25) & roll pin (#24) through the bracket (#20). Insert the spring (#23) and 7/16" flatwasher (#22) to the inside of the lock pin bracket and push the pin (#25) through. Secure the lock pin assembly with cotter pin (#21) between the washer and bracket. Make sure pin moves in and out freely and rotates down into the "latch out" position easily.
- 3. Before mounting the boom carrier to the main frame assembly, mount the UHMW wear pads (#15) to the boom carrier (#13) and boom carrier brackets (#14) using sixteen 1/4" x 1" flathead screws (#16) and sixteen 1/4" locknuts (#17).
- 4. Now place the boom carrier (#13) on to the main frame assembly (#1) so that the lock pins are in the holes of the main frame. Loosely mount the boom carrier brackets (#14) to the boom carrier (#13) using eight 3/8" x 1-1/4" bolts (#2), six 3/8" x 1-1/2" bolts (#18), fourteen 3/8" flatwashers (#3) and fourteen 3/8" locknuts (#5).
- 5. Slide the hydraulic cylinder (#7) clevis end down through the large hole in the top of the main frame assembly (#1). The hole is slotted so the cylinder inlet can be maneuvered through. Slide one mounting ear bracket (#6) onto each peg on the cylinder, align over holes in the main frame top and secure the mounting ears with four 3/8" x 1-1/4" bolts (#2) and four 3/8" locknuts (#5).
- 6. Attach the bottom lift bracket and back-up plate (#27&28) to the center of the boom carrier (#13) with four 3/8" x 2-1/4" bolts (#26) and four 3/8" locknuts (#5). The hole in the lift bracket (#28) is offset and the hole must go towards the bottom for total adjustment. Compress the cylinder and attach the cylinder clevis to the lift bracket with one 1/2" x 2" bolt (#12) through the 1/2" I.D. x 5/8" lg. bushing (#29) and one 1/2" locknut. See page 9 for adjustment.

REF. PART			
PART			
NO.	QT		
05601	1	Height Adjuster Main Frame	
00523	20	3/8"-16UNC x 1-1/4" Hex Head Bolt Gr.5	
00059	20	3/8" Flatwasher	
	2	Boom Mounting Brackets (not included)	
02592	30	3/8"-16UNC Nylon Insert Locknut	
05605	2	Top Cylinder Mounting Ear	
05600	1	Hydraulic Cylinder	
00288	1	Air Vent - hydraulic cylinder	
05661	1	3/8" MPT x 3/8" FPT Orifice Restrictor	
05013	1	26' Hydraulic Hose	
02178		1/2"-13UNC Nylon Insert Locknut	
01253	1	1/2"-13UNC x 2" Hex Head Bolt Gr.5	
03306	1	Boom Carrier	
03305	2	Boom Carrier Brackets	
02946	-	UHMW Wear Pad	
05732	16	1/4"-20UNC x 1" Slotted Flat Head	
02772	16	1/4"-20UNC Hex Nylon Insert Locknut	
00914	6	3/8"-16UNC x 1-1/2" Hex Head Bolt Gr.5	
00967	4	1/2"-13UNC x 1-1/4" Hex Head Bolt Gr.5	
03340	2	Lock Pin Bracket	
02363		5/32" x 1/14" Cotter Pin	
00205		7/16" Flatwasher	
02208		Lock Spring	
03099		Roll Pin (3/16" x 1")	
03342		Lock Pin	
02494	4	3/8"-16UNC x 2-1/-4" Hex Head Bolt Gr.5	
05604	1	Bottom Lift Back Plate	
05603	1	Bottom Lift Bracket	
01839	1	1/2" I.D. x 5/8" lg. Spacer	
	NO. 05601 00523 00059 02592 05605 05600 00288 05661 05013 02178 01253 03306 03305 02946 05732 02772 00914 00967 03340 02363 00205 02208 03099 03342 02494 05604 05603	NO. QTV 05601 1 00523 20 00059 20 2 02592 30 05605 2 05605 2 05606 1 05013 1 02178 5 01253 1 03306 1 03305 2 02946 8 05732 16 02772 16 00914 6 00967 4 03340 2 02363 2 00205 2 02208 2 03099 2 03342 2 02494 4 05604 1	

Please order replacement parts by PART NO. and DESCRIPTION.

NOTE: Use CAUTION when adjusting height. Make sure all air is bled from the line before initial trial.

MOUNTING THE BOOM CENTER SECTION TO MANUAL HEIGHT ADJUST (DFBHA OPTION)



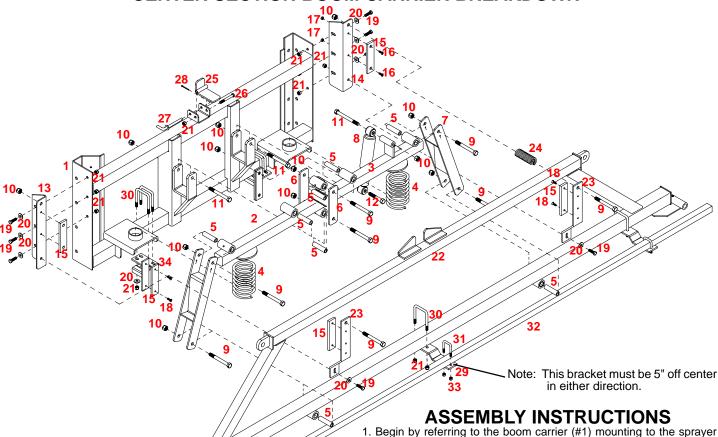
- brackets (#4) on the sprayer frame with eight 3/8" x 1-1/4" bolts (#2), eight 3/8" flatwashers (#3) and eight 3/8" locknuts (#5). NOTE: The mounting brackets (#4) may need to be turned in or out depending on sprayer frame width.
- 2. Mount the lock pin brackets (#6) to the boom carrier (#7) using four 1/2" x 1-1/4" bolts (#8) and four 1/2" locknuts (#9) make sure these bolts are inserted in the right direction as shown above. Place the lock pin (#14) & roll pin (#13) through the brackets (#6). Insert the lock spring (#12) and 7/16" flatwasher (#11) to the inside of the lock pin bracket and push the pin (#14) through. Secure the lock pin assembly with cotter pin (#10) between the washer and bracket. Make sure pin moves in and out freely and rotates down into the "latch out" position easily.
- 3. Before mounting the boom carrier to the main frame assembly, mount the UHMW wear pads (#16) to the boom carrier (#7) and boom carrier brackets (#15) using sixteen 1/4" x 1" flathead screws (#17) and sixteen 1/4" nuts (#18).
- 4. Now place the boom carrier (#7) on to the main frame assembly (#1) so that the lock pins are in the holes of the main frame. Loosely mount the boom carrier brackets (#15) to the boom carrier (#7) using eight 3/8" x 1-1/4" bolts (#2), six 3/8" x 1-1/2" bolts (#19), fourteen 3/8" flatwashers (#3) and fourteen 3/8" locknuts (#5).
- 5. Attach the two top pulley mounts (#23) to the main frame (#1) as shown using four 3/8" x 1-1/2" bolts (#2) and four 3/8" locknuts (#5). Attach the top pulley (#27), spacer (#26) and cable retainer bracket (#25) with 1/2" x 1-3/4" bolt (#24) and 1/2" locknut (#9). Assemble the pulley on the top left side of the height adjuster main frame. Adjust cable retainer brackets (#25) to always keep the cable in the pulley grove even when there is no tension on the cable.
- 6. Attach the bottom pulley mount (#28) to the center of the boom carrier (#7) using two 3/8" x 2-1/2" sq. U-bolts (#29) and two 3/8" locknuts (#5). Attach the pulley (#27) to the bottom pulley mount (#25), and spacer (#26), then secure with a 1/2" locknut (#9). Align this bracket so the cable runs straight down from the top, around the bottom pulley and back up to the rapidlink (#30).

REF.	PART		
NO.	NO.	QT	Y. DESCRIPTION
1.	05601	1	Height Adjuster Main Frame
2.	00523	23	3/8"-16UNC x 1-1/4" Hex Head Bolt Gr. 5
3.	00059	23	3/8" Flatwasher
4.		2	Boom Mounting Brackets (not included)
5.	02592	33	3/8"-16UNC Nylon Insert Locknut
6.	03340	2	Lock Pin Bracket
7.	03306	1	Boom Carrier
8.	00967	6	1/2"-13UNC x 1-1/4" Hex Head Bolt Gr.5
9.	02178	7	1/2"-13UNC Nylon Insert Locknut
10.	02363	2	5/32" x 1/14" Cotter Pin
11.	00205	2	7/16" Flatwasher
12.	02208	2	Lock Spring
13.	03099	2	Roll Pin (3/16" x 1")
14.	03342	2	Lock Pin
15.	03305	2	Boom Carrier Brackets
16. 17.	02946	8 16	UHMW Wear Pad 1/4"-20UNC x 1" Slotted Flat Head
18.	05732 00062	16	1/4"-20UNC X 1 Slotted Flat Head
19.	00062	6	3/8"-16UNC x 1-1/2" Hex Head Bolt Gr.5
20.	03345	1	Winch Mount Bracket
21.	00084	2	1/2" Lockwasher
22.	04967	1	Winch w/ disc brake - 1200 lb. cap. (w/ handle)
	04971	Ι'n	Replacement Handle only
23.	05607	2	Top Pulley Mount
24.	00482	3	1/2"-13UNC x 1-3/4" Hex Head Bolt Gr.5
25.	01838	3	Cable Retainer Bracket
26.	01839	3	1/2" I.D. x 5/8" Ig. Spacer
27.	01840	3	Pulley
28.	05609	1	Bottom Pulley Mount
29.	01887	2	3/8"-16UNC x 2-1/2" U-bolt
30.	04819	1	5/16" Rapid Link
31.	05611	1	3/16" Aircraft Cable x 20' lg. with thimble
		مام	ement parts by PART NO and DESCRIPTION

Please order replacement parts by PART NO. and DESCRIPTION.

(#28) ear, using one 1/2" x 1-3/4" bolt (#24), cable retainer bracket 7. Attach the winch mounting bracket (#20) to the height adjust main frame (#1) using two 1/2" x 1-1/4 bolts (#8) and two 1/2" lockwashers (#21). Mount the winch (#22) to the winch mounting bracket (#20), using three 3/8" x 1-1/4" bolts (#2), three 3/8" flatwashers (#3) and three 3/8" locknuts (#5).

CENTER SECTION BOOM CARRIER BREAKDOWN



			PARTS LIST
REF.	PART		
NO.	NO.	QT	/. DESCRIPTION
1.	03306	1	Boom Carrier
2.	03309	1	Boom Carrier Left Floater
3.	03310	1	Boom Carrier Right Floater
4.	03330	2	Spring
5.	03313	8	Pivot Bushing (2-7/8" long)
6.	03311	2	Linkage Plate
7.	03312	2	Auto-Level Linkage
8.	03331	1	Shock
9.	01338	8	1/2"-13UNC x 4-1/2" Hex Head Bolt Gr.5
10.	02178	14	1/2"-13UNC Nylon Insert Locknut
11.	01975	3	1/2"-13UNC x 5" Hex Head Bolt Gr.5
12.	04073	1	1/2"-13UNC x 3" Hex Head Bolt Gr.5
13.	03307	1	Left Auto-Level Sway Control Bracket
14.	03308	1	Right Auto-Level Sway Control Bracket
15.	03324	4	UHMW Wear Pad
16.	05732	4	1/4"-20UNC x 1" Slotted Flat Head
17.	02772	4	1/4"-20UNC Nylon Insert Locknut
18.	00516	4	1/4"-20UNC x 3/4" Slotted Flat Head
19.	00523	8	3/8"-16UNC x 1-1/4" Hex Head Bolt Gr.5
20.	00059	16	3/8" Flatwasher
22.	02592	23	3/8"-16UNC Nylon Insert Locknut
23.	03314	2	Center Section
24.	02945 01348	2	Auto-Level Sway Guide
25.	01346	1	Spring (1" O.D. x 3" long) Auto-Level Latch
26.	01903		3/8"-16UNC x 3-1/2" Hex Head Bolt Gr.5
27.	00199	Ι¦	Lock Pin (3/8" O.D. x 3-1/2" lg.)
28.	00133		1/8" Small Hair Pin
29.	03334	3	Center Nozzle Tube Mounting Plate
30.	01887	7	3/8"-16UNC x 2-1/2" Square U-bolt
31.	00909	3	5/16"-18UNC x 1-1/4" Sq. U-bolt
32.	03333	l ĭ	Center Nozzle Mounting Tube
33.	02802	6	5/16"-18UNC Nylon Insert Locknut
34.	03399	2	Bottom Center Support Bracket

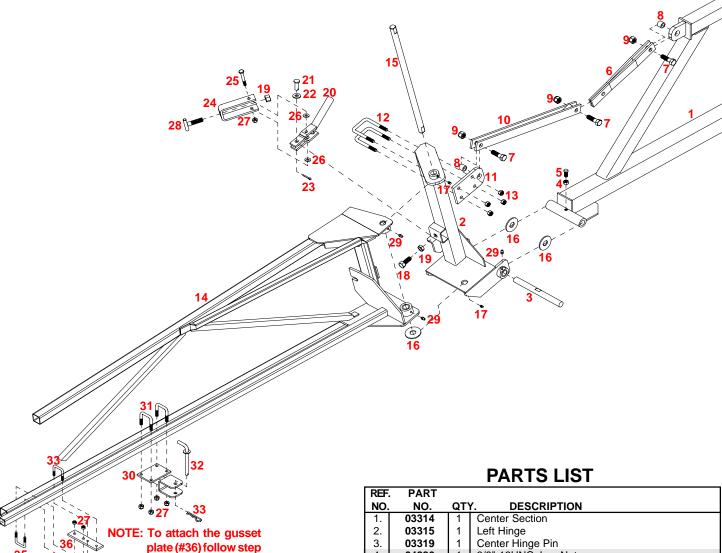
Please order replacement parts by PART NO. and DESCRIPTION.

frame (page 1) or mounting to the height adjust (pages 2 & 3). After the boom carrier is mounted begin assembling the center section.

2. Mount the left floater tube (#2) to the boom carrier (#1) using one 1/2" x 5" bolt (#11), pivot bushing (#5), and one 1/2" locknut (#10). Next mount the right floater tube (#3) to the boom carrier (#1) using one 1/2" x 5" bolt (#11), one pivot bushing (#5), and one 1/2" locknut (#10).

- 3. Place the auto-level springs (#4) between the left and right floater (#2 & 3) and the boom carrier (#1). Attach the left floater (#2) and right floater (#3) using two linkage plates (#6), two pivot bushings (#5), two 1/2" x 4-1/2" bolts (#9), and two 1/2" locknuts (#10).
- 4. Now mount the shock (#8) to the right floater (#3) using one 1/2" x 5" bolt (#11) and one 1/2" locknut (#10). Mount the opposite end of the shock to the boom carrier (#1) using one 1/2" x 3" bolt (#12) and one 1/2" locknut (#10).
- 5. Mount the auto-level linkage (#7) to the left floater (#2) using one 1/2" x 4-1/2" bolt (#9), one pivot bushing (#5), and one 1/2" locknut (#10). NOTE: Make sure the arrows on the linkage are up as shown above. Mount the auto-level linkage (#7) to the right floater (#3) using one 1/ 2" x 4-1/2" bolt (#9), one pivot bushing (#5), and one 1/2" locknut (#10).
- 6. Mount the center section onto the boom center section (#22). Secure the linkages (#7) on the right and left to the bottom of the boom center section (#22) using two 1/2" x 4-1/2" bolts (#9), two pivot bushings (#5) and two 1/2" locknuts (#10).
- 7. Attach the left and right auto-level sway control brackets (#13 & 14) to the boom carrier (#1) using six 3/8" x 1-1/4" bolts (#19), six 3/8" flatwashers (#20) and six 3/8" locknuts (#21). Next mount the UHMW wear pads (#15) to the sway control brackets (#13 & 14) using four 4" x 1" slotted flat head screws (#16) and four 1/4" locknuts (#17). Assemble the UHMW wear pads (#15) to the auto-level sway control guides (#23) and the bottom center support bracket (#34) using eight 1/4" x 3/4" slotted flat head screws (#18). Mount the sway control guides (#23) with UHMW wear pads to the right and left sway control brackets (#13 & 14) using two 3/8" x 1-1/4" bolts (#19), two 3/8" flatwashers (#20) and two 3/8" locknuts (#21). Bolt the top of the sway control guides and sway control brackets together using two 1/2" x 4-1/2" bolts (#9), two springs (#24) and two 1/2" locknuts (#10). Mount the bottom center support bracket (#34), with UHMW, to bottom tube of boom carrier (#1) using four 3/8" x 2-1/2" square u-bolts (#30), eight 3/8" flatwashers (#20) and eight 3/8" nylon insert locknuts (#21).
- 8. Assemble the center boom nozzle mounting plates (#29) to the center section (#22) as shown using three 3/8" x 2-1/2" sq. U-bolts (#30) and six 3/8" locknuts (#21). Next mount the center nozzle tube (#32) to the mounting plates (#29) using three 5/16" x 1-1/2" sq. U-bolts (#31) and six 5/16" locknuts (#33).

LEFT INNER WING PARTS BREAKDOWN



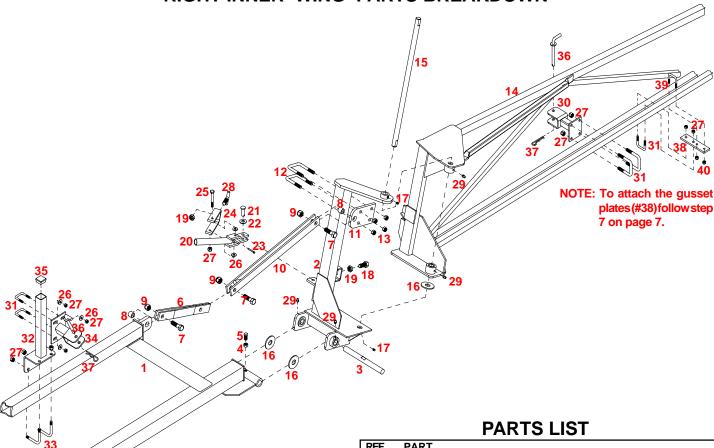
ASSEMBLY INSTRUCTIONS

- 1. Attach the upper offset linkage (#6) to center section (#1) using one 1/2" x 2" bolt (#7), bushing (#8) and one 1/2" locknut (#9).
- Next attach the lower linkage bracket (#10) to the upper offset linkage (#6) using one 1/2" x 2" bolts (#7) and one 1/2" locknut (#9).
- 3. Mount the left center hinge (#2) to the center section (#1). Secure with pin (#3), 3/4" machine washer (#16), 3/8" x 3/4" setscrew (#5) and 3/8" jam nut (#4).
- 4. Bolt the linkage mounting plate (#11) to the left center hinge (#2) as shown using two 3/8" x 2-1/2" U-bolts (#12) and four 3/8" locknuts (#13). Bolt the lower linkage bracket (#10) to the linkage mounting plate (#11) using one 1/2" x 2" bolt (#7), bushing (#8), and one 1/2" locknut (#9).
- and one 1/2" locknut (#9).

 5. Attach the left inner wing (#14) to the left center hinge (#2) with the 3/4" machine washer (#16) between the wing and hinge, using the center hinge pin (#15). Secure with two 5/16" x 1/2" setscrews (#17).
- Insert the 1/2" x 1-1/2" bolt (#18) and 1/2" nut (#19) into the center hinge (#2) as shown above.
- 7. Assemble the wing latch handle (#20) to the center hinge (#2) using the 7/16" clevis pin (#21), 3/8" flatwasher (#22) and secure with 5/32" x 1" cotter pin (#23). Next attach the wing latch channel (#24) to the wing latch handle (#20) using one 5/16" x 2-1/2" bolt (#25), two 5/16" flatwashers (#26), and one 5/16" locknut (#27). Next screw the tee bolt (#28) into the wing latch channel (#24) and secure with 1/2" jam nut (#19) on back side.
- 8. Bolt the wing storage bracket (#30) to the left wing approximately 23" from latch plate on the left wing, using two 5/16" x 2" sq. U-bolt (#35) and four 5/16" locknuts (#27).

REF.	PART		
NO.	NO.	QT	
1.	03314	1	Center Section
2.	03315	1	Left Hinge
3.	03319	1	Center Hinge Pin
4.	04886	1	3/8"-16UNC Jam Nut
5.	00095	1	3/8"-16UNC x 3/4" Square Head Setscrew
6.	00171	1	Upper Offset Linkage Bracket
7.	01253	3	1/2"-13UNC x 2" Hex Head Bolt Gr.5
8.	02491	2	Bushing (3/4" O.D. x 1/2" I.D. x 1/2" lg.)
9.	02178	3	1/2"-13UNC Nylon Insert Locknut
10.	00170	1	Lower Linkage Bracket
11.	03318	1	Linkage Mounting Plate
12.	05294	2	3/8"-16UNC x 2-1/8" Square U-bolt
13.	02592	4	3/8"-16UNC Nylon Insert Locknut
14.	03322	1	Left Inner Wing
15.	03321	1	Inner Hinge Pin (3/4" x 20")
16.	02534	3	3/4" x 14 Ga. Machine Washer
17.	00091	2	5/16"-18UNC x 1/2" Square Head Set Screw
18.	01254	1	1/2"-13UNC x 1-1/2" Hex Head Bolt Gr.5
19.	00640	2	1/2"-13UNC Jam Nut
20.	05309	1	Wing Latch Handle
21.	00080	1	7/16" x 1-1/4" lg. Clevis Pin
22.	00059	1	3/8" Flatwasher
23.	00185	1	5/32" x 1" lg. Cotter Pin
24.	05310	1	Wing Latch Channel
25.	04221	1	5/16"-18UNC x 2-1/2" Hex Head Bolt Gr.5
26.	00004	2	5/16" Flatwasher
27.	02802	3	5/16"-18UNC Nylon Insert Locknut
28.	03320	1	Latch Bolt
29.	04642	4	Zerk
30.	03335	1	Storage Bracket
31.	04822	3	1/4"-20UNC x 1-1/16" Square U-bolt
32.	00199	1	3/8" Dia. x 3-1/2" lg. Lock Pin
33.	00182	1	1/8" Small Hair Pin
34.	02772	6	1/4"-20UNC Nylon Insert Locknut
35.	00909	1	5/16"-18UNC x 1-1/4" Square U-bolt
36.	03537	1	Gusset Plate
	aca ardar r	ากไว	cement parts by PART NO, and DESCRIPTION

RIGHT INNER WING PARTS BREAKDOWN

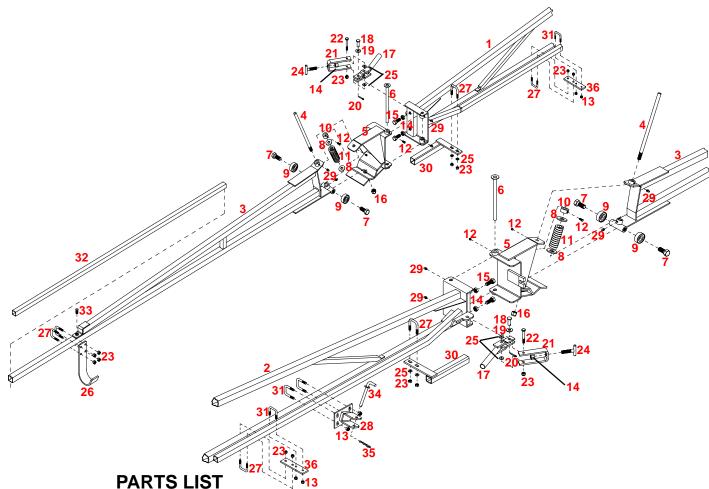


ASSEMBLY INSTRUCTIONS

- 1. Attach the upper offset linkage (#6) to center section (#1) using one 1/2" x 1-3/4" bolt (#7), bushing (#8) and one 1/2" locknut (#9).
- Next attach the lower linkage bracket (#10) to the upper offset linkage (#6) using one 1/2" x 1-3/4" bolts (#7) and one 1/2" locknut (#9).
- 3. Mount the right center hinge (#2) to the center section (#1). Secure with pin (#3), 3/4" machine washer (#16) and 3/8" x 3/4" setscrew (#5) and 3/8" nut (#4).
- 4. Bolt the linkage mounting plate (#11) to the right center hinge (#2) as shown using two 3/8" x 2-1/2" U-bolts (#12) and four 3/8" locknuts (#13). Bolt the lower linkage bracket (#10) to the linkage mounting plate (#11) using one 1/2" x 1-3/4" bolt (#7), bushing (#8), and one 1/2" locknut (#9).
- Attach the right inner wing (#14) to the right center hinge (#2) with the 3/4" machine washer (#16) between the wing and hinge, using the center hinge pin (#15). Secure with two 1/4" x 1/4" setscrews (#17).
- Insert the 1/2" x 1-1/2" bolt (#18) and 1/2" nut (#19) into the center hinge (#2) as shown above.
- 7. Assemble the wing latch handle (#20) to the center hinge (#2) using the 7/16" clevis pin (#21), 3/8" flatwasher (#22) and secure with 5/32" x 1" cotter pin (#23). Next attach the wing latch channel (#24) to the wing latch handle (#20) using one 5/16" x 2-1/2" bolt (#25), two 5/16" flatwashers (#26) and one 5/16" locknut (#27). Next screw the tee bolt (#28) into the wing latch channel (#24) and secure with 1/2" jam nut (#19) on back side.
- 8. Bolt the wing storage bracket (#30) to the right wing approximately 23" from latch plate on the left wing, using two 5/16" x 1-1/4" sq. U-bolt (#31) and four 5/16" locknuts (#27).
- 9. Mount all brackets in this step loosely in locations shown. When boom is complete, fold and adjust brackets to support the boom in the folded positon. Mount the wing storage upright (#32) to the top of the center section (#1) using two 5/16" x 2-1/2" L-bolts (#33) and four 5/16" locknuts (#27). Attach the storage cross tube (#34) to the storage upright (#32) using two 5/16" x 1-1/4" square u-bolts (#31), four 5/16" flatwashers (#26) and 5/16" nylon insert locknuts (#27). Place the 1-1/4" Cap Plug (#35) in the end of the upright (#32).

			I AICIO LIGI
REF.			
NO.	NO.	QT'	
1.	03314	1	Center Section
2.	03316	1	Right Hinge
3.	03319	1	Center Hinge Pin
4.	04886	1	3/8"-16UNC Jam Nut
5.	00095	1	3/8"-16UNC x 3/4" Square Head Setscrew
6.	00171	1	Upper Offset Linkage Bracket
7.	01252	3	1/2"-13UNC x 2" Hex Head Bolt Gr.5
8.	02491	2	Bushing (3/4" O.D. x 1/2" I.D. x 5/8" lg.)
9.	02178	3	1/2"-13UNC Nylon Insert Locknut
10.	00170	1	Lower Linkage Bracket
11.	03318	1	Linkage Mounting Plate
12.	05294	2	3/8"-16UNC x 2-1/8" Square U-bolt
13.	02592	4	3/8"-16UNC Nylon Insert Locknut
14.	03323	1	Right Inner Wing
15.	03321	1	Inner Hinge Pin
16.	02534	3	3/4" x 14 Ga. Machine Washer
17.	00091	2	5/16"-18UNC x 1/2" Square Head Set Screw
18.	01254	1	1/2"-13UNC x 1-1/2" Hex Head Bolt Gr.5
19.	00640	2	1/2"-13UNC Jam Nut
20.	05309	1	Wing Latch Handle
21.	08000	1	7/16" x 1-1/4" lg. Clevis Pin
22.	00059	1	3/8" Flatwasher
23.	00185	1	5/32" x 1" lg. Cotter Pin
24.	05310	1	Wing Latch Channel
25.	04221	1	5/16"-18UNC x 2-1/2" Hex Head Bolt Gr.5
26.	00004	6	5/16" Flatwasher
27.	02802	15	5/16"-18UNC Nylon Insert Locknut
28.	03320	1	Latch Bolt
29.	04642	4	Zerk
30.	03338	1	Storage Bracket
31.	00909	5	5/16"-18UNC x 1-1/4" Sq. U-bolt
32.	03437	1	Storage Upright Bracket
33.	05818	2	5/16"-18UNC x 2-1/2" L-bolt
34.	03438	1	Storage Cross Tube Bracket
35.	05188	5	1-1/4" Square Cap Plug
-	04739	2	1" Square Cap Plug
36.	00199	2	Lock Pin (3/8" O.D. x 3-1/2" lg.)
37.	00182	2	1/8" Small Hairpin
38.	03537	1	Gusset Plate
39.	04822	1	1/4"-20UNC x 1-1/16" Square U-bolt
40.	02722	2	1/4"-20UNC Nylon Insert Locknut

RIGHT AND LEFT OUTER WING PARTS BREAKDOWN



			PARIS LISI VI 13
REF.	PART		
NO.	NO.	QT	Y. DESCRIPTION
1.	03322	1	Left Inner Wing
2.	03323	1	Right Inner Wing
3.	03328	2	Right and Left Outer Wing
4.	03326	2	Breakaway Pin
5.	03325	2	Outer Breakaway Hinge
6.	03329	2	Outer Hinge Pin
7.	04051	4	5/8"-11UNC x 1-1/2" Hex Head Bolt Gr.5
8.	00085	4	1/2" Flatwasher
9.	00490	4	Breakaway Bearing
10.	03327	2	Lock Collar
11.	05318	2	Spring
12.	00694	6	1/4"-20UNC x 1/2" Square Head Set Screw
13.	02772	8	1/4"-20UNC Nylon Insert Locknut
14.	00640	6	1/2"-13UNC Jam Nut
15.	00967	4	1/2"-13UNC x 1-1/4" Hex Head Bolt Gr.5
16.	02178	2	1/2"-13UNC Nylon Insert Locknut
17.	05309	2	Wing Latch Handle
18.	08000	2	7/16" x 1-1/4" lg. Clevis Pin
19.	00059	2	3/8" Flatwasher
20.	00185	2	5/32" x 1" lg. Cotter Pin
21.	05310	2	Wing Latch Channel
22.	04221	2	5/16"-18UNC x 2-1/2" Hex Head Bolt Gr.5
23.	02802	18	5/16"-18UNC Nylon Insert Locknut
24.	03320	2	Latch Bolt
25.	00004	4	5/16" Flatwasher
26.	05297	2	Tip Protector
27.	00909	8	5/16"-18UNC x 1-1/4" Square U-bolt
28.	03439	1	Storage Bracket
29.	04642	4	Zerk
30.	05319	2	Tip Offset Bracket
31.	04822	4	1/4"-20UNC x 1-1/16" Square U-bolt
32.	05171	2	Wing Tip Extension for 50' boom (optional)
33.	00209	2	3/8"-16UNC x 1" Square Head Set Screw
34.	00199	1	Lock Pin (3/8"O.D. x 3-1/2" lg.)
35.	00182	1	1/8" Small Hairpin
36.	03537	2	Gusset Plate

Please order replacement parts by PART NO. and DESCRIPTION.

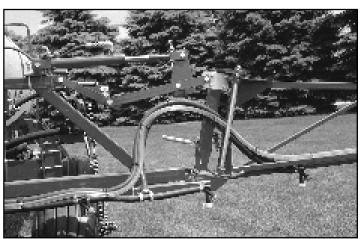
ASSEMBLY INSTRUCTIONS

- 1. Attach the outer wing (#3) to the breakaway hinge (#5). Place bearings (#9), 1/2" flatwashers (#8) and 1/2" x 1-3/4" bolts (#7) to the outer wing (#3). Slide outer wing (#3) on to the breakaway hinge (#5). Insert breakaway hinge pin (#4) through the outer wing top bushing through the breakaway hinge top bushing, through the lock collar (#10), through the 1/2" flatwasher, spring (#11) and 1/2" flatwasher (#8), through the bottom bushing on the outer wing and through the breakaway hinge, place 1/2" locknut (#16) on the hinge pin (#4) do not tighten. Tighten the 1/4" x 1/2" sq. head setscrew (#12) on the lock collar (#10), now tighten the 1/2" locknut (#16) to compress breakaway spring, the spring should be compressed to about 3-1/4". Do not over compress.
- 2. Assemble the outer wing and breakaway hinge to the inner left and right wing (#1 & 2). Insert hinge pin (#6) through the bushings and secure using 1/4" x 1/2" square head set screw (#12).

 3. Insert four 1/2" x 1-1/4" bolts (#15) and four 1/2" jam nut (#14) into
- the inner left and right wing (#1 & 2).
- Assemble the wing latch handle (#17) to the inner right and left wing (#1 & 2) using the 7/16" clevis pin (#18), 3/8" flatwasher (#19) and secure with 5/32" x 1" cotter pin (#20). Next attach the wing latch channel (#21) to the wing latch handle (#17) using one 5/16" x 2-1/2" bolt (#22), two 5/16" flatwashers (#25) and one 5/16" locknut (#23). Next screw the tee bolt (#24) into the wing latch channel (#21) and secure with 1/2" nut (#14) on back side.
- 5. Bolt the wing storage bracket (#28) to the right inner wing approximately 30" from latch plate, using two 1/4" x 1-1/16" sq. Ubolt (#31) and four 1/4" locknuts (#13).
- 6. Bolt the wing tip protector (#26) to the outer right and left wing (#3) approximately 17" from wing tip. Secure using four 5/16" x 1-3/8" sq. U-bolts (#27) and eight 5/16" locknuts (#23).
- 7. Attach the gusset plate to the bottom wing tube and the nozzle tube, center them as close as possible, between the hinge points and the welded in gusset. Attach them using one 5/16" x 1-1/4" Square U-bolt (#27), two 5/16" Locknuts (#23), one 1/4" x 1-1/16" Square U-bolt (#31) and two 1/4" Locknuts (#13).

TIP PLACEMENT

- 1. Marking location of boom clamps: Mark the clamp locations by starting at the center of the center boom section. From this mark, locate 20 inch spaces to both ends of the boom.
- 2. Fasten preassembled boom lines: Fasten the boom clamps (#3) on the boom so the sprayer tip will be on the back side of the boom. The wing extensions for the 60 foot boom are 1 inch tubing. Therefore, this boom will have two size clamps.



Feeder Line Routing and Tip Placement for Inner Hinge Feeder Line Routing and Tip Placement for Outer Hinge

NOTE: 40' Boom 25 Tips 45' Boom 27 Tips

50' Boom 31 Tips(w/ 1" Ext.Tube)

BASIC PLUMBING PARTS LIST

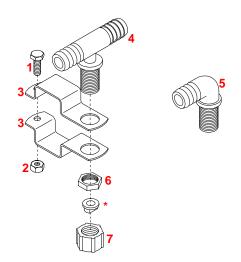
REF.	PART	
NO.	NO.	DESCRIPTION
-	340RB	3/4" Rubber Hose
-	B12H	3/4" Gear Clamp
-	NHT11	Nylon Hose Ties

Please order replacement parts by PART NO. and DESCRIPTION.



CONVENTIONAL NOZZLES AND BOOM CLAMPS

1-1/4" BOOM CLAMP PARTS LIST



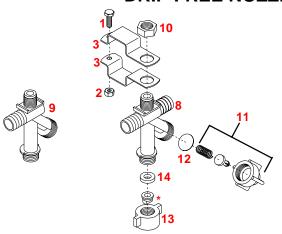
REF.	PART	
NO.	NO.	DESCRIPTION
-	B11 114	1-1/4" Boom Clamp Assembly
1.	89000	1/4"-20UNC x 3/4" Hex Head Bolt
2.	00062	1/4"-20UNC Hex Nut
3.	00337	1-1/4" Boom Clamp
-	00338	1" Boom Clamp

3/4" NOZZLE PARTS LIST

REF.	PART	
NO.	NO.	DESCRIPTION
4.	NTL34	3/4" Nozzle Tee
5.	NTT34	3/4" Nozzle Elbow
6.	B12	Nut
*		Tip (specify tip size) (not included)
7.	8027	11/16" FPS Cap

Please order replacement parts by PART NO. and DESCRIPTION.

DRIP FREE NOZZLES AND BOOM CLAMPS



3/4" NOZZLE PARTS LIST

	O / ¬	THOUSE I AIRTO LIGI
REF.	PART	
NO.	NO.	DESCRIPTION
-	DF34NTL	3/4" Nozzle Elbow & Check Valve Assembly
-	DF34NTT	3/4" Nozzle Tee & Check Valve Assembly
8.	DF34T	3/4" Nozzle Tee
9.	DF34E	3/4" Nozzle Elbow
10.	DFB12	Nut
11.	DFCP	Spring Retainer Cap Assembly
12.	DFDV	Diaphragm (viton)
13.	DFFD	Floodjet Cap (red)
-	DFFT	Flat Cap (yellow)
14.	DFGE	Gasket (EPDM)
*		Tip (specify tip size) (not included)

ADJUSTMENT PROCEDURES

After the boom is completely assembled and before attempting to fold the boom for the first time, the boom should be adjusted so it lays straight both horizontally and vertically. There are several adjustment points built into the boom for this purpose.

- All adjustments must be done with the boom unfolded and latched. Begin by adjusting the right and left boom carrier brackets (#13 & 14 on page 4). Adjust the brackets (#13 or 14) forward or backward against the top tube of the boom center section so as to act as a guide for the center section to keep it straight up and down, not tilting forward or backwards. When the auto-level sway control brackets are adjusted and tightened, the 1/2" x 4-1/2" bolt through the top of the sway guide can be adjusted to snug the bracket against the rear side of the top of the center section tube. This adjustment should not restrict the side to side sway of the boom but be enough to dampen it and support the boom from excessive rear forces.
- 3. The wings on either side must be adjusted horizontally by moving the linkage mounting plate (#10 on pages 5 & 6) up or down on the inner hinge to get the wing level.
- 4. The outer breakaway hinge can be adjusted for breakaway tension by tightening or loosening the 1/2" locknut (#16 on page 7). You may have to adjust the lock collar down to get more spring compression. The outer wings should be set to breakaway after a 50 lb force or better is applied to the wing tips. The springs should not be compressed more than 3-1/4 inches.
- 5. At this time the latches should be adjusted at each hinge so the wings will be locked securely after unfolding. There are 1/2" bolts at each hinge point that act as a stop. These stop bolts must be adjusted in or out to straighten the lay of the boom. After these bolts are adjusted, the tee bolt in the clevis end of the latch should be adjusted to securely latch each wing. It is important that the latch locks over-center otherwise there will be problems with it coming unlocked. If adjustment is required with the latch not locking over-center you must grind or file down the latch stop which will then let the latch go over-center and lock securely.

- 6. After the boom is setup and the storage brackets are placed in their approximate location final adjustments can be made by folding the boom, in the proper procedure (see page 10), slide the storage brackets into the exact location when the wings are folded and tighten in place.
- 7. If your flotation boom is equipped with a manual or hydraulic height adjuster the following adjustments must be made. Adjust the boom carrier brackets inwards by tightening the 3/8" x 1-1/2" bolts that protrude sideways out through the carrier bracket and the boom carrier, when these brackets are snug on the height adjust tubes tighten the 3/8" x 1-1/4" to lock these plates tight against the boom carrier. Make sure the assembly slides up and down freely on the tubes. After this is done adjust the height adjust lock pin brackets. Carefully raise or lower the boom carrier so the lock pins are lined up with holes in the upright tube. Securely block the carrier at this level and adjust the latch pin brackets so the pin will latch securely and easily in the holes in the upright tubes. Tighten the 1/2" bolts holding these lock brackets securely and make sure the pins are securely seated in the holes before removing the blocks.

Note: Always make sure the lock pins are securely locked after any type of height adjustment or before any work is done on the boom.

8. Make sure all fasteners are tight or at the proper tension, and hoses are not in the path of any folding procedures.

ADJUSTMENTS FOR FOLDING AND STORAGE

If the boom is adjusted correctly it should fold and store very easily. It is important to lock the sway control in its storage position before beginning the folding procedures. If the boom has hydraulic wing tip leveling, it is important not to operate these cylinders after the wings are folded as damage may result to the boom.

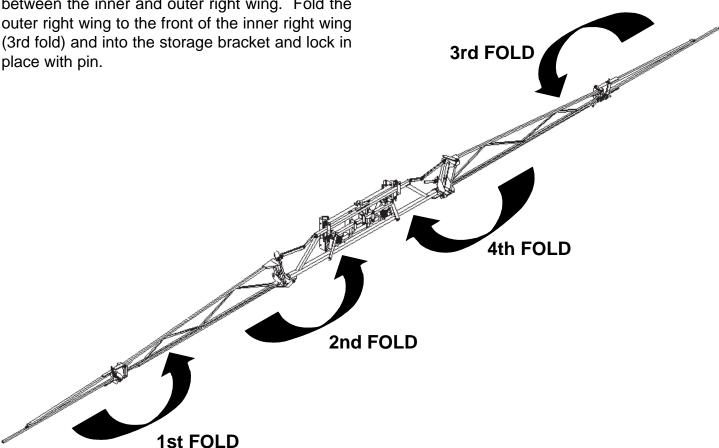
- 1. Begin the folding operation at the left side (standing behind the boom looking forward) (1st Fold) of the boom. Unlock the latch and fold the outer wing into the storage bracket and lock in place with pin. Make sure at this time and at every folding and unfolding operation that the hoses and tips do not interfere or bind around any corners. During all folding operations you must support the wings until they are in the storage brackets, otherwise extreme twisting forces will be created and possibly damage or twist the boom.
- 2. Next unlock the latch on the inner left wing (2nd fold) and pull the outer left wing and the inner left wing back and around to fold to the rear of the center section and into the storage bracket and lock in place with pin.
- 3. On the right side outer wing unlock the latch between the inner and outer right wing. Fold the outer right wing to the front of the inner right wing (3rd fold) and into the storage bracket and lock in

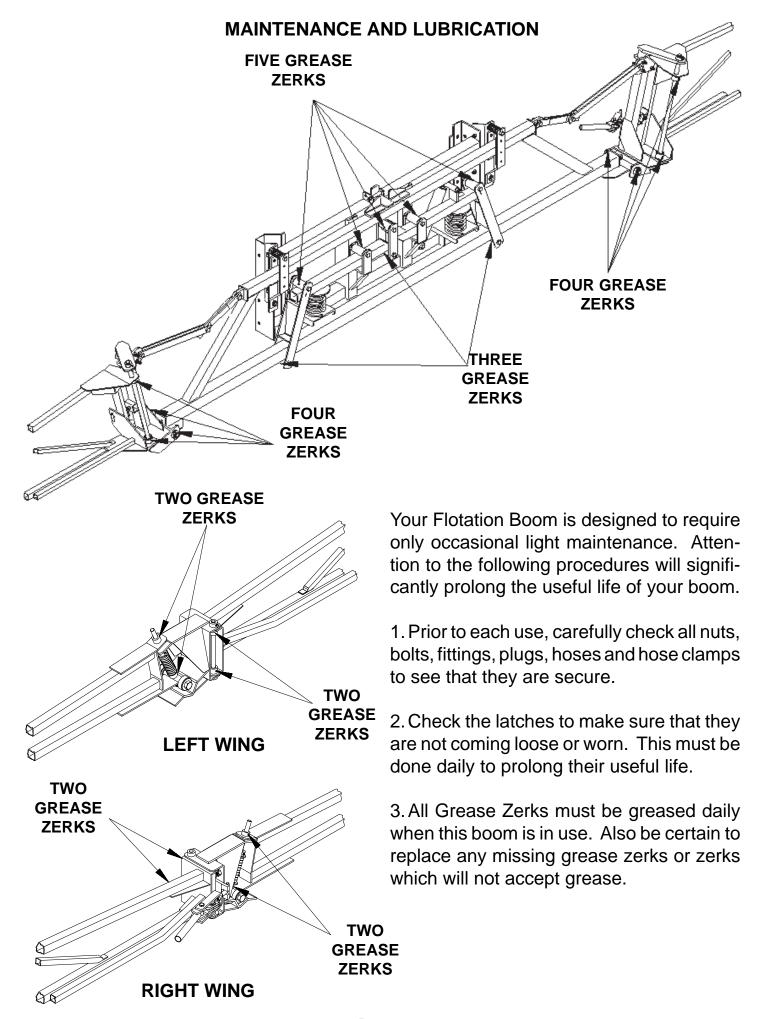
4. Finally unlock the latch between the center section and inner right wing. (4th fold) Fold the inner right wing and outer right wing back and around to fold to the rear of the center section and into the storage bracket and lock in place with pin. At this time the boom is completely folded and ready for transport.

MAKE SURE ALL PINS ARE LOCKED IN PLACE WITH HAIR PINS.

CHECK ALL HOSES AND TIPS TO MAKE SURE THEY ARE NOT INTERFERING OR HUNG UP ON ANY HINGES OR BOLTS.

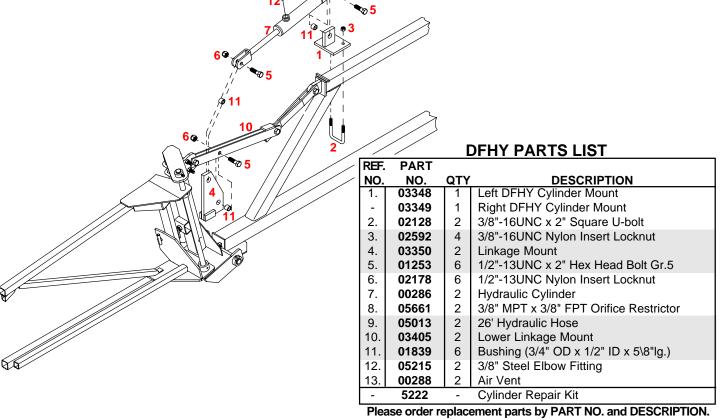
DO NOT OPERATE THE HYDRAULIC WING TIP LEVELING WHEN THE BOOM IS FOLDED (if equipped).



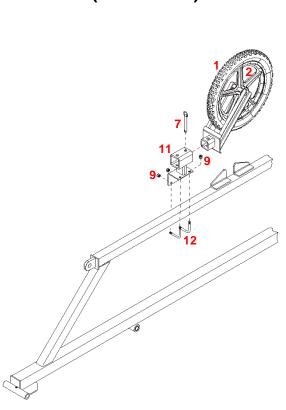


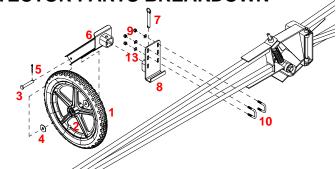
Page 11

(OPTIONAL) HYDRAULIC BOOM LEVELING PARTS BREAKDOWN



(OPTIONAL) WHEEL TIP PROTECTOR PARTS BREAKDOWN





DFBTP PARTS LIST

REF.	PART		
NO.	NO.	QTY	DESCRIPTION
-	5328	2	16" Nylon Rim Assembly with Tire & Tube
1.	04744	1	16" x 2-1/8" Rubber Tire with Tube
2.	04743	1	16" Glass Filled Nylon Rim with Bearing
3.	05619	2	Pin (1/2" x 3" lg.)
4.	02384	4	Machine Washer (1/2" ID x 14 GA.)
5.	00185	2	5/32" x 1 Cotter Pin
6.	05564	2	Wheel Fork
7.	05328	2	1/2" x 3" lg. Ball Lock Hitch Pin
8.	05566	2	Wing Mounting Plate
9.	02802	12	5/16"-18UNC Nylon Insert Locknut
10.	00909	4	5/16"-18UNC x 1-1/4" Square U-bolt
11.	05567	1	Transport Storage Bracket
12.	05818	2	5/16"-18UNC x 2-1/2 L-bolt
13.	00004	8	5/16" Flatwasher

SPRAYER CALIBRATION PROCEDURES

NOTE: To avoid wind drift, use lower pressure and higher spray volume.

Guidelines For Sprayer Calibration

Before calibrating your sprayer, first determine whether each nozzle is delivering at a uniform rate. Place quart jars under all nozzles and watch as they fill up. The level should rise uniformly and take the same time (within 10%) for all nozzles to fill the jars. Replace any nozzle showing a discharge rate different from the others.

Calibrating the Sprayer

- 1. Mark off 660 feet (1/8 mile).
- 2. Fill the tank with water.
- 3. Set the sprayer to your desired operating pressure.
- 4. Turn the sprayer on and drive at the constant speed you will be spraying. Calibration on a road or unplowed field will give different results than on soft cultivated ground. Note tachometer reading so same speed can be maintained later.
- 5. Measure the amount of water it takes to refill the tank completely.
- 6. Calculate the amount applied:

Number of gallons used x 66 (factor) Gallons applied Spray Swath in Feet per acre

Example: If 10 gallons are used in 660 feet and the spray swath is 40 feet, spraying rate is 16.5 gallons per acre.

$$\frac{10 \times 66}{40} = \frac{660}{40}$$
 or 16.5 gallons per acre

7. To calculate the amount of chemical to put in the tank:

Example: If a 500 gallon tank is used and 16.5 gallons per acre are applied, one tank will cover 30.3 acres. If three pounds of chemical are required per acre, then 90 pounds of chemical is required per tankful.

$$\frac{500}{16.5}$$
 = 30.3 acres covered then;

3 lbs. (gal.) x 30.3 = 90 lbs. (gal.) per tankful

To determine GPA at other nominal speed.

Tractor	Multiply by			
Speed	Speed Factor			
4 mph	1.25			
5 mph	1.00			
6 mph	.83			
7.5 mph	.67			
10 mph	.50			

Sprayer Tips

FLAT SPRAY NOZZLE for Broadcast Spraying

Nozzle	Liquid	Nozzle	Gallons Per Acre			
No.		Capacity	Based on 20" Nozzle Spacing			
140.	in PSI	in GPM	4	5	7.5	10
			MPH	MPH	MPH	MPH
XR8001VS X	20	.07	5.3	4.3	2.8	2.2
	25	.08	5.9	4.7	3.1	2.4
	30	.09	6.4	5.1	3.4	2.6
	40	.10	7.4	6.0	4.0	3.0
XR80015VS X	20	.11	7.8	6.3	4.3	3.2
	25	.12	8.8	7.1	4.7	3.6
	30	.13	9.7	7.7	5.2	3.9
XR8002VS X	40 20	.15 .14	11.1	8.9 8.4	6.0	4.5 4.2
XK8002V5 X	20 25	.14	10.5 11.8	9.4	5.6 6.3	4.2 4.7
	30	.16	12.9	10.3	6.9	5.2
	40	.20	14.8	11.8	7.9	5.9
XR8003VS X	20	.21	15.7	12.6	8.4	6.3
/ COOCOVO X	25	.24	17.6	14.1	9.4	7.1
	30	.26	19.0	15.4	10.3	7.7
	40	.30	22.0	17.8	11.8	8.9
XR8004VS X	20	.28	21.0	16.8	11.2	8.4
	25	.32	24.0	18.7	12.5	9.4
	30	.35	26.0	21.0	13.7	10.3
	40	.40	30.0	24.0	15.8	11.9
XR8005VS X	20	.35	26.0	21.0	14.0	10.5
	25	.40	29.0	23.0	15.7	11.7
	30	.43	32.0	26.0	17.2	12.9
VD0000V0 V	40	.50	37.0	30.0	19.8	14.9
XR8006VS X	20	.42	31.0	25.0	16.9	12.6
	25	.47 .52	35.0	28.0	18.7	14.1
	30 40	.52 .60	39.0 45.0	31.0 36.0	21.0 24.0	15.5 17.8
XR8008VS X	20	.56	42.0	34.0	22.0	17.0
A COUNTY OF A	25	.63	47.0	37.0	25.0	19.0
	30	.69	52.0	41.0	27.0	21.0
	40	.80	59.0	48.0	32.0	24.0
8010SS X	20	.70	53.0	42.0	28.0	21.0
	25	.78	59.0	47.0	31.0	24.0
	30	.86	64.0	51.0	34.0	26.0
	40	1.00	74.0	59.0	40.0	30.0

To determine GPA for solutions other than water, determine the weight per gallon or specific gravity and use the following conversion table.

Weight per Gallon	Specific Gravity	Multiply By
7.0 lbs.	.84	1.09
8.0 lbs.	.96	1.02
8.34 lbs. (water)	1.00	1.00
9.0 lbs.	1.08	.96
10.0 lbs.	1.20	.91
11.0 lbs.	1.32	.87
12.0 lbs.	1.44	.83

SPRAYER CHECK LIST

Down time in the field caused by breakdowns is costly and time consuming. Many breakdowns can be eliminated by periodic equipment maintenance. By spending time running over this checklist before seasonal spraying application time and following proper after season care, you can save time and money later on.



Keep hands, feet, and loose clothing away from rotating parts.

Wear the protective clothing recommended by your chemical and fertilizer manufacturer when working with chemicals.

Be sure rear safety stand is lowered before unhooking sprayer from tractor, if the sprayer is equipped with this stand.

CHECK Before Going To The Field:

1. NOZZLES

grooves in or near the tip opening.

2. HOSES

Check all hoses for worn or soft spots. Be sure all hose clamps are tightened. Be sure no hoses are kinked or pinched. Check for leakage in any of the lines.

3. **BOOM HINGES**

Clean the hinges and grease to help the breaking action of the boom.

4. REPLACEMENT PARTS

Replace all worn or damaged parts.

NOTE: Dethmers Manufacturing Company does not and will not make any recommendations concerning the application of various chemicals or solutions. These recommendations relate to either amount or procedure of materials applied. If you have any guestions regarding the application of certain chemicals or solutions, contact your chemical supplier and follow chemical manufacturer recommendations.



After Season Care

NOTE: It is important that when cleaning the sprayer Check the tip for excessive wear by checking for one wears proper safety equipment. See your chemical or fertilizer package for this information.

- 1. After spraying chemicals, run water mixed with ammonia through the tank, pump, and all hose hookups. If wettable powder dries out in the system, it is very difficult to put back into suspension and can cause malfunction, damage or injury.
- 2. Disassemble the tips and rinse with water or cleaning solution. (Appropriate for chemical sprayed).
- 3. Clean the tip opening with a wooden toothpick. Never use wire or a hard object that could distort the opening.
- 4. Water rinse and dry the tips before storing.
- 5. Be sure to dispose of all unused chemicals or solutions in a proper and ecologically sound manner.



DETHMERS MFG. COMPANY

P.O. BOX 189 4010 320 th St., BOYDEN, IA. 51234 PH: (712) 725-2311 or (712) 725-2302

FAX: (712) 725-2380 TOLL FREE: 1-800-54DEMCO (1-800-543-3626)