<u>1790/95 WEIGHT TRANSFER SYSTEM</u>

(16 ROW)

INSTALLATION INSTRUCTIONS





MARTIN PLANTER ATTACHMENTS

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BEFORE INSTALLATION BEGINS EVALUTE POSSIBLE CLEARANCE ISSUES

It is important to verify that you do not have any installed accessories that may cause an interference problem when the planter is folded for transport. Mounting of liquid fertilizer tanks, air compressors, or other accessories along the center spine of the planter must be evaluated for interferences before and carefully confirmed after the initial installation upon the first time folding the planter. Every effort has been made to minimize the possibility of interferences, however any customizations or accessories mounted <u>MUST</u> be carefully evaluated by the installer to prevent the possibility of equipment damage.

Before beginning the installation the planter should be unfolded and lowered to near operating levels to allow good access to the wing hinge area where the brackets will be installed. All hydraulic system pressure should be released and the planter supported as needed to prevent unexpected movement.



AREAS OF CONCERN FOR INTERFERENCE/CLEARANCE ISSUES OF TOUNGE MOUNTED TANKS WHEN FOLDED FOR TRANSPORT

STEP 1. REMOVE WING VACUUM CONNECTOR HOSES.

Loosen the clamp on the vacuum hoses at the plastic elbow connector and remove the hose from the loom on each wing. Normally this hose is routed through the loom at the wing pivot point and is underneath the seed delivery tubes , these hoses should be removed from the loom and set aside for rerouting after the brackets are installed (both sides).



STEP 2: REMOVE TRAVEL LIMIT STRAPS

Using large snap ring pliers, remove the external retaining rings (4) from the pins on the wings at the top of the hinge point for both left and right wings. Remove the washers and the travel limit straps from bot LEFT and RIGHT wings, and set aside for later reinstallation.



STEP 3 : INSTALL THE INNER WING BRACKETS

NOTE: It may be necessary to place a block under the seed hoses, raising them to allow for better clearance when installing the brackets.

1.Place the 800167(front)bracket on the <u>outside</u> of the loom and locate on the 2 pins where the travel limit straps were removed. Place the 800168 (rear) inner bracket on the inside of the loom as shown.

2. Then insert the two 5/8 X 3 (783630) bolts , placing a 800161 spacer over each bolt. Insert the bolts through 800168 bracket and install the 5/8 flange nuts (785600) finger tight .

3.install the two 1/2 X 1-1/4 (783512) bolts through the two holes in the tower section of the bracket and start the nuts (785500) to finger tight .

4. Ensure that there is no wiring or air lines underneath or between the brackets and that no seed hoses are pinched and that the brackets will move on the travel limit pins so that they will be free to pull up close to the frame web when tightened.

NOTE: The part numbers shown here are for the RIGHT WING, the LEFT WING inner brackets are part numbers 800162 (front) and 800163(rear) and follow the same method of installation. (continued on next page)



STEP 3 : CONTINUED

5. Place the two 5/8 X 9 (784964) bolts with flat washer (788601) through the holes in bracket 800167 on the front and rear of the toolbar.

6. Place the Clamp bar (800181) over the bolts underneath the upper toolbar as shown and install the 5/8 flange nuts (785600) finger tight.

7. Start the 5/8 X 2 bolt (784620) with jam nut (785600) in the weld nut in the location shown. This will be adjusted and locked in the final steps later.



STEP 4: INSTALL THE OUTER WING BRACKETS

1. Place the 800170 bracket over the rear travel limit pin on the outer wing.

2. For this step it may be helpful to use a wooden block to hold any seed hoses and wiring harnesses up 4-5 inches from the top of the toolbar for ease of installation of the next bracket. Place the 800169 bracket over the front travel limit pin, and push the bracket rearward so that the notched area of the bracket clears the tie off bar shown. <u>Ensure</u> that any wiring running across the top of the toolbar <u>IS NOT</u> under the bracket.

3. Insert the two 5/8 X 3 bolts (783630) through the holes in the front bracket (800169) then place the spacers(800161) over each bolt and then through the corresponding holes in the rear bracket (800170). Install the two 5/8 flange nuts (785600) on the bolts finger tight.

4. Install the two 1/2-13 bolts (783512) in the holes in the upper part of the front and rear (800169-800170) brackets and install the flange nuts (785500) finger tight.

5. Place the two 5/8 X 9 (784964) bolts with flat washer (788601) through the holes in bracket 800169 on the front and rear of the toolbar.

6. Place the Clamp bar (800181) over the bolts underneath the upper toolbar as shown and install the 5/8 flange nuts (785600) finger tight.

7. Start the 5/8 X 2 (784620) bolt and the jam nut(785600)in the weld nut shown . This will be adjusted in a later step

NOTE: Part numbers for RIGHT WING shown, LEFT WING brackets are 800167(front) and 800168(rear)



STEP 5 : ATTACH THE HYDRAULIC CYLINDERS

At this stage of the installation both inner and outer wing bracket assemblies for both wings should be installed and all bolts in a finger tight condition to allow for cylinder installation and final adjustment and tightening. Right wing shown below (LEFT WING is mirror image)



- 1. Install the cylinder as shown, using the pin kit supplied with the cylinder. Place the gland port (Rod End) on the bottom side. This port will require the installation of the breather vent unit (800192) supplied with the kit, this will prevent rainwater entry into the vented end of the cylinder.
- 2. When installing the hydraulic fittings and hoses, use the port on the base end of the cylinder.

NOTE: Left wing cylinder installation with the gland port DOWN will place the BASE end port facing rearward.



STEP 6: TIGHTEN ALL BRACKETS

Before proceeding with this step inspect both inner and outer brackets and both wings to ensure that the brackets are not on top of any hoses or wiring harnesses or there are any interferences with aftermarket custom brackets or installed accessories before tightening.

- 1. Begin by tightening the top two bolts next to the cylinder ends on the inner and outer brackets, tighten to 85 foot lbs torque
- 2. Tighten the 5/8 bolts attaching the front and rear brackets together, ensure that the brackets are as close to the welds on the travel limit pins as possible Tighten to 143 ft lbs torque
- 3. Tighten the 5/8 X 9 bolts clamping the brackets to the wings , tighten to 143 ft lbs torque.
- 4. Reinstall the travel limit straps removed at the beginning of the installation noting that the notched end of the bar goes to the inner wing pin. Reinstall the Flat washers and the heavy duty snap rings to retain the travel limit straps in place.
- 5. With all bolt tightened, now adjust the support stop bolt on the ends of the inner wing and outer wing brackets to firmly contact the end of the rear bracket and lock into position with the jam nut.
- 6. Remove any blocking used to support seed tubes or other hoses ,route and tie off as appropriate to ensure there are no pinch points or radical bends in seed tubes.
- 7. Route as needed and reattach the vacuum hoses to the connectors where they were removed in step 1



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STEP 7: HYDRAULIC AND ELECTRICAL CONNECTIONS

The supplied valve may be mounted in any desired location but typically would be installed within 2 feet of one or the other wing cylinders to reduce hose length. Plumbing for the valve is as follows: Port 1= Return to tank, Port 2= System supply pressure, Port 3 = Supply to cylinders, normally a "tee" fitting is used to connect both cylinders to this port. The hydraulic flow requirements for this system are very low and typically will be less than 1 gpm.

CAUTION The return line from Port 1 <u>MUST</u> be connected to an unrestricted return to tank port such as case drain return or hydraulic motor return. Equipment damage may result if the return line is blocked and prevented from returning oil to tank either while in use or if disconnected. Use Parker fitting 0304-170 or Specialty Manufacturing part number S71-4-CV when connecting to tractor hydraulic system.



Due to the unique nature of the installations on each planter the hoses are not supplied with this kit and it is up to the installer/owner to properly route and secure the hoses according to the space available and the accessories installed on each particular planter. The use of 3000 psi rated hose is strongly recommended.

The control box may be located in any convenient area of the cab, and is provided with approximately 10 feet of power supply cable and 15 feet of valve control cable to a 2 pin deutsch connected to be secured in an accessible and safe location on the back of the tractor. The power supply cable is equipped with an inline fuse holder for a 5 amp ATC style fuse and should be attached to key on +12 VDC input, the inline fuse is supplied with a standard automotive style female blade connector mating to a male blade found on most tractor fuse panels. Attach ground lead. A 30 foot valve connection cable is provided to allow for the widest range of valve locations possible and for ample length for transport and operational configurations. The valve cable is provided with a DIN style connector to the valve and the mating 2 pin Deutsch connector mating to the control box lead. The valve connection cable should be carefully routed and located to clear all pinch point areas in transport and operational modes and properly secured with Zip ties or other suitable semi permanent methods to prevent damage. Excess cable should be looped and tied off in a secure manner out of the way of possible physical damage.



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