

Installation Instructions



Three-Point Drill Flat-Fold Markers

Used with:

- 3PD27 and 3PD30
- 3PD15 and 3PD20 (Old-Style Drill)



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 flat-fold markers. These instructions apply to:

113-211A	15-Foot Left-Hand Marker
113-212A	15-Foot Dual Markers
113-208A	20-Foot Left-Hand Marker
113-209A	20-Foot Dual Markers
113-199A	27-Foot Dual Markers
113-195A	30-Foot Dual Markers

Manual Update

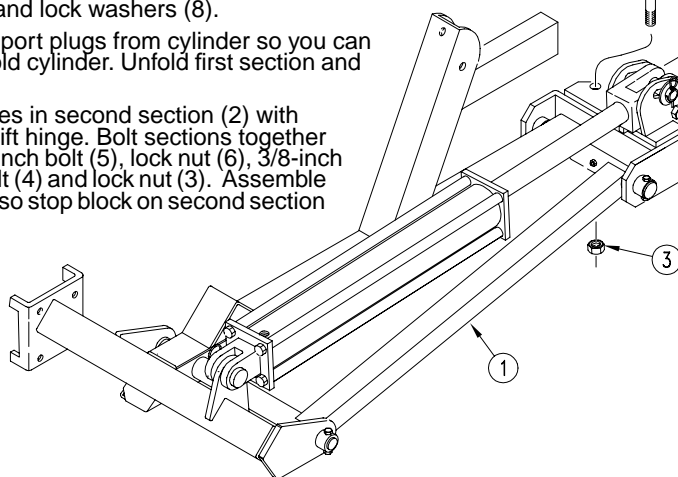
Refer to the drill operator's manual for detailed information on safely operating, adjusting, troubleshooting and maintaining the flat-fold markers. Refer to the parts manual for part identification.

- 3PD27 and 3PD30 Operator's Manual 118-365M-A
- 3PD27 and 3PD30 Parts Manual 118-365P
- 3PD15 and 3PD20 Operator's Manual 118-262D
- 3PD15 and 3PD20 Parts Manual 118-365P

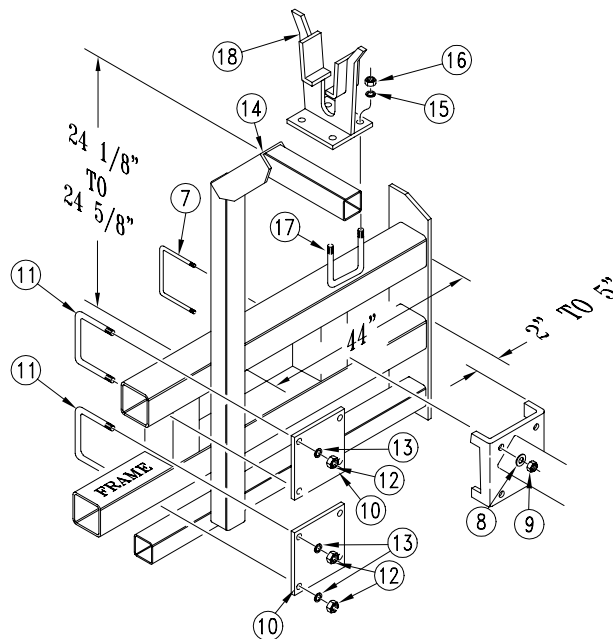
Marker Assembly

15- or 20-Foot Markers

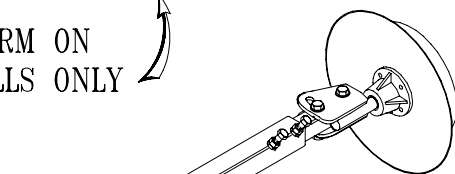
1. Lower drill into field position. From end of each drill box, allow 9 feet of clearance on a 15-foot drill or 11 feet of clearance on a 20-foot drill for marker assembly.
2. Mount first marker section (1) on lower 3 1/2-inch frame tube. Mount marker as close to end of frame as possible. Mount with 5/8-inch u-bolts (7), hex nuts (9) and lock washers (8).
3. Remove port plugs from cylinder so you can extend fold cylinder. Unfold first section and lift hinge.
4. Align holes in second section (2) with holes in lift hinge. Bolt sections together with 5/8-inch bolt (5), lock nut (6), 3/8-inch shear bolt (4) and lock nut (3). Assemble sections so stop block on second section faces up.



5. On 20-foot drills, mount support arm (14) at dimension shown using clamp plates (10), 1/2-inch u-bolts (11), hex nuts (12) and lock washers (13).
6. Mount support-arm saddle (18) to support arm with 1/2-inch u-bolts (17), lock washers (15) and hex nuts (16). To prevent wear when folded, center saddle under the square tube of second section.
7. Adjust support arm and saddle so second section is parallel with seed-box lid when marker is folded.



SUPPORT ARM ON
20-FOOT DRILLS ONLY



8. If necessary, repeat steps to mount other marker. After assembling markers, proceed to *Hydraulic Setup*, page 3.

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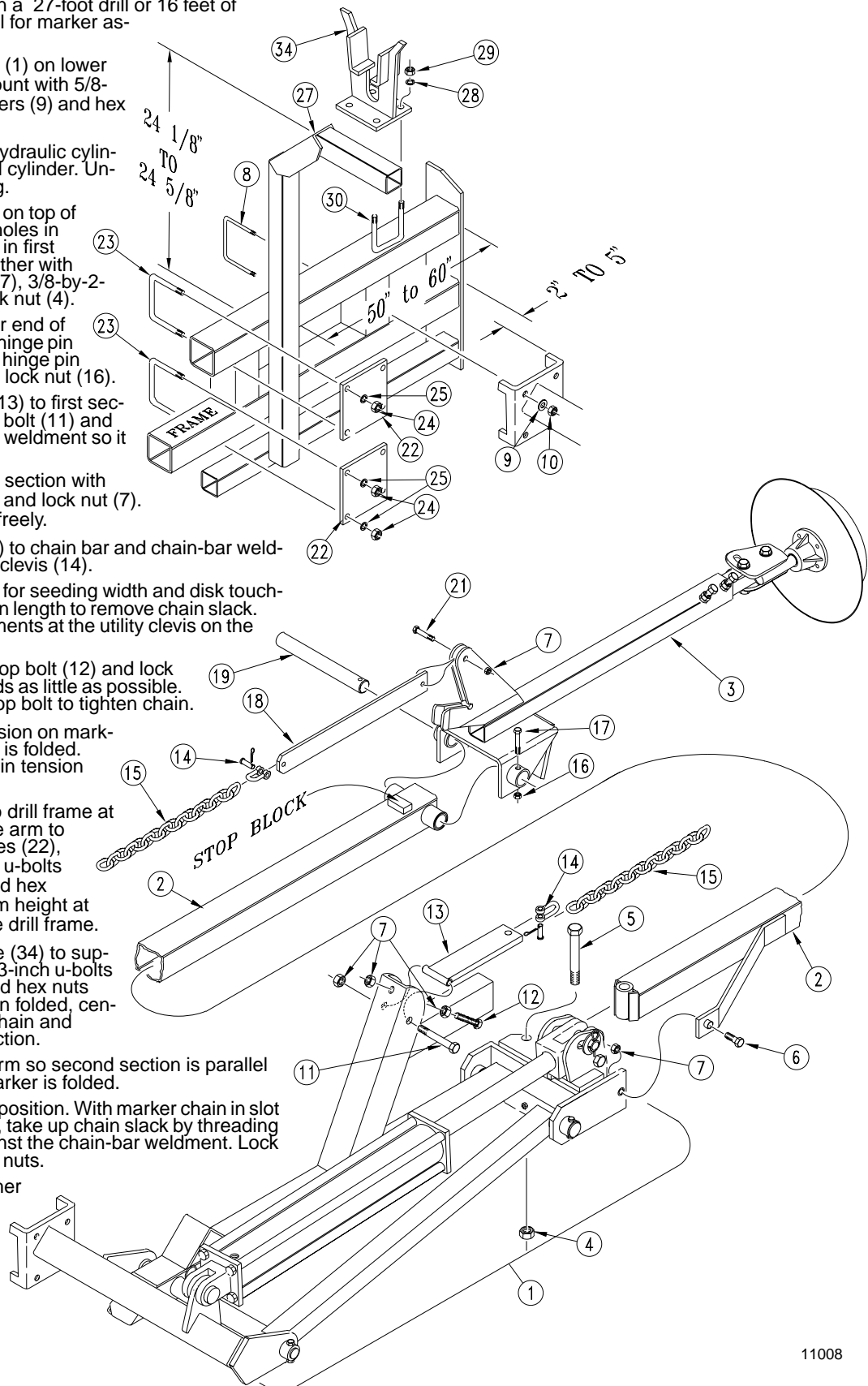
Assembly

27- or 30-Foot Markers

1. Lower drill into field position. From end of each drill box, allow 14 feet of clearance on a 27-foot drill or 16 feet of clearance on a 30-foot drill for marker assembly.
2. Mount first marker section (1) on lower 3 1/2-inch frame tube. Mount with 5/8-inch u-bolts (8), lock washers (9) and hex nuts (10).
3. Remove port plugs from hydraulic cylinder so you can extend fold cylinder. Unfold first section and lift lug.
4. With stop block positioned on top of second section (2), align holes in second section with holes in first section. Bolt sections together with 5/8-inch bolt (6), lock nut (7), 3/8-by-2-inch shear bolt (5) and lock nut (4).
5. Place third section (3) over end of second section and insert hinge pin (19) through pivot. Secure hinge pin with 1/4-inch bolt (17) and lock nut (16).
6. Bolt chain-bar weldment (13) to first section with 3/8-by-3 1/4-inch bolt (11) and lock nut (7). Bolt chain-bar weldment so it pivots freely.
7. Bolt chain bar (18) to third section with 3/8-by-1 1/2-inch bolt (21) and lock nut (7). Bolt chain bar so it pivots freely.
8. Connect marker chain (15) to chain bar and chain-bar weldment with 5/16-inch utility clevis (14).
9. With marker disk adjusted for seeding width and disk touching the ground, adjust chain length to remove chain slack. Make chain-length adjustments at the utility clevis on the chain-bar weldment.
10. Install 3/8-by-2 1/2-inch stop bolt (12) and lock nuts (7) so stop bolt extends as little as possible. Fold marker and adjust stop bolt to tighten chain.

NOTE: Stop bolt must hold tension on marker chain only when the marker is folded. Stop-bolt should not affect chain tension when marker is unfolded.

11. Mount support arm (27) to drill frame at dimension shown. Secure arm to drill frame with clamp plates (22), 1/2-by-3 1/2-by-6 1/2-inch u-bolts (23), lock washers (25) and hex nuts (24). Set support-arm height at about 24 1/8 inches above drill frame.
12. Mount support-arm saddle (34) to support arm with 1/2-by-2-by-3-inch u-bolts (30), lock washers (28) and hex nuts (29). To prevent wear when folded, center saddle under marker chain and square tube of second section.
13. Adjust height of support arm so second section is parallel with seed-box lid when marker is folded.
14. Fold marker into transport position. With marker chain in slot of the support-arm saddle, take up chain slack by threading 3/8-inch stop bolt out against the chain-bar weldment. Lock stop bolt in place with hex nuts.
15. Repeat steps to mount other marker. After assembling other markers, proceed to *Hydraulic Setup*, page 3.



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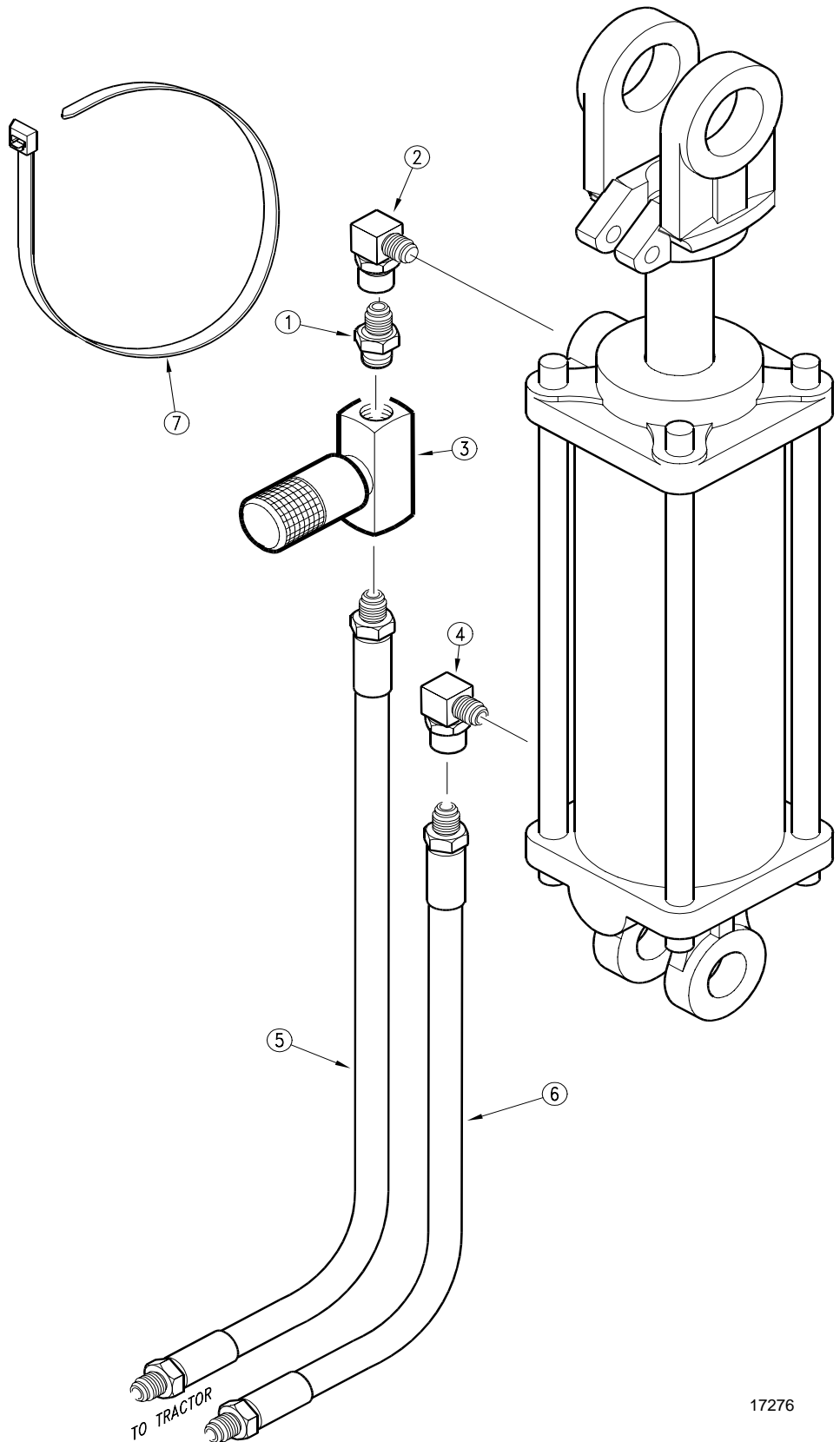
Hydraulic Setup



CAUTION!

Folding the markers with air in the system will cause erratic, jerky movement. With air in the system, the markers may crash, causing injury to bystanders. Always bleed the marker cylinders before folding.

1. Attach adaptor (1) and elbow fitting (2) to needle valve (3). Attach elbow fittings (2 and 4) to cylinder ports. Attach hoses (5 and 6) to needle valve and elbow fitting. Route hoses down to and along drill frame to center of drill. Use cable ties (7) to keep hoses in place.
2. Bleed air out of the hydraulic system.
 - a. Unpin rod end of cylinder. Support cylinder with a block under cylinder body on the first marker section.
 - b. Extend and retract the cylinder rod several times to work air out of the system.
 - c. Repin cylinder with clevis pin, cotter pin and flat washers.
3. Using needle valve, adjust marker folding speed to a slow setting.
4. Fold marker up and down a few times and check for pinching and kinking of hoses. Reposition hoses if necessary.



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