



High Clearance Lister

Operator's & Repair Parts Manual

For Models: **Single 7x7**
 Double 4x7
 Double 7x7
 Fold/Overfold
 Stack Fold



Do Not Use or Operate this Equipment



Until you have Read and Understood this Manual

The purpose of this manual is to explain maintenance requirements and adjustments which are necessary for the most efficient operation of the machine. Read this manual thoroughly and completely before using your machine. Keep this manual handy for reference when questions arise.

Should you have questions or difficulties which your dealer or representative are unable to answer, please call or write:

Bigham Brothers, Inc. 705 E. Slaton Rd. P.O. Box 3338 Lubbock, Texas 79452
Telephone: (806) 745-0384 Fax: (806) 745-1082



SAFETY FIRST
PREVENT ACCIDENTS BY "THINKING SAFETY"
IN UNLOADING, SETTING UP, MOVING, STORAGE
AND OPERATING ALL EQUIPMENT.



BIGHAM BROTHERS, INC.

806-745-0384 • 705 E. Slaton Road • P.O. Box 3338 • Lubbock, Texas 79452

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A MESSAGE TO THE OWNER AND OPERATOR:

This machine was carefully designed and manufactured to give you dependable service. To keep it running efficiently, read the instructions in this Operator's Manual. Check each item and acquaint yourself with the adjustments required to obtain efficient operation and maximum performance. Remember, the machine's performance depends on how you operate and care for it.

After the operating season, thoroughly clean your machine and inspect it. Preventive maintenance saves time and pays dividends. Your dealer has original equipment parts which assure proper fit and best performance. Record the model number, serial number and date of purchase in the space provided on this page. Your dealer needs this information to give you efficient service when you order parts or attachments. The model number and serial number appear on the identification plate on the front left side of the tool bar mast.

The Warranty on your machine is included with this manual. Your dealer will review both this manual and the warranty with you when you take delivery of your machine.

WARRANTY

Bigham Brothers, Inc. warrants all products of its manufacture to be free from defects in materials and workmanship for a period of six months from date of delivery to the retail purchaser. Parts assumed to be defective must be returned F.O.B. Lubbock, Texas for our inspection or inspected in the field by our authorized representative. Our obligation under this warranty is limited to replacement or repair of the defective part and does not cover other damages to persons or property. Other than the aforesaid, no warranties of merchantability or fitness for a particular purpose will apply. We do not assume liability for altered or remanufactured components or machines or applications beyond their intended use. Some states do not allow limitation of how long an implied warranty lasts, or exclusions of, or limitations on relief such as incidental or consequential damages, so the above limitations or exclusion may not apply to you. This warranty gives you specific legal rights and you may have other rights which vary from state to state.

Warranty does not cover damage due to abuse, neglect, collision, towing, pulling, normal wear and tear or any other factor beyond the control of the manufacturer. Tool bars that are bent, bowed or that have been welded on or modified in any way are specifically excluded from any warranties.

LIMITED LIFETIME WARRANTY ON TOOL BAR CLAMPS

Bigham Brothers, Inc. will replace any ductile iron clamp body that breaks or cracks under normal use for as long as the original purchaser owns them. This includes all replaceable bolt ductile iron clamps sold by Bigham Brothers, Inc. after December 31, 1987.

Clamps that fail should be returned to Bigham Brothers, Inc. freight prepaid along with caps, bolts, set screws and nuts for evaluation. If found to have failed under normal operating conditions, a new clamp body will be returned along with your old caps, bolts, set screws and nuts. Only clamps that have been used with Grade 2 bolts of the proper size will be replaced. All other provisions of the above warranty apply.

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**Be alert when you see this symbol in the instructions.
It warns of a hazard which might lead to injury.**

It means: “Attention! Become alert! Your Safety Is Involved!”

Before Use:  **DO NOT operate this equipment until this**

manual has been read and understood. 

- * Assure operators have read and are familiar with the instructions contained in the Operator's Manual
- * If working on the High Clearance Lister, make sure it is level and stable. Proper stands should be lowered and secured. Use support blocks when necessary. The work area should be on a level, load bearing surface, e.g. concrete floor. NEVER, NEVER work under a High Clearance Lister while it is supported by only the tractor's hydraulics.
- * Consult the “Tractor Manufacturers Manual” for instructions on safe mounting of implements and operating methods.
- * Never stand between the High Clearance Lister and tractor with engine running.

During Use:

- * Check and tighten all bolts after 30 minutes of initial operation and after adjustments have been made.
- * Assure the High Clearance Lister is correctly attached to the tractor.
- * Be alert to underground obstructions, e.g. large stones, tree roots, cables, pipe lines, etc. Should an obstruction be encountered, **STOP IMMEDIATELY AND INVESTIGATE.**

 NOTIFY THE APPROPRIATE AUTHORITY IF BURIED CABLES OR PIPELINES ARE SUSPECTED. Non-hazardous obstructions should be removed before continuing operation.

- * Keep operating speeds at a safe level.
- * Never allow anyone to ride on the High Clearance Lister during operation.
- * Never travel in reverse with the High Clearance Lister in the operating position.
- * Never carry out adjustments or repairs to a mounted High Clearance Lister unless the tractor engine is stopped and the High Clearance Lister is firmly supported or lowered to the ground.
- * Inspect the High Clearance Lister for wear or damage on a regular basis.
- * Check all nuts, bolts and other fasteners for tightness on a regular basis. Replace worn fasteners as needed.
- * Carry out maintenance and lubrication procedures as detailed in this manual.
- * When disconnecting the High Clearance Lister do so on a level, hard surface. Assure it is left in a stable position with proper stands in the correct position.

Always:

- * Wear gloves and safety footwear when handling worn parts with sharp edges.
- * Assure the High Clearance Lister is not operated by untrained persons.
- * Use the High Clearance Lister only for the purpose for which it was designed and tested, and always according to the instructions contained in this manual.
- * Reduce speed when transporting over uneven or rough terrain.
- * Place a “Slow Moving Vehicle” emblem on the rear of the unit before driving on open roads.
- * Keep hands, feet and clothing away from all moving parts.
- * Exercise care when adjusting legs, leg spacings, disc coulters or rear bedding tools. The assemblies are heavy and may have sharp edges.

“Left” and “Right” of the machine refers to the side when standing behind the High Clearance Lister and facing the tractor.

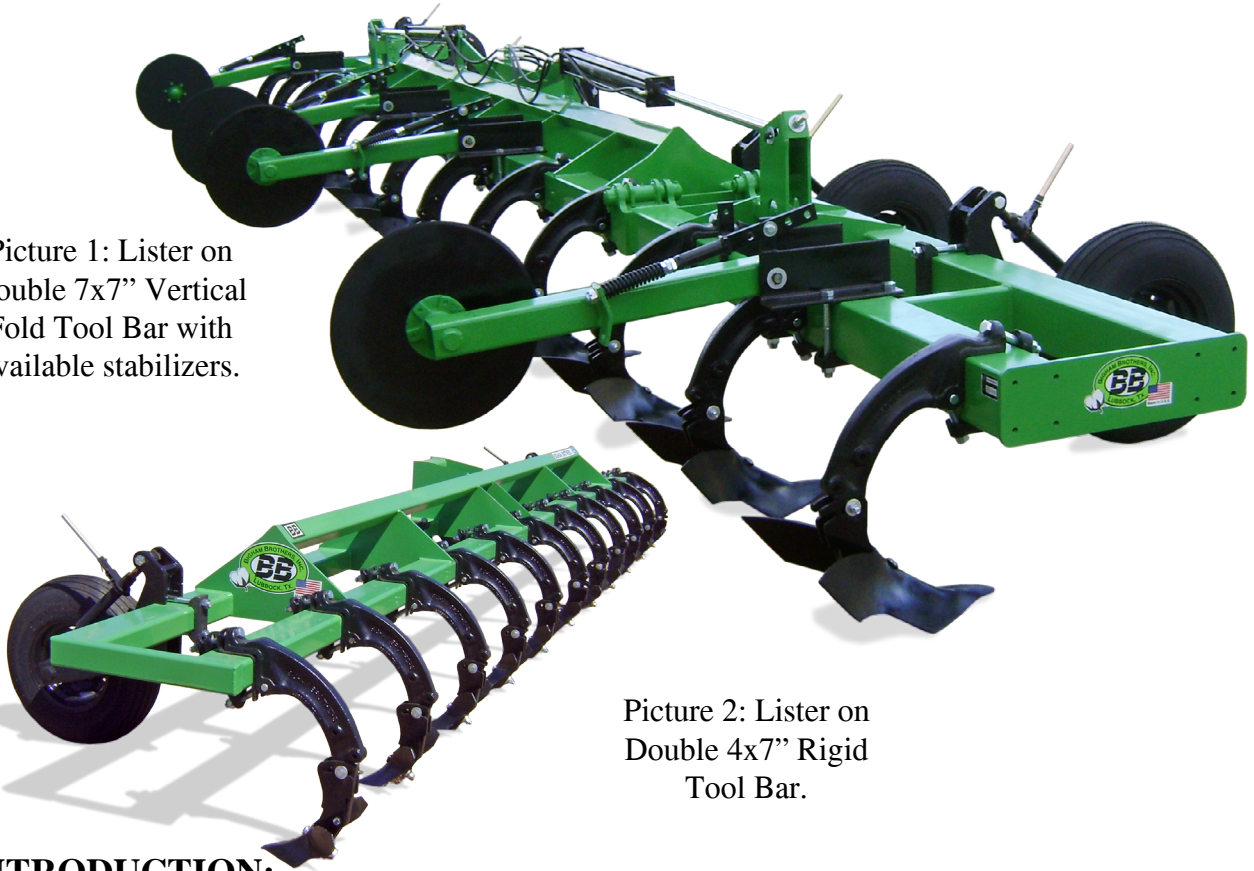
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**BE A SAFE OPERATOR—THINK BEFORE OPERATING.
READ ALL INSTRUCTIONS BEFORE
ASSEMBLY OR OPERATION OF THE HIGH CLEARANCE LISTER!**



Picture 1: Lister on
Double 7x7" Vertical
Fold Tool Bar with
available stabilizers.



Picture 2: Lister on
Double 4x7" Rigid
Tool Bar.

INTRODUCTION:

Lighten the listing load behind your tractor. The Bigham Brothers High Clearance Lister helps you achieve the same bedding results with less horsepower. The proven design of the High Clearance Shank and sleek profile of the Bigham High Wing 348 lister bottom slices through soils faster and easier than a conventional buster on a 1x3" shank. The component design lets you set shanks on virtually any row spacing. A number of options and accessories complete the plow to suit your operation.

P/N	Description	# of Shanks	Rigid or Folding	Marker Frame Boxes	Approx. Ship Wt.
902-609	High Clearance Lister	9	Rigid 4x7	N/A	3375 Lbs.
902-619	High Clearance Lister	9	Fold 4x7	No	3985 Lbs.
902-620	High Clearance Lister	9	Fold 4x7	Yes	4125 Lbs.
902-622	High Clearance Lister	13	Fold 4x7	No	5865 Lbs.
902-623	High Clearance Lister	13	Fold 4x7	Yes	5975 Lbs.
High Clearance Listers include: Double 4x7" tool bar with Cat. III three point hitch and corresponding quantities of lister beams with mounting hardware and 346 bottoms. Gauge wheels and markers are pictured but not included. All units are priced unassembled FOB Lubbock, Texas. Standard equipment is engineered 40" rows, please specify row spacing for rigid and folding tool bars.					
840-246	Shank Assy., H.C. Lister for 4 x 7 or 5 x 7 Tool Bar (#348 Foot Piece)				75 Lbs.
840-217	Shank Assy., H.C. Lister for 7 x 7 Tool Bar (#348 Foot Piece)				75 Lbs.
870-155	Buster BBI 348 High Wing W/Square Washer/Bolts				24 Lbs.

Guidelines for Operation

Attaching the Tractor to the High Clearance Lister

Choosing the Proper Tractor:

1. Check the general specifications of High Clearance Lister whole goods on page 3 of this manual. Check the weight of the unit to operate and check the lift capacity of the tractor to which you intend to attach the High Clearance Lister. Make certain the selected tractor has ample capacity to pick up and transport the unit that you intend to operate.
2. Insure that both right and left lift arms are identical in length and tool bar is level (right to left). They must be equal to achieve uniform operating depth and transport clearance.
3. The three-point lift linkage should be locked into the fixed position, not the float position.
4. Sway blocks or stabilizing chains should be adjusted to minimize lateral movement.
5. Check the tractor for sufficient front end weight to permit constant positive steering at all times.

6. NEVER STAND BETWEEN TRACTOR AND HIGH CLEARANCE LISTER WITH THE TRACTOR ENGINE RUNNING.

7. The three point hitch has been specifically designed to be compatible with Cat. III N and Cat. III Wide quick hitches. Make sure the top side of the top link is positioned correctly and check position of pull points on the tool bar.

A. Tractors Equipped with Quick Hitches:

1. Attach quick hitch to the High Clearance Lister and make sure lower pin locks are secured.
2. When disconnecting the High Clearance Lister utilize parking stands (if equipped) or blocks to allow the front of the High Clearance Lister to tilted slightly forward. This will permit easier disconnection and reattaching.

B. Tractors without Quick Hitch:

1. Attach lower lift arms of the tractor to the Lister with appropriate pins which match the lower lift arms of the tractor.
2. Attach top link after connecting lower lift arms. Raise High Clearance Lister slightly to lift parking stands into operating position (if equipped).

Field Use and Adjustments:

**⚠ NEVER ALLOW ANYONE ⚠
TO RIDE ON THIS EQUIPMENT
DURING OPERATION.**

**⚠ TO AVOID INJURY NEVER ⚠
CLEAN, ADJUST, OR SERVICE
WHEN MACHINE IS IN MOTION**

1. Level the frame front to back by lengthening or shortening the top link of the tractor. Check level frame position again after Lister has been lowered into the operating position.
2. The High Clearance Lister is a specialized tillage tool. Operators should consider how deep lister bottoms should be engaged and what size and shape of beds are desired. Gauge wheels may be set to determine the plowing depth of the unit. Raise gauge wheels (reduce screw jack length) for deeper operation and larger beds. Lower gauge wheels (increase screw jack length) for shallower operating depth and smaller, more rounded beds.
3. Operators should take tractor driving skills into consideration before attempting to list straight rows. It is quite common for the listing operation to require the most technical skill of practically any farming operation. Items to consider before operating the Lister:

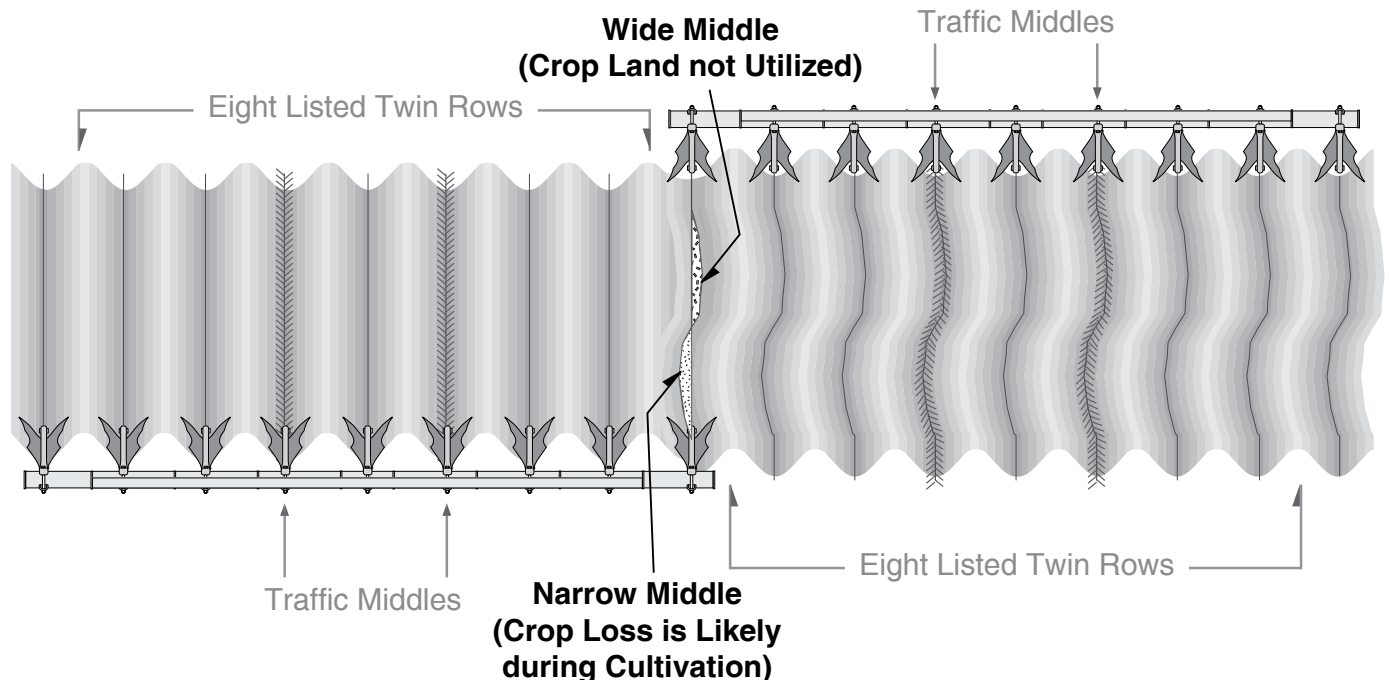
A. Familiarity with the tractor. It is difficult to focus all attention to plowing straight rows when one is not entirely comfortable with operation of the tractor.

B. Find a good place to start. It is easier to maintain straight rows when the first set of rows on the edge or the middle of the field are straight. When laying out the first set, try to pick out a landmark some distance away. Another hint is to align one or more distant landmarks. Keep these objects in the same relationship to help guide the first pass.

C. Learn to look at the center mark to guide the tractor. Again, best results are often obtained when the object of focus is in the distance. Accurate setting of marker disc is imperative.

D. Avoid guess rows. Guess rows occur when the center of the outside lister bottom is not aligned with the last set of rows that were listed. See Figure 1. Wide and narrow middles can cause several problems. If the space is too narrow, later cultivation will likely plow out a certain amount of crop in the outside rows of the set. If the space is too wide, a certain amount of crop land is not utilized. Extremely wide middles also may leave strips that will not be cultivated during the growing season.

**Figure 1:
Field Pattern Diagram; Guess Rows
(Wide & Narrow Middles)**



Maintenance Instructions

Periodic maintenance and inspections will pay dividends.

Bolts:

Check all bolts after 30 minutes of service. Pay particular attention to mounting bolts for the lister beam assembly, pivot bolts on the foot piece and mounting bolts for the hitch, gauge wheels, and row markers. Check that all hairpins and click pins that secure hitch, gauge wheel and transport wheel clevis pins are properly attached. Always tighten loose bolts. See bolt torque chart on page 11. Replace worn, broken or missing fasteners.

Hitch Pins:

Visually check lower pull point clevis pins and upper top link clevis pin for wear or signs of stress. Replace broken or worn pins at once.

Lubrication:

Gauge Wheel Screw Jacks: Fill each gauge wheel screw jack with grease before operation. As a general rule, grease each screw jack once weekly during the operating season. Two zerks are located on each screw jack.

(Picture 4)

Gauge Wheel Hubs: Clean and repack roller bearings at least once each operating season.

4. Maximum recommended operating depth is 18".
5. Maximum speed is 8 m.p.h. Optimum operating speed is 4-6 miles per hour. Lower speeds generally result in a less aggressive soil engagement with larger clods and more slabbing of soil. Higher speeds result in increased wear on ground engaging tools.
6. Always raise the implement completely out of the ground when backing up or making sharp turns in field operation. This will prevent damage to components such as lister beams, bottoms and foot pieces.
7. High Clearance Listers equipped with standard Bigham High-Wing 348 bottoms wear well in most soils. Extremely abrasive soils and extreme operating depth will cause quicker wear on the lister bottoms. Under these conditions it may be advisable to hardface bottoms before operation in the field.
8. High Clearance Lister may be equipped with a variety of other accessories and attachments for different field and finish results. Two of the more popular options are:

Stabilizer: (Picture 3) This accessory be attached to rear of tool bar to help keep the lister frame aligned down the row The large blade penetrates the soil to eliminate side draft of three point equipment such as listers and planters.



Picture 3 - Stabilizer mounted on High Clearance Lister



Picture 4: Fill screw jacks with grease.

Tires:

Maintain gauge wheel tire pressure at 30-35 PSI.
Check tire pressure before initial field operation.

Lister Bottoms:


Bigham High Wing 348 Lister bottoms generally wear well for most field operations. In abrasive soils, however, check each bottom on the unit on a daily basis for breakage or unusual wear. Worn or broken lister bottoms must be replaced on a timely basis or foot pieces on the unit will wear and need to be replaced. An indication that points are worn excessively is when the High Clearance Lister will not penetrate the soil.


Lister beam foot pieces feature a rear trip slot. Should the bottom trip, repair or replace worn or broken parts immediately.


Hydraulic Components:

Make a visual inspection of each hydraulic circuit daily. Tighten fittings that leak. Replace or repair any worn or damaged components.

Clean quick connect tips before plugging into tractor remote. This will minimize contamination of the tractors hydraulic system.

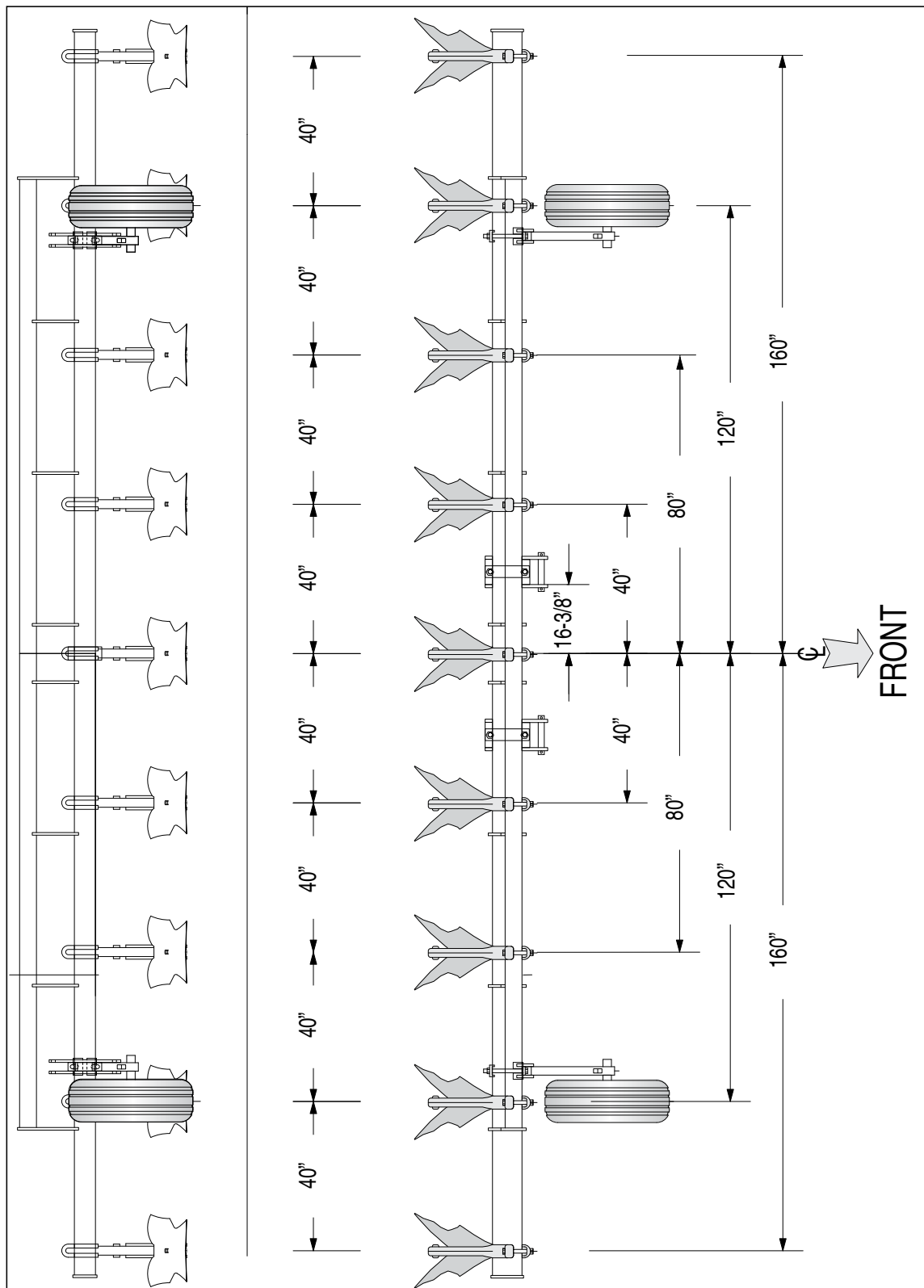
 **Hydraulic fluid is under high pressure. Be careful when you are close to cylinders, hoses and fittings. Replace or repair leaking or damaged hydraulic components.**

 **Never use your hands to locate a hydraulic leak. Use a small piece of cardboard or wood. Hydraulic fluid escaping under pressure can penetrate the skin.**

 **Before disconnecting hydraulic lines, shut off hydraulic supply and relieve all hydraulic pressure. Remove quick tips from the remote plug sockets.**

8 Row High Clearance Lister, 40" Spacing

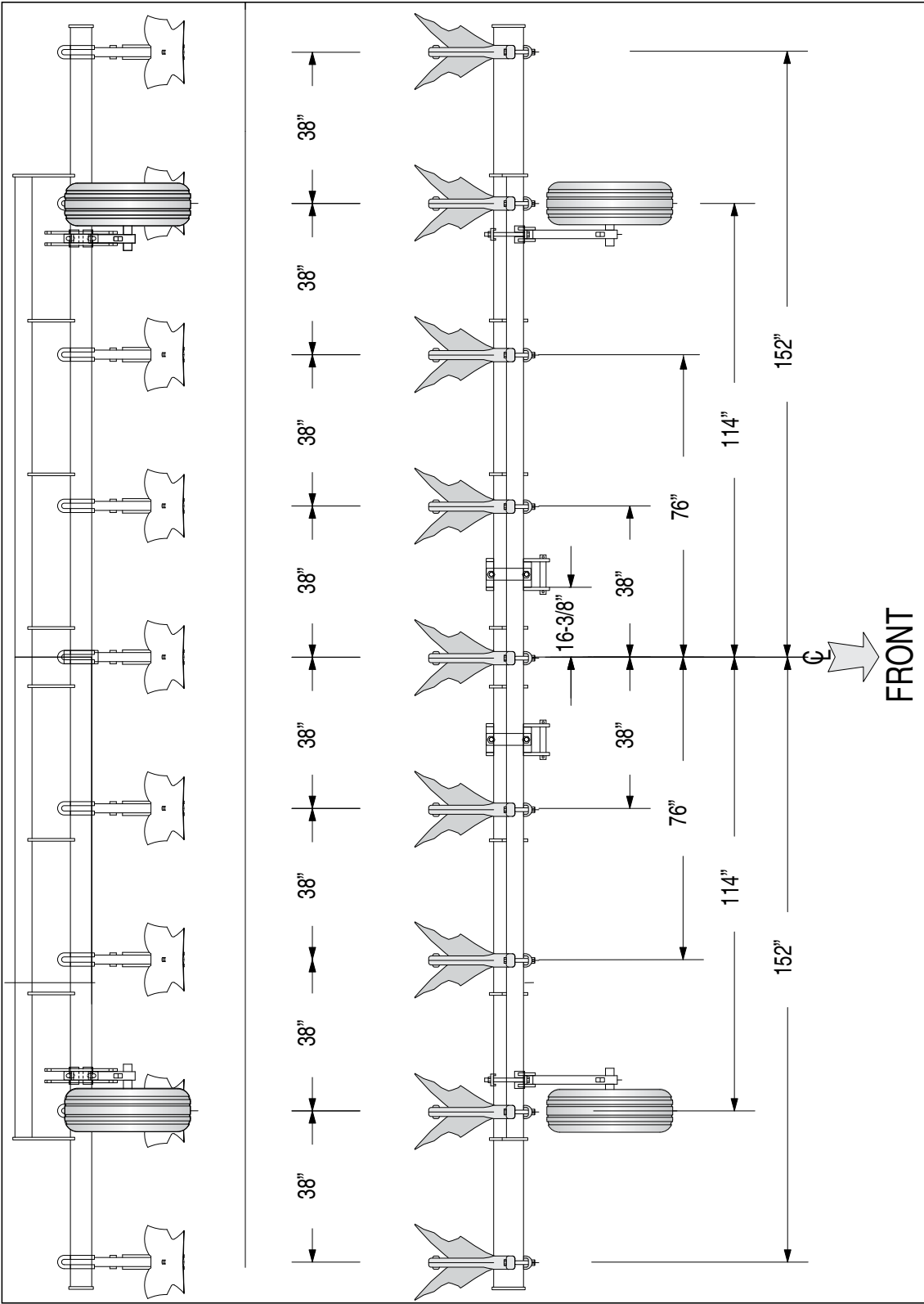
8 Row High Clearance Lister, 40" Spacing



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Figure 3

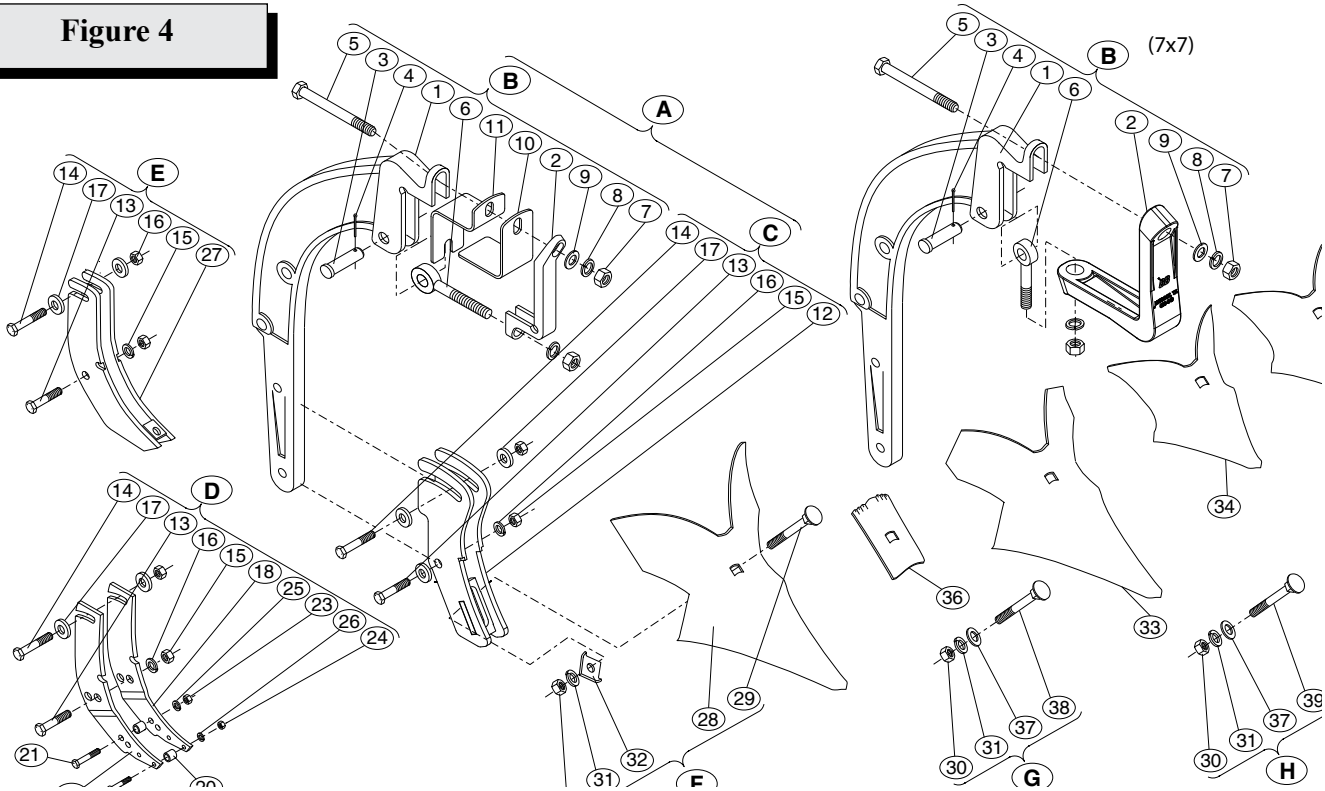
8 Row High Clearance Lister, 38" Spacing



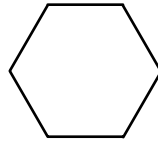
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High Clearance Lister Shank and Parts Breakdown

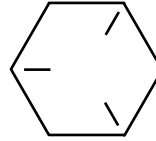
Figure 4



Ref #	P/N	Description	Qty. Req. Per Assy.	Ref #	P/N	Description	Qty. Req. Per Assy.
A.	840-246	Shank Assy, HC Lister, 4x7", 348 Buster	-	D.	806-158	Foot Piece Assy., Universal	-
	840-217	Shank Assy, HC Lister, 7x7", 348 Buster	-	18.	636-150	Foot Pc., Side H.C. Beam LH	1
	840-218	Shank Assy, HC Lister, 7x7", I.H. Ft. Pc.	-	19.	636-151	Foot Pc., Side H.C. Beam RH	1
	840-252	Shank Assy, HC Lister, 4x4" I.H. Foot Piece	-	20.	636-200	Spacer, Lister Ft. Pc.	2
	840-250	Shank Assy, HC Lister, 4x4" Univ. Ft. Pc.	-	21.	602-0710Z	Bolt, HCS ZP GR5 7/16 x 2-1/2"	1
B.	840-200	Shank Assy, HC Lister, Less Foot Piece	-	22.	602-0610Z	Bolt, HCS ZP GR5 3/8 x 2-1/2"	1
1.	628-840	Shank, High Clearance Lister	1	23.	611-0701Z	Nut, Hex ZP 7/16"	1
2.	628-850	Cap, For High Clearance Shank	1	24.	611-0601Z	Nut, Hex ZP 3/8"	1
	636-849	Cap, Strap 7x7 Lister	1	25.	615-0700Z	Washer, Lock ZP 7/16"	1
3.	617-147	Pin, Clevis ZP 7/8 x 3-1/4"	1	26.	615-0600Z	Washer, Lock ZP 3/8"	1
4.	617-025	Pin, Cotter 3/16 x 2-1/4"	1	E.	806-152	Foot Piece Assy., IH HC Beam	-
5.	602-1430Z	Bolt, HCS ZP GR5 7/8 x 7-1/2"	1	27.	636-152	Foot Piece Wlmt., IH HC Beam	1
	602-1428Z	Bolt, HCS 7/8"x7" GR5 ZP (for 7x7)	1	F.	870-155	Buster BBI 348 W/Sq Washer/Bolts	-
6.	610-1424Z	Eye Bolt, Forged ZP 7/8 x 7-1/2"	1	28.	638-348G	Buster, 15" Bigham High Wing (Fitted)	1
	610-1422Z	Eye Bolt, Forged 7/8"x3-3/8" (for 7x7)	1	29.	604-1224Z	Bolt, Carriage ZP 3/4 x 6"	1
7.	611-1401Z	Nut, Hex ZP 7/8"	2	30.	611-1201Z	Nut, Hex ZP 3/4"	1
8.	615-1400	Washer, Lock ZP 7/8" (plain)	2	31.	615-1200Z	Washer, Lock ZP 3/4"	1
9.	616-1402	Washer, Structural 7/8"	1	32.	638-578	Washer, Square #348 Buster	1
10.	636-201	Cuff, 1/4x4x6x6.6" Lister (4x7, Bottom)	1			Buster Options	
11.	636-202	Cuff, 1/4x4/5.6x9" Lister (4x7, Top)	1	33.	638-349	Buster, 15" Bigham Clipped Wing	-
C.		No-Twist Foot Piece Assy	-	34.	638-111	Lister Bottom, #11W	-
12.	636-157	Foot Piece, No-Twist, Lister Beam	1	35.	638-212	Texas Buster 12"	-
13.	602-1013Z	Bolt, HCS ZP GR5 5/8 x 3-1/4"	1	36.	636-995	Buster Block for 348 Buster	-
14.	602-1015Z	Bolt, HCS ZP GR5 5/8 x 3-3/4"	1	G.	638-359	Bolt, Nut & Wshr Pack 348 (Gr9/ 1/3 Shk)	-
15.	611-1001Z	Nut, Hex ZP 5/8"	2	37.	615-1200Z	Washer Lock 3/4" ZP	-
16.	615-1000Z	Washer, Lock 5/8"	2	38.	604-1220H	Bolt, Carriage 3/4"x5" (Gr9) ZP	-
17.	616-1002Z	Washer, Flat (Heavy) 5/8"	2	H.	638-350	Bolt, Nut & Washer Pack W/ GR 5 Bolt	-
				39.	604-1220Z	Bolt, Carriage 3/4"x5" (Gr5) ZP	-



GRADE 2
No Marks



GRADE 5
3 Lines on
Bolt Head

RECOMMENDED ASSEMBLY TORQUES FOR HEXAGON HEAD CAP SCREWS

Based on dry assembly. Variables such as lubrication, plating etc. may reduce the values listed below as much as 20%, and must be taken into consideration.

	Bright Cap Screws 1018 Grade 2			Heat Treated 1038 Hexagon Head Cap Screws, SAE Grade 5			
Cap Screw Diam.	Yield Strength PSI Min.	Recommended Torque (Ft. Lbs.)		Yield Tensile Strength PSI Min.	Recommended Strength PSI Min.	Torque (Ft. Lbs.)	
		UNC	UNF			UNC	UNF
1/4"	58,000	6	7	90,000	120,000	11	13
5/16"	58,000	13	14	90,000	120,000	21	23
3/8"	58,000	23	26	90,000	120,000	38	40
7/16"	58,000	37	41	90,000	120,000	55	60
1/2"	58,000	57	64	90,000	120,000	85	95
5/8"	55,000	111	128	90,000	120,000	175	210
3/4"	55,000	200	223	90,000	120,000	300	330
7/8"	55,000	315	340	81,000	115,000	450	490
1"	50,000	400	460	81,000	115,000	680	715
1-1/8"	50,000	570	635	77,000	105,000	885	990

General Formula for calculating Torque is as follows:

Torque in Inch Lbs. = .2 x Nominal Diameter of Screw x Load in Lbs., where Load = 80% of Yield Strength, expressed in Lbs., not pounds per square inch.

The tension induced in a cap screw may be checked by measuring overall length before torquing and then under torque load. The screw stretches .001" per inch of screw length for each 30,000# P.S.I. induced tension. Applies only to loads below the yield point.

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Notes: