



Service Manual



Cub Cadet 8000 Compact Tractor Attachments Back Hoe Installation

IMPORTANT: READ SAFETY RULES AND INSTRUCTIONS CAREFULLY

This Service Manual is not a substitute for the Operator's Manual. You must read, understand and follow all of the directions in this manual as well as the Operator's Manual before working on this power equipment.

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Backhoe Installation 1

8000 Series and Attachments

1. BACKHOE INSTALLATION

NOTE: These instructions are intended as a supplement to the “Operator’s Manual”, Form # 769-00735, and are to be used in conjunction with the “Operator’s Manual”, as well as the installation instructions for the backhoe mounting frame. Read and understand all of the safety instructions in the backhoe “Operator’s Manual”.

NOTE: There are particular dangers to be aware of when working with large equipment. For instance, danger of crushing injury exists from the weight of the equipment as well as from the unintended actuation of the equipment. Do not attempt to install this backhoe unless proper material handling equipment is available.

NOTE: It is necessary to start the tractor and operate the backhoe from outside of the operators seat while performing this installation. This is the only time the backhoe should be operated from someplace other than the seat.

NOTE: When it is not immediately necessary to have the engine running for the purpose of installation, turn the engine off and remove the key from the key switch.

NOTE: Do not attempt to repair or uncouple any hydraulic connections unless all attachments are resting on the ground, and pressure has been relieved format system.

NOTE: The complete backhoe is contained in at least three parts: the backhoe itself (590-644-100) and the subframe that is necessary to mount it (590-646-100), and the bucket or buckets to be used on the backhoe. They include:

- 9” bucket.....590-648-100
- 12” bucket.....590-649-100
- 16” bucket.....590-650-100
- 18” bucket.....590-651-100
- 24” bucket.....590-652-100
- 36” bucket.....590-653-100

- 1.1. In addition, the backhoe attachment must be used in conjunction with the front end loader attachment: 590-641-100.
- 1.2. The front end loader may be installed at the same time as the backhoe, or it may have been

previously installed, with the backhoe added afterward.

- 1.3. Check the contents of the backhoe kit. A listing of the contents will accompany the kit.
- 1.4. Position the mounting frame so that the angled guide tabs on the front cross member are on top.
- 1.5. Test fit the latching bracket to the mounting frame, and secure it with the T Handle clevis pins to ensure that it is seated fully. See Figure 1.5.

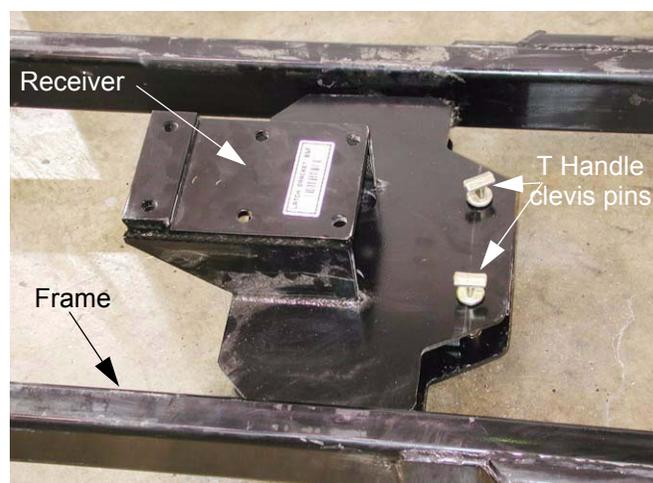


Figure 1.5

- 1.6. Test fit the receiver to the mounting frame. See Figure 1.6.

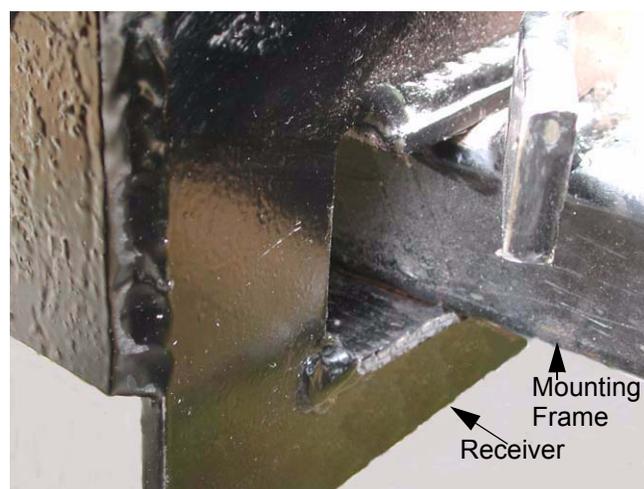


Figure 1.6

1.7. If necessary, minor adjustments can be made to insure ease of installation: e.g., if a weld-bead interferes with the fit, the corner may be radiused for clearance.

1.8. Once fit is confirmed, install the receiver and latching bracket on the tractor frame.

NOTE: If a front end loader has been previously installed, the cross member that ties the two loader rear mounts to the transmission housing must be removed. The latching bracket bolts on in place of the cross member.

1.9. Remove the four bolts that hold the cross member to the bottom of the transmission housing using a 19 mm wrench. See Figure 1.9.

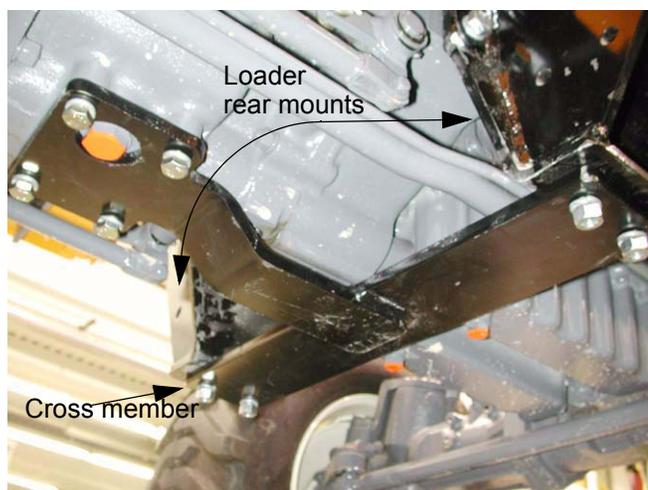


Figure 1.9

1.10. Remove the four nuts, bolts and lock washers that hold the cross member to the rear loader mounts using a pair of 3/4" wrenches, and remove the cross member.

WARNING: cross member is heavy.

1.11. Lift the receiver into position in place of the cross member. See Figure 1.11.



Figure 1.11

NOTE: A small jack stand will fit in the crotch of the receiver, supporting it securely until the bolts are installed.

1.12. Attach the receiver to the loader rear mounts and transmission housing using the hardware previously removed. Do not tighten any receiver mounting bolts until all of them are in place.

1.13. Remove the two nuts and two bolts that secure the P.T.O. shield to the back of the transmission using an 18 mm wrench. See Figure 1.13.

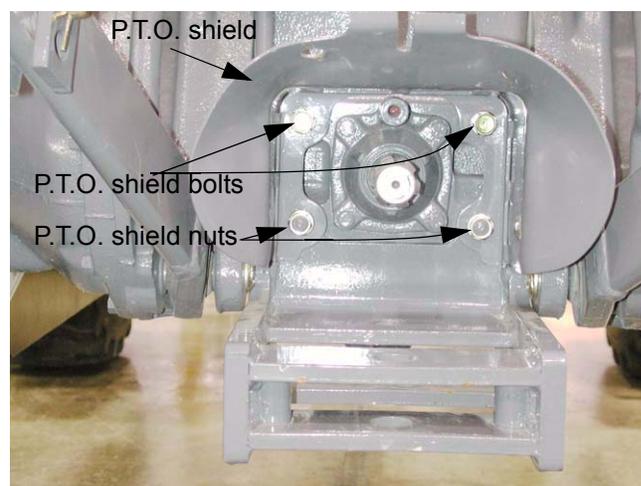


Figure 1.13

- 1.14. Disconnect the lower link limiter from the R.O.P.S. bracket on the axle by removing the hairpin clip and clevis pin. See Figure 1.14.

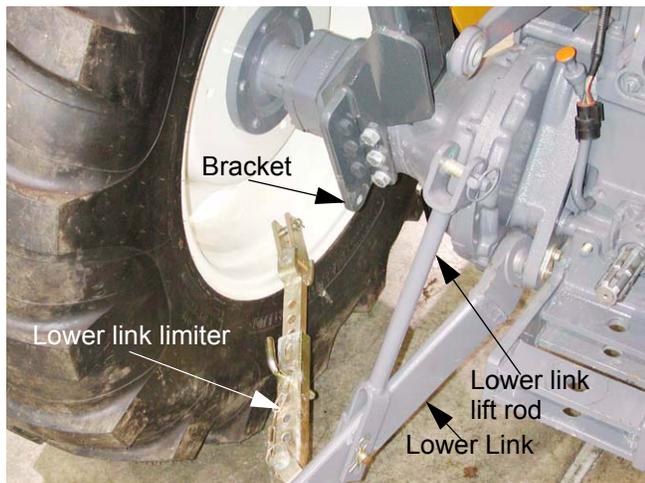


Figure 1.14

- 1.15. Disconnect the lower link lift rod from the lift arm by removing the click pin and clevis pin. Allow the lower link to rest on the ground.
- 1.16. Remove the bolt that secures each lower link pivot pin using a 14 mm wrench. See Figure 1.16.

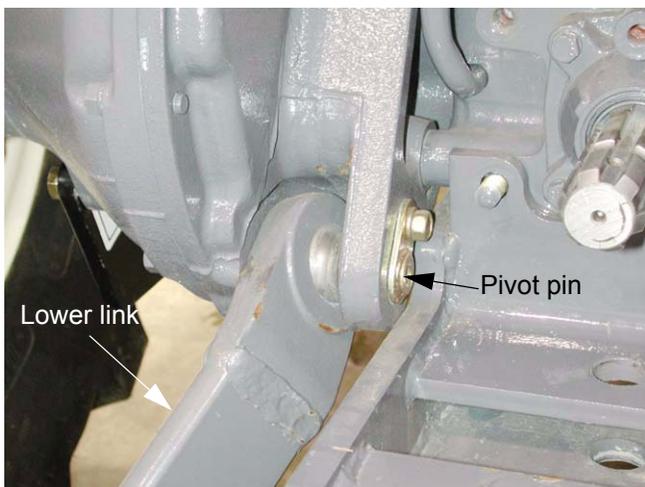


Figure 1.16

- 1.17. Withdraw each pivot pin and remove each lower link.

- 1.18. Remove the hairpin clip and clevis pin that secure the top link to the draft control input bracket. See Figure 1.18.

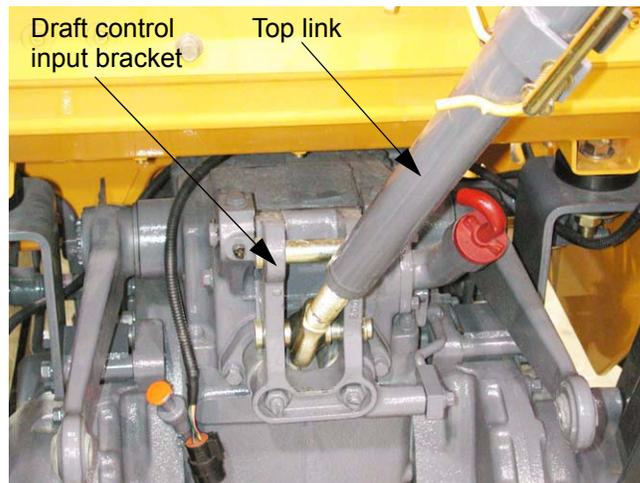


Figure 1.18

- 1.19. Remove the top link.
- 1.20. Install the two nuts that held the P.T.O. shield and draw bar bracket to the back of the transmission housing. Put them on finger-tight only.
- 1.21. Remove the four bolts that hold the draw bar bracket to the bottom of the transmission housing using a 19mm wrench. See Figure 1.21.

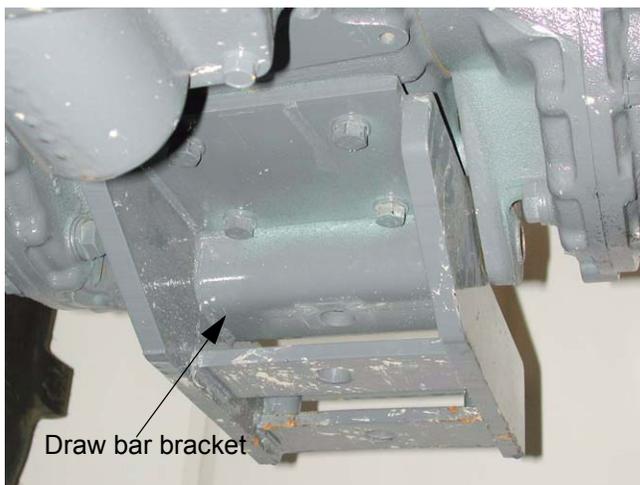


Figure 1.21

- 1.22. Leave the draw bar bracket in position. It will hang securely on the two studs on the back of the transmission housing.
- 1.23. Position the backhoe latching bracket beneath the draw bar bracket, using a hydraulic jack.

- 1.24. Fasten the latching bracket and draw bar bracket to the bottom of the transmission housing using the six 14 mm by 40 mm bolts and lock washers provided with the backhoe. See Figure 1.24.

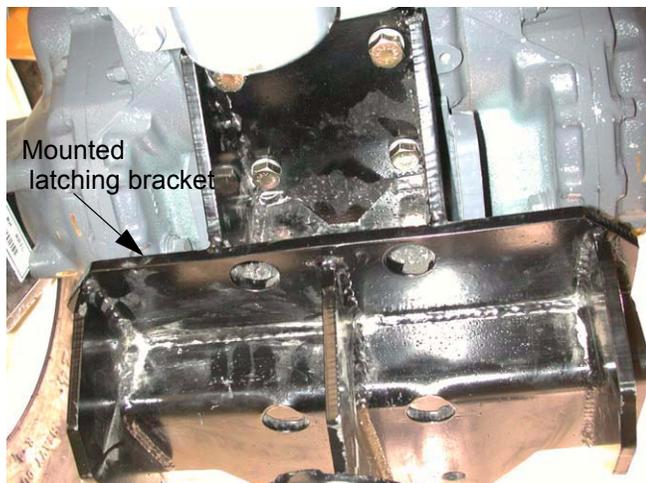


Figure 1.24

NOTE: Use a 22mm wrench to tighten the bolts.

- 1.25. Test fit the mounting frame. Lift it into position using a hydraulic jack, and confirm the correct fit of the frame in the receiver and latching bracket when they are mounted on the tractor. See Figure 1.25.



Figure 1.25

NOTE: The draw bar may be left in or removed, at the operator's or installers discretion. The draw bar can be installed or removed once the backhoe is mounted, but it is difficult to reach the hairpin clips that secure the clevis pins.

- 1.26. Confirm that the mounting frame seats properly in the receiver. See Figure 1.26.

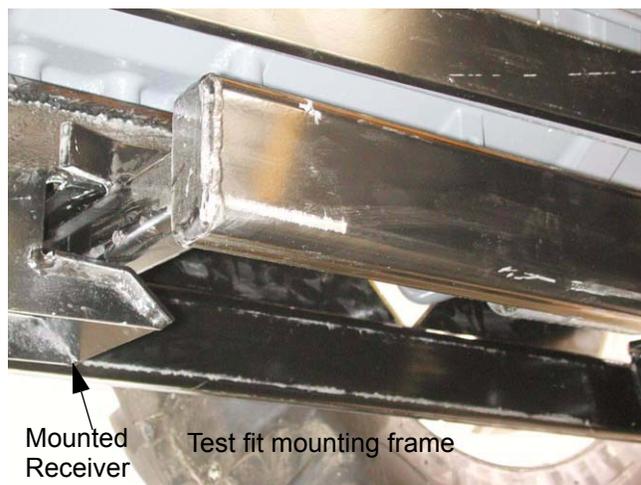


Figure 1.26

- 1.27. Confirm that the mounting frame seats fully into the latching bracket, allowing the T-handle clevis pins to drop completely to their stop shoulders. See Figure 1.27.

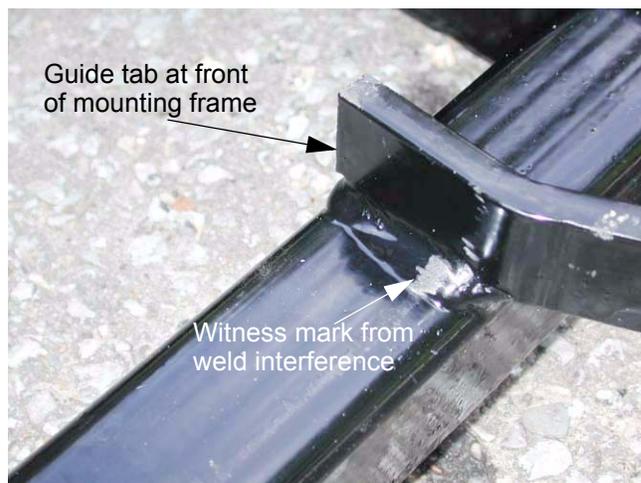


Figure 1.27

NOTE: If there is a fit problem, the test fit will help identify the source of the issue.

NOTE: If the mounting frame does not fit properly, it may be necessary to radius some welds, or adjust the mounting positions of the receiver and latching bracket. If these minor adjustments do not solve the problem, call Cub Cadet Technical support.

- 1.28. If necessary, the numbers may be ground off of the T handle clevis pins to ease installation. See Figure 1.28.



Figure 1.28

- 1.29. After correct fit is confirmed between the mounting frame, receiver, and latching bracket, attach the mounting frame to the backhoe. See Figure 1.29.

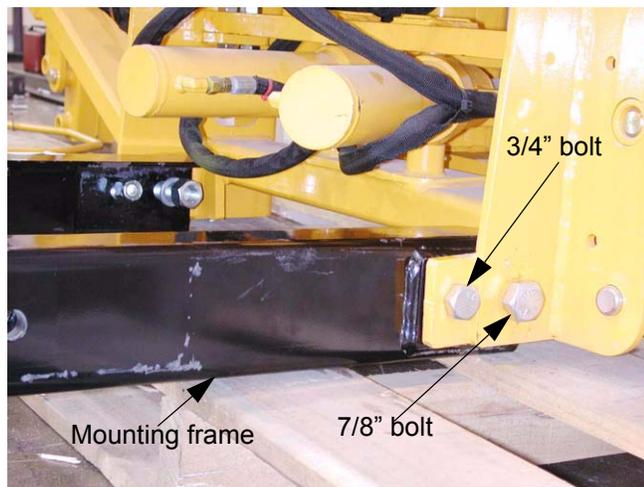


Figure 1.29

NOTE: The guide tabs at the front of the mounting frame face up.

- 1.30. Secure the mounting frame to the backhoe using the two 7/8" X 3 1/2" bolts, nuts, and lock washers in the rear holes, and the 3/4" X 3 1/2" bolts, nuts and lock washers in the front holes.

- 1.31. Install the braces diagonally between the mounting frame and the backhoe, using four 3/4" X 2 1/2" bolts, nuts, and lock washers. See Figure 1.31.



Figure 1.31

NOTE: There is a slight off-set to the braces, allowing them to fit flush against the backhoe and mounting frame.

- 1.32. Verify that the mounting frame and backhoe are at a 90 degree angle to one another, then tighten the 7/8" bolts using a pair of 1 5/16" wrenches. Tighten the 3/4" bolts using pair of 1 1/8" wrenches.
- 1.33. Mount the seat pedestal to the backhoe. Tighten the bolts using a pair of 17mm wrenches. See Figure 1.33.

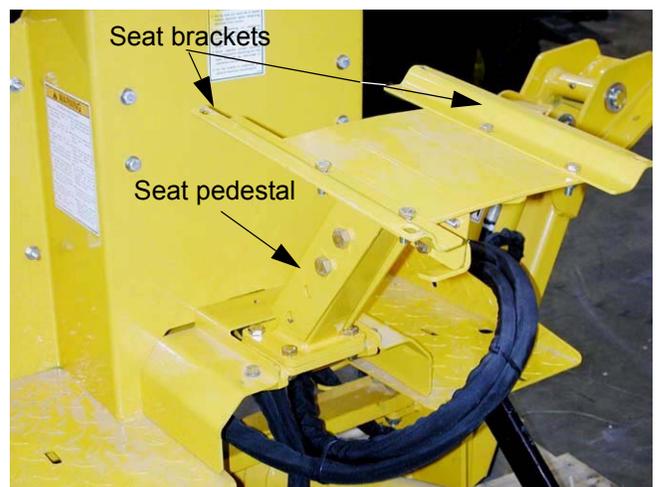


Figure 1.33

- 1.34. Position the backhoe behind the tractor, oriented as it is to be installed.

- 1.35. Remove the two seat brackets from the seat pedestal using a pair of 13mm wrenches.
- 1.36. Place the backhoe seat atop the pedestal, and secure it by running 5/16" bolts with lock washers through the holes previously occupied by the seat bracket bolts, and into the threaded holes in the bottom of the seat. See Figure 1.36.



Figure 1.36

- 1.37. Tighten the bolts using a 1/2" wrench. They are easily reached once the threads are started by tilting the seat forward.
- 1.38. Remove the cover from the backhoe control console using a pair of 13mm wrenches. See Figure 1.38.



Figure 1.38

- 1.39. Identify the feed and return lines where they enter the hydraulic valve package. As seen from behind the backhoe, looking toward the front of the tractor, the feed line is on the right side, entering the middle port of the valve. The return line is on the left, entering the lowest port on the valve.
- 1.40. Connect the hoses on the backhoe to the two separate lengths of hose that came with it, keeping track of which hose is which. Connect the hoses using two 3/8" JIC unions. See Figure 1.40.

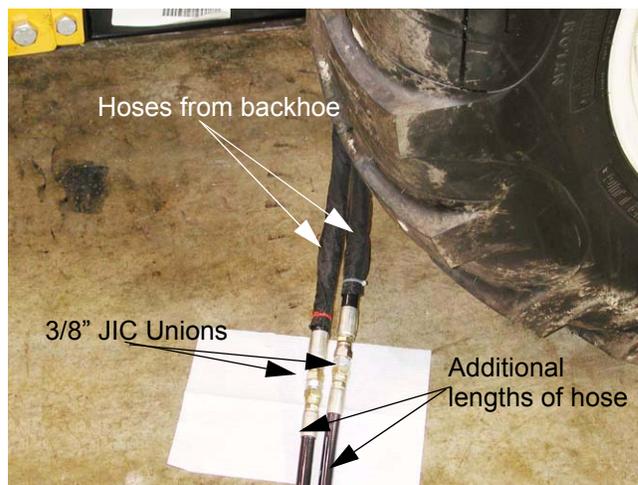


Figure 1.40

- 1.41. Tighten the fittings using a 7/8" wrench and a 13/16" wrench.
- 1.42. If the loader had been previously installed, perform the following steps:
- 1.43. Disconnect the loader return hose and the 90 degree fitting from the adaptor on the front surface of the modulating valve.

- 1.44. Disconnect the loader power beyond hose from the rear-most 90 degree fitting on the modulating valve. See Figure 1.44.

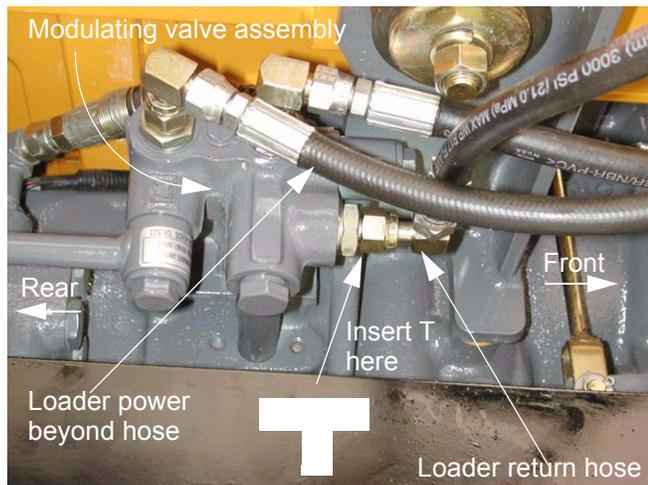


Figure 1.44

- 1.55. Couple the pressure hose leading to the backhoe to the power beyond hose from the loader. See Figure 1.55.

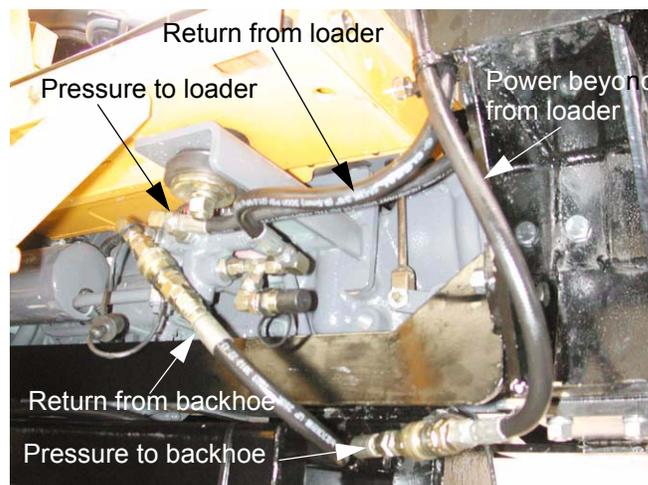


Figure 1.55

- 1.45. Install the T fitting in place of the 90 degree fitting on the front of the block. The center leg of the T should face down.
- 1.46. Install the 90 degree fitting and loader return hose onto the forward-facing leg of the T.
- 1.47. Assemble a 3/8" male coupler to a second 90 degree fitting and install that to the center (bottom) leg of the T fitting so that the coupler faces forward.
- 1.48. Adapt a 3/8" female coupler to the loader power beyond hose using a double male fitting.
- 1.49. Adapt a 3/8" male coupler to the 90 degree fitting on the modulator valve that the loader power beyond hose had been connected to.
- 1.50. Adapt a 3/8" male coupler to the pressure hose that feeds hydraulic fluid to the backhoe, using a double male fitting.
- 1.51. Adapt a 3/8" female coupler to the return hose from the backhoe, using a double male fitting.
- 1.52. Install coupler covers on all couplers.
- 1.53. Couple the backhoe pressure hose to the loader power beyond hose.
- 1.54. Couple the return hose from the loader to the forward-facing coupler attached to the T fitting on the front surface of the modulator valve.

- 1.56. When the hydraulics are connected as illustrated, both the front end loader and the backhoe should be functional.
- 1.57. Install the cover and hand bar on the backhoe control console. Tighten the nuts and bolts using a pair of 13mm wrenches. See Figure 1.57.



Figure 1.57

- 1.58. Thread the stabilizer control levers into the linkages inside the two close-set holes in the top of the console. See Figure 1.58.



Figure 1.58

- 1.59. Once installed, tighten the jam nuts using a 14mm wrench.
- 1.60. Start the two levers that control the boom, swing, dipperstick and shovel control levers through their rubber boots and bushings.
- 1.61. thread the two levers into the linkages visible within the two larger holes in the console cover. See Figure 1.61.



Figure 1.61

- 1.62. Each of the two levers has a slight bend in it. Position the two levers so that they are angled away from one another.

- 1.63. Tighten the jam nuts using a 14mm wrench to secure them in this position.
- 1.64. Tuck the bottom of each rubber boot into the hole surrounding each control lever, to help keep out water and dirt. See Figure 1.64.



Figure 1.64

- 1.65. Ensure that no unsafe conditions will arise from starting the engine or operating the backhoe.
- 1.66. Start the engine briefly, and check for any hydraulic leaks. Turn off the engine, relieve pressure, check for and repair any leaks before continuing.

NOTE: Mounting the backhoe to the tractor is the only time that it is recommended to operate the backhoe while not occupying the operator's seat.

- 1.67. If no leaks exist, re-start the engine, lower the stabilizers and manipulate the boom and dipperstick to allow the installation of the bucket. See Figure 1.67.

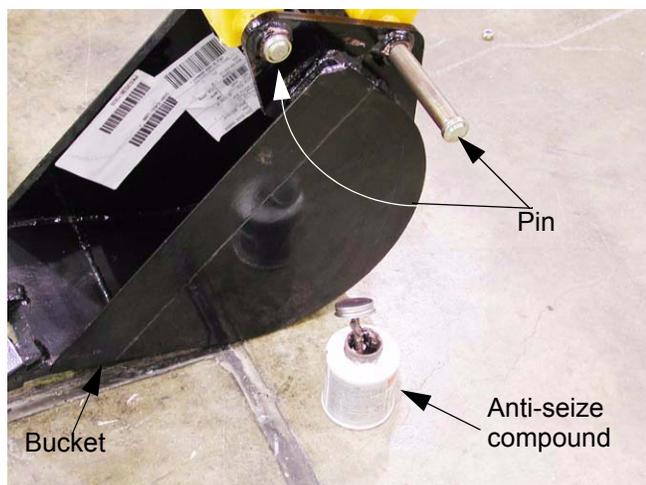


Figure 1.67

NOTE: It is generally easier to connect the bucket to the fixed portion of the dipperstick first.

- 1.68. Secure the bucket to the dipperstick using the large pins. Lock the pins in place using the nuts and bolts provided in the kit. See Figure 1.68.

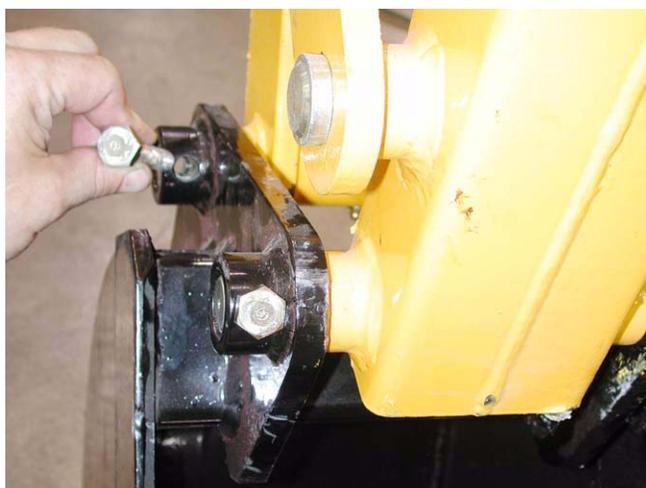


Figure 1.68

NOTE: There may be some interference between the hardware and the weld beads on the collars that the bolts pass through. This is acceptable, and creates an additional locking effect.

- 1.69. Once the bucket is installed, it may be used in conjunction with the stabilizers to raise the

mounting frame up to just beneath the level of the latching bracket and receiver.

- 1.70. Ensure that the hydraulic hoses are clear of the wheel paths, and back-up the tractor until the center cross member of the mounting frame is just behind the latching bracket.
- 1.71. Check the final alignment of the front cross member with the receiver. It should be roughly centered.

NOTE: small lateral adjustments can be made using the swing of the boom. Larger adjustments will require realignment of the tractor.

- 1.72. Using the stabilizers and bucket, raise the mounting frame to make the final height adjustment. The front cross-member of the mounting frame should be level with the receiver. The center cross-member should be level with the latching bracket.

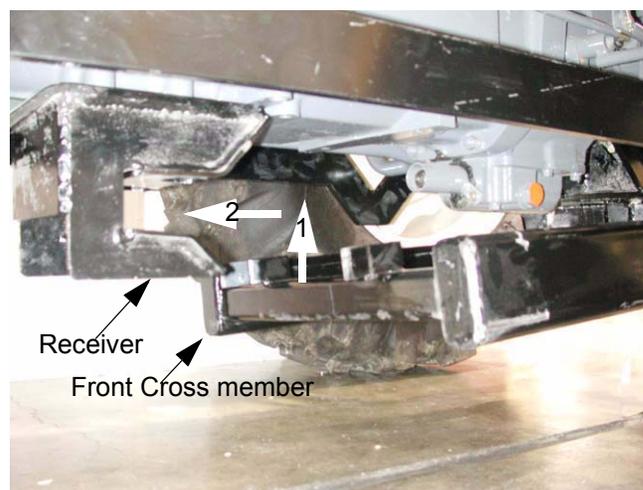


Figure 1.72

- 1.73. Once correct alignment is achieved, back the tractor into the mounting frame, seating the center cross member into the latching bracket.

- 1.74. Backing-up further will seat the front cross member into the receiver. See Figure 1.74.



Figure 1.74

- 1.79. Make a final check for leaks. If non exist, and the backhoe operates properly, it may be put into service.

- 1.75. Once both cross members are fully seated, insert the T handle Clevis pins through the latching bracket, securing the mounting frame to the tractor.
- 1.76. Lock the T handle clevis pins in place using the large hairpin clips supplied.
- 1.77. After the backhoe and mounting frame are safely mounted on the tractor, lubricate all of the grease zirchs on the backhoe attachment. See Figure 1.77.



Figure 1.77

- 1.78. Start the engine, and run the backhoe through its full range of motion to purge any air from the hydraulic system.