

Installation Instructions



CP1000 & FCP1000 Folding Markers

Used with:

- CP1000
- FCP1000



When you see this symbol, the subsequent instructions and warnings are serious - follow without exception. Your life and the lives of others depend on it!

General Information

These instructions explain how to install the dual folding markers. The marker disks leave a line for the drill operator to follow on the next field pass. The markers fold and unfold hydraulically for field operation. The markers are plumbed together through a sequence valve and operated on one hydraulic circuit.

These instructions apply to:

148-430A CP1000 and FCP1000 Dual Markers

Manual Update

Refer to the drill operator's manual for detailed information on safely operating, adjusting, troubleshooting and maintaining the folding markers. Refer to the parts manual for part identification.

- CP1000 Operator's Manual 148-358M
- CP1000 Parts Manual 148-358P
- FCP1000 Operator's Manual 148-693M
- FCP1000 Part Manual 148-693P

Before You Start

Pages 5 and 6 are detailed listing of parts included in the folding markers package. Use these list to inventory parts received.

Definitions

The following terms are used throughout this manual.

Right and left as used in this manual are determined by facing the direction the machine will travel while in use unless otherwise stated.

IMPORTANT: A crucial point of information about the preceding topic. For safe and correct operation, read and follow the directions provided before continuing.

NOTE: Useful information about the preceding topic.

Assembly Instructions

Marker Assembly

Refer to Figure 1.

1. Secure mounting plates (1) on marker mount (2) as shown. On inside end of mount use 1/2" x 2 3/4" bolts, lock washers and nuts. On outside end use 1/2" x 1 3/4" bolts, lock washers and nuts.
2. U-bolt marker mount and mounting plates to rear coultter toolbar (3). Bolt mount near end of toolbar as coultter spacing allows. Exact placement of marker mount will vary with coultter spacing. Secure u-bolts with lock washers and nuts.
3. Mount marker hinge (4) on marker mount using pivot pin (5) and pin lynch (6).
4. Mount base end of hydraulic cylinder (7) on marker mount. Remove plugs from cylinder ports. Pull cylinder rod out and pin cylinder rod to hinge using pin (8), washers and cotter pins.

5. Secure marker arm (9) to marker hinge. Through top hole use 5/8" x 5" bolt (10) and nylock nut. Through side hole use 5/16" x 1 1/2", grade 5 bolt (11) and lock nut.

IMPORTANT: Bolt marker arm to marker hinge with a grade 5 bolt (11) through side that faces direction of marker travel. Failure to bolt the arm to hinge properly can cause marker damage.

6. Slide inner marker arm (12) into marker arm. Secure with u-bolt (13).
7. Install marker disk (14) into mounting bracket (15). Through outside hole use a 1/2" x 3" bolt (16), lock washer and nut. On inside slot, place a 1/2" flat washer (17) on both sides of the mounting bracket before installing bolt, lock washer and nut.
8. Mount bracket (15) to the underside of the inner marker arm (12) with 1/2" x 2 3/4" bolts, lock washers and nuts.
9. Insert 1 1/4" x 7" bolt (19) and secure head of bolt with bolt tab (20), 5/8" x 2" bolts, flat washer, lock washer and nut as shown. Tighten bolt (19) with 1 1/4 lock nut.

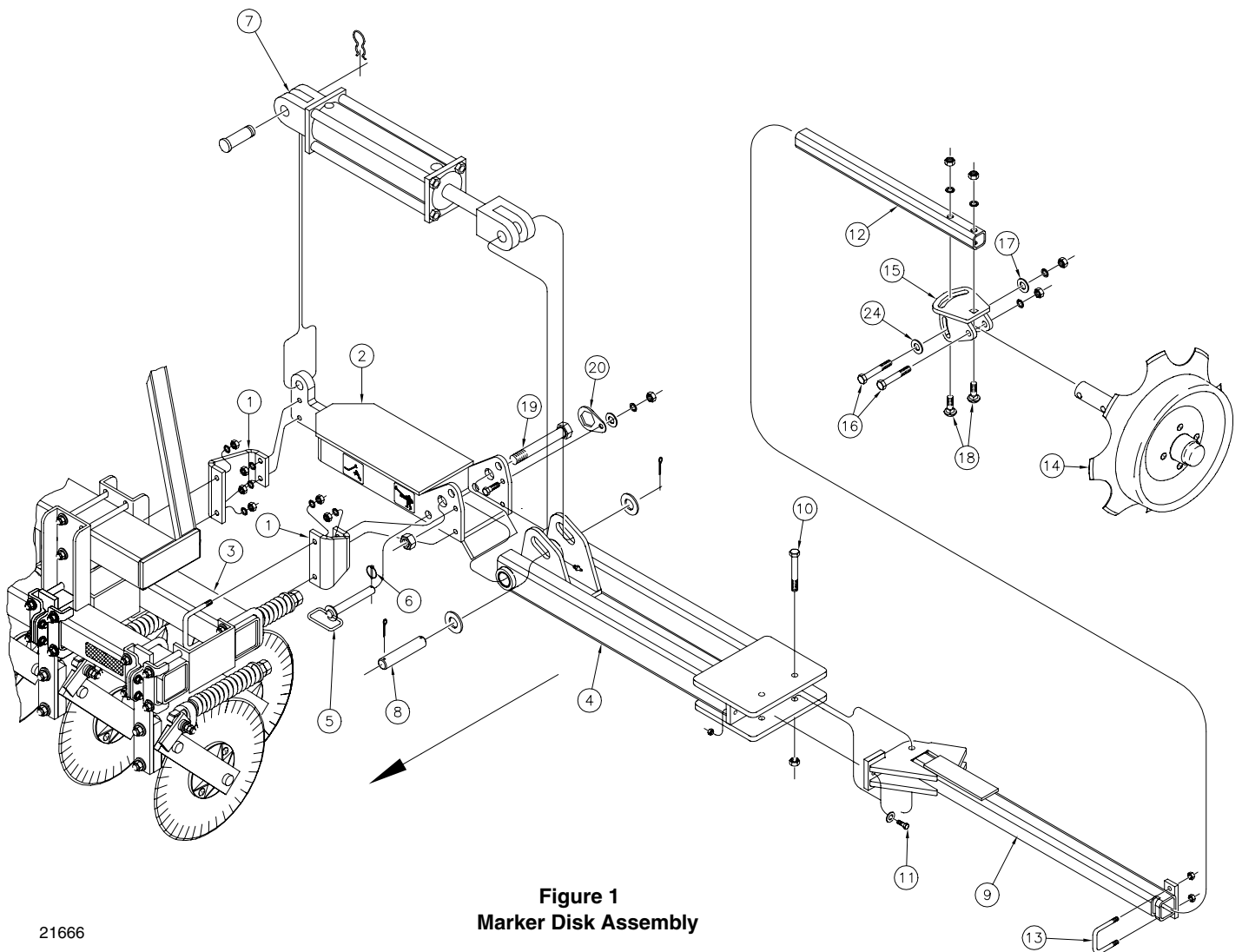


Figure 1
Marker Disk Assembly

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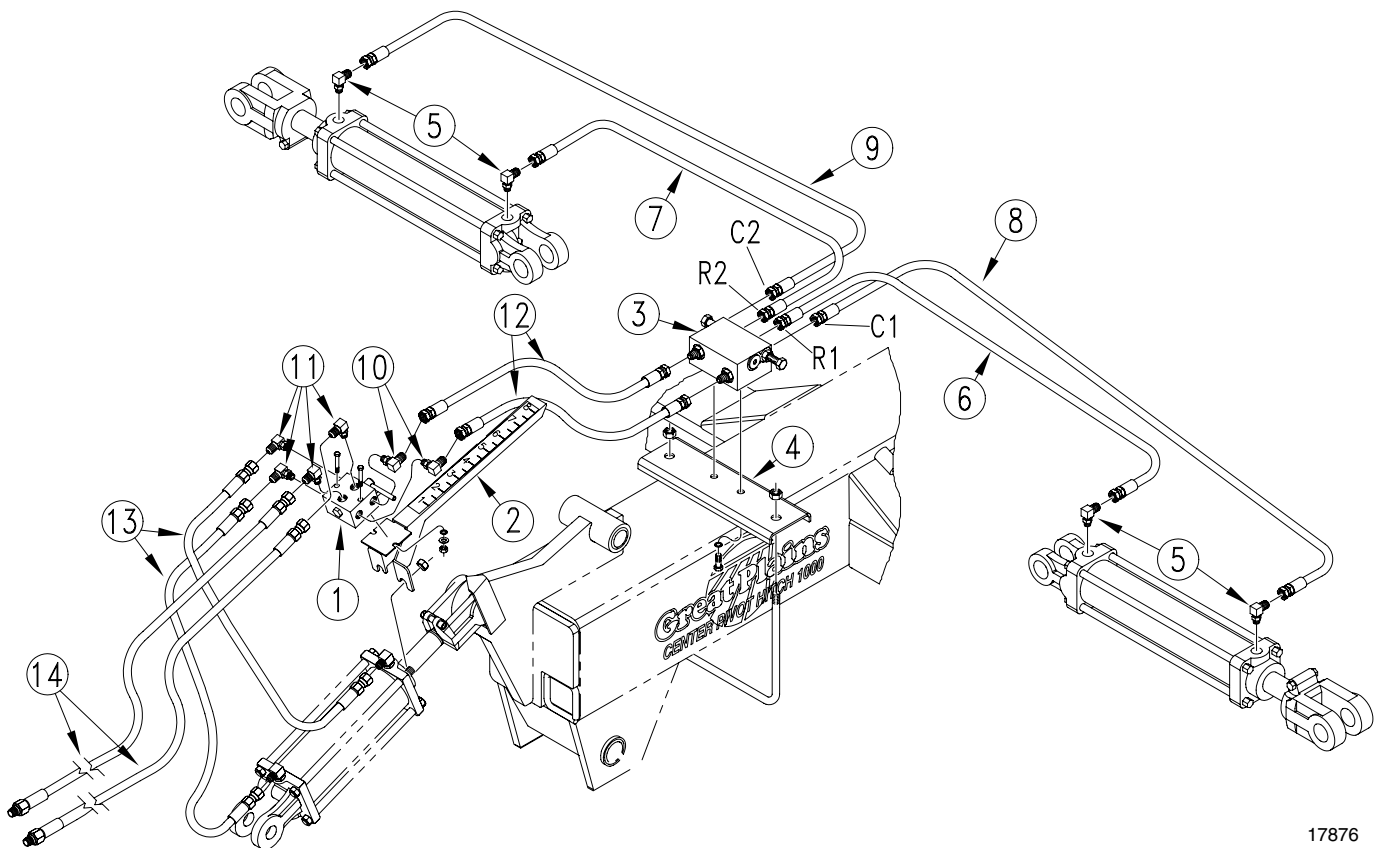
Hydraulic Assembly

1. Remove hoses from elbows in tongue cylinder. Lay hoses aside for later reinstallation.
2. Remove existing cylinder gauge from tongue cylinder. Discard gauge.

Refer to Figure 2.

3. Mount selector valve (1) on new cylinder gauge (2) using 3/8" x 2 3/4" bolts, flat washers, lock washers and nuts provided. Position selector valve as shown.
4. Install new cylinder gauge on tongue cylinder.
5. Mount sequence valve (3) on sequence-valve mount (4). Secure valve on mount with 3/8" x 1" bolts and lock washers provided.
6. U-bolt sequence-valve mount on hitch at location shown. Position sequence valve so four ports point to the rear of the implement and two ports face the tractor. Secure u-bolt with 1/2" nylock nuts.
7. Install elbows with 9/16" outlets (5) in marker-cylinder ports.

8. Use hydraulic hose stamped "811-180C" to connect base ends of marker cylinders to sequence valve. Connect hose from left-hand cylinder (6) to port R1. Connect hose from right-hand cylinder (7) to port R2.
9. Use hydraulic hoses stamped "811-309C" to connect rod ends of marker cylinders to sequence valve. Connect hose from left-hand cylinder (8) to port C1. Connect hose from right-hand cylinder (9) to port C2.
10. Install elbows with one 9/16" outlet and one 3/4" outlet (10) in left-hand ports in selector valve. Install remaining elbows with 3/4" outlets (11) in remaining ports in selector valve.
11. Use two remaining hoses stamped "818-180C" (12) to connect left-hand ports on selector valve to sequence valve.
12. Use hoses stamped "811-272C" (13) to connect right-hand ports in selector valve to tongue cylinder.
13. Connect hoses removed from tongue cylinder in step one (14) to top ports on selector valve.



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Figure 2
Marker Hydraulic Assembly

Bleeding Marker Hydraulics



WARNING!

Escaping fluid under pressure can have sufficient pressure to penetrate the skin. Check all hydraulic lines and fittings before applying pressure. Fluid escaping from a very small hole can be almost invisible. Use paper or cardboard, not body parts, and wear heavy gloves to check for suspected leaks. If injured, seek medical assistance from a doctor that is familiar with this type of injury. Foreign fluids in the tissue must be surgically removed within a few hours or gangrene will result.



CAUTION!

You may be injured if hit by a folding or unfolding marker. Markers may fall quickly and unexpectedly if the hydraulics fail. Never allow anyone near the drill when folding or unfolding the markers.

1. Check that tractor hydraulic reservoir is full.
2. With both markers lowered into field position, loosen hydraulic-hose fittings at rod and base ends of marker cylinders. Loosen fittings on back side of sequence valve.

IMPORTANT: Never bleed an O-ring fitting. Instead, bleed a nearby pipe or JIC fitting.

3. With tractor idling, activate tractor hydraulic valve until oil seeps out around a loosened fitting. Tighten that fitting.

IMPORTANT: JIC fittings do not require high torque. JIC and O-ring fittings do not require sealant. Always use liquid pipe sealant when adding or replacing pipe-thread fittings. To avoid cracking hydraulic fittings from over tightening, do not use plastic sealant tape.

4. Reactivate tractor hydraulic valve until oil seeps out around another loosened fitting. Tighten that fitting. Repeat process until all loosened fittings have been bled and tightened.

Marker Adjustments

Adjust marker folding to a safe speed and adjust marker disk for proper width. Refer to *Marker Adjustments*, "**Adjustments**," in the drill operator's manual.

Listing of Parts**148-430A CP1000 and FCP1000 Dual Markers***Your Kit Includes:*

Qty.	Part No.	Part Description
1	148-354V	1000 DUAL MARKER HOSE BDL
1	148-432K	CP1000 MARKER ASY
1	148-434K	CP1000 MARKER HDWR BDL
1	148-449M	MANUAL CP1000 DUAL MARKER

148-432K CP1000 and FCP1000 Marker Assembly*Your Kit Includes:*

Qty.	Part No.	Part Description
2	113-537H	MARKER DISC ADJUSTMENT WLM
2	113-547S	NO-TILL ARKKER DISK HUB AS
2	148-440H	CP1000 MARKER MNT
2	148-444H	CP1000 MARKER HNG SEC WLMT
2	148-446H	CP1000 MARKER ARM WLMT
2	148-448H	CP1000 MARKER LOCK PIN
2	148-605D	1000 MARKER PIVOT PIN
2	148-711D	CP1000 MARKER PVT BOLT TAB
2	148-722D	CP1000 MARKER ARM TUBE EXT
2	800-001C	GREASE ZERK STRAIGHT 1/4-2
4	802-041C	HHCS 1/2-13X3 1/2 GR5
2	802-055C	HHCS 5/8-11X2 GR5
2	802-062C	HHCS 5/8-11X5 GR5
2	802-295C	HHCS 5/16-18X1 1/2 GR2
2	802-317C	HHCS 1 1/4-7X11 GR5 SPTH
4	802-440C	RHSNB 1/2-13X2 3/4 GR5
2	803-011C	NUT LOCK 5/16-18 PLT
8	803-020C	NUT HEX 1/2-13 PLT
2	803-021C	NUT HEX 5/8-11 PLT
2	803-081C	NUT HEX 1 1/4-7 NYLON INSE
4	803-147C	NUT HEX NYLOCK 1/2-13
2	803-148C	NUT HEX NYLOCK 5/8-11 PLT
2	804-010C	WASHER FLAT 5/16 USS PLT
8	804-015C	WASHER LOCK SPRING 1/2 PLT
4	804-017C	WASHER FLAT 1/2 USS PLT
2	804-021C	WASHER FLAT 5/8 SAE PLT
2	804-022C	WASHER LOCK SPRING 5/8 PLT
4	804-028C	WASHER FLAT 1 USS PLT
2	805-015C	PIN LYNCH 5/16 X 1 3/4
4	805-017C	PIN COTTER 3/16 X 1 3/4
2	806-103C	U-BOLT 1/2-13 1 17/32 X 2
2	810-299C	CYL 2X8X1.12 ROD (TIE ROD)
4	838-365C	DECAL PIC--MARKER PINCH PO
4	838-367C	DECAL PIC--OVERHEAD MKR CR

Assembly**148-434K CP1000 and FCP1000 Marker Hardware Bundle***Your Kit Includes:*

Qty.	Part No.	Part Description
2	148-436H	CP1000 MARKER MNT EAR LG
2	148-438H	CP1000 MARKER MNT EAR SH
1	148-629D	1000 MARKER SEQUENCE VALVE
6	800-035C	CABLE TIE 28 LONG
2	802-017C	HHCS 3/8-16X1 GR5
4	802-055C	HHCS 5/8-11X2 GR5
4	802-058C	HHCS 5/8-11X2 1/2 GR5
16	803-021C	NUT HEX 5/8-11 PLT
2	803-178C	NUT NYLOCK JAM NUT 1/2-13
2	804-013C	WASHER LOCK SPRING 3/8 PLT
16	804-022C	WASHER LOCK SPRING 5/8 PLT
1	806-038C	U-BOLT 1/2-13 X 8 1/16 X9
4	806-062C	U-BOLT 5/8-11 X 4 1/32 X 5
1	810-197C	VALVE,SEQUENCE SHOEMAKER
4	811-065C	ELN9/16MJIC 9/16MORB
2	811-315C	AD 9/16MJIC

148-354V CP1000 and FCP1000 Marker Hose Bundle*Your Kit Includes:*

Qty.	Part No.	Part Description
4	811-180C	HH1/4R1 057 16FJIC
2	811-272C	HH1/2R2 096 1/2MNPT 3/4FJI
2	811-309C	HH1/4R1 066 9/16FJIC