

INSTALLATION INSTRUCTIONS



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SAFETY NOTICES

Safety notices are one of the primary ways to call attention to potential hazards.

This Safety Alert Symbol identifies important safety messages in this manual. When you see this symbol, carefully read the message that follows. Be alert to the possibility of personal injury or death.

WARNING

Use of the word **WARNING** indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.

CAUTION

Use of the word **CAUTION** with the Safety Alert Symbol indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury.

CAUTION

Use of the word **CAUTION** without the safety alert symbol indicates a potentially hazardous situation which, if not avoided, may result in equipment damage.

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HYDRADRIVE

The HydraDrive is a hydraulic motor with an integrated flow control valve that delivers high torque at low speeds while consuming minimal hydraulic oil. Hydraulic ports on the drives allow multiple HydraDrives to be connected.

SPECIFICATIONS

GENERAL

RPM Operating Range: 4 to 180 RPM

Hydraulic Oil Usage: 4.9 in³/rev (80 cc/rev)

Max Hydraulic Oil Usage: 4 gpm (15 LPM)

Maximum Torque: 1400 inch pounds (160 Nm)

Dimensions: 10.2 x 5.0 x 6.3 in (260 x 127 x 160 mm)

Weight: 19.8 lbs (9.0 Kg)

ELECTRICAL

Control Signal: 12 Volts pulse width modulated

Control Frequency: 200 Hz

Maximum Current: 1.5 Amps

HYDRAULIC CONNECTIONS

Tractor Hydraulics: Closed Center or Open Center

HydraDrive Hydraulics:

Pressure port 1/2" SAE (7/8 UNO)

Return port 1/2" SAE (7/8 UNO)

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COMPONENTS

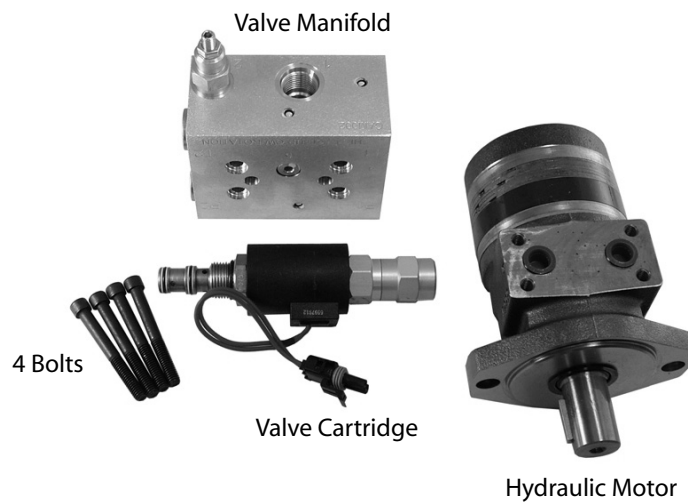
HydraDrive components consist of the following items that must be assembled prior to installation.

- Hydraulic motor
- Valve manifold
- Valve cartridge
- (4) bolts

A bracket will be required to attach the HydraDrive to the implement.

Figure 1

HydraDrive Components



ASSEMBLY

The mounting position of the manifold onto the motor will affect:

- Direction the motor will turn (clockwise or counterclockwise). The motor direction is identified on the type and bottom of the manifold.
- Pressure and return inlets

To Assemble the HydraDrive:

1. Remove the red blocking plugs from the hydraulic motor and verify o-rings are fitted within the pressure and return inlets.

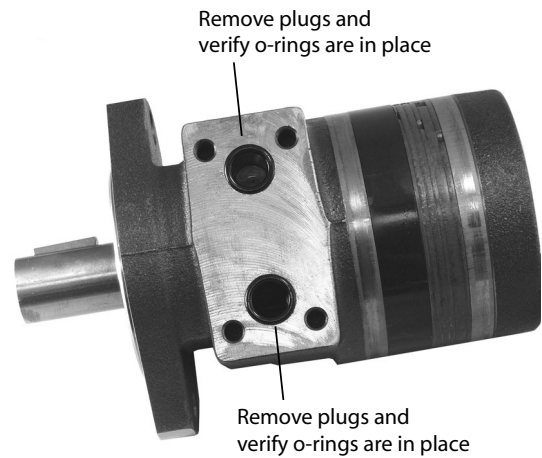
IMPORTANT: Ensure the hydraulic motor mounting surface is clean with no dust particles before attaching to the manifold.

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Figure 2

Verify O-rings

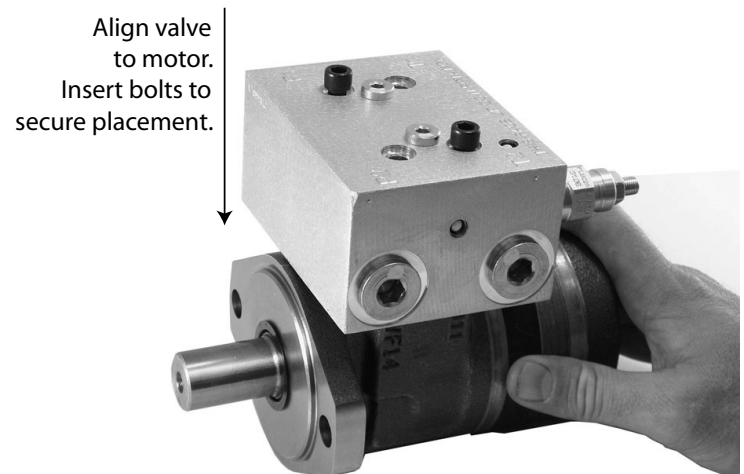


CAUTION

Mounting of the manifold determines which direction the motor will turn. Motor direction is identified on the top and bottom of the manifold.

Figure 3

Secure Manifold to Motor



2. Determine the appropriate motor direction and align the valve manifold mounting holes to the hydraulic motor.
3. Insert bolts into manifold holes and use an Allen wrench to tighten and secure to motor.

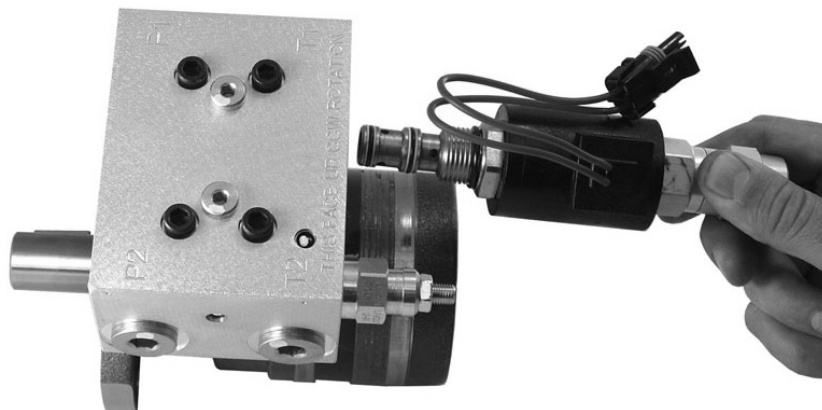
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4. Place the valve cartridge into the side hole of the valve manifold and screw in until secure.

Figure 4

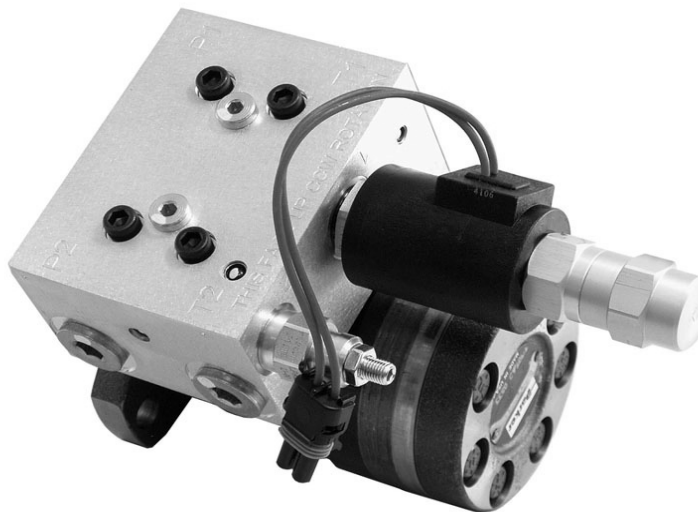
Valve Cartridge Placement



The motor is now ready to install to implement.

Figure 5

Assembled HydraDrive





IMPLEMENT INSTALLATION

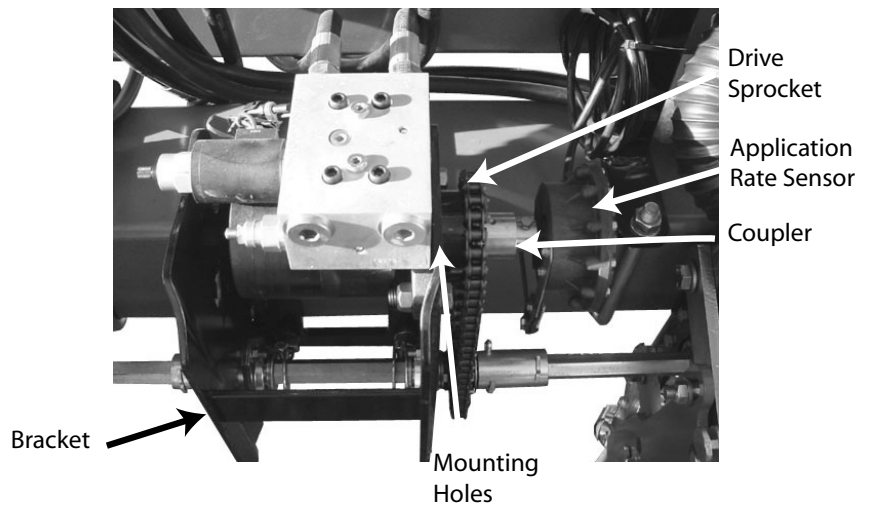
To attach the HydraDrive to the implement, a heavy-duty bracket is required either by making or purchasing from a dealer or distributor. The typical mounting location is the center of the implement above the final planter drive.

To Install HydraDrive to the Implement:

1. Attach steel bracket to implement frame to accommodate mounting of HydraDrive.
2. Mount the HydraDrive to the bracket.
3. Attach appropriate drive sprocket on the 1" keyed output shaft of the HydraDrive.
4. Install application rate sensor and coupler onto the 1" output shaft of the HydraDrive.

Figure 6

Bracket Mounted to Implement



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HYDRAULIC CONNECTIONS

The HydraDrive is connected to the tractor hydraulics and is dependent on if the tractor has closed-center or open-center hydraulics. The HydraDrive is shipped for closed-center hydraulics. Check the tractor's operator's manual to confirm the tractor's hydraulic type.

NOTE: All pressure and return ports on the HydraDrive are SAE #10.

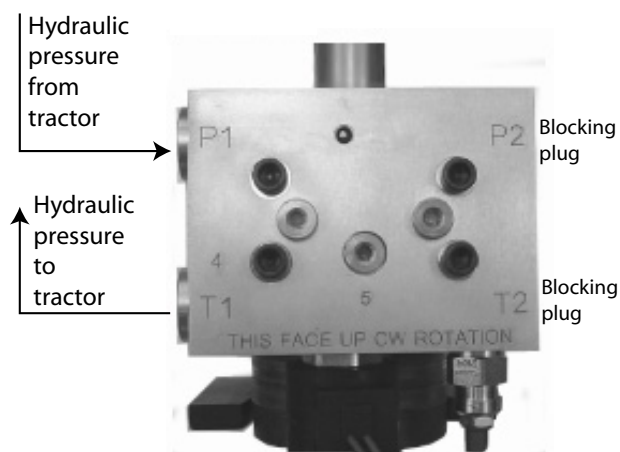
CLOSED-CENTER HYDRAULICS

For closed-center hydraulic connections to the valve, connect as shown in (Figure 7).

1. Connect hydraulic pressure hose from tractor to P1 valve port.
2. Connect hydraulic return hose from T1 valve port to tractor.
3. Close the P2 and T2 ports with the red blocking plugs.

Figure 7

Closed-Center Connection



CONNECTING MULTIPLE HYDRADRIVES (CLOSED-CENTER HYDRAULICS)

Ports P2 and T2 are used only when connecting multiple HydraDrives in a series.

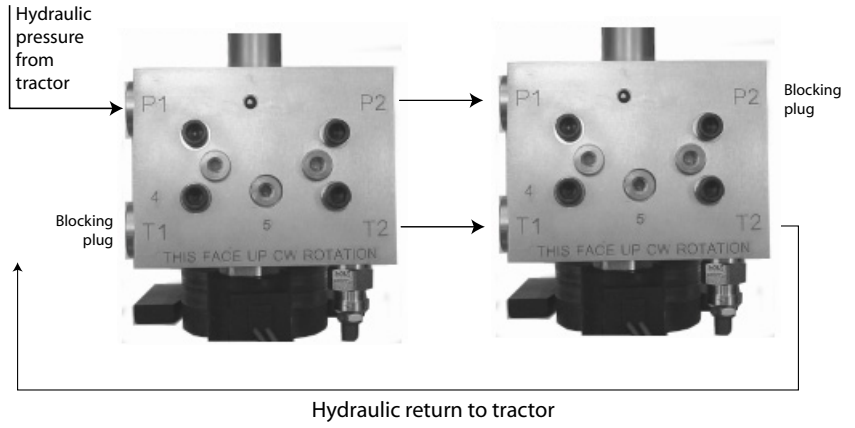
1. Connect hydraulic pressure hose from tractor to P1 valve port.
2. Connect a hose from the P2 valve port to the P1 valve port of the next HydraDrive.
3. Connect a hose from the T2 valve port to the T1 valve port of the next HydraDrive.
4. Repeat steps 2 and 3 for each connected unit.
5. Connect the hydraulic return hose of the last connected HydraDrive to the T2 port back to tractor.
6. Close the P2 port of the last connected HydraDrive using the red blocking plug. Close the T1 port on the first HydraDrive using the red blocking plug.

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Figure 8

Connecting Multiple HydraDrive Units (Closed Center)



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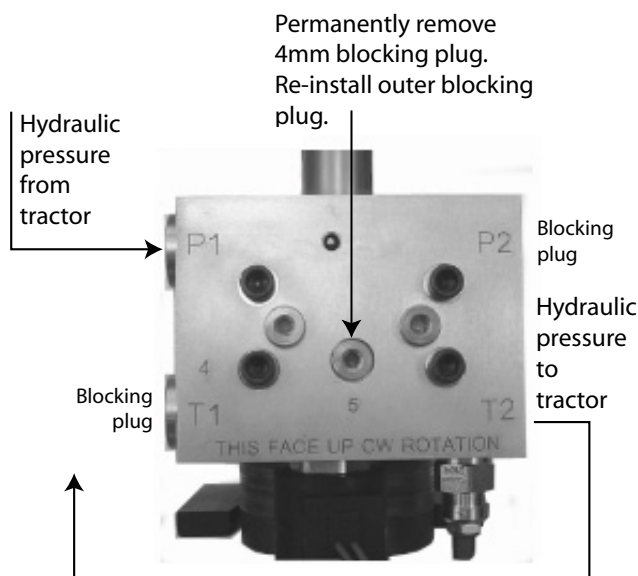
OPEN-CENTER HYDRAULICS

For an open-center hydraulic connection to the valve, connect as shown in (Figure 9).

1. Remove the 5 mm hex blocking plug 5.
2. Under plug 5 remove the 4 mm hex blocking plug. This plug is to be permanently removed.
3. Reinstall the outer blocking plug 5.
4. Connect hydraulic pressure hose from tractor to P1 valve port.
5. Connect the hydraulic return hose to the T2 port.
6. Close the P2 and T1 valve ports with the red blocking plugs.

Figure 9

Open-Center Connection



CONNECTING MULTIPLE HYDRADRIVES (OPEN-CENTER HYDRAULICS)

To connect multiple HydraDrive units:

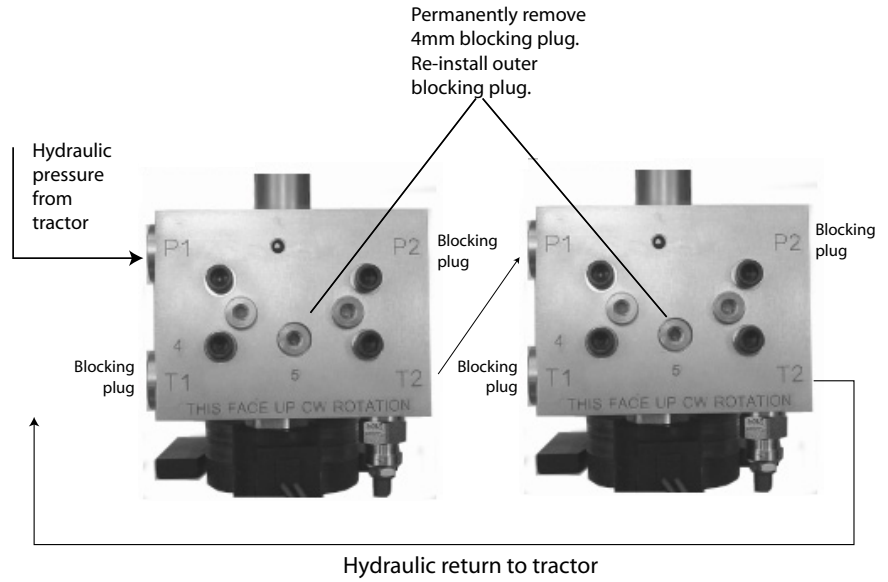
1. Remove the 5 mm hex blocking plug 5.
2. Under plug 5 remove the 4 mm hex blocking plug. This plug is to be permanently removed.
3. Reinstall the outer blocking plug 5.
4. Connect hydraulic pressure hose from tractor to P1 valve port.
5. Connect a hose to the T2 valve port and connect to the next unit's P1 valve port.
6. Repeat steps 1-3 and step 5 for each unit.
7. Connect the hydraulic return to tank hose to the T2 valve port of the last unit back to tractor.
8. Close all P2 and T1 valve ports with red blocking plugs on each unit.

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Figure 10

Connecting Multiple HydraDrive Units (Open Center)



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PRE-CHECK

A pre-check before connecting to the controller is recommended to verify:

- Hydraulic hoses are properly connected
- Motor rotates in the right direction

MANUAL OVERRIDE

A manual override of the hydraulic valve will verify proper installation.

To manually override the hydraulic valve:

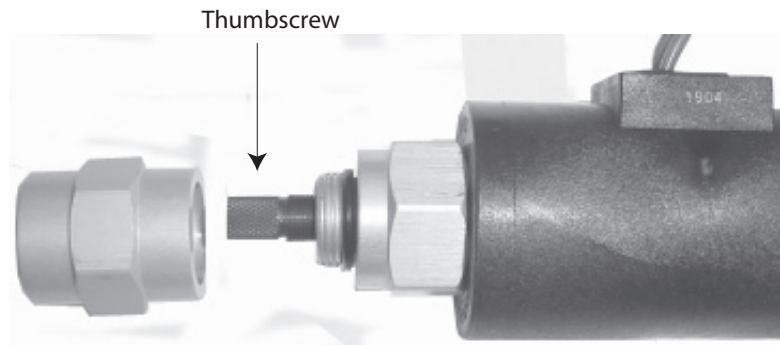
1. Start tractor and engage hydraulics.
2. Unscrew the protective cap from the valve cartridge.
3. Slowly turn the red thumbscrew clockwise to a maximum of 4 1/2 turns to fully open the hydraulic valve.
4. Verify that the hydraulic motor is rotating in the proper direction.

CAUTION

After performing a manual override, the red thumbscrew on the valve cartridge **MUST be turned fully counter clockwise until it stops turning for automatic control of the valve.**

Figure 11

Valve Cartridge Thumbscrew



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Dealers have the responsibility of calling to the attention of their customers the following warranty prior to acceptance of an order from their customer for any DICKEY-john product.

DICKEY-john® WARRANTY

DICKEY-john warrants to the original purchaser for use that, if any part of the product proves to be defective in material or workmanship within one year from date of original installation, and is returned to DICKEY-john within 30 days after such defect is discovered, DICKEY-john will (at our option) either replace or repair said part. This warranty does not apply to damage resulting from misuse, neglect, accident, or improper installation or maintenance; any expenses or liability for repairs made by outside parties without DICKEY-john's written consent; damage to any associated equipment; or lost profits or special damages. Said part will not be considered defective if it substantially fulfills the performance expectations. THE FOREGOING WARRANTY IS EXCLUSIVE AND IN LIEU OF ALL OTHER WARRANTIES OF MERCHANTABILITY, FITNESS FOR PURPOSE, AND OF ANY OTHER TYPE, WHETHER EXPRESS OR IMPLIED. DICKEY-john neither assumes nor authorizes anyone to assume for it any other obligation or liability in connection with said part and will not be liable for consequential damages. Purchaser accepts these terms and warranty limitations unless the product is returned within fifteen days for full refund of purchase price.

**For DICKEY-john Service Department, call
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