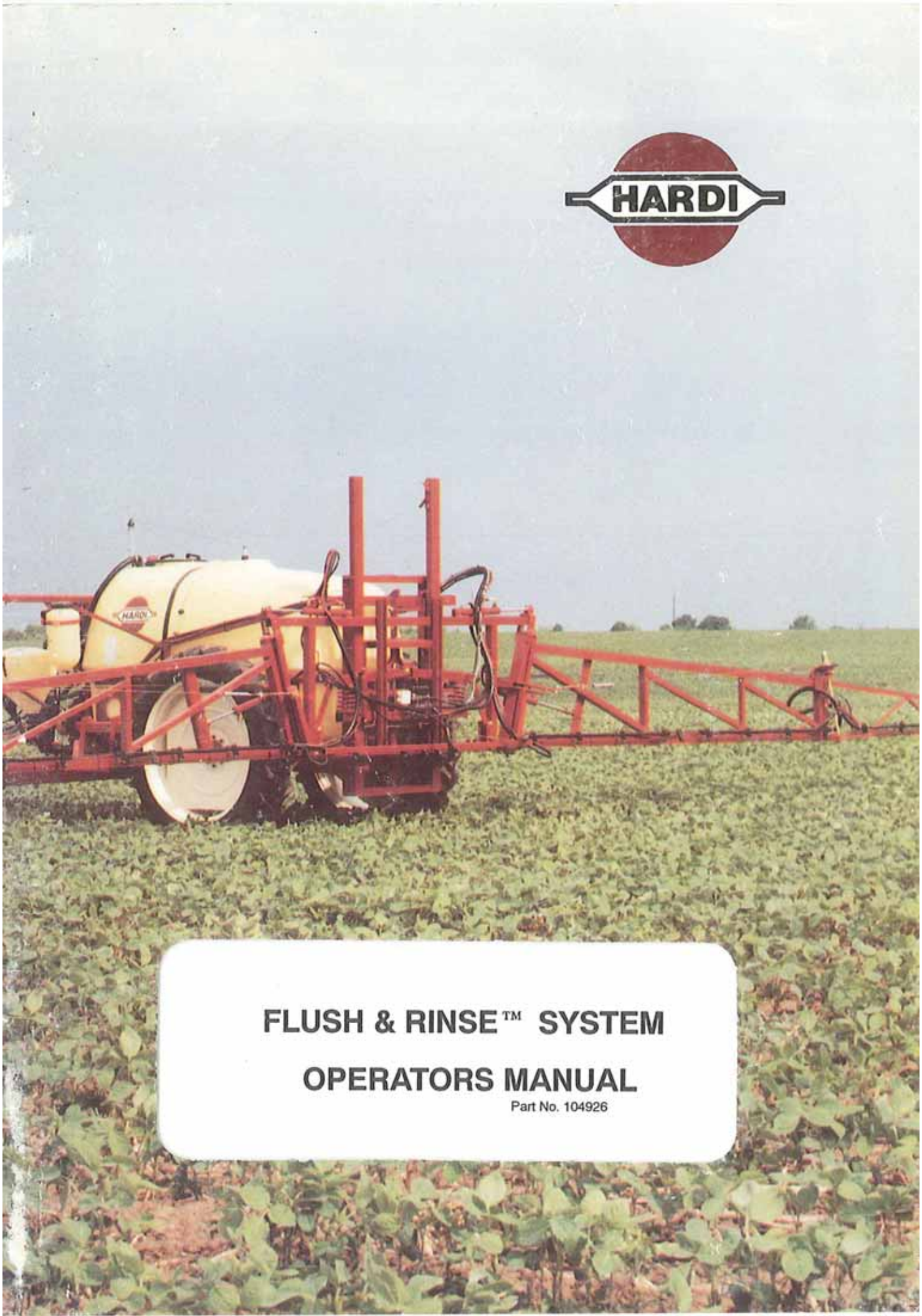

FLUSH & RINSE™ SYSTEM

OPERATORS MANUAL

Part No. 104926

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FLUSH & RINSE™ SYSTEM

OPERATORS MANUAL

Part No. 104926

Dear Owner,

Thank you for purchasing a HARDI product and welcome to the ever-increasing family of HARDI sprayer owners.

Our sprayers and accesories are rapidly becoming a familiar sight on North American farms. We believe that this results from growers becoming increasingly conscious of chemical input costs and the vital need for cost effective chemical application equipment.

Please take the time to thoroughly read the Operator's Manual before using your equipment. You will find many helpful hints as well as important safety and operation information.

Some of the features on your HARDI sprayer were suggested by growers. There is no substitute for "on farm" experience and we invite your comments and suggestions.

Please address your correspondence to the Service Manager at one of these branches:

HARDI MIDWEST
1500 West 76th St.
Davenport, Iowa 52806
Phone: (319) 386-1730

HARDI GREAT LAKES
290 Sovereign Rd.
London, Ontario N6M 1B3
Phone: (519) 659-2771

Sincerely,

Tom L. Kinzenbaw
President

INTRODUCTION

The Flush & Rinse™ system was designed to flush the pump, controls, spray lines and nozzles to avoid residue buildup and nozzle plugging if the spraying operation is interrupted due to uncontrollable situations such as bad weather condition, etc. and to rinse the sprayer tank between tank loads and at the end of the day. The advantages can be:

- Shorter clean up time
- Reduced amounts of water wastes
- Fewer risks of crop damage
- Less nozzle plugging and cleaning

Whenever possible it allows the rinse water to be sprayed over the field. Be sure to check and follow local regulations and chemical labels for possible restrictions.

The Flush & Rinse™ system consists of:

- A 53 gallon (for 500 and 650 gallon trailers) or an 80 gallon (for 800, 950, and 1000 gallon trailers) front mounted tank to carry the flush & rinse solution.

- A set of (2) 360° rotating rinse nozzles to spray the interior of the tank and remove the residues.

When in the flushing mode (spray lines, pump, controls and nozzles), fresh water as a cleaning agent is generally enough. In the rinsing mode manufacturer's recommended cleaning agents can be used to provide a more thorough rinsing, in particular for those hard to remove herbicides.

Only common sense would indicate that a clean sprayer is a much safer sprayer, but proper cleaning is not a common practice. The Flush & Rinse™ system from HARDI makes cleaning a much faster and simpler procedure. It provides the operator with a practical and user friendly system that is simple, and efficient.

Sprayer clean-up with Flush & Rinse™ system will eliminate most of the residues from the equipment, however in addition the operator should follow the directions on the chemical label or on the chemical manufacturers fact sheet for thorough clean up.

SAFETY

RECOGNIZE SAFETY INFORMATION

This is the safety-alert symbol. When you see this symbol on your machine or in this manual, be alert to the potential for personal injury.

Follow recommended precautions and safe operating practices.

1. Read the complete manual carefully and become familiar with the operation of the equipment before spraying season. Failure to do so may result in incomplete flushing and rinsing operations and possible crop damage.

2. Wear protective clothing when operating the Flush & Rinse™ system.

3. For Flush & Rinse™ operations use the cleaning solution recommended by the chemical manufacturer on the product label (water only or mixed with a cleaning agent.)

4. Do not use chlorine bleach in flushing mode.

5. NEVER mix ammonia and chlorine bleach.

6. Read and follow all label directions carefully.

OPERATION

The following two diagrams are written information decals. They are found on the side of the Flush & Rinse™ tank, they are to be used as a quick reference only. It is very important that you read the complete manual carefully and become familiar with the use of the equipment before spraying season begins.

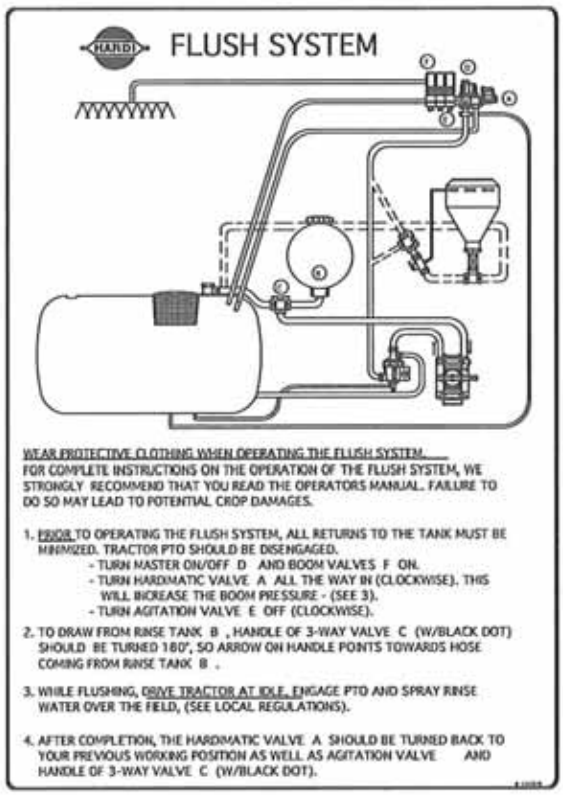


Diagram 1

Note: Order replacement part no. 104909

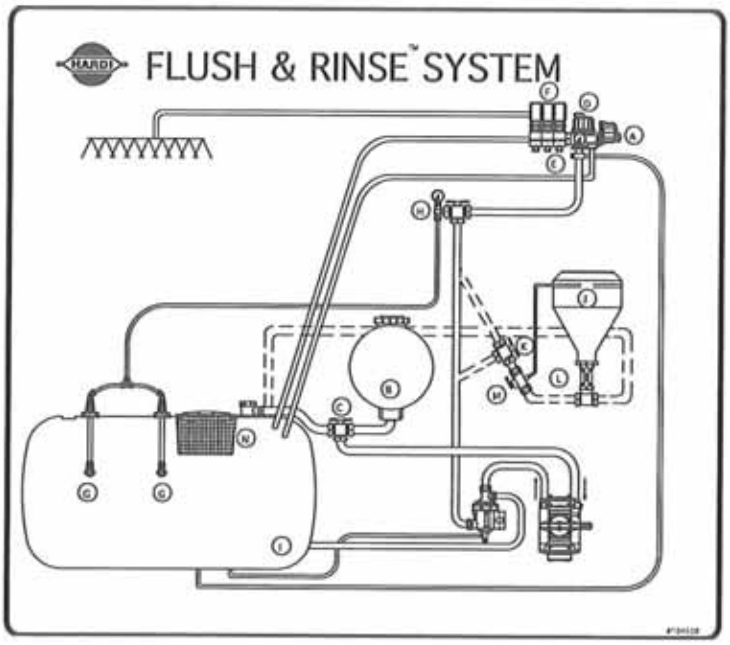


Diagram 2

Note: Order replacement part no. 104908

FLUSH & RINSE SYSTEM

WEAR PROTECTIVE CLOTHING WHEN OPERATING THE FLUSH & RINSE SYSTEM

FOR COMPLETE INSTRUCTIONS ON THE OPERATION OF THE FLUSH & RINSE SYSTEM, WE STRONGLY RECOMMEND THAT YOU READ THE OPERATORS MANUAL. FAILURE TO DO SO MAY LEAD TO POTENTIAL CROP DAMAGES.

FLUSHING

1. PRIOR TO OPERATING THE FLUSH SYSTEM, ALL RETURNS TO THE TANK MUST BE MINIMIZED AND TRACTOR PTO SHOULD BE DISENGAGED.
   - TURN MASTER ON/OFF D AND BOOM VALVES F ON.
   - TURN HARDIMATIC VALVE A ALL THE WAY IN (CLOCKWISE). THIS WILL INCREASE THE BOOM PRESSURE - (SEE 3).
   - TURN AGITATION VALVE E OFF (CLOCKWISE).
2. TO DRAIN FROM RINSE TANK B , HANDLE OF 3-WAY VALVE C (W/BLACK DOT) SHOULD BE TURNED 180°, SO ARROW ON HANDLE POINTS TOWARDS HOSE COMING FROM RINSE TANK B .
3. WHILE FLUSHING, DRIVE TRACTOR AT IDLE, ENGAGE PTO AND SPRAY RINSE WATER OVER THE FIELD. (SEE LOCAL REGULATIONS)
4. AFTER COMPLETION, THE HARDIMATIC VALVE A SHOULD BE TURNED BACK TO YOUR PREVIOUS WORKING POSITION AS WELL AS THE AGITATION E AND THE HANDLE OF THE 3-WAY VALVE C (W/BLACK DOT).

RINSING

IMPORTANT: SPRAYER RINSING SHOULD BE PERFORMED RIGHT AWAY AFTER TANK IS EMPTY SO CHEMICAL DEPOSITS DO NOT DRY UP MAKING CLEANUP MORE DIFFICULT.

1. PRIOR TO RINSING, EMPTY TANK AND PLUMBING AS COMPLETELY AS POSSIBLE THEN DISENGAGE TRACTOR PTO.
2. TO DRAIN FROM RINSE TANK B , TURN HANDLE OF 3-WAY VALVE C (W/BLACK DOT) 180° SO ARROW ON HANDLE POINTS TOWARDS HOSE ATTACHED TO RINSE TANK.
3. TO SPRAY CLEANING SOLUTION THROUGH RINSE NOZZLES G , TURN HANDLE OF 3-WAY VALVE H (W/BLUE DOT) SO ARROW ON HANDLE POINTS TOWARDS PRESSURE GAUGE NEXT TO VALVE. OPERATING PRESSURE FOR RINSE NOZZLES IS BETWEEN 35 AND 100 psi. (OPTIMUM BETWEEN 60 AND 100 psi.).
4. TO RECIRCULATE CLEANING SOLUTION, TURN HANDLE OF 3-WAY VALVE C (W/BLACK DOT) 180° SO ARROW ON HANDLE POINTS TOWARD HOSE COMING FROM TANK.
5. TO SPRAY OUT RINSE WATER TURN HANDLE OF 3-WAY VALVE H (W/BLUE DOT) BACK 180°. WITH TRACTOR AT IDLE, ENGAGE PTO AND SPRAY OVER THE FIELD. (SEE LOCAL REGULATIONS).

Diagram 3

Note: Order replacement part no. 104910

FLUSHING INSTRUCTIONS

Preliminary Notes:

-Read the following set of instructions carefully and get familiar with the operation of the equipment before the spraying season. Failure to do so may result in mis-operation and possible damages.

-For flushing, use pure water only. Never use chlorine bleach or mix ammonia (3% household ammonia for example) and chlorine bleach.

-When operating the flush system, returns of solution to the tank can be expected, although dilution of spray solution should be minimal, it may be necessary, in particular if sprayer tank level is low to adjust dosage of the herbicide or other chemical.

Review the following pictures #1,2,3,4,&5 to become familiar with the location of the components related to the Flush system on the different models of HARDI sprayers.

FLUSH PROCEDURE :

1. Prior to operating the Flush system all returns to the tank must be minimized to reduce diluting of the tank solution.- Tractor PTO system should be disengaged.

- Turn master On/Off valve (D) and boom valves (F) to on position (see picture #1-2-3-4).
- Turn Hardi-Matic valve (A) all the way in. Caution: This will increase the boom pressure. (Lower tractor RPM)
- Turn agitation valve (E) (clockwise) to OFF position.

2. Turn handle of 3-way flush valve (C) (see picture #5) so arrow on handle points towards hose coming from rinse tank (B) .

3. While tractor is running at an **idle**, slowly engage PTO when driving and spray rinsates over the field. (Consult local regulations.)

4. Turn tractor PTO OFF and master valve OFF.

5. Before resuming spraying job, pressure needs to be readjusted to previous level by turning Hardi-Matic valve back, and turn handle of 3-way flush valve (C) (w/ black dot) back 180° so arrow on handle points toward the hose connected to the main tank. Finally turn agitation valve (E) back ON.

Important: Before resuming actual spraying, it may be necessary to allow some time to charge lines with tank mix solution to obtain a uniform spray mixture at the nozzles.

(A) Hardi Matic Valve

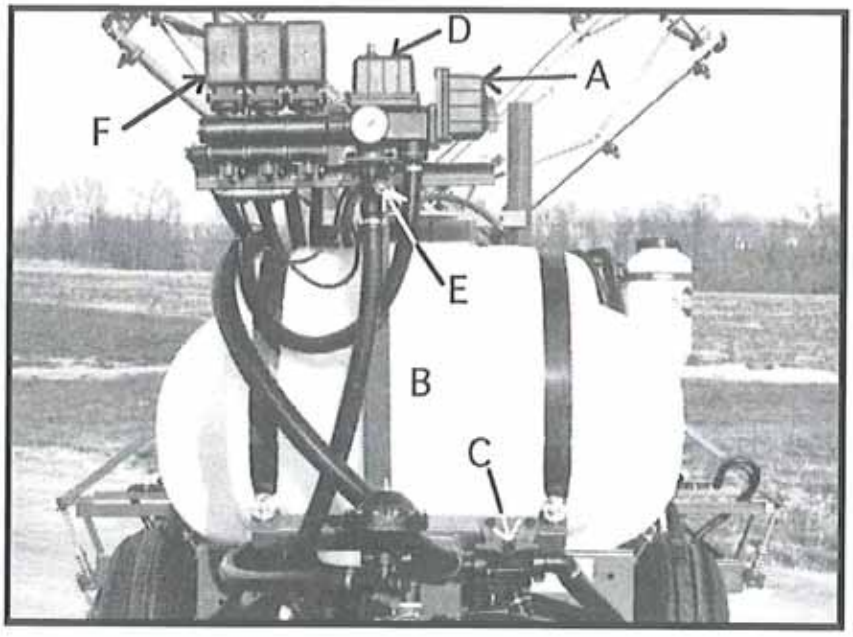
(B) Flush & Rinse™ Tank

(C) Flush System 3 Way Valve (Black dot)

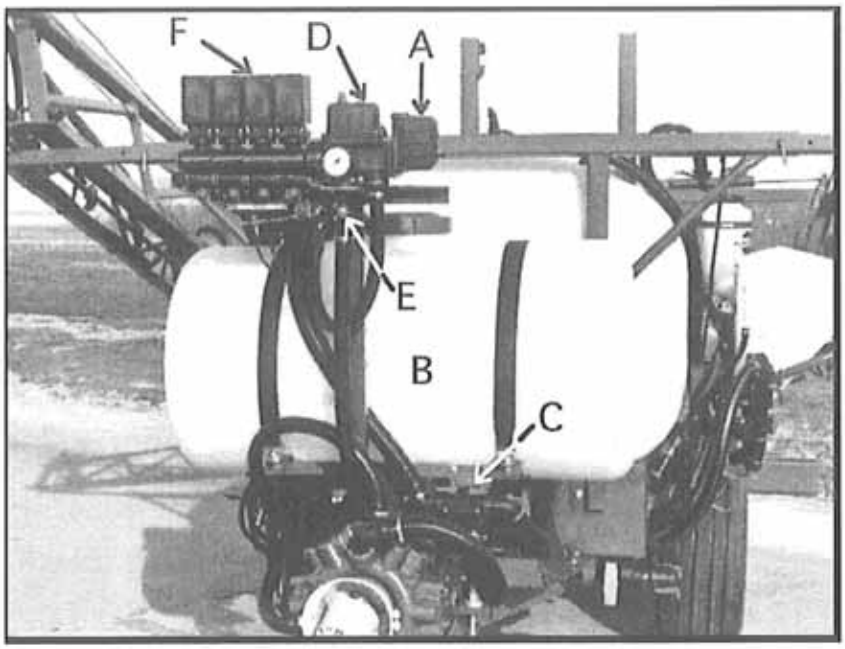
(D) Main on/off Valve

(E) Agitation Valve

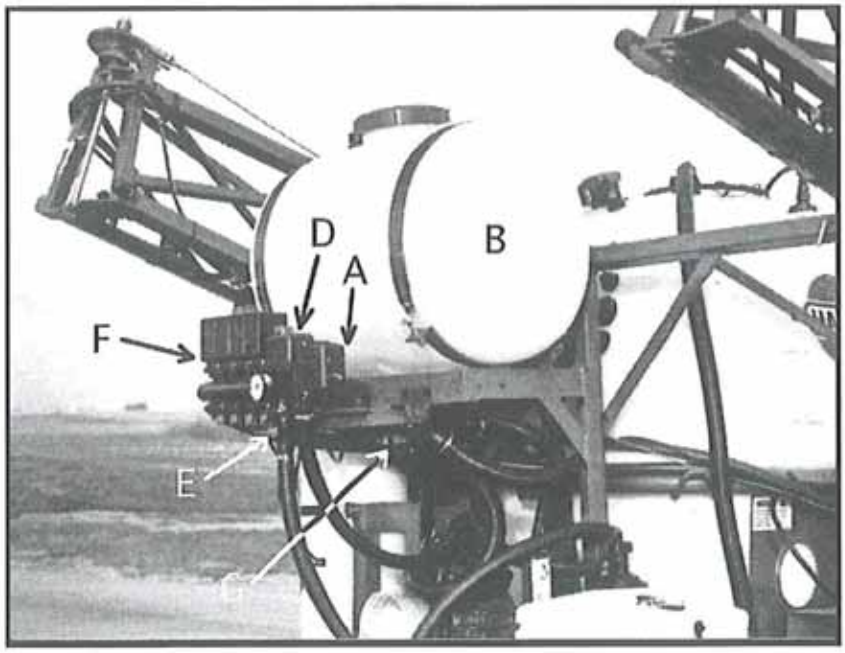
(F) Boom Control Valves



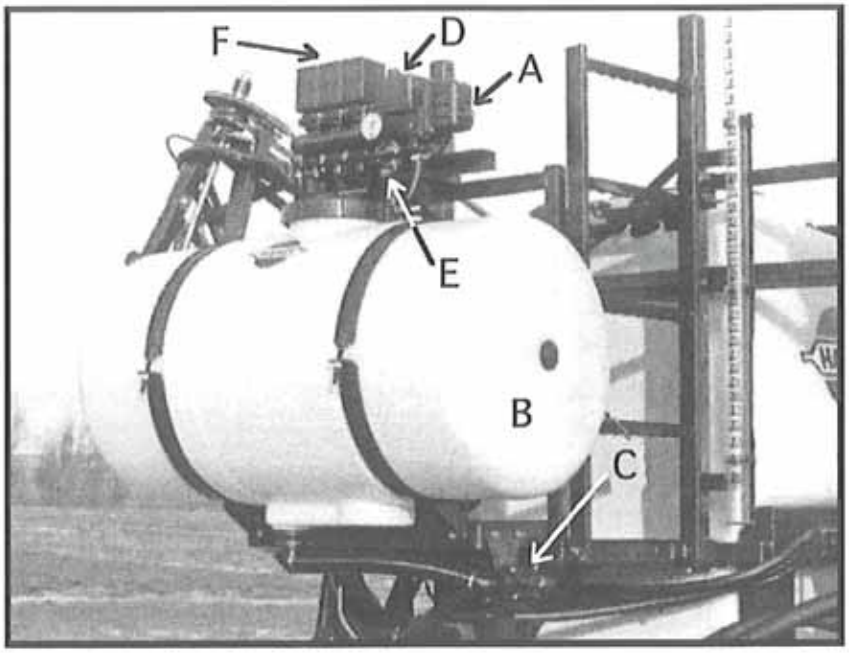
Picture 1
HC/TR 500 WITH FLUSH SYSTEM ONLY



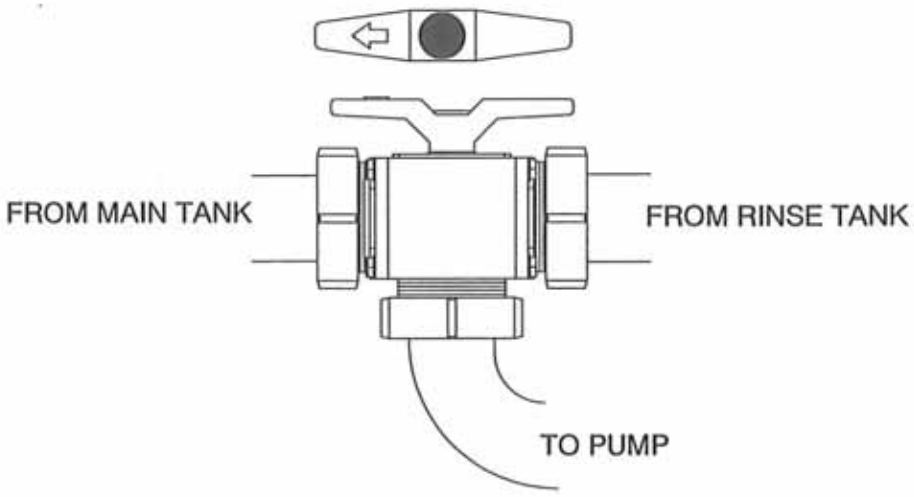
Picture 2
HC/TR 800/1000 WITH FLUSH SYSTEM ONLY



Picture 3
HC 650 WITH FLUSH SYSTEM ONLY



Picture 4
HC 950 WITH FLUSH SYSTEM ONLY



Picture 5
FLUSH VALVE (C)
(BLACK DOT)

PRELIMINARY RINSING INSTRUCTIONS

- Read the following set of instructions carefully and get familiarized with the operation of the equipment BEFORE the spraying season. Failure to do so may result in mis-operation and possible damages.

- In field rinsing should be performed after daily spraying, or between tank loads of different chemicals (see note).

- Sprayer rinsing should be performed right away after tank is empty so chemical deposits do not dry up making cleanup more difficult.

- As often as possible, if permitted by local regulations, rinsing should be performed in the field and rinse water sprayed over the crop.

- Rinse tank should be filled with water prior to going to the field.

Note:

- In-field rinsing ,in particular, before applying a different chemical, must be followed by a through cleanup according to the directions indicated by the chemical label.

(A) Hardi Matic Valve

(B) Flush & Rinse™ Tank

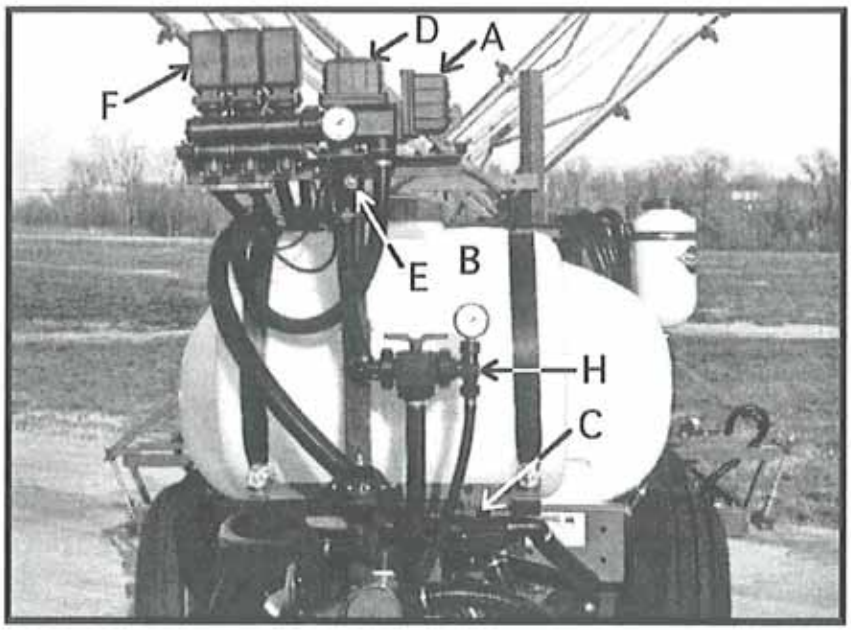
(C) Flush System 3 Way Valve (Black dot)

(D) Main on/off Valve

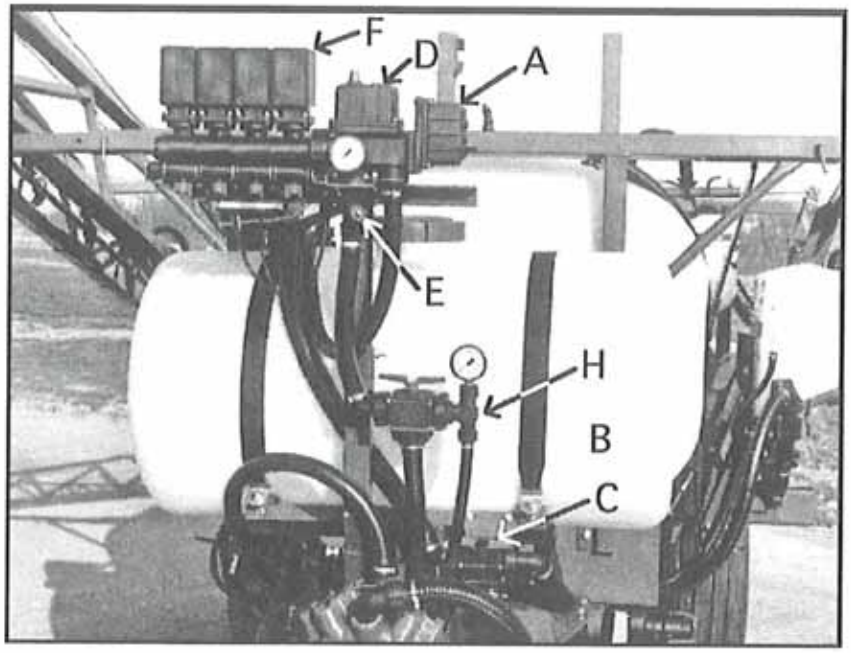
(E) Agitation Valve

(F) Boom Control Valves

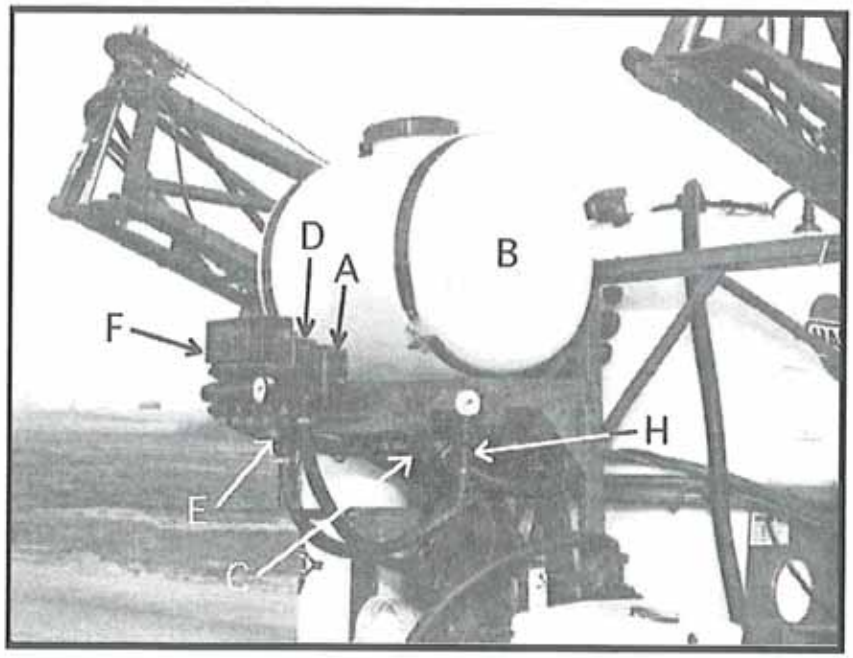
(H) Rinse valve



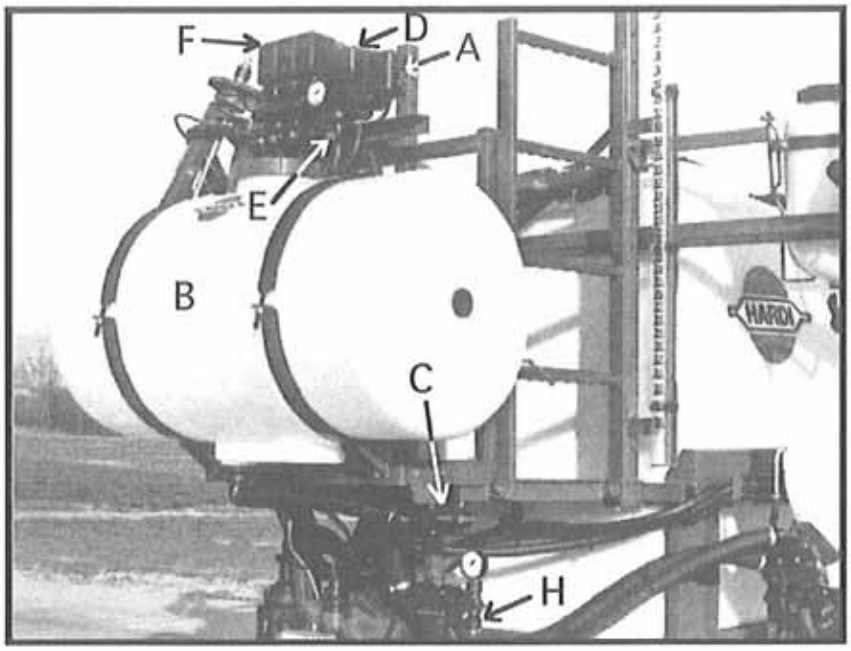
Picture 6
HC/TR 500 WITH FLUSH & RINSE ™ SYSTEM



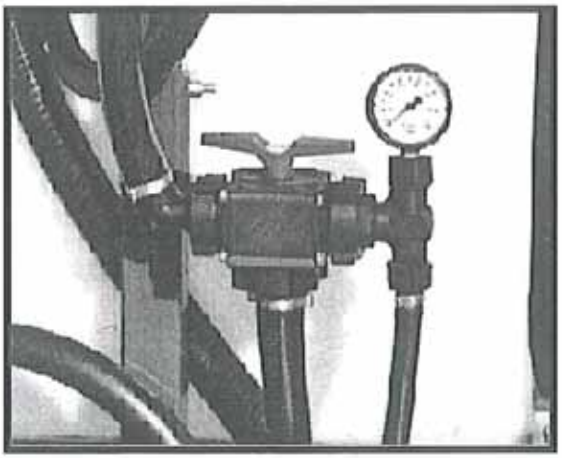
Picture 7
HC/TR 800/1000 WITH FLUSH & RINSE ™ SYSTEM



Picture 8
HC 650 WITH FLUSH & RINSE ™ SYSTEM



Picture 9
HC 950 WITH FLUSH & RINSE ™ SYSTEM



Picture 10
RINSE VALVE (H)
(BLUE DOT)

IN FIELD RINSING PROCEDURE

1. Prior to rinsing, empty tank and plumbing as completely as possible then disengage tractor PTO.

2. Idle tractor

3. Turn handle of 3-way flush valve (C) (w/black dot) to draw from the Flush & Rinse™ tank (B) . Arrow on handle must be pointing towards the hose attached to Flush & Rinse™ tank.

4. Turn handle of 3-way rinse valve (H) (w/blue dot) so the arrow on the handle points to the pressure gauge next to the valve.

5. Set tractor RPM so gauge by rinse valve shows pressure between 35 psi. (minimum) and 100 psi. (maximum). Optimum pressure is between 60 and 100 psi. See separate set of instructions (page 19) on how to set pressure.

6. Slowly engage tractor PTO.

7. When approximately half of Flush & Rinse™ tank capacity has been drawn, disengage tractor PTO.

8. Turn handle of 3-way flush valve (C) (w/black dot) back 180° so the arrow points toward the hose coming from the main tank.

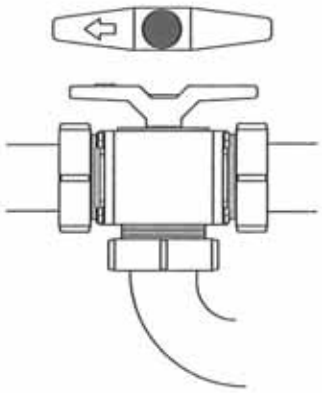
9. Engage tractor PTO & let the solution in the main tank circulate 5 minutes, disengage the tractor PTO.

10. Turn the handle on the Rinse valve (H) (w/blue dot) back 180° so the arrow points away from the gauge.

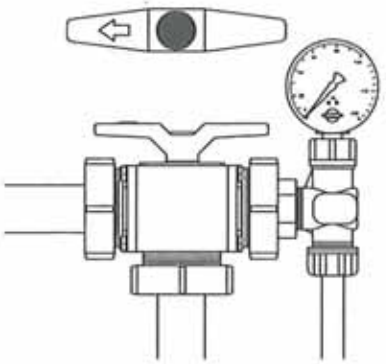
11. Slowly engage tractor PTO while driving and spray tank rinse water over the field. See local regulations for possible restrictions.

12. When air comes out of nozzles (sprayer tank is empty), stop tractor and repeat sequence 2-11 with the other half of the Flush & Rinse™ tank (B).

13. Once sprayer is brought back to farm site, follow directions on chemical label or chemical company fact sheet for complete sprayer clean-up.



Picture 11
FLUSH VALVE (C)
(BLACK DOT)



Picture 12
RINSE VALVE (H)
(BLUE DOT)

ADDITIONAL INSTRUCTIONS:

IF SPRAYER HAS CHEMICAL FILLER

While solution is recirculating in step 9 of the infield rinsing procedure turn chemical filler 3-way valve (K) 180° and activate rinsing switch (M) so it fills 1/3 of the hopper then release rinsing switch and turn 3-way valve (L) 90° to empty the hopper.- Once empty, turn valve (L) back 90° then valve (K) back 180°.

Picture 13

Determine tractor RPM for operating the rinse nozzles (G) .

1. Fill rinse tank (B) with water only.

2. With tractor idling, turn handle of 3-way flush valve (C) (w/black dot) so arrow on handle points towards the hose attached to the Flush & Rinse™ tank.

3. Slowly turn 3-way rinse valve (H) (w/blue dot) so arrow on handle points towards the gauge next to the valve.

4. Adjust tractor RPM to reach 35-100 psi pressure range (optimum 60-100 psi). Record the tractor RPM to use for further rinse procedures.

Important note:

-Remember to winterize the Flush & Rinse™ system before freezing conditions occur, add a mixture of ethylene glycol base anti-freeze and water at the ratio for the desired temperature protection. Volume of anti-freeze should be about 1% of tank volume. Run the sprayer and circulate the anti-freeze through the Flush & Rinse™ system.

NOTES