



#### 45' MANUAL-FOLD BOOM

Part No. 40868

#### SELF-LEVELING BOOM - Introduction

#### Foreword

This symbol identifies important safety messages. When you see it, read the message that follows and be alert to the possibility of personal injury.

Remember, safety instructions stated in this manual are for your protection. Read them carefully and follow them closely when working around or using this machine.

Read and study this manual completely before attempting to operate this implement. Take this manual to the field for handy reference when operating, adjusting, or servicing your machine.

When referenced, "Right-Hand" (RH) and "Left-Hand" (LH) side of the machine are determined by standing behind the machine and facing in the direction of travel.



#### **SELF-LEVELING BOOM** — Introduction

#### **Product Information**

All products manufactured by Unverferth Mfg. Co., Inc. are warranted to be free from material and workmanship defects for one full year from time of consumer delivery. Your local dealer will gladly assist you with any warranty questions.

Please fill out and retain this portion for your records. The serial number decal is located on the top of the center section frame as shown below.

Purchase Date	Model	Serial No

Dealer \_\_\_\_\_ City \_\_\_\_\_

Dealer Contact \_\_\_\_\_ Phone \_\_\_\_\_



#### IMPORTANT

• The information, specifications, and illustrations in the manual are based on information available at the time it was written. Due to continuing improvements in the design and manufacture of Unverferth products, all specifications and information contained herein are subject to change without notice.

## SELF-LEVELING BOOM - Introduction

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#### SELF-LEVELING BOOM — Safety

#### **General Hazard Information**

No accident-prevention program can be successful without the wholehearted cooperation of the person who is directly responsible for the operation of the equipment.

A large number of accidents can be prevented only by the operator anticipating the result before the accident is caused and doing something about it. No power-driven equipment, whether it be transportation or processing, whether it be on the highway, in the field, or in the industrial plant, can be safer than the person who is at the controls. If accidents are to be prevented--and they can be prevented--it will be done by the operators who accept the full measure of their responsibility.

It is true that the designer, the manufacturer, and the safety engineer can help; and they will help, but their combined efforts can be wiped out by a single careless act of the operator.

It is said that, "the best kind of a safety device is a careful operator." We, at Unverferth Mfg. Co., Inc. ask that you be that kind of operator.



SIGNAL WORDS

REMEMBER: THINK SAFETY A CAREFUL OPERATOR IS THE BEST INSURANCE AGAINST AN ACCIDENT!

A DANGER

INDICATES AN EXTREMELY HAZARDOUS SITUATION OR ACTION THAT WILL RESULT IN SERIOUS INJURY OR DEATH.



INDICATES A HAZARDOUS SITUATION OR ACTION THAT COULD RESULT IN SERIOUS INJURY OR DEATH.



INDICATES AN UNSAFE SITUATION OR ACTION THAT MAY RESULT IN PERSONAL INJURY.

IMPORTANT

Is used for instruction on operating, adjusting, or servicing a machine.

#### SELF-LEVELING BOOM - Safety



• REPLACE LOST, DAMAGED, PAINTED, OR UNREADABLE DECALS IMMEDIATELY. IF PARTS THAT HAVE DECALS ARE REPLACED, ALSO MAKE SURE TO INSTALL NEW DECALS. THESE DECALS INFORM AND REMIND THE OPERATOR WITH OPERATIONAL INFORMATION AND SAFETY MESSAGES.



#### **SELF-LEVELING BOOM** — Safety

#### **Following Safety Instructions**

- Read and understand this operator's manual before operating.
- All machinery should be operated only by trained and authorized personnel.
- To prevent machine damage, use only attachments and service parts approved by the manufacturer.
- Always shut tractor engine off and remove key before servicing.
- Avoid personal attire such as loose fitting clothing, shoestrings, drawstrings, pants cuffs, long hair, etc., that may become entangled in moving parts.
- Do not allow anyone to ride on the implement. Make sure everyone is clear before operating machine or towing vehicle.

#### **Before Servicing**

• Avoid working under an implement; however, if it becomes absolutely unavoidable, make sure the implement is safely blocked.



- Ensure that all applicable safety decals are installed and legible.
- Check all spray equipment for leaks. Repair any leaks before beginning or resuming operation.
- Residual pressure may exist in sprayer plumbing even when unit is not in use. Relieve pressure before servicing any plumbing.

#### **Before Operating**

- Always make certain everyone and everything is clear of the machine before beginning operation.
- Ensure that all applicable safety decals are installed and legible.
- When operating sprayers on sidehill conditions, it is recommended that the wheel spacing be set as wide as possible for stability.
- Hitch sprayer to towing vehicle and clear all personnel from the surrounding area before folding and unfolding wings.
- Ensure tank access covers are fully closed before beginning or resuming operation.
- Residual pressure may exist in sprayer plumbing even when unit is not in use. Relieve pressure before servicing any plumbing.

#### **During Operation**

- Regulate speed to field conditions. Maintain complete control at all times.
- Never service or lubricate equipment when in operation.
- Keep away from overhead power lines. Electrical shock can cause serious injury or death.
- Use extreme care when operating close to ditches, fences, power lines, or on hillsides.
- Do not leave equipment unattended with engine running.

#### **Before Transporting**

• Check for proper function of all available transport lights. Make sure that all reflectors are clean and in place on machine. Make sure that the SMV emblem and SIS decal are visible to approaching traffic.

#### **During Transport**

- Comply with all laws governing highway safety when moving machinery.
- Use transport lights as required by all laws to adequately warn operators of other vehicles.
- Use good judgment when transporting equipment on highways. Regulate speed to road conditions and maintain complete control.
- Maximum transport speed of this implement should never exceed 20 mph as indicated on the machine. Maximum transport speed of any combination of implements must not exceed the lowest specified speed of the implements in combination. Do not exceed 10 mph during off-highway travel.
- Slow down before making sharp turns to avoid tipping. Drive slowly over rough ground and side slopes.
- It is probable that this implement is taller, wider, and longer than the towing vehicle. Become aware of and avoid all obstacles and hazards in the travel path of the equipment, such as power lines, ditches, etc.

#### **Chemical Hazards**

- Always wear personal protective equipment when working with or near chemicals. This equipment includes, but is not limited to: protective eye wear, gloves, shoes, socks, long-sleeved shirt, and long pants. Additional protection may be required for many types of chemicals.
- Spray tanks may contain residual toxic chemicals. DO NOT ENTER SPRAY TANK FOR ANY REASON WITHOUT WEARING PROPER VENTILATION EQUIPMENT. Failure to do so may result in asphyxiation and death.
- Seek and receive chemical product training prior to using agricultural chemicals
- Read and understand the entire label of every chemical being applied with this sprayer.
- Avoid breathing spray mist or vapor.
- Wash hands and exposed skin immediately after contact with spray/fertilizer solution and application equipment.
- Remove clothing immediately if chemicals penetrate clothing and contact skin. Wash thoroughly and put on clean clothing.
- Dispose of unused chemical in accordance with chemical label directions and local/national regulations.

#### SELF-LEVELING BOOM — Safety

#### **Preparing for Emergencies**

- Keep a first aid kit and properly rated fire extinguisher nearby.
- Keep emergency numbers for fire, rescue, and poison control personnel near the phone.





# SELF-LEVELING BOOM — Safety

#### Notes

# SECTION II Set Up & Maintenance

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#### SELF-LEVELING BOOM — Set Up & Maintenance

#### Set Up Instructions

1. Park the unit on a firm level surface. Set the towing vehicle parking brake, shut off the engine, and remove the ignition key.



- 2. Bolt H-Frame to frame of sprayer by using 11 1/2" and 7 1/2" angles. Use 1/2" x 1 1/2" and 1/2" x 3 1/2 bolts, lock washers and nuts.
- 3. Bolt pivot plates on center section using 3/8"-16UNC x 2 1/2" bolts, lock washers, and nuts. Hand tighten at this time.
- 4. Assemble wing to center section with 3/4" x 21 1/4" threaded rod. Drop the threaded rod (with threads down) through top wing pivot and then the center section top pivot. Once the rod has passed through the center section top pivot, assemble the collar. With the collar installed on the shaft, make sure set screw hole is lined up with the dimple in the shaft. Install the set screw and tighten to engage the dimple in the shaft. Next, attach the 3/4" flat washer, spring, bottom pivot of wing and then pivot plate sleeve. Add a 3/4" flat washer and start 3/4" nut. Tighten 3/4" nut onto the 3/4" threaded rod and tighten to current nut locking the nut in place.



- 5. To straighten wings, hold wing in desired operating position, front to back, up and down, and tighten all pivot plate bolts.
- 6. Grease all grease zerks daily.
- 7. Assemble nozzle clamps and hoses in desired position for application of sprayer.

#### SELF-LEVELING BOOM - Set Up & Maintenance

#### **Changing Breakaway Wheels or Breakaway Wheel Bolts**

- 1. Loosen the 3/4" jam nuts on the threaded rod which will relieve the tension on the spring.
- 2. Loosen the set screws that lock the wheel bolts in place and remove the wheel bolt. This will also allow the wheel to be removed.
- 3. Replace the wheel bolt, wheel, thrust bearing, and thrust washers as shown on the previous page.
- 4. Tighten wheel bolt so it turns tightly. Wheel should not spin freely.
- 5. Tighten set screws to lock wheel bolts in place.
- 6. Tighten 3/4" jam nuts on threaded rod and compress spring to 7 1/8" as shown in the figure below.



7. Grease all grease zerks daily.

## SELF-LEVELING BOOM - Set Up & Maintenance

#### Notes

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# Hydraulic Lift Assist Components



# Hydraulic Lift Assist Components

ITEM	PART NO.	QTY.	DESCRIPTION	NOTES
	TA102073	-	Hydraulic Boom Lift Kit	Includes Items 1 through 14, 16, 18, 19, 20
1	TA540117B	1	Hydraulic Lift-Top Tower	
2	TA510081	1	Spring, 1 1/16" I.D.	
3	TA540119B	1	Spring Ride Pin	
4	9392-206	1	Roll Pin, 1/2" Dia. x 1 3/4"	
5	9392-140	1	Spring Pin, 1/4 x 2	
6	9390-101	8	Hex Bolt 1/2-13UNC x 1 1/2	
7	TA500470	8	1/2" I.D. External Star Washer	
8	TA520060	2	Slide Guide Rails	
9	9390-100	6	Hex Bolt 1/2-13UNC x 1 1/4	
10	9395-010	6	Hex Jam Nut 1/2-13UNC	
11	TA580222B	1	Hydraulic Assist Frame Mount	
12	9003535	1	Cylinder 1 1/8 x 20	
13	9390-107	1	Hex Bolt 1/2-13UNC x 3	
14	9398-016	1	Locknut 1/2-13UNC	
16	TA300690	1	Hydraulic Hose 1/4" Dia. x 300	
17	TA580021B	1	Self-Leveling H-Frame	
18	TA510000	2	U-Bolt 1/2-13UNC x 3 1/4 x 4	3000 PSI
19	9404-025	4	Lock Washer 1/2"	
20	9394-010	4	Hex Nut 1/2-13UNC	
21	9004647	1	Seal Kit	Not Shown

## **Manual Lift Assist Components**



# Manual Lift Assist Components

ITEM	PART NO.	QTY.	DESCRIPTION	NOTES
	TA102072	-	Self-Leveling Boom Winch Kit	Includes Items 1 through 23
1	TA520060	2	Winch Bar	
2	9390-057	4	Capscrew 3/8"-16UNC x 1 1/2"	Grade 5
3	9394-006	4	Hex Nut 3/8"-16UNC	
4	9405-076	2	Flat Washer 3/8" USS	
5	96709	A/R	Cable 3/16" Dia.	Specify Length in Feet
6	TA0-902635-0	2	Cable Clamp For 3/16" Cable	
7	9404-021	4	Lock Washer 3/8" I.D.	
8	TA510000	2	U-Bolt 1/2"-13UNC x 3.25" x 4 1/2"	
9	9800	8	Locknut 1/2"-13UNC	
10	9390-103	1	Capscrew 1/2"-13UNC x 2"	Grade 5
11	9398-016	1	Elastic Stop Nut 1/2"-13UNC	
12	9405-088	1	Flat Washer 1/2" USS	
13	TA500342	1	Pulley	
14	9806	1	Hairpin Cotter .148" Dia. x 2.68"	
15	902450	1	Bent Pin 1/2" Dia. x 1 7/32"	
16	41182B	1	Sliding Center Frame Weldment Manual Assist Frame Mount	
17	41310B	1	Winch Support Bracket	
18	9501907	1	Winch	
19	9390-100	8	Capscrew 1/2"-13UNC x 1 1/4"	Grade 5
20	9390-101	6	Capscrew 1/2"-13UNC x 1 1/2"	Grade 5
21	9395-010	6	Hex Jam Nut 1/2"-13UNC	
22	TA500470	8	External Star Washer 1/2" I.D.	
23	TA510029	1	Decal, CAUTION (Locking Pin)	
24	TA580021B	1	H-Frame Weldment =Black=	
25	TA522140B	1	Lock Pin 1/2" Dia. x 12 5/8" Long	
26	TA510035	1	Compression Spring 2 1/2" Long	
27	TA510453	1	Handle Grip	
28	TA510031	1	Decal, USA	
29	900910-128	1	Roll Pin 3/16" Dia. x 2"	=Stainless Steel=

# 45' Wing & Extension Components



# 45' Wing & Extension Components

ITEM	PART NO.	QTY.	DESCRIPTION	NOTES
1	9000117	12	Plug 1 1/4" Square	
2	9000938	5	Lynch Pin 3/8" Dia. x 2 1/4"	
3	91160	10	Grease Zerk	
4	93459	6	Decal, Grease - 8 Hours	
5	9390-061	2	Capscrew 3/8"-16UNC x 2 1/2"	
6	9390-151	2	Capscrew 3/4"-10UNC x 3 1/2"	
7	9398-012	2	Elastic Stop Nut 3/8"-16UNC	
8	9398-021	2	Elastic Stop Nut 3/4"-10UNC	
9	9399-060	4	Set Screw 1/4"-20UNC x 1/2"	
10	TA500401	2	Plug 1 1/2" Square	
11	TA510101	5	Tube Protector	
12	TA520075B	2	Tube Extension	
13	TA580169B	1	Center Section Weldment	
14	TA500325	4	Bronze Bushing 1 1/2" Long	
15	TA500407	4	Drive Screw #10 x 3/8"	
16	TA580226B	1	End Wing - Left-Hand	
17	TA580227B	1	End Wing - Right-Hand	
18	TA580280B	1	Main Wing Weldment Right-Hand	
19	TA580281B	1	Main Wing Weldment Left-Hand	

## **Self-Leveling Center Section Components**



# Self-Leveling Center Section Components

ITEM	PART NO.	QTY.	DESCRIPTION	NOTES
1	9928	10	Locknut, 3/8"-16UNC G5	
2	40826B	1	Front Fold Bracket, Right-Hand =Black=	
3	40830B	1	Front Fold Bracket, Left-Hand =Black=	
20	46237B	1	SIS Bracket w/Decal	
30	9008714	1	Decal, SIS (20 MPH)	
5	903172-136	2	Machine Screw #10-24UNC x 3/4"	
6	9005305	2	Lynch Pin, 3/8" Dia. x 3"	
7	9003126	2	Reflector =RED=	
8	9003127	1	Reflector =AMBER=	
9	91160	10	Grease Zerk	
10	9388-025	2	Carriage Bolt 5/16"-18UNC x 1"	Grade 5
11	9390-033	2	Capscrew, 5/16"-18UNC x 1 3/4" G5	
12	9390-055	2	Capscrew 3/8"-16UNC x 1"	Grade 5
13	9395-019	4	Hex Jam Nut 1"-14UNS	Grade 5
14	9405-070	2	Flat Washer 5/16" USS	
15	9807	4	Locknut 5/16"-18UNC	
16	TA500310	4	Bushing 1 1/2" O.D. x 1" I.D.	
17	TA510072	2	U-Bolt 3/8"-16UNC x 2 1/2"	Grade 5
18	TA510514	1	SMV Emblem	
19	TA510516	1	SMV Bracket	
20	TA520199	2	Pivot Shaft 3/4" Dia. x 6 1/4"	
21	TA521254B	2	Swing Arm Brace	
22	TA522030B	1	Mounting Bracket	
23	TA580021B	1	Self-Leveling H-Frame Weldment	
24	TA580023B	2	Top Sleeve Tube Swing Arm Assembly	Includes Items 25
25	TA500333	4	Spring Ride Bronze Bushing 2" Long	
26	TA580169B	1	Center Section Self-Leveling Boom	Includes Items 27
27	TA500325	4	Bronze Bushing 1.004" O.D. x .753" I.D.	
28	TA500407	4	U-Drive Screw, #10 x 3/8"	
29	TA510036	4	U-Bolt, 3/8"-16UNC x 2.75"	

## **Breakaway Assembly Components**



# **Breakaway Assembly Components**

ITEM	PART NO.	QTY.	DESCRIPTION	NOTES
1	91160	10	Grease Zerk	
2	9388-054	8	Carriage Bolt 3/8"-16UNC x 1 3/4" Grade 5	
3	9394-006	8	lex Nut 3/8"-16UNC	
4	9395-016	4	Hex Jam Nut 3/4"-10UNC	
5	9399-060	4	Set Screw 1/4"-20UNC x 1/2"	
6	9404-021	8	Lock Washer 3/8"	
7	9405-076	8	Flat Washer 3/8" USS	
8	9405-106	4	Flat Washer 3/4" USS	
9	TA500197	4	12 PT Capscrew 5/8"-11UNC x 2 5/8"	Grade 8
10	TA500309	2	Washer/Bushing 1 1/4" O.D. x 3/4" I.D.	
11	TA500316	16	Thrust Washer 1 3/32" O.D. x 5/8" I.D.	
12	TA500321	8	Thrust Bearing 1 1/8" O.D. x 5/8" I.D.	
13	TA500689	2	Shaft Collar 1 1/4" O.D. x 3/4" I.D. w/Set Screw	Includes Item #14
14	9399-070	1	Set Screw 5/16"-18UNC x 5/16"	
15	TA510013	2	Spring 7 1/2" Long	
16	TA510026	4	Hardened Wheel 5/8"	
17	TA522498	2	Pivot Shaft - Threaded 21 1/4" Long	
18	TA580030B	2	Pivot Plate	

# **Light Components**





# Light Components

ITEM	PART NO.	QTY.	DESCRIPTION NOTES	
	40777B	-	Light Kit	
1	22790	1	Wiring Harness 132" (3-T)	
3	40785B	1	Mounting Bracket	
4	91163	5	U-Bolt 3/8"-16UNC x 2 1/4"	
5	9405-076	4	Flat Washer 3/8" USS	
6	9928	10	Locknut 3/8"-16UNC	
7	TA510072	4	U-Bolt 3/8"-16UNC x 2 1/2"	
8	40849B	4	Mounting Plate	
9	86466	1	Main Wiring Harness 114"	
10	9000106	12	Cable Tie 6" Long	
11	9003876	2	Light - Round Amber	
12	9003877	2	Light - Round Red	
13	94037	4	Cable Tie 15 1/2" Long	

## **3-Point Attachment Kit Components**



ITEM	PART NO.	QTY.	DESCRIPTION NOTES	
1	TA580021B	1	Self-Leveling H-Frame	
2	TA580094	1	-Point Attachment	
3	TA0-907235-0	4	Capscrew, 1/2"-13UNC x 1 1/2"	
4	TA0-908480-0	4	Lock Washer, 1/2"	
5	TA0-907855-0	4	Hex Nut, 1/2"-13UNC	
6	TA540139	1	Top Tee Pin	
7	TA540138	2	Bottom Tee Pin	
8	94652	3	Lynch Pin, 3/8" Dia. x 1 1/2"	

# **Boom Strainer Kit Components**



ITE	EM	PART NO.	QTY.	DESCRIPTION	NOTES
		TA300350	1	Boom Strainer Kit	Includes Items 1-18
1		91163	2	U-Bolt, 3/8"-16UNC x 2 1/4", 1 15/16" c/c	
	<u> </u>	TA510095		U-Bolt, 3/8"-16UNC x 3 1/4", 2 3/8" c/c	
1	2	9394-006	4	Hex Nut, 3/8"-16UNC	
(	3	9404-021	4	Lock Washer, 3/8"	
4	4	9405-076	4	Flat Washer, 3/8" USS	
Į	5	TA540533B	1	Flange Strainer Weldment	
(	6	TA800910	6	Hose Clamp, SZ-12 (0.51" Dia. to 1.26" Dia.)	
	7	TA800924 3 Hose Clamp, SC-48 (2 1/2" Dia. to 4" Dia.)			
8	3	TA815017 6 90° Elbow, 1" Flange x 3/4" Hose Barb			
	9	TA815026 6 Flange Clamp, 1"			
1	10 TA815029 6 Gasket/Seal, 1 3/8" x 1" x 1/4"		Gasket/Seal, 1 3/8" x 1" x 1/4"		
1	1	TA815081	3	Strainer Assembly, 1" Flange, 50 Mesh	Includes Items 12-18
	12	N/A	1	Strainer Head	
	13	TA812137	1	50 Mesh Screen with O-Rings	Includes Item 14
	14	902663	2	O-Ring, 0.924" ID	
	15	TA812142	1	Strainer Bowl	
	16	TA812123	1	Clean-Out Plug O-Ring	
	17	N/A	1	Clean-Out Plug	
	18	TA812143	1	Gasket 3/4" - 1"	

#### 45' Boom Line Plumbing - 3 Section 15" Boom Kit







#### 45' Boom Line Plumbing - 3 Section 20" Boom Kit







ITEM	PART NO.	QTY.	DESCRIPTION	NOTE	
A		18	9 1/2" EPDM Hose		
В		9	19" EPDM Hose		
С	TA806250	2	33" EPDM Hose	Specify Length in Feet	
D		2	45" EPDM Hose		
E		2	55" EPDM Hose		
F	TA300350	1	Boom Strainer Kit	3/4" - 3 Section	
	TA886010	12	90° Elbow Body		
	TA886025	15	Tee Body		
m <sup>B</sup> m	TA814891	9	Hose Barb Tee		
<b>S</b>	TA880027	27	Nozzle Clamp 1 1/4"		
8	TA800910	66	Hose Clamp SCS12		





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