

Operator Manual

Models FF and HD
Martens Brand Harrows,
Vintage 2010 and Prior

The Martens logo consists of a stylized illustration of a wheat stalk with three ears, rendered in shades of green and yellow. To the right of the wheat stalk, the word "Martens" is written in a large, bold, black, sans-serif font.

Martens

OPERATING INSTRUCTIONS & PARTS LIST FOR MARTENS HARROWS

**MODELS FF & HD
24 FT. – 52½ FT.**

SERIAL NUMBER _____

**MARTENS MANUFACTURING
915 E. STATE ROAD
FAIRVIEW, OK 73737**

Revised 6-09

Legacy manual provided for owners and users of these model harrows not manufactured by Great Plains Manufacturing, Inc. For continuing support and parts of older implements, contact Great Plains.



Martens Harrow Quick Start Guide

Avoid Damage to your harrow!

Please Read This Page!

Please read the owners manual, but here are some important items for you to know to avoid damage to your harrow.

- 1. Securely attach hitch to tractor Page 3**
- 2. To avoid wing and cylinder damage - extend all cylinders completely before working in the field. Page 5**
- 3. Do not partially lift harrow for turning or extended periods while working in the field. Page 5**
- 4. Do not move the machine until wings are fully unfolded or refolded. Page 4 & 6**
- 5. Fold and unfold wings slowly Page 4 & 6**
- 6. Never back up with the harrow sections on the ground. Page 5**
- 7. Do not turn so short as to make the wing wheel go backward. Page 5**
- 8. If the wings do not slide onto the steady rest easily, the height needs to be adjusted. Page 8**

In the manual, we have our safety warnings and operational warnings to be in ***bold italic lettering*** for you to better recognize these items.

OPERATING INSTRUCTIONS FOR MARTENS FRONT FOLD HARROWS

Unfold to field position.

1. Attach tongue of harrow securely to the towing tractor using sufficient drawbar pin. Connect cleaned hydraulic couplers of harrow to tractor. Raise jack and swing to horizontal position **WARNING: Make certain harrow is securely attached to the towing tractor. Tip-over may occur during unfolding if harrow comes loose from tractor.**



2. Disconnect transport safety chains from wing.



3. Make certain area around harrow and behind harrow is clear of people and obstacles. With engine speed at low RPM, *slowly* operate hydraulic lever to swing wings back until the wings are unfolded. **Do not move the harrow until the wings are fully unfolded.** **WARNING: Do not walk or allow others to walk behind harrow when it is in the unfolded vertical position.** *Hydraulic malfunctions or the hitch pin coming loose could allow the harrow to tip over causing serious injury.*



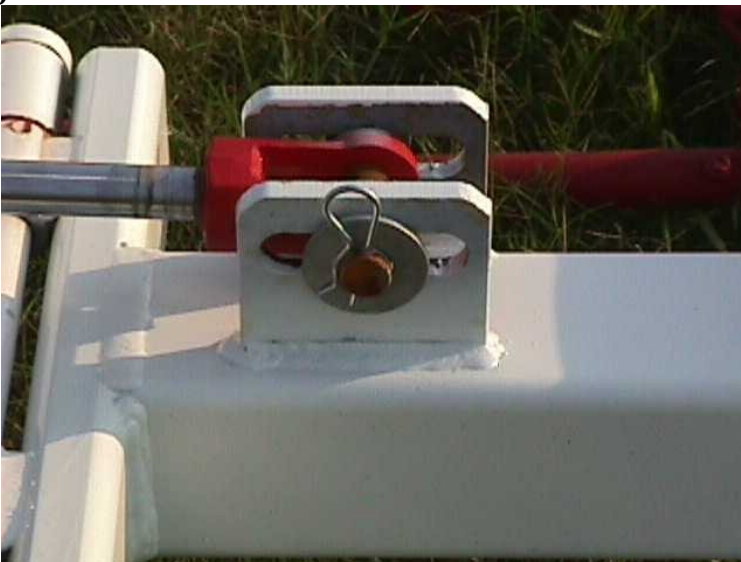
4. When the wings are unfolded, the sections will start to be lowered to the ground. When the rear bars of the sections start to touch the ground, start driving forward slowly.



5. Continue lowering sections until they lie flat on the ground.



6. IMPORTANT - When the sections are on the ground, continue to operate the hydraulic lever to fully extend the wing cylinder so the cylinder pin is approximately in the center of the slot. This allows up and down travel for the wing over rough ground. Failure to fully extend cylinder will damage the cylinder or the framework.



7. Harrow is ready for field use.

WARNING: This harrow is designed to be pulled in the field with the harrows fully on the ground and all cylinders fully extended at all times. Pulling the machine with the sections lifted off the ground over extended distances or lifting the harrows off the ground for turning at corners or end of rows is not recommended and will result in premature wear of the cylinders, pins, and frame components and those parts will not be warrantied. Lifting the harrow for a short distance to unplug any residue clog is acceptable. Never back up with the harrow sections on the ground. Always lift the sections off the ground before backing up. Do not turn so short as to make the wing wheel roll backward.

Refolding the Harrow to Transport Position

1. *Do not move the machine until wings are fully folded to transport position.* With engine running at low RPM, slowly operate the hydraulic lever to raise the sections to vertical.

WARNING: *Do not walk or allow others to walk behind harrow when it is in the unfolded vertical position. Hydraulic malfunctions or the hitch pin coming loose could allow the harrow to tip over causing serious injury.*



Do not move the machine until wings are fully folded. Wing or center frame damage may occur.

2. As the wings start to fold inward, make certain that the spring operated cable lift arms are lifting the cables. If the cable arms are not lifting properly, they will be damaged by the wings. **NOTE:** Harrows smaller than 30 ft. do not use cables.



3. Operate the hydraulic lever until the wings are fully against the stop on their support and hook the transport safety chains to the wings for safe transport. Machine can now be moved.



Maintenance and Adjustment Instructions.

Greasing – Every day.

6 zerks on pivot pins – 8 zerks on wing pins



Adjusting wing fold height –

As pins wear and settle in, wings may droop a bit and need adjustment to make the wings slide up the ramp to the wing support crossmember. This is adjusted by turning the stop screw on the lift cylinder as shown. (All FF model 12 bar harrows smaller than 43 ½ ft. use figure A)(HD 12 & 16 bar harrows up to 43 ½ ft. wide use a bolt stop as in figure C.)(All harrows 45 ft. and up use a shim stop as in figure D & E. Shims are added to raise the wing.) The stop screw should be adjusted so the wing engages about ½ ” below the top of the ramp as shown in figure B. Silicone sealer should be spread across the threads to prevent the stop screw from moving. **NOTE: Harrows smaller than 30 ft. do not use wing adjustment or wing support crossmember.**

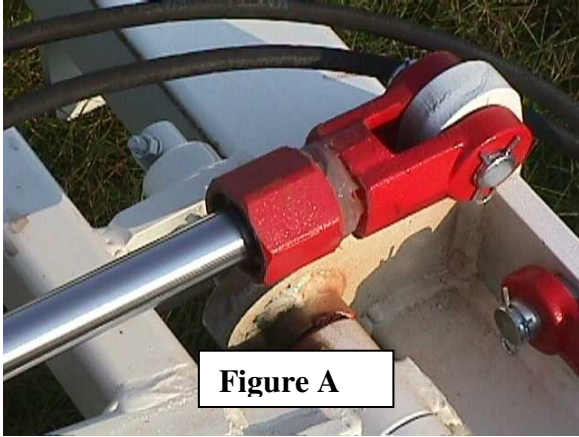


Figure A

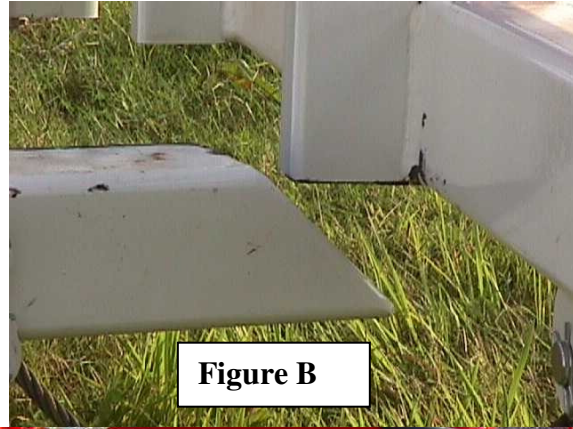


Figure B

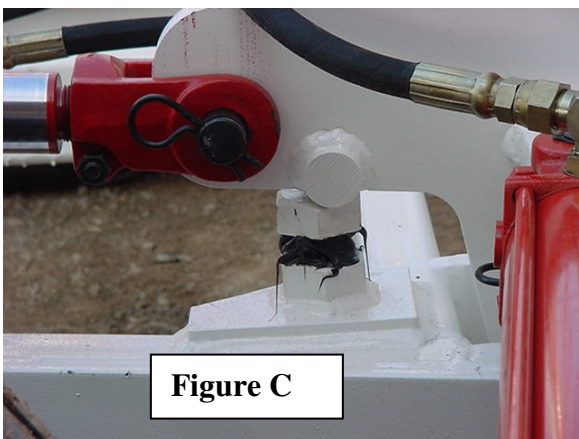


Figure C

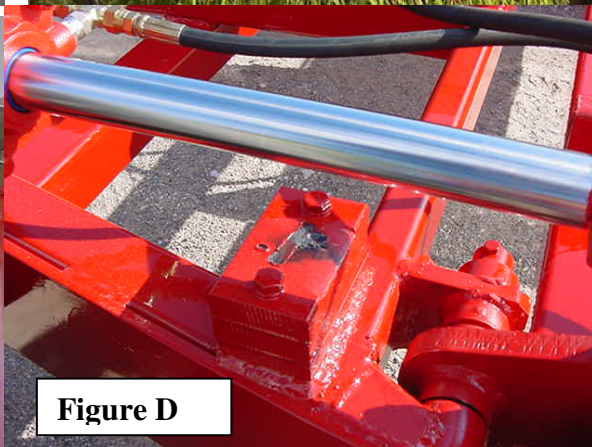


Figure D

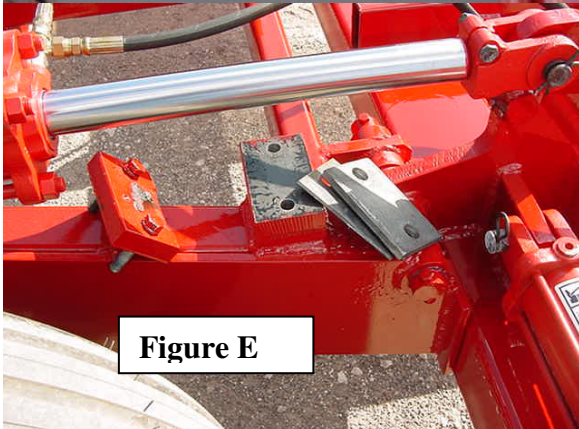
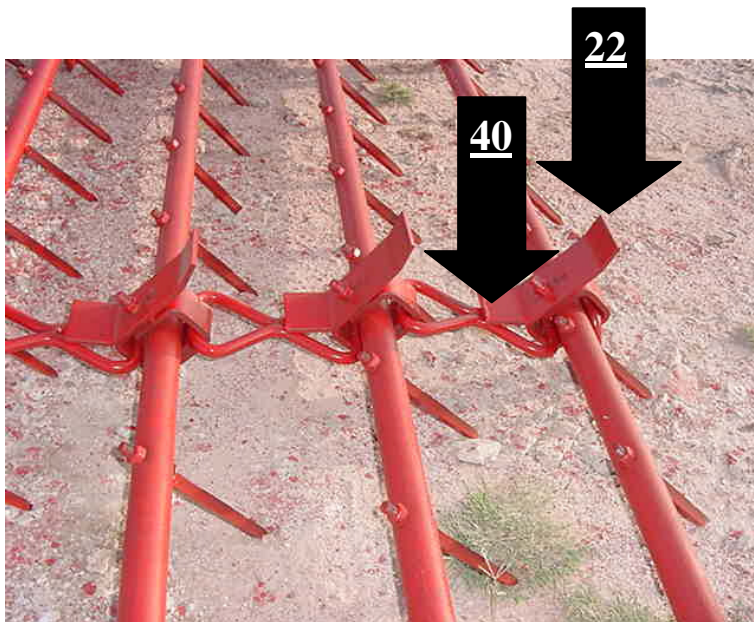


Figure E

Tooth Angle Adjustment –

The teeth can be pulled at either a 40 or 22 degree (back from vertical) angle depending upon the aggressiveness and soil stirring action needed. If the harrow is pulled with the long side of the restrictor bracket toward the front of the harrow, it is set at 40 degrees back of vertical (flatter and most commonly used tooth angle – factory setting). If the short side of the restrictor bracket is to the front of the harrow, the setting is 22 degrees back of vertical (straighter up and down – more aggressive). To change the setting, the harrow sections must be unhooked from the frame, reattached and pulled from the other end of the section. Harrows come from the factory set at 40 degrees and most people use them that way in most conditions.



In most conditions the 40 degree setting (flatter) is preferred. It will give a better seedbed and will flow residue more easily.

If you use the harrow in the 22 degree setting, you must slow down to 4 ½ mph. The aggressiveness of the tooth in the straighter up and down position is much harder on the machine and the section will hop if the speed is too fast.

Residue flow will be much better in dry conditions. Wet residue has a tendency to ball up.

Martens Harrow Parts List

Harrow Size, Year Model, and Serial Number Identification

Your harrow will have a Model, Serial Number and Size Tag on the top of the tongue near the front of the machine. There is also a serial number and size stamped into the top of the tongue near the front of the machine. The serial number is the same as the date built. Example – SN 071205 would have been built on July 12, 2005. Model designations are FF- Standard Frame 8 or 12 bar. HD – Heavy Duty Frame 8, 12, or 16 bar.

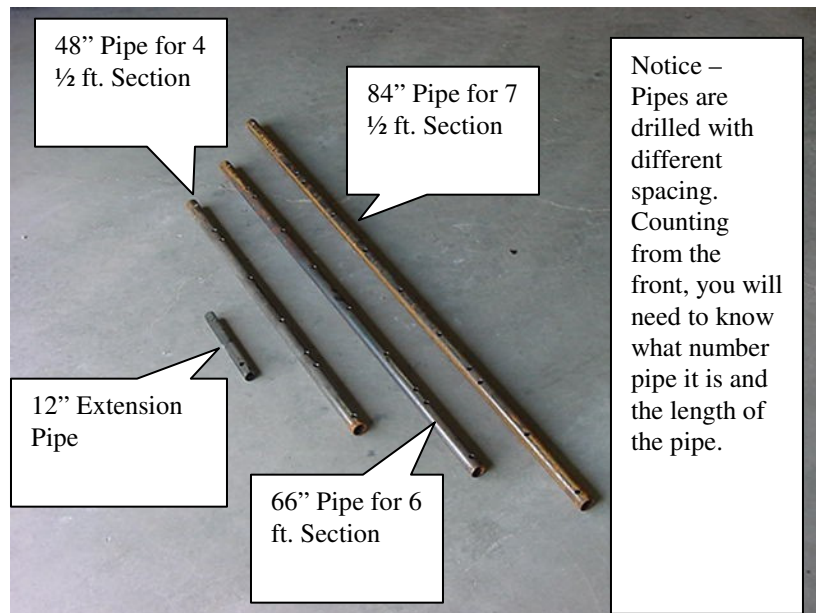
Flex Harrow Section Parts –

The FF and the HD harrows use the same 4 bar sections that are bolted together to make 8, 12, or 16 bar harrows.

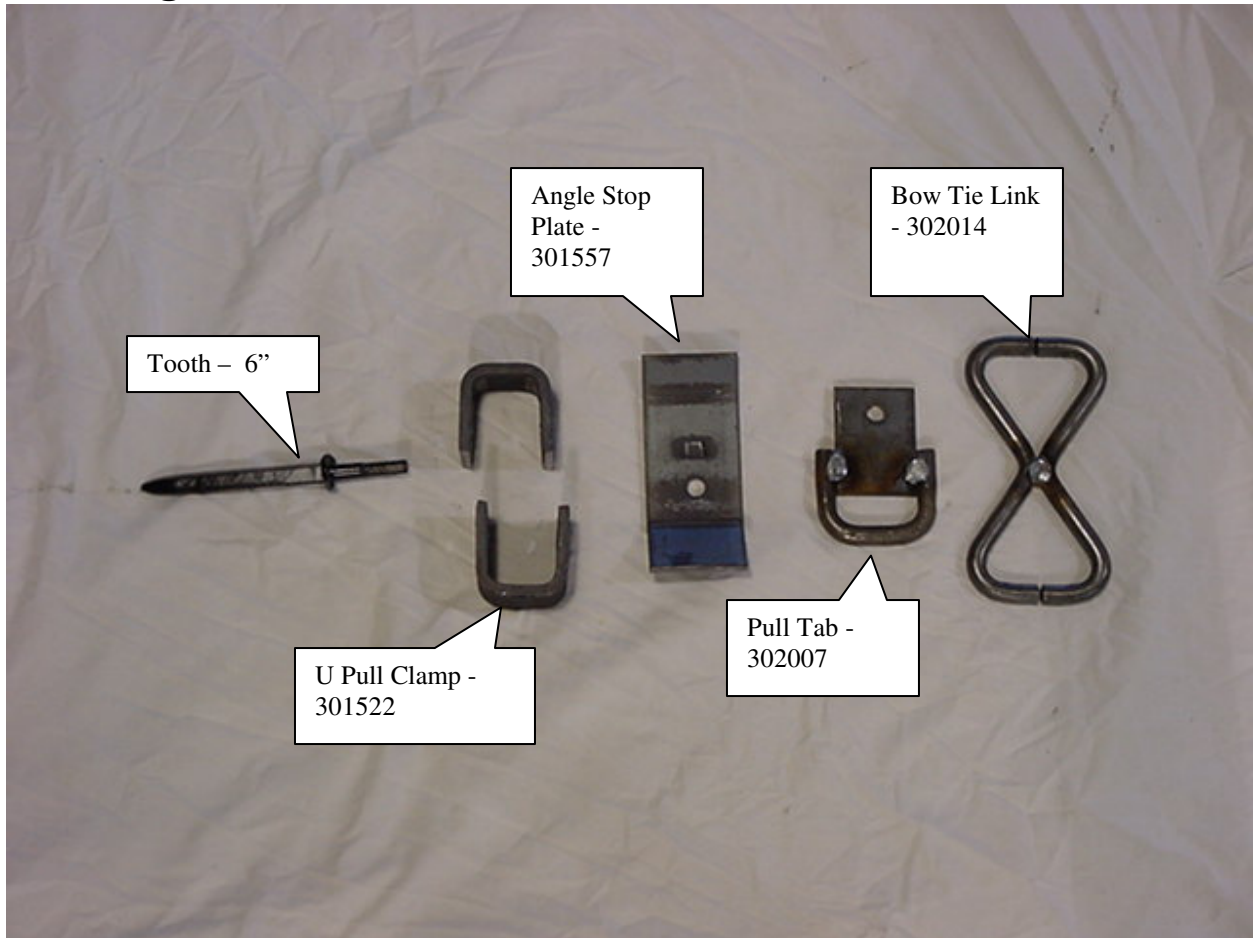
Ordering Harrow Bar Pipes

To order harrow pipes, we must know the following info:

- *What is the length of the pipe? 48", 66", or 84"
- *Counting from the front of the harrow section as it lays on the ground, what number pipe is it? This is important because the pipes are drilled with different spacing.
- *What is the size of the harrow?
- * Which section is it? End wing, inside wing, center wing?
- * Does the pipe have a 12" extension pipe bolted into the end of the pipe.



Ordering Flex Harrow Section Parts



Hub Identification

8 Bolt Hub - # 8BH100 – Used on HD Main Axle

6 Bolt Hub - #6BH101 – Used on FF Main Axle

4 Bolt Hub - #4BH102 – Used on FF and HD Wing Spindle

Spindles are weld-in units – Call factory for assistance

Cylinder Identification

3 ½ X 8 – #35X8 - FF Main Lift Cylinders

3 ½ X 16 - #35X16 – HD Main Lift Cylinders 22 ½ ft. through 43 ½ ft.

4 X 16 - #40X16 – HD Main Lift Cylinders 45 ft. through 52 ½ ft.

2X14 - #20X14 – FF & HD Wing Cylinders 22 ½ ft. through 28 ½ ft.

2 ½ X 14 - #25X14 – FF & HD Wing Cylinders 30 ft. through 43 ½ ft.

3 X 14 - #30X14 – HD Wing Cylinders 45 through 52 ½ ft.

**Parts List –
September 20, 2009**

Main Description	Sub-description	Part Number	Notes
Clevis Hitch	Clevis Hitch	Clevis Hitch	Specify if FF or HD model
4 Bolt Hub	Complete with bearings, races, seal & cap	4BH102	
	Large Wheel Bearing and race	LM67048, LM67010	
	Small Wheel bearing and race	LM11949, LM11910	
	Hub Seal	16069	
6 Bolt Hub	Complete with bearings, races, seal & cap	6BH101	
	Large Wheel bearing and race	JL69349, JL69310	
	Small Wheel bearing and race	LM67048, LM67010	
	Hub seal	SL162	
8 Bolt Hub	Complete with bearings, races, seal & cap	8BH100	
	Large wheel bearing and race	LM603049, LM603011	
	Small wheel bearing and race	LM67048, LM67010	
	Hub seal	SL226	
Wheel bolts	4 bolt	½-20 Bolt	
Wheel Nuts	6 bolt	½-20 Nut	
	8 bolt	9/16-18 Nut	
Wheel	4 hole 15"	4WH15	
	6 hole 15" X 8"	6WH15	
	8 Hole 15" X 10"	8WH15	
	15" Aircraft Tire & 4 or 6 bolt wheel	4ACWH15	
Harrow Teeth	6" tooth	Tooth	
	½" Top Lock Nut	Nut	
Wing Cable	3 section (11'10")	Cable 4 Sec	
	5&6 section (15'2")	Cable 6 Sec	
	7 &8 section (17'10")	Cable 8 Sec	

Cable Lift Arm	Cable Lift Arm	Cable Lift Arm	Specify Harrow Size
	Cable Lift Spring	CLS	
	Cable Lift Clevis	3/8Clevis	
Harrow Bar Pipes	48" Pipe	4 ½' Pipe- 1,2,3,4	Must specify which pipe
	66" Pipe	6' Pipe – 1,2,3,4	Must specify which pipe
	84" Pipe	7 ½' Pipe- 1,2,3,4	Must specify which pipe
	93" Pipe	8'3" Pipe – 1,2,3,4	Must specify which pipe
	12" Extension	EXT9	9" between holes
Cylinders			See cylinder identification chart.
Flex Section Parts	U Pull clamp	301522	
	Angle Stop Plate	301557	
	Pull Tab	302007	
	Bow Tie Link	302014	
Pull & Lift Chains	FF Pull Chain Complete	FFPC	
	HD Pull Chain complete	HDPC	
	Section Lift Chain FF&HD	SLC	
Hoses	58" X 3/8 Hoses	Hose58	
	27' X 3/8 Hoses	Hose27	
	31' X 3/8 Hoses	Hose31	For 45' and larger

Martens Model HD & FF Harrow Warranty Policy

Martens Manufacturing warrants to the original owner that within two years from the date of purchase, any part of the harrow frame, or within one year any part of the harrow sections should fail due to defect in material or workmanship, Martens Mfg. will, at their discretion, repair or replace it free of charge. Damage, failure, or wear due to improper operation will not be warranted. Due to many varying operating conditions and methods, there is no warranty on bent or broken section pipes.

Warranty service is available by contacting your Martens dealership.

Martens policy is to constantly improve its products. The right is reserved to make changes in design and pricing without incurring any obligation to incorporate such improvements in any product which has been shipped or is in service.

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