

# **Chain Link Harrow Cart**

## **"FC" Series**

### **Owner's Manual**

#### **Pre Assembly Instructions**

1. All references to right hand and left hand sides of the implement are determined by facing the machine from the rear.
2. Check your packing lists and report any missing parts as soon as possible.
3. Lubricate all moving parts and bearings as recommended.
4. Follow assembly instructions in the order shown.
5. This owner's manual should be given to the owner for his reference.

## Safety

1. Never attempt to operate or adjust the harrow without reading this manual.
2. Never allow anyone to ride on the harrow or other attachments.
3. Drive slowly over rough ground.
4. Always slow down when turning.
5. Always support the Harrow Cart when mounting or working on the cart or other attachments.
6. Never attempt to adjust the harrow while it is in motion.
7. Periodically check bolts and replace worn ones.
8. Be careful around teeth, tines, sweeps, and blades: they get sharper with wear.
9. Periodically check tires for wear and proper inflation.
10. Hydraulics:
  - a. When installing hydraulic hose, make sure all connections are tight, and cylinders are full of hydraulic oil.
  - b. Relieve pressure in hydraulic lines before uncoupling hoses from source.
  - c. Check for and correct all points of abrasion of hydraulic hose.  
**Do Not Use a Partially Damaged Hose**

## Lubrication

### *Use a SAE Multi Purpose Grease*

1. Transport and Gage Wheel Bearings - Once a Year or 50 Hours pack the bearing with grease. Also, raise the tires off the ground and check for end play. To eliminate, remove dust cap and cotter pin. Tighten slotted nuts until there is noticeable resistance and back off one slot. Replace cotter pin and dust cap.

### *Use a SAE 30 or Heavier Oil*

1. Wing Hinge Points (4) - Daily squirt oil into each hinge bushing also, before a prolonged storage. This will help to insure extended hinge life and years of trouble free operation.

## Harrow Cart - Mounting Instructions

1. First block up the base section of the cart.

**Note: The three hinge ears should point upward.**

2. Next attach the hitch section to the base. Use three 3/4"-10 x 3" bolts with locknuts. Snug the bolts. **Do not over tighten.** (See diagram on page 5)
3. Attach the spindle and hub packages to the tire and wheel assemblies. Use six 1/2"-20 hub studs for each assembly.
4. Place the spindle into the spindle tubes located on the base of the cart. Align the holes and use a 1/2"-13 x 3" bolt with locknut. (See diagram on page 5)
5. Next attach the wings. Use a 5/8"-11 x 5 1/2" bolt with locknut on the front hinge. Use a 5/8"-11 x 3" bolt with locknut on the rear hinge. Snug the bolt. **Do not over tighten.** (See diagram on page 5)
6. **All wings (except 4')** - Attach the wing stand to the hitch. Lay the two plates on top of the hitch braces. Use four 5/8"-11 x 2" x 5 1/2" U-bolts with lock washer and nut to attach the plates to the braces. Set the wing stand on top of these plates. Use two 1/2" x 3" x 4 1/2" U-bolts with lock washer and nuts to attach the wing stand to the plates. The wing stand should be placed approximately 32" from the rear tube of the hitch. (See diagram on page 8)  
**4' wing only** - Attach the wing stop ear assembly on the wing. Use four 1/2"-13 x 4 1/2" bolts with lock washer, nut and back plate. The wing stand should be placed 4 13/16" from the center of the hinge to the front edge of the assembly. Use a 1" headed pin with clip to attach the straps the ear welded to the cart base. Use a second 1" headed pin to attach the other end of the straps to the bolt on ear assembly on the wing. The third set of holes is used as a transport lock. (See diagram on page 8)
7. Next, bolt the clevis to the hitch. Use one 3/4"-10 x 6" bolt with locknut. Also place the jack stand on the hitch. (See diagram on page 5)
8. Attach the hose holder loop to the hitch. Use the 5/8"-11 carriage bolt with lock washer and nut. (See diagram on page 5)
9. Next attach the hydraulic port adapters to the 3" x 16" cylinder.
10. Pin the base end of the cylinder to the cylinder ear on the hitch. Use a 1" pin with clips. (See diagram on page 5)
11. Attach the **longer hose** to the hydraulic port adapter on the **rod end** of the cylinder. **Do not use Teflon tape or thread dope.**

**Note: The hydraulic port adapter may need to be rotated for proper alignment.**

12. Attach the **short hose** to the hydraulic port adapter on the **base end** of the cylinder. **Do not use Teflon tape or thread dope.**
13. Attach the hose to the hitch. Use a 3/8"-16 x 1 1/4" bolt to attach the hose holder clamp.
14. Apply hydraulic pressure to the system and check for leaks.
15. Attach the rod end of the cylinder to the cylinder ear located on the base. Use a 1" pin with clips.

**Caution: Before you proceed, pin the cart to a tractor. This will keep it from tipping over while you're assembling the rest of the cart.**

16. **All wings (except 4')** - Attach the gauge wheel assembly to each wing. Use four 5/8"-11 x 5 1/2" bolt with lock washer, nut and back plate. Place the spindle into the spindle tubes located on each assembly. Align the holes and use a 1/2"-13 x 3" bolt with locknut. (See diagram on page 5)

**4' wing only** - This size cart does not need gauge wheels.

17. Next, center the pull bracket assemblies out be hide the front base and wing frame tubes. The pull bracket assemblies will match the size of the wing or base. Attach the chain mounting brackets to the rear of the base and wing frame tubes directly above the pull bracket assemblies. Use two 1/2"-13 x 5 1/2" bolts with lock washer, nut and back plate for each bracket. (See enlarged diagram on page 5)
18. Use the five link chain to attach the pull bracket assemblies to the chain mounting brackets. Use a 3/8"-16 x 1 1/4" bolt with flat washer and locknut on each end of the chain. (See enlarged diagram on page 5)

**Note: Before attaching the harrow, raise and lower the cart and fold the wings. Do this a couple of times. This will verify that cart is assembled properly and force the air out of the hydraulic system.**

19. Lay out the harrow sections under each wing and base. Each harrow section will match the width of the wing or base.

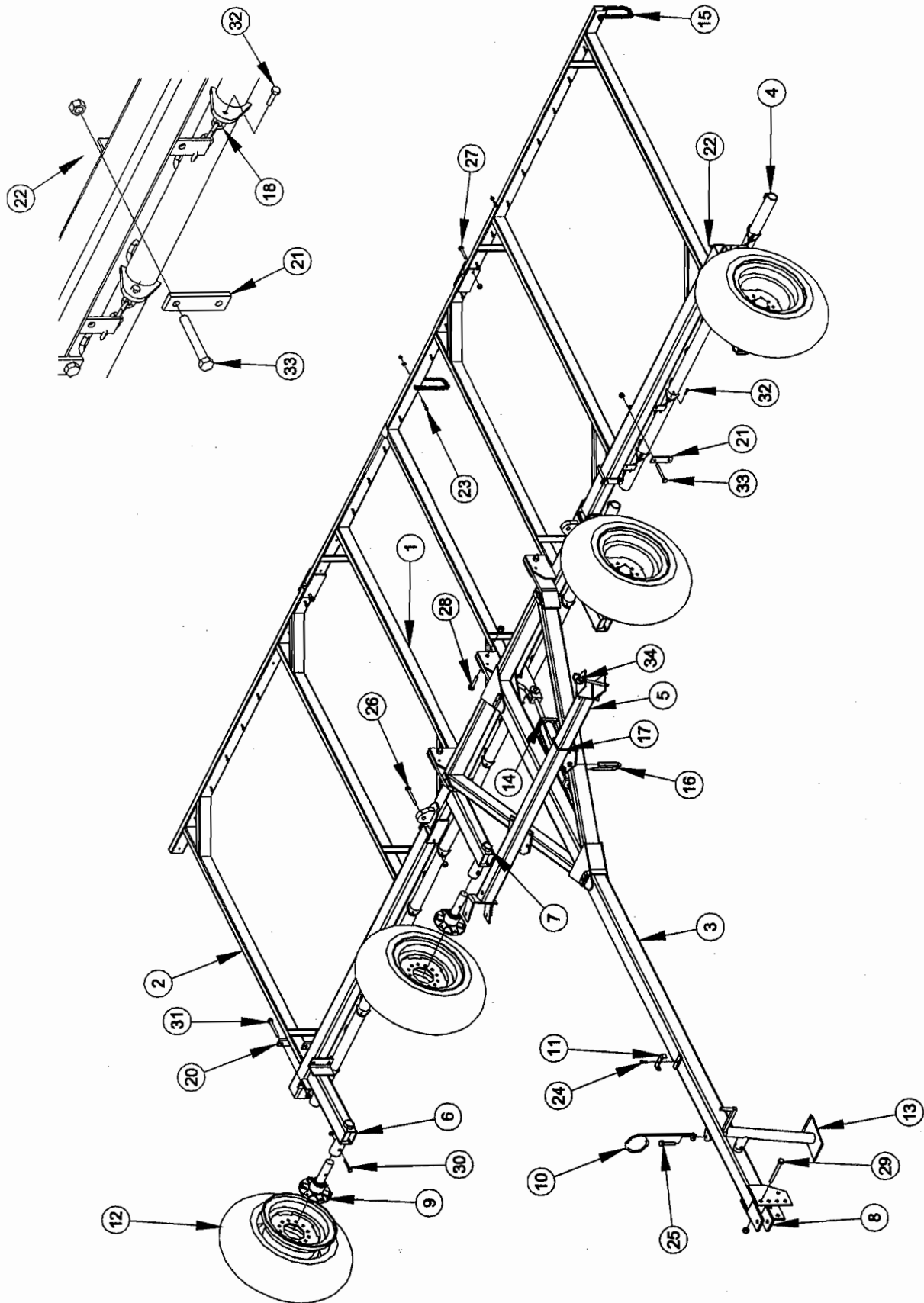
**Note: Each section is two pieces. They can both be set to operate aggressive, or both passive, or one passive and the other aggressive.**

20. Attach the pull hooks on the harrow to the pull brackets.

**Note: If you do not plan to change the aggression of the harrow, we advise closing the pull hooks on the harrow.**

21. Loop the rear lift chain through the "eye" directly in front of the rear hook. Place one end of the chain on the front side of the rear frame and the other end of the chain on the rear side of the frame. Use one 3/8"-16 x 2 3/4" bolt with two flat washers and locknut. (See photo on page 7)

# Complete Assembly Layout (24' shown)

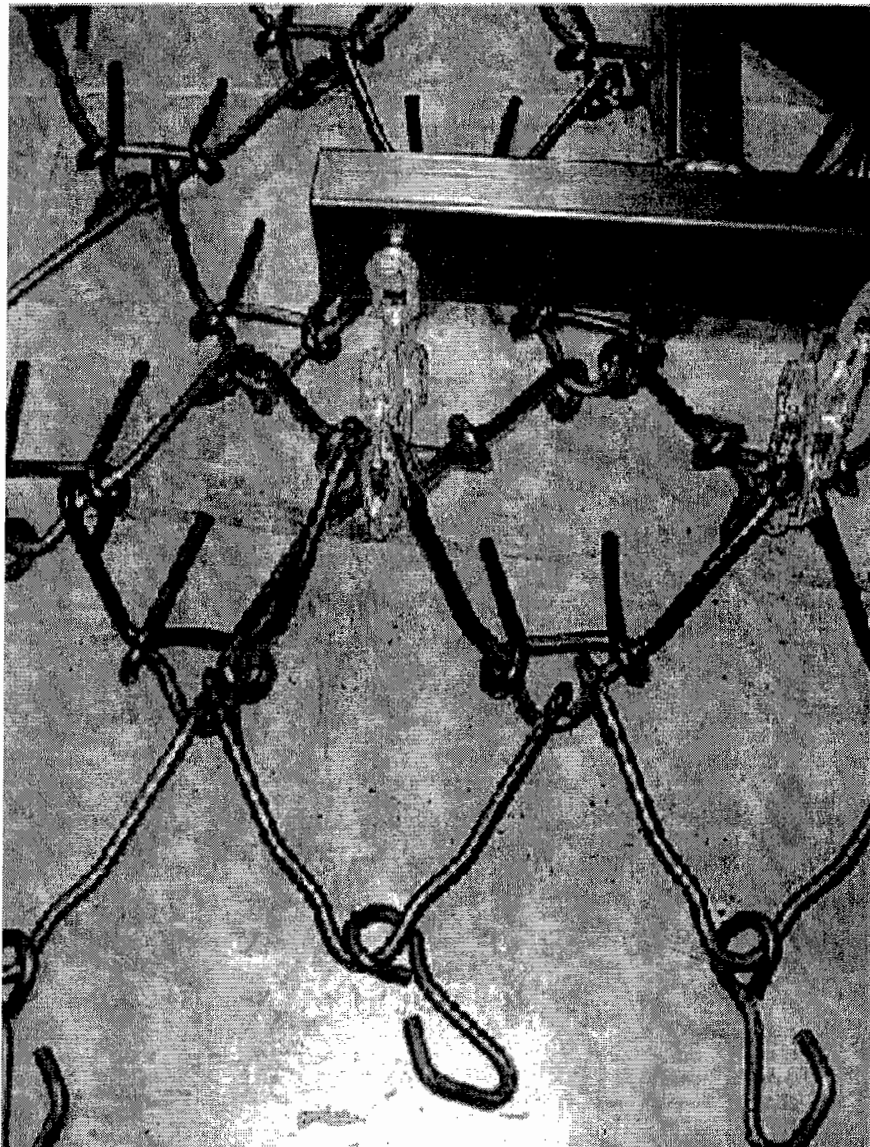


## Chain Link Harrow Cart Parts Description

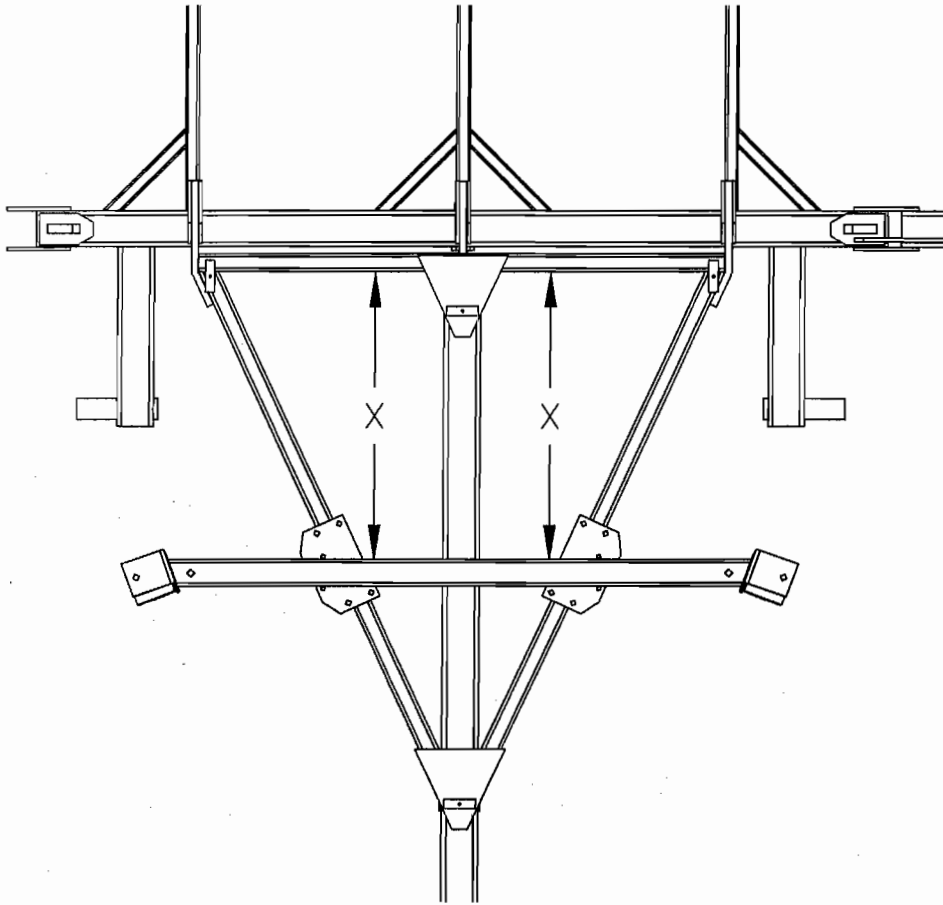
Item No.	Part No.	Part Name / Description
1	FC-1002	8' Base Assembly
	FC-1033	10' Base Assembly
	FC-1034	12' Base Assembly
2	FC-1003	4' Wing Assembly
	FC-1004	6' Wing Assembly
	FC-1005	8' Wing Assembly
	FC-1037	10' Wing Assembly
	FC-1040	12' Wing Assembly
3	FC-1001	Short Hitch Assembly
	FC-1046	Long Hitch Assembly
4	FC-1051	4' Pull Bracket Assembly
	FC-1031	6' Pull Bracket Assembly
	FC-1026	8' Pull Bracket Assembly
	FC-1041	10' Pull Bracket Assembly
	FC-1042	12' Pull Bracket Assembly
5	FC-1019	8' Base Wing Lock Assembly
	FC-1049	10' Base Wing Lock Assembly
	FC-1050	12' Base Wing Lock Assembly
6	FC-1013	Gage Wheel Assembly
7	FC-1045	Axle Assembly (only required on 10' & 12' bases)
8	FC-1015	Hitch Clevis Assembly
9	FC-1022	6 Bolt Hub and Spindle Assembly
10	FC-0055	Hose Holder
11	FC-0028	Hose Holder Clamp
12	FC-0056	7.60-15 Tire (optional)
	FC-0057	15"-6" 6 Bolt on 6" Bolt Circle
13	FC-0054	Top Crank Jack stand
14	FC-0053	3" x 16" Hydraulic Cylinder w/ pins and clips
15	FC-0067	5/0 Lift Chain (13 link)
16	F-00078	5/8"-11 x 2" x 5 1/2" U-bolt w/ Lock washer and Nut
17	FC-0052	1/2"-13 x 3" x 4 1/2" U-bolt w/ Lock washer and Nut
18	FC-0114	5/16 Proof Coil Lift Chain (5 link)
19	FC-0116	Wing Lock Mount Plate
20	FC-0102	Axle Clamp Back Plate
21	FC-0094	3/8" Back Plate
22	FC-0115	Chain Mount Bracket
23		3/8"-16 x 2 3/4" Hex Cap Bolt with (2) Flat washer & Locknut
24		3/8"-16 x 1 1/4" Hex Cap Bolt
25		5/8"-11 x 2" Carriage Bolt with Lock washer & Nuts
26		5/8"-11 x 6" Hex Cap Bolt with Locknut
27		5/8"-11 x 3" Hex Cap Bolt with Locknut
28		3/4"-10 x 3" Hex Cap Bolt with Locknut

29		3/4"-10 x 6" Hex Cap Bolt with Locknut
30		1/2"-13 x 3" Hex Cap Bolt with Locknut
31		5/8"-11 x 6" Hex Cap Bolt w/ Lock washer & Nut
32		3/8"-16 x 1 1/4" Hex Cap Bolt w/ Flat washer & Locknut
33		1/2"-13 x 5 1/2" Hex Cap Bolt w/ Lock washer & Nut
34	FC-0103	Hitch Pin w/ #10 Hairpin Clip
35	Not Shown	Harrow Section - Specify Size

**Attach the Rear of the Harrow to rear frame of the Cart**



## Wingstand Location - All wings except 4'



## All 4' Wings

