



APPLICATION UPDATE

Number 9
Revision 1

ADAPTING ACE FMC-HYD SERIES PUMPS TO JOHN DEERE 8000 AND 9000 SERIES TRACTORS

John Deere 8100, 8200, 8300, 8400, 8100T, 8200T, 8300T, 8400T, 9100, 9200, 9300, and 9400 tractors have a LOAD SENSING CLOSED CENTER hydraulic system, also known as Pressure Flow Compensating (PFC) system. These tractors use electrical controls instead of mechanical levers to regulate the operation of the hydraulic valves. This combination is sometimes referred to as "electrohydraulic".

PUMP SELECTION:

ACE recommends using the FMC-HYD-210, FMC-150-HYD-206, FMC-200-HYD-210, or the FMC-200-HYD-304 pump models on these tractors. The ACE FMC-HYD-204 can also be used, but the special instructions on the back of this UPDATE must be followed.

TO CONNECT THE PUMP:

1) Close the needle valve on the ACE motor by turning fully clockwise and tightening the jam nut.
2) **DO NOT** install a restrictor orifice in the ACE motor. A flow limiter may be installed (not required) in the inlet port of the motor to prevent damage from possible motor overspeeding. 3) Connect the pump to the lowest right hand remote hydraulic port. ACE strongly recommends using the tractor auxiliary low pressure return circuit (John Deere Kit #AR114664) to return hydraulic oil to the tractor (figure 3 on back side).

TO SET THE FLOW CONTROL:

1) Press the Selective Control Valve (SCV) TouchSet switch marked I, II, III or IV (figure 1A) for the remote outlet connected to the sprayer pump. 2) Turn the Detent Time Adjustment knob (figure 1B) fully clockwise until the clock symbol equals "C" for continuous flow. 3) Begin with the rabbit/turtle Flow Rate Adjustment (figure 1C) turned fully counter-clockwise to TURTLE position.

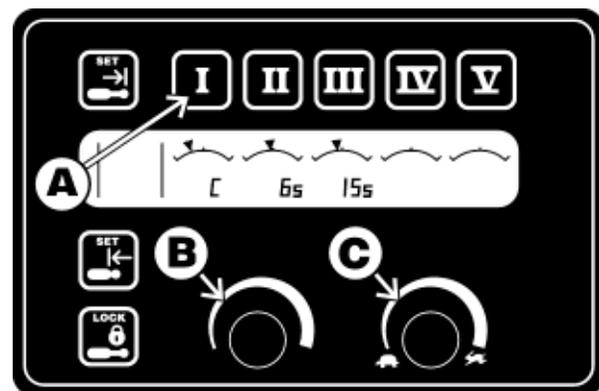


Figure 1

TouchSet™ Control

4) Shut off the boom, agitation and any bypass lines on your sprayer. 5) Move the SCV lever forward until it clicks into the RETRACT DETENT position; the lever will return to NEUTRAL when released. 6) Set the rabbit/turtle Flow Rate Adjustment so the shut-off pressure on the sprayer pressure gauge does not exceed the maximum listed below. 7) Open the agitation valve to get the desired spraying pressure.

To turn the pump off, move the SCV lever fully forward and down (figure 2 on back side) until it locks in the FLOAT position. This will eliminate hydraulic pressure buildup in the Ace motor seal area.

MAXIMUM SHUT-OFF PRESSURE:

100 PSI for FMC-HYD Series
120 PSI for FMC-150-HYD-206
80 PSI for FMC-200-HYD-210
120 PSI for FMC-200-HYD-304

CAUTION: DO NOT EXCEED THE
MAXIMUM SHUT-OFF PRESSURE

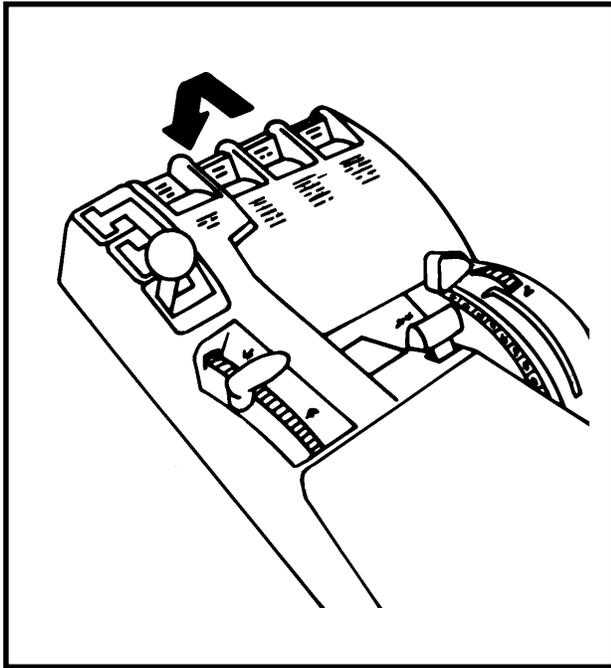


Figure 2 Command Control Arm

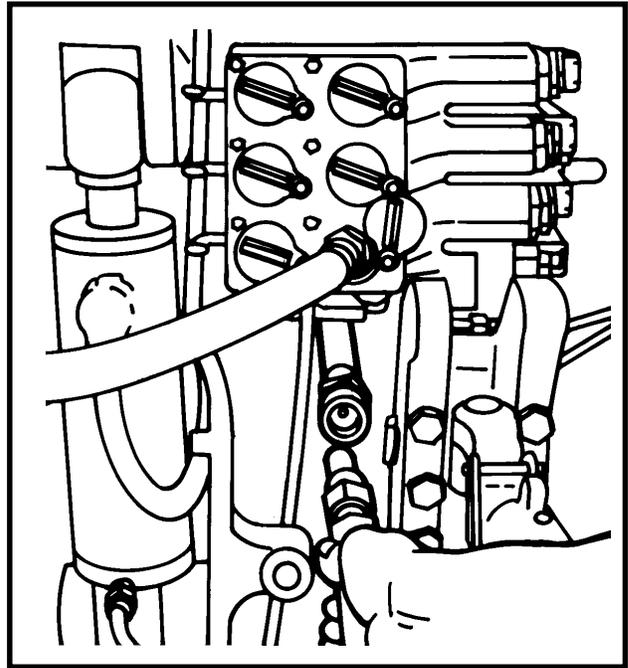


Figure 3 Low Pressure Return Circuit

To turn the spray pump on, move the SCV lever forward until it clicks into the RETRACT DETENT position. The lever will return to NEUTRAL when released, but the hydraulic valve will continue to supply oil to the ACE motor.

To turn the pump off, move the SCV lever fully forward and down to the FLOAT position, as shown above. The lever will remain in that position and the spray pump will coast to a stop. The lever can then be moved back to NEUTRAL.

Ace strongly recommends the use of the low pressure return circuit (John Deere Kit #AR114664) as shown above. Use of this kit substantially lowers the pressure in the return line, thus prolonging the life of the hydraulic motor.

SPECIAL INSTRUCTIONS FOR USING MODEL FMC-HYD-204

At low hydraulic oil flow, such as is required by the -204, the tractor hydraulic system may surge which, in turn, may cause the sprayer pressure to fluctuate. This condition can be aggravated by the simultaneous use of other hydraulically operated devices, such as depth control on a planter. This can be remedied by slightly opening the needle valve on the ACE motor until the pressure fluctuations stop. This allows a small amount of hydraulic fluid to bypass the gears, which will stop the hydraulic surge. The amount of oil bypassed by the needle valve should be kept to a minimum so that the tractor hydraulic system can operate at peak efficiency.