

HAGIE

DTS 10 COMBO



HAGIE MANUFACTURING COMPANY

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COVERS MACHINE SERIAL NUMBERS: U1461001001 THROUGH U1461001100
U1461011001 THROUGH U1461011100

01-10 493441
02-12

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ABBREVIATIONS

A/C	AIR CONDITIONING	NO.....	NUMBER
ADJ	ADJUST	OD.....	OUTSIDE DIAMETER
ADPTR.....	ADAPTER	PLT	PLATE
ALT.....	ALTERNATOR	PRESS.....	PRESSURE
AMP	AMPERE	PRKNG	PARKING
APPROX	APPROXIMATELY	PSI	POUNDS PER SQUARE INCH
ASSY.....	ASSEMBLY	QT.....	QUART
AUX.....	AUXILIARY	RAD	RADIATOR
BRKT.....	BRACKET	REC	RECOMMENDED
BTRY	BATTERY	REQ	REQUIRED
C.....	CELSIUS	RPM.....	REVOLUTIONS PER MINUTE
CCA.....	COLD CRANKING AMPS	SAE.....	SOCIETY of AUTOMOTIVE ENGINEERS
CTRL.....	CONTROL	SEC.....	SECOND
CYL	CYLINDER	SERV	SERVICE
DIAG	DIAGRAM	SLCTR	SELECTOR
DIM.....	DIMENSION	SMV	SLOW MOVING VEHICLE
DISPL.....	DISPLACEMENT	SOLE	SOLENOID
EA	EACH	SPEC	SPECIFICATION
ELECT.....	ELECTRIC	STRG.....	STEERING
F.....	FAHRENHEIT	SQ.....	SQUARE
FIG.....	FIGURE	TACH	TACHOMETER
FLO	FLOW	TEMP.....	TEMPERATURE
FRT	FRONT	TERM.....	TERMINAL
FT.....	FOOT OR FEET	TRD.....	TREAD
GA.....	GAUGE	TT.....	TUBE-TYPE
GAL.....	GALLON	TU	TUBELESS
HAL	HALOGEN	VAR.....	VARIABLE
HR.....	HOUR	V.....	VOLT
HYD.....	HYDRAULIC	VLV	VALVE
HYDRO	HYDROSTATIC	W.....	WEIGHT
ID.....	INSIDE DIAMETER	WD.....	WHEEL DRIVE
IN.....	INCH	W/.....	WITH
INFO.....	INFORMATION	W/O.....	WITHOUT
Km/H	KILOMETERS PER HOUR	WHL.....	WHEEL
LB.....	POUND	WK.....	WEEK
LS.....	LIGHT SENSOR	WLD.....	WELDMENT
MAINT	MAINTENANCE		
MIN.....	MINUTE		
M/F.....	MAINFRAME		
MPH.....	MILES PER HOUR		
MT.....	MOUNT		
MTH	MONTH		
MTR	MOTOR		

TO THE OWNER



A WORD FROM HAGIE MANUFACTURING COMPANY

Congratulations on your selection of a Hagie Model DTS 10 combo sprayer. We recommend that you study this Operator's Manual and become acquainted with the adjustments and operating procedures before attempting to operate your new sprayer. As with any piece of equipment, certain operating procedures, service and maintenance are required to keep it in top running condition.

We have attempted herein to cover all of the adjustments required to fit varied conditions. However, there may be times when special care must be considered.

Hagie Manufacturing Company reserves the right to make changes in the design and material of any subsequent unit without obligation to existing units.

We thank you for choosing a Hagie sprayer and assure you of our continued interest in the satisfactory operation of the unit.

If we might be of assistance to you, please contact Hagie Manufacturing Company at your convenience.

We are proud to have you as a customer.

TO THE OPERATOR

The following pages and illustrations will help you operate and service your combo sprayer. It is the responsibility of the user to read the Operator's Manual and comply with the safe operating procedures and the proper lubrication and maintenance schedules.

The user is responsible for inspecting the attachment, having parts repaired or replaced when continued use of the product causes damage or excessive wear to other parts.

Keep this manual in a convenient place for easy reference when problems arise. This manual is considered a permanent fixture with this machine. In the event of resale, this manual should accompany the unit. If you do not understand any part of the manual or require additional information or service, contact the Hagie Customer Support Department:

Hagie Manufacturing Company
721 Central Avenue West
Box 273
Clarion, Iowa 50525-0273
(515) 532-2861




The following symbols found throughout this manual alert you to situations that could be potentially dangerous to the operator, service personnel or the equipment.	
	This symbol indicates a hazardous situation which, if not avoided, will result in death or serious injury.
	This symbol indicates a potentially hazardous situation, which if not avoided, could result in death or injury.
	This symbol indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury. It may also be used to alert against unsafe practices.

TABLE OF CONTENTS

ABBREVIATIONS	ii
TO THE OWNER	ii
TO THE OPERATOR	iii
TABLE OF CONTENTS	iv
I. SAFETY	5
II. SAFETY DECALS	5
III. SPECIFICATIONS	14
IV. DETASSELING SYSTEM	15
V. STORAGE	20
VI. REMOVING SPRAY BOOMS	21
VII. DETASSELING CONVERSION	25
Attaching Combo Toolbar	25
Attaching Lift Assemblies	27
Attaching Quad Pullers	29
Attaching Cutter Heads	30
Attaching LS System and Depth Command	32
Attaching Male Choppers	34
VIII. OPERATING SYSTEM	35
IX. TASSELTRON [®] /LS SYSTEM 12 [™]	38
Setting up the Hagie Tasseltron [®] /LS System 12 [™]	38
Operating the Tasseltron/LS Control	39
Short Corn Operation	40
“ALL UP” and “ALL HOLD” Function	41
TASSELTRON [®] RESPONSE PARAMETER	42
TASSELTRON [®] TOP PARAMETER	43
TASSELTRON [®] BOTTOM PARAMETER	44
SIX-LIFT TASSELTRON [®] DISPLAY SCREEN QUICK REFERENCE CHART	45
X. SERVICE	48
Electrical System	49
Filters	50
High Pressure In-line Filters	51
XI. TROUBLESHOOTING	52

I. SAFETY

Most accidents occur as the result of failure to follow simple and fundamental safety rules. For this reason, most accidents can be prevented by recognizing the real cause and doing something about it before the accident occurs.



Many conditions cannot be completely safeguarded against without interfering with efficient operation and/or reasonable accessibility. Therefore, you must study this Operator's Manual and learn how to use the sprayer controls for safe operation. Likewise, do not let anyone operate without instruction.

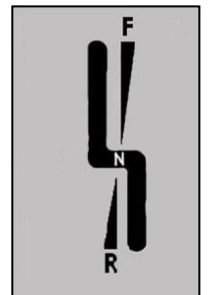
Do NOT make modifications such as weldments, add-ons, adaptations, or changes from the original design of sprayer. Such changes and/or modifications may become safety hazards to you and to others and **will void all warranties.**



Replace missing, faded, or damaged safety signs. See the operator's manual for correct sign and placement.

Do Not By-Pass Safety Start Switch

- Start the machine from the operator's seat only. The machine must be in neutral to start.



Use Caution While Driving

- Never drive too close to ditches, embankments, holes, mounds or other obstacles.
- Never drive on hills too steep for safe operation.
- Reduce the sprayer speed while turning.
- Do not permit passengers on machine when it is moving; they may fall off or obstruct the operator's view.
- Check overhead clearance before driving under any overhead obstructions. Contact with power lines can result in serious injury or death.
- Booms must be folded and in cradles when driving.



Keep Riders off Machine

- Do not permit passengers to ride on the machine or in the cab. The only time passengers should be permitted is for instructional or diagnostic purposes. The passenger should be seated on the buddy seat next to the operator and never allowed to ride outside of the cab.



Remove Paint before Welding or Heating

- Avoid potentially toxic fumes and dust. Hazardous fumes can be generated when paint is heated by welding, soldering, or using a torch.
- Do not use chlorinated solvents in areas where welding will take place.
- Do all work in an area that is well ventilated to carry toxic fumes and dust away
- Dispose of paint and solvents properly.



Avoid Heating near Pressurized Lines

- Avoid torching, welding, and soldering near pressurized hydraulic lines. Pressurized lines may accidentally burst when heat goes beyond the immediate flame area.



Handle Fuel Safely– Avoid Fires

- Always turn engine off and allow it to cool before re-fueling.
- NEVER smoke while re-fueling.
- Do not fill tank completely, fuel may expand and run over.
- Always clean up spilled fuel with soapy water.
- Keep a fire extinguisher close when re-fueling.



Operate Safely

- Before moving sprayer, make sure there are no obstacles or persons in the path of travel.
- Never operate a machine in the same field as walking personnel.
- Always drive at a reasonable field speed.
- Never operate sprayer on roadway with any solution in the tank. Additional weight caused from partially full or full solution tanks may cause erratic or increased stopping distance.
- Never operate the sprayer at transport speeds with a full tank. The wheel motors and planetary gear hubs are not rated to withstand high speeds under full loads and may over heat or blow out.
- Make sure SMV and SIS emblem is in place and visible from rear when traveling on public roadways.
- Pull over to the side of the road before stopping.
- Always come to a complete stop before reversing directions.
- Keep a fire extinguisher close at all times.
- Keep ALL shields in place.
- Keep clear of all moving parts and keep others away when operating.
- Do not wear loose fitting clothing that may be blown or drawn into moving parts.
- Do not activate parking brake while machine is in motion.
- Stop slowly to avoid “nose diving”.
- Reduce speed for icy, wet, graveled or soft roadway surfaces.
- Use flashers/hazard warning lights, day or night, unless prohibited by law.
- Keep away from overhead power lines. Serious injury or death to you or others may result should the machine contact electrical wires.
- Never fold/unfold boom extension when main boom is in cradle.
- Never operate sprayer with one boom out of cradle and the other boom in cradle.
- Do not adjust factory engine RPM settings.
- Operate engine at two pumps to assure proper charge pressure for brakes to work properly.
- Never use starting fluid to assist engine start up.
- If equipped with ground speed sensing radar or light sensing depth units, do NOT look directly into radar beam. It emits a very low intensity microwave signal which may cause possible eye damage.



Be Prepared

- Be prepared for an emergency. Keep a fire extinguisher handy, a first aid kit and clean water in the cab.
- Make sure to service the fire extinguisher regularly. Keep an accurate inventory of supplies in the first aid kit and dispose of anything that has expired.



Wear Protective Clothing

- Do not wear loose fitting clothes that could get caught in moving parts. Wear safety equipment that is appropriate for the job.
- Do not store chemical soaked clothes in the cab. Clean off as much mud and dirt from your shoes as you can before entering the cab.



Protect Against Noise

- Operating equipment safely requires the full attention of the operator. Do not wear radio or music headphones while operating the machine.
- Prolonged exposure to loud noise could cause loss of hearing. Wear suitable hearing protection.



Battery Acid Accident Prevention

Avoid serious injury by avoiding battery acid contact with your body. Battery electrolyte contains sulfuric acid that is strong enough to eat holes in clothing and cause blindness if splashed into eyes.

Make sure to:

- Fill batteries in a well-ventilated area.
- Wear Personal Protective Equipment when servicing a battery.
- Avoid breathing in the fumes when recharging with electrolyte.
- Avoid spilling or dripping electrolyte.
- When charging a battery, connect positive cable to positive terminal and negative cable to negative terminal. Failure to do so may result in an explosion and cause injury

If you spill on yourself:

- Immediately begin flushing affected area with cold water while removing any contaminated clothing and shoes. Continue to flush the area for a minimum of 15 minutes.
- Call a physician.
- While transporting or waiting for medical attention, apply compresses of iced water or immerse affected area in iced water. Do not allow tissue to freeze.
- Do not apply creams or ointments until you have been seen by a physician.



If acid is swallowed:

- Do not induce vomiting.
- Drink large amounts of water.
- Get medical attention immediately!
- Do not neutralize the acid.



If fumes are inhaled:

- Move the person into fresh air.
- Do not give artificial respiration to a person that is able to breathe on their own.
- Give CPR only if there is no breathing AND no pulse.
- Seek medical attention IMMEDIATELY!

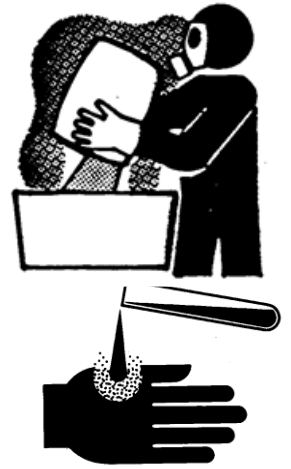
Handle Agricultural Chemicals Safely

Agricultural chemicals used in applications can be harmful to your health and the environment if not used carefully.

- Always follow the manufacturer's label directions for use.
- Never allow chemicals to come in contact with your skin or eyes.
- NEVER pour chemicals into an empty tank, fill tank half full of water first.
- Dispose of empty chemical containers properly.
- Wash spilled chemicals or spray residue from the sprayer to prevent corrosion and deterioration.

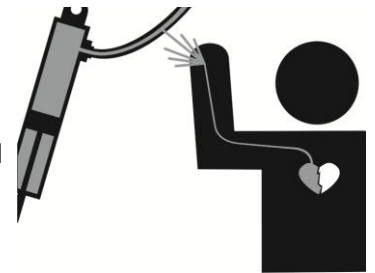


- Select safe areas to fill, flush, calibrate, and clean sprayer where chemicals will not run off to contaminate people, animals, vegetation, or water supply.
- Never place a spray nozzle to your lips in an attempt to unclog it.
- Do not spray when wind is in excess of chemical manufacturer’s recommendation.
- Store chemicals in their original containers with the label intact.
- Store chemicals in a separate, locked building.
- Wear protective equipment as recommended by chemical manufacturer.



Safe Hydraulic Maintenance

- Always practice personal safety when performing service or maintenance on the hydraulic system.
- Use caution when working with hydraulic fluid under pressure. Escaping fluid can have sufficient force to penetrate your skin causing serious injury. This fluid may also be hot enough to burn.
- Always lower the load or relieve the pressure before repairing a hydraulic oil leak.



Beware of Exhaust Fumes

- Never run the machine in a closed building. Proper ventilation is required. Use an exhaust pipe extension to remove fumes if you must operate in a building. Also open doors and windows to bring in enough outside air into the area.



General Maintenance Safety

- Turn off engine before checking, adjusting, repairing, lubricating, or cleaning any part of the sprayer.
- When servicing the radiator, let the engine cool before removing pressurized cap.
- Disconnect battery ground cable and turn main battery switch off before servicing electrical system or welding on machine.
- Each Hagie machine outfitted with AWS has position sensing internal to the steering cylinders. Please disconnect each sensor before welding on the machine. Then reconnect when done welding. ⚠



Operating Optional Components

Tread Width

- Select a tread setting to fit between crop rows.

Sprayer Booms

- Cradle booms when leaving sprayer unattended.
- Make sure booms are folded when cradled.
- Select a safe area before folding/unfolding booms.
- Clear area of personnel.
- Check for overhead obstructions.
- Do not fold or unfold booms near power lines. Contact with power lines can result in serious injury or death.
- Do not fold/unfold boom extensions when main boom is in the cradle.
- Do not operate sprayer with one boom out of cradle and other boom in cradle.



II. SAFETY DECALS

Decals warning you of avoidable danger are located on various parts of the machine. They are there for your personal safety and protection. DO NOT remove them. They will fracture upon attempted removal and therefore must be replaced.

Following are locations of important safety decals for the detasseler. Replace them if they are torn or missing. All warning decals and other instructional Hagie decals may be purchased through Hagie Customer Support Department. To replace decals, be sure the installation area is clean and dry; decide on exact position before you remove the backing paper.



650303

Left front window corner



650379 & 650355

Right side window above lift control and motor control boxes



SAFETY DECALS

650820

1 on mounting tube of each quad puller head assembly



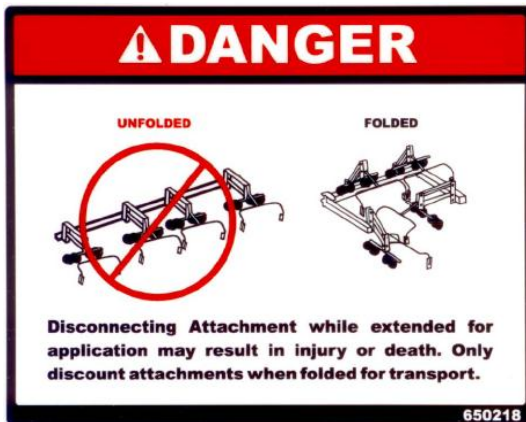
650256

2 – 1 on each side of cutter head assembly



650218

2 – 1 on each end of combo attachment



III. SPECIFICATIONS

The detasseling system is a constantly monitored and continuously-adjusted system. The cab mounted control system receives data from photo light sensors to determine appropriate detasseling height.

The following section will explain operational procedures. Please read information before operating.

Detasseling Equipment - Front mounted with Tasselrol®/LS System™

Quad Puller

Number of rows available 4, 6, 8, 10, or 12
Drive..... Hydraulic
Tire size 4.10/3.50 2 ply
Operating speed Up to 400 RPM
Pulling height Min. range – 34” to 87”
Max. range 52” to 105”
Weight per head assembly 86 lbs.

Cutter

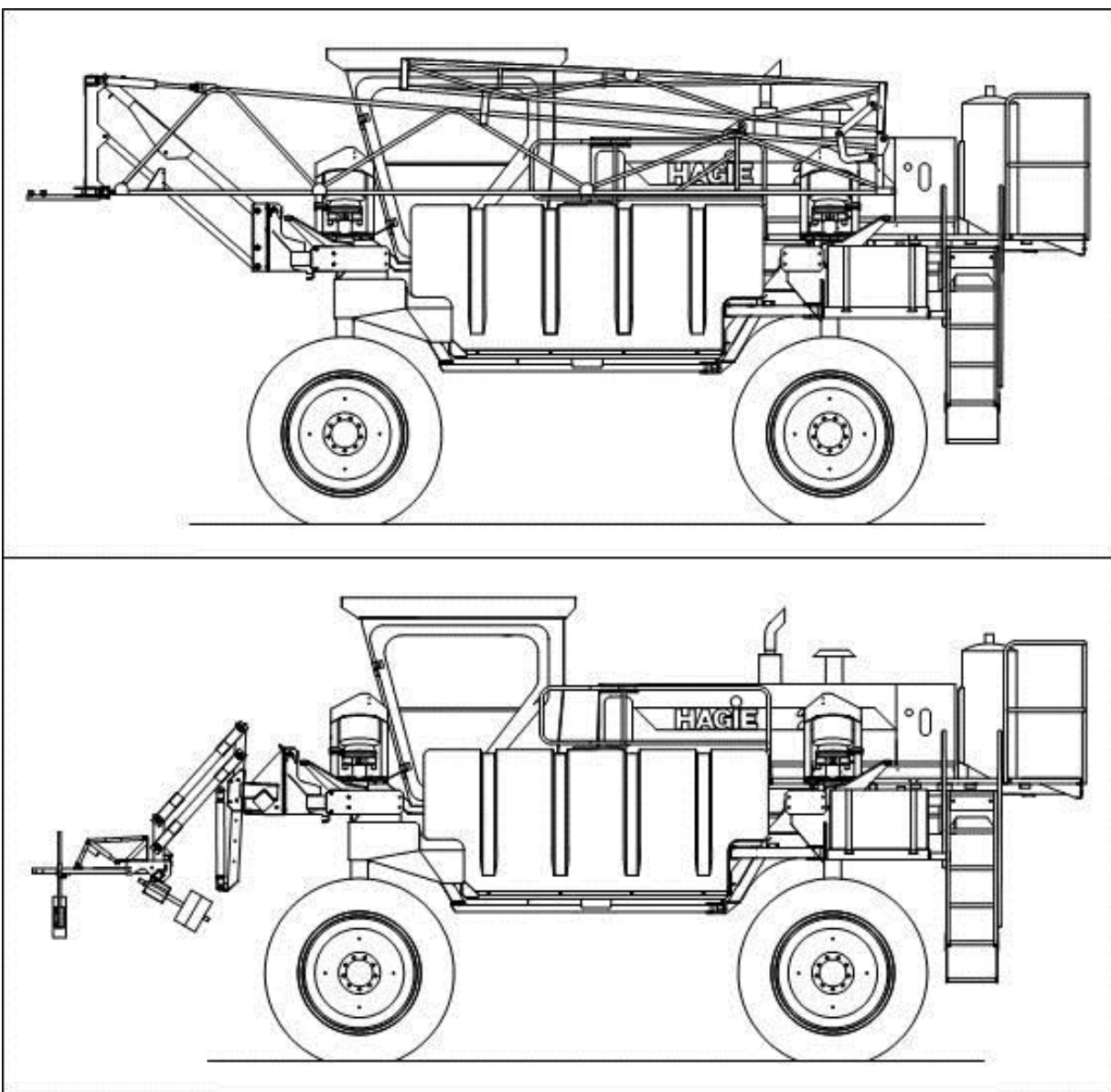
Number of rows available 4, 6, 8, 10, or 12
Drive..... Hydraulic
Blade size 18”
Operating speed Up to 3600 RPM
Cutting height..... Min. range – 32” to 85”
Max. range 50” to 103”
Weight per head assembly 62 lbs.

Male Choppers

Male corn cutter (1 blade)..... Hydraulically driven 18” blade
Male corn cutter (4 blade)..... Hydraulically driven 18” blades (includes left and right)
Male corn chopper (8 blade)..... Ground driven 15” blades or Ground driven 20” blades

IV. DETASSELING SYSTEM

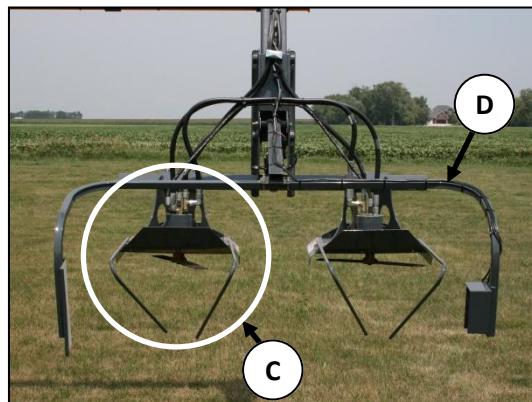
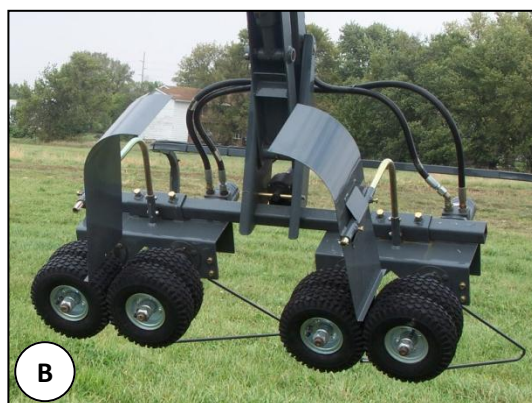
In shipment, some of the components may have been sent loose and need to be installed before operating. In order to ensure proper installation of the optional attachments, refer to your Hagie DTS 10C Parts Manual for the correct option for outlining the installation, hydraulic schematic and wiring diagram. Read and comply with the following information. Always make sure you have proper equipment and help when installing the attachments.



DETASSELING SYSTEM

Detasseling Components

- A. Combo attachment –shown is a DTS 10 with cutter head attachments
- B. [Quad Puller heads](#) (see page 29)
- C. [Cutter heads](#) (see page 30)
- D. [LS System 12™depth command](#)¹ (see page 32)
- E. [Photo-light sensor – part of LS System 12](#) (see page 46)

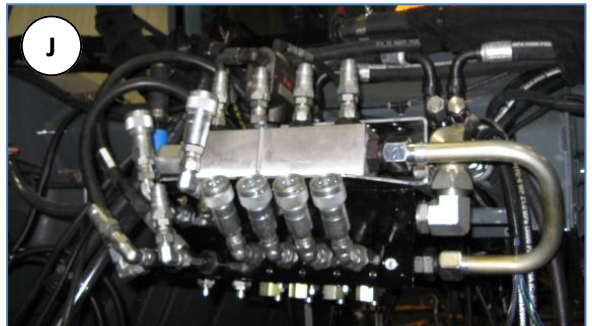
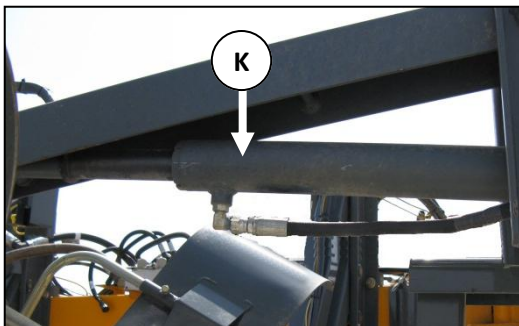
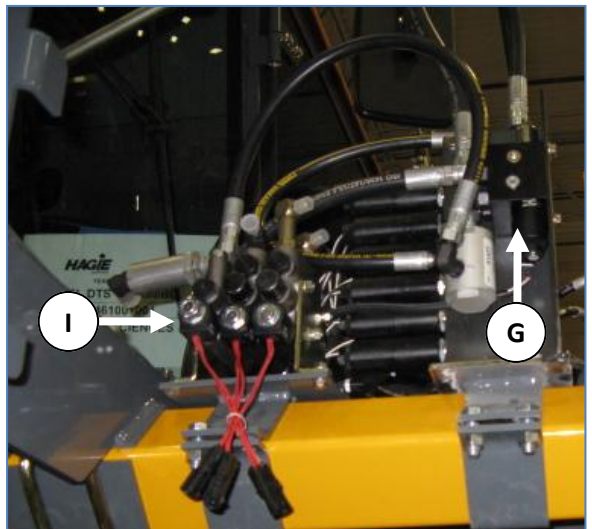
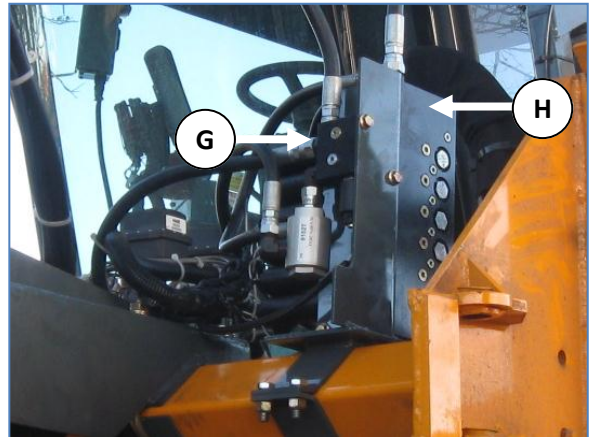
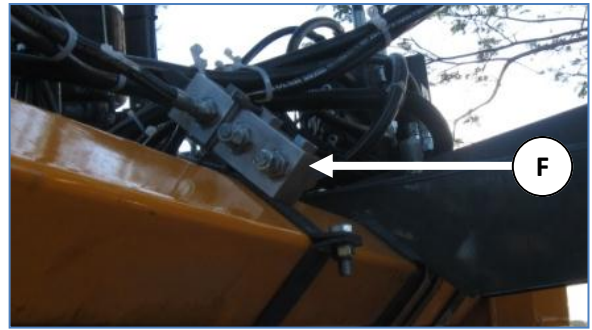


¹ LS System 12 is a trademark of Hagie Manufacturing Company

DETASSELING SYSTEM

Detasseling Components - Hydraulic

- F. Cutter case drain manifold (front toolbar)
- G. Relief manifold (lift valve mount)
- H. Lift valve (front left toolbar)
- I. Outrigger fold valve (front left toolbar)
- J. Motor control valve (front center machine)
- K. Lift cylinder (on each lift arm)



DETASSELING SYSTEM

Detasseling Components - Electrical

- L. Depth command actuator
- M. DepthControl and Command electrical panel



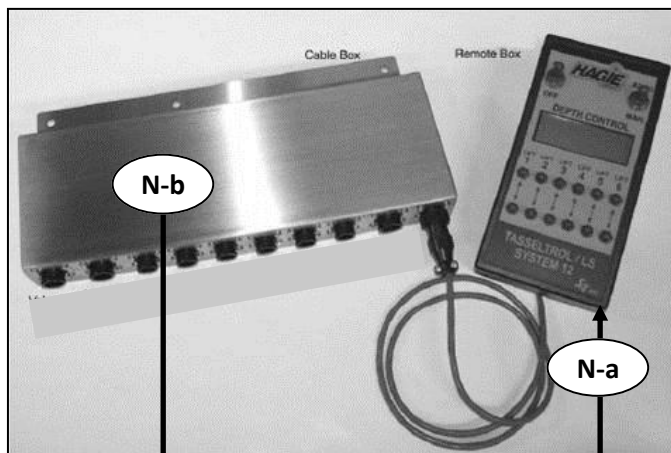
DETASSELING SYSTEM

Control System Components

N. Tasselrol®²

- a. Remote box
- b. Cable box

The Hagie Tasselrol®/ LS System 12™ control box is used for the programming of the detasseling heads as well as the depth command system. This control box can also be used to control the detasseling heads manually.

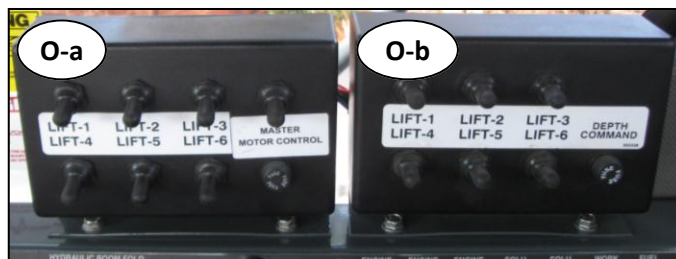
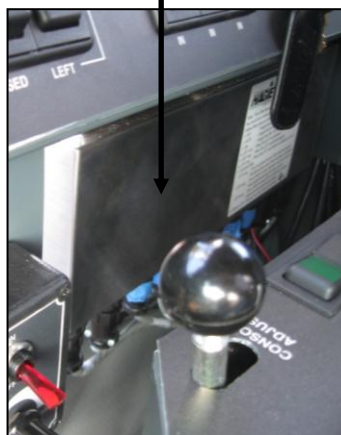


O. Combo control boxes

- a. Motor control
- b. Depth control

The combo control panel houses most of the switches for the detasseling system. More information on the functions of the switches can be found in the Hydraulics section of this manual.

None of the functions of the detasseling system will function if the machine is not in “field” drive state.



² Tasselrol is a registered trademark of Hagie Manufacturing

V. STORAGE


Storage

When looking for a place to store the boom, there are three important things to consider:

1. **Level ground:** The ground must be relatively level to help prevent tip over. Look at the ground in all directions. Level ground will also minimize stress on the frame of the attachment while in storage.
2. **Space:** The boom option has to be partially open in order for it to stand properly. Make sure that there is adequate room to allow for the boom.
3. **Accessibility:** Make sure that there is enough room that the boom is not blocking anything or is blocked.


If temporarily storing the boom on a soft surface, such as grass, it may be necessary to put blocks under the stand's feet to prevent the attachment from sinking into the ground. It is not recommended that booms be stored on a soft surface for an extended period of time because of the risk of the soil settling even when blocks are used.

VI. REMOVING SPRAY BOOMS

 **Warning:** When operating or positioning the booms observe the following safety items to avoid serious injury or death.

- Select a safe area before folding/unfolding booms.
- Clear area of personnel.
- Check for overhead obstructions.
- Do not fold or unfold booms near power lines. Contact with power lines can result in serious injury or death.



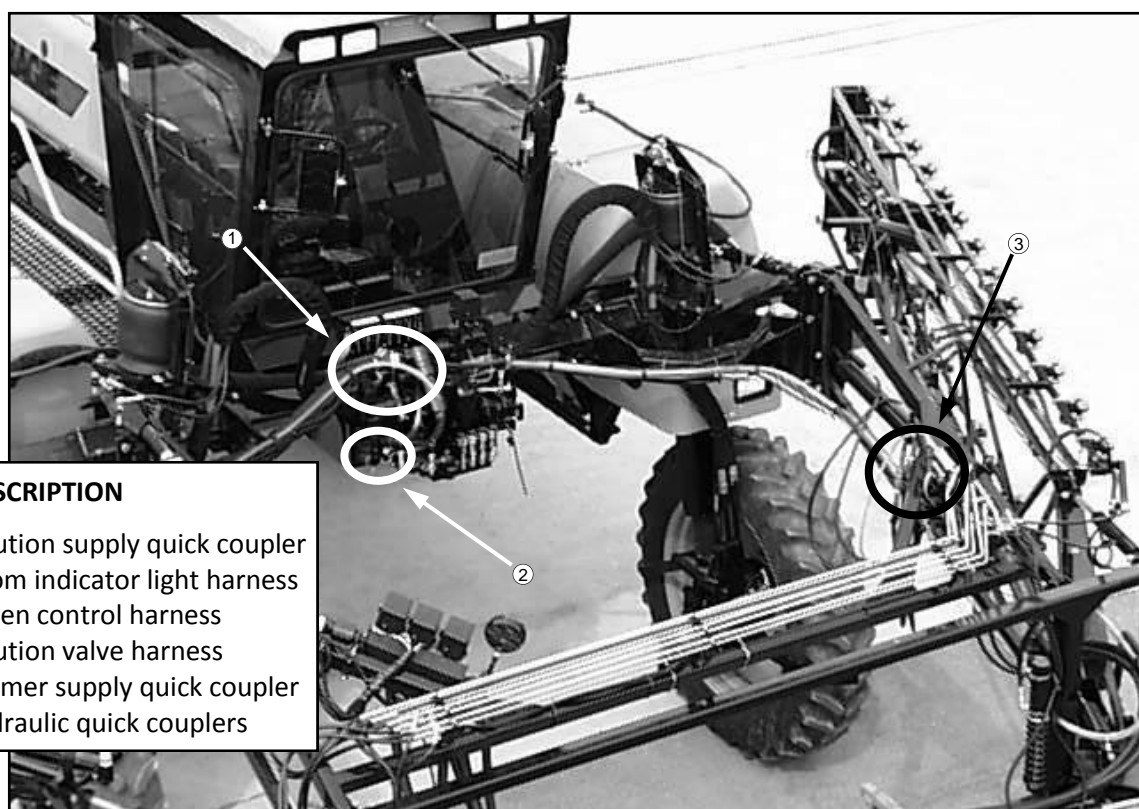
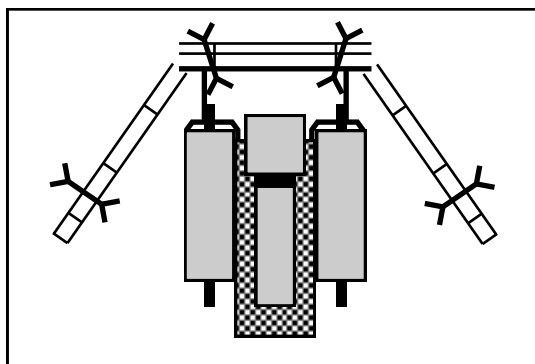
 **Caution:** When operating or positioning the booms observe the following safety items to avoid injury or equipment damage.

- Do not fold/unfold boom extensions when main boom is in the cradle.
- Do not operate sprayer with one boom out of cradle and other boom in cradle.
- Do not transport machine without booms folded and in cradle.

REMOVING SPRAY BOOMS

Removing the Boom

1. Determine where to place the boom once it is off the machine.
2. Set parking brake.
3. Lift booms out of cradle, leaving extensions folded in.
4. Open booms up enough to clear the solution tanks when lowered.
5. Slowly and gently lower the boom until it is rested on safe and supportive stands in at least 4 places as shown.
6. Make sure the solution valves are OFF and turn off the engine before disconnecting any hoses or electrical lines.
7. Disconnect hydraulic, solution, electrical and foamer lines (if equipped) shown below.

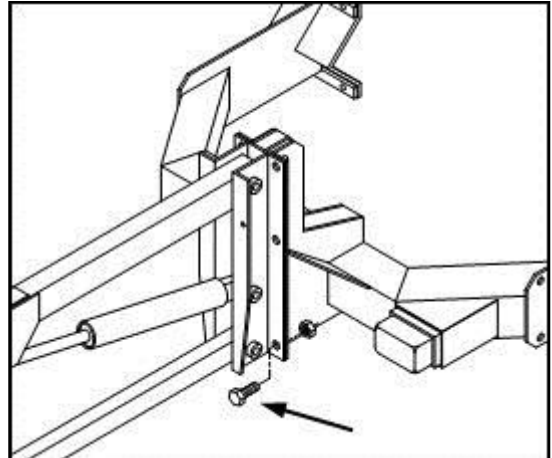


DETAIL DESCRIPTION

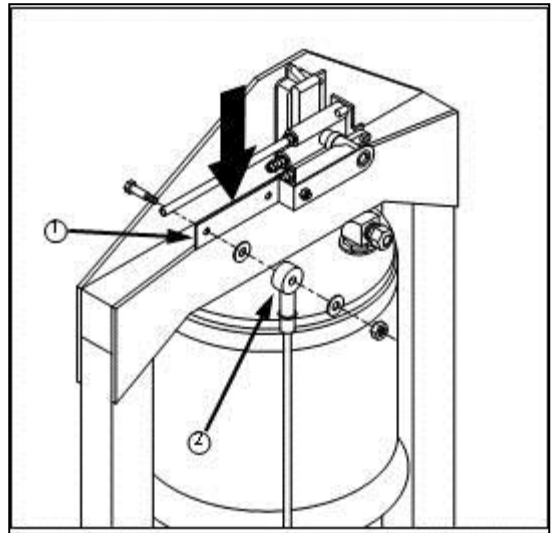
- 1) Solution supply quick coupler
Boom indicator light harness
Raven control harness
Solution valve harness
- 2) Foamer supply quick coupler
- 3) Hydraulic quick couplers

REMOVING SPRAY BOOMS

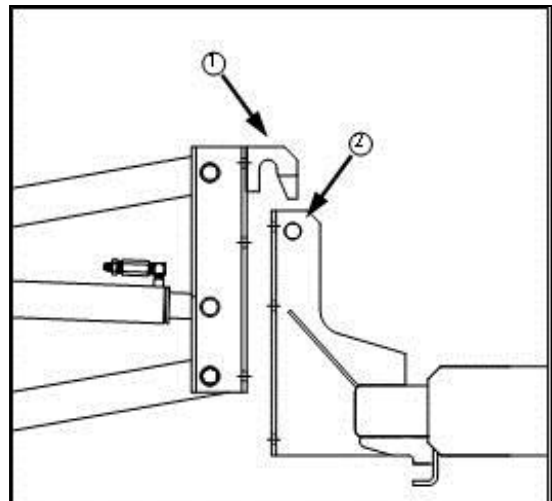
8. Remove each bolt from the quick-attach mount (6 bolts per side – 12 total) as shown to the right.



9. Remove air control linkage (item 2) from the air valve control arm on front leg assemblies. Push the air control arm (item 1) down to release all air out of the bag.

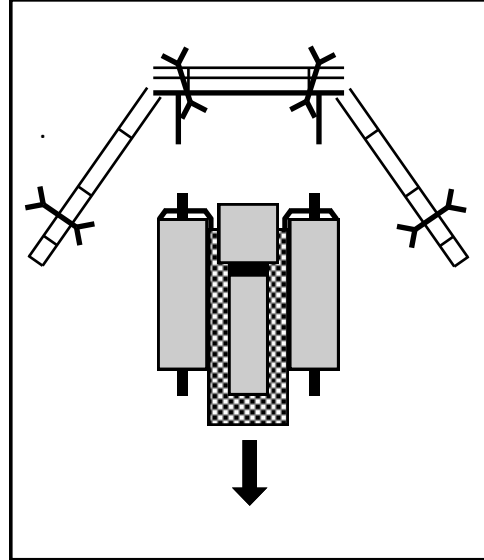


10. Quick attach mounting hooks (item 1) should clear lock pins (item 2) on each lift arm.



REMOVING SPRAY BOOMS

11. Start the machine and slowly back out and away from the boom.



VII. DETASSELING CONVERSION

Attaching Combo Toolbar

1. **Attach temporary toolbar** support to both ends of center toolbar. (Figure 8)
2. **Install support rods** to temporary toolbar supports. (Figure 8)
3. **Lift toolbar** (item 1) to front of machine.
4. **Bolt toolbar** to front of machine using 6 bolts per side.
5. **Attach left and right outriggers** (item 3) with supplied hardware. Refer to DTS 10C Parts Manual.
6. **Attach support rods** if required.
7. **Attach fold cylinder mounts** (item 2) on outriggers.

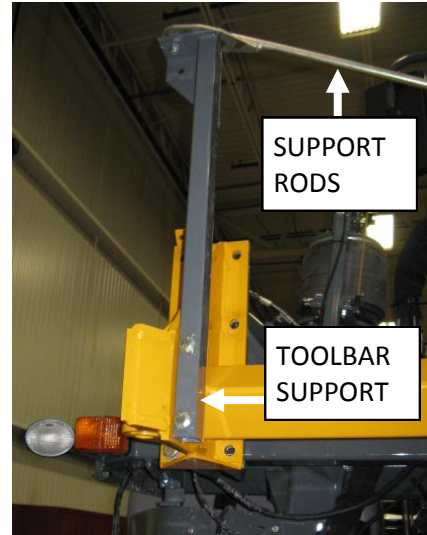
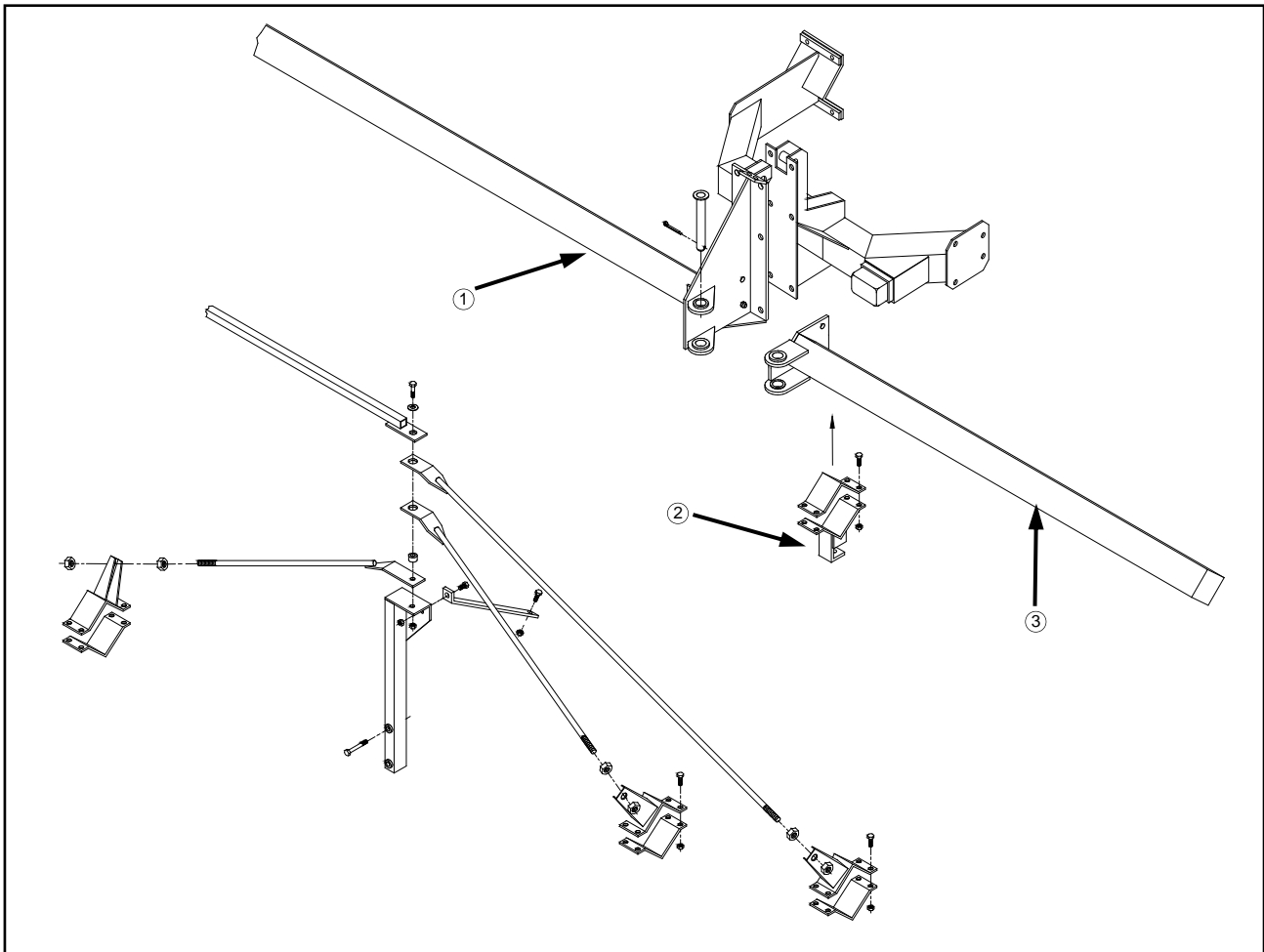
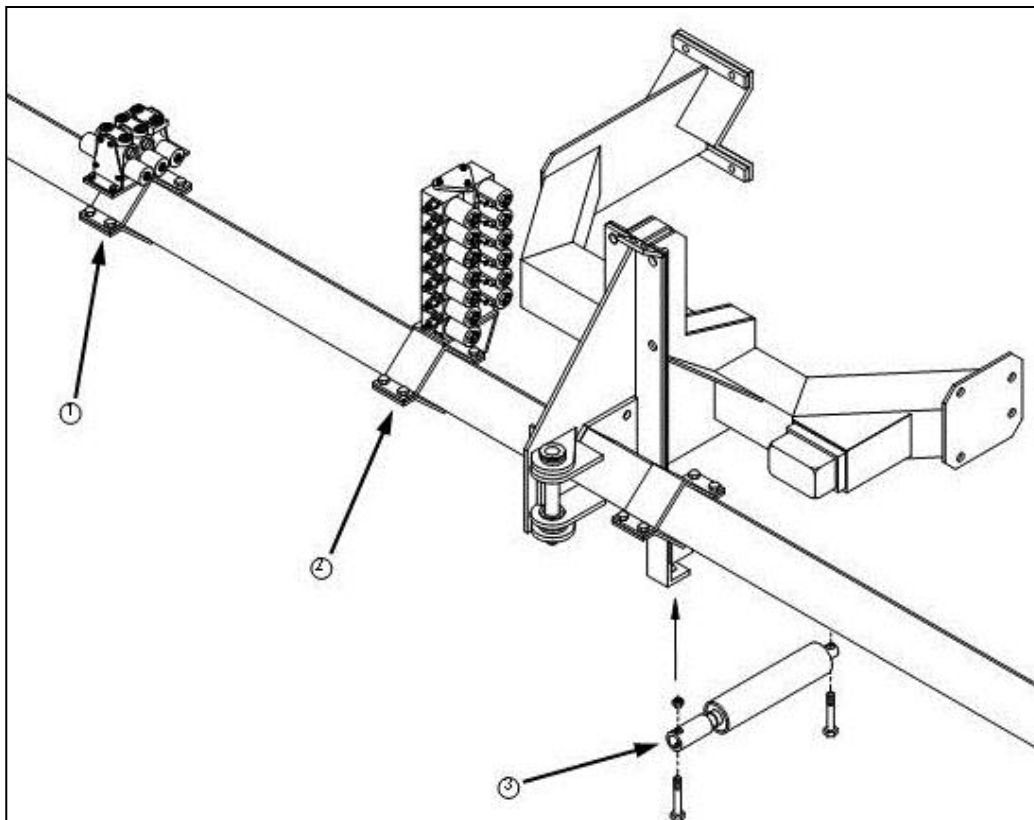


Figure 1: Step 1-4 RH side



DETASSELING CONVERSION



8. **Attach Outrigger Fold Stack Valve** (item 1) in the center of the tool bar with supplied mounting bracket and hardware. Attach supplied wire harness to boom control stack valve wire harness connection. Refer to DTS 10C Parts Manual for hydraulic and electrical schematics.
9. **Attach Outrigger Fold Cylinders** (item 3) with supplied hardware according to DTS 10C Parts Manual. Also refer to 2100 SPRAYER/DETASSELER Parts Manual for correct hydraulic schematic
10. **Attach Lift Arm Stack Valve** (item 2) toward the left of the tool bar with supplied mounting bracket and hardware. Refer to DTS 10C Parts Manual for hardware and hydraulic schematic
11. **Attach cutter case drain valve (OPTIONAL)** if required. Refer to DTS 10C Parts Manual for hardware and hydraulic schematic.
12. **Connect hoses** from outrigger cylinders to outrigger fold stack valve. Refer to DTS 10C Parts Manual for hydraulic schematic.



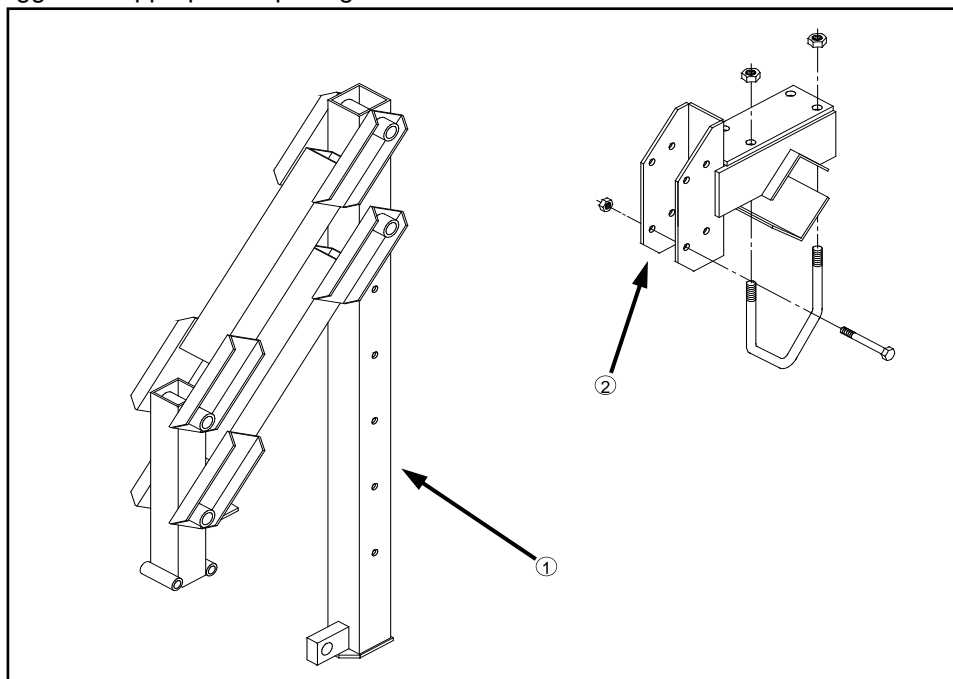
DETASSELING CONVERSION

Attaching Lift Assemblies

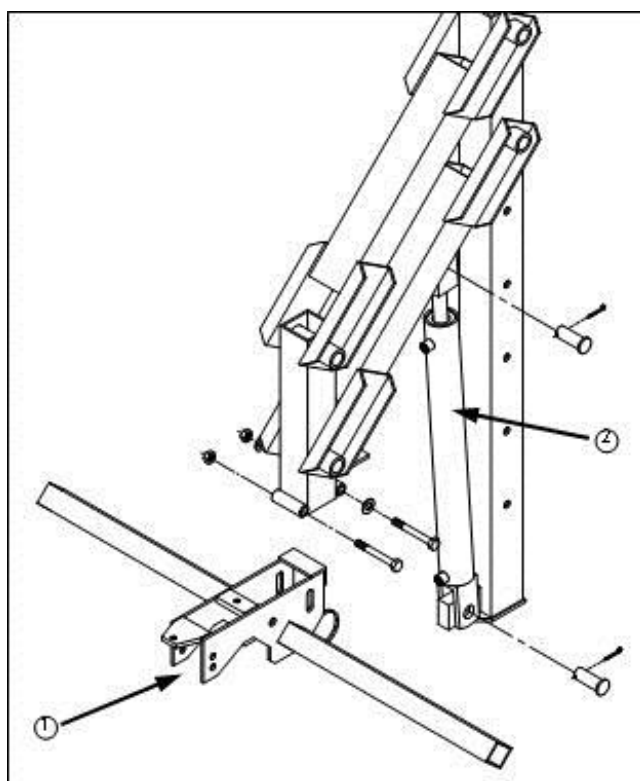
Refer to DTS 10C Parts Manual for correct hardware and additional drawings.

1. **Attach Lift Assembly Heads** to toolbar and outriggers at appropriate spacing.

2. **Attach Lift Arms** to the lift mounts and outriggers.



3. **Attach Lift Arm Cylinders** (item 2) to the lift arm assemblies.
4. **Attach Toolbar Head Weldment** (item 1) to the lift arm assemblies.
5. **Connect hoses** from lift cylinder to lift arm stack valve. Refer to DTS 10C Parts Manual for correct hydraulic schematics.



DETASSELING CONVERSION

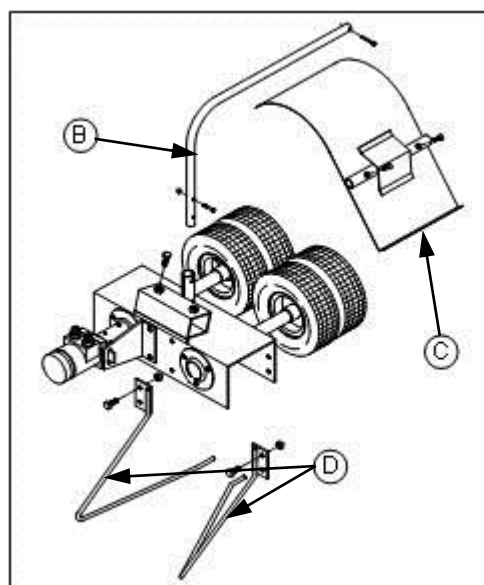
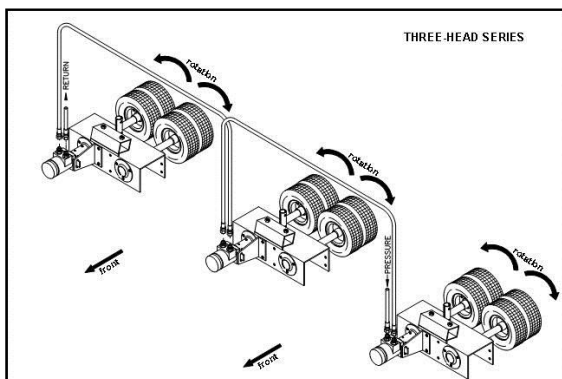
6. **Connect hydraulics** to lift arm stack valve to outrigger fold stack valve and to hydraulic combo quick coupler . Refer to DTS 10C Parts Manual for hydraulic schematics.



DETASSELING CONVERSION

Attaching Quad Pullers

1. Attach the quad pullers to each lift arm tool bar
(A). (Some quad pullers may come pre-assembled to the tool bar.)
2. Install the stalk guides (D) to the quad puller head assembly.
3. Attach the deflector shield mount tube (B) and the deflector shields (C) to mount tube for left or right deflection.
4. Install hydraulic hoses to motor control valve and refer to the parts manual.
5. Adjust the puller tire pressure to approximately 10 psi.



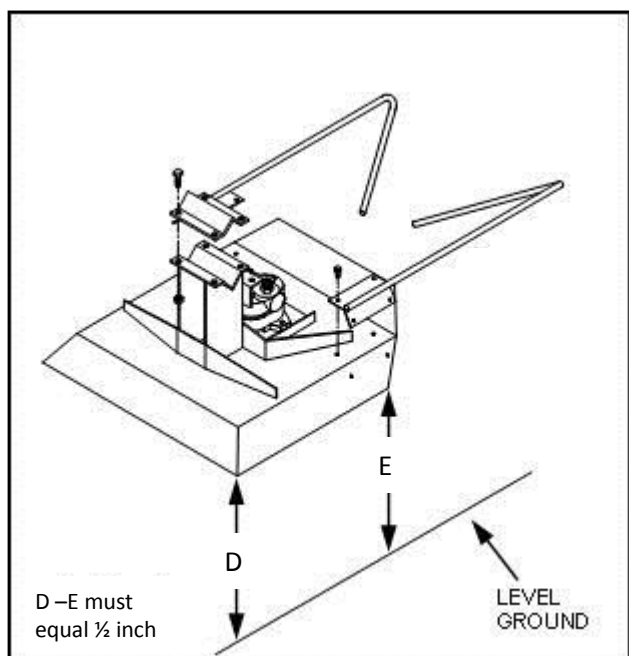
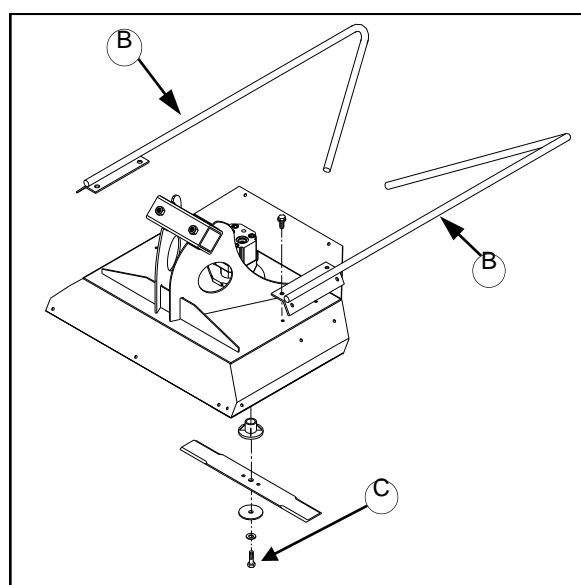
NOTICE

Be sure all four tires have equal pressure. Check tire pressure daily.

DETASSELING CONVERSION

Attaching Cutter Heads

1. Attach the cutter head assembly to the tool bar (A). (Some quad pullers may come pre-assembled to the toolbar.)
2. Install the stalk guides (B) to the cutter head assembly. Refer to the parts manual for proper hardware.
3. Check and tighten the retaining bolt (C) if necessary.
4. Install hydraulic hoses to motor control valve. Refer to the parts manual for the hydraulic hose diagram.
5. Adjust cutter heads using adjusting bolts so the front of the cutter head is pointing downward approximately $\frac{1}{2}$ inch.



DETASSELING CONVERSION

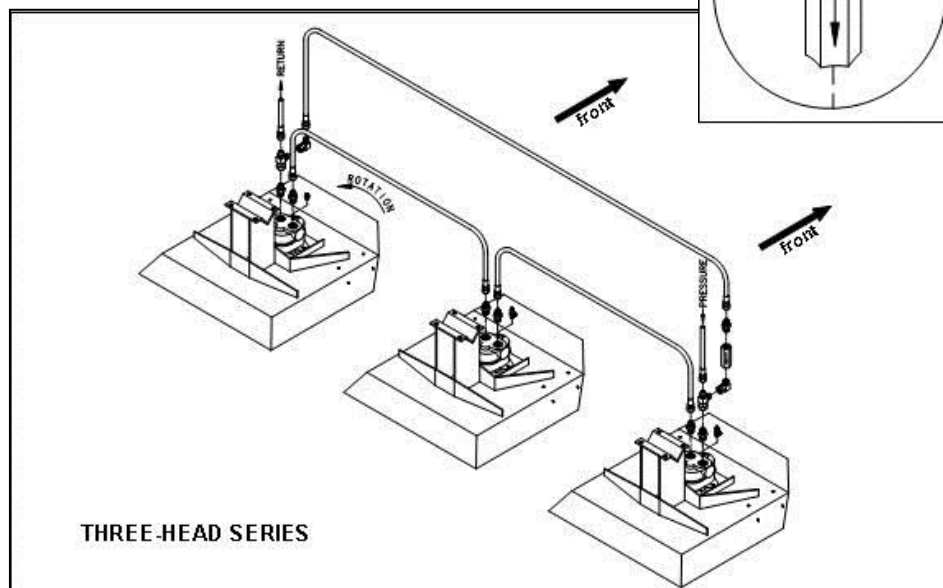
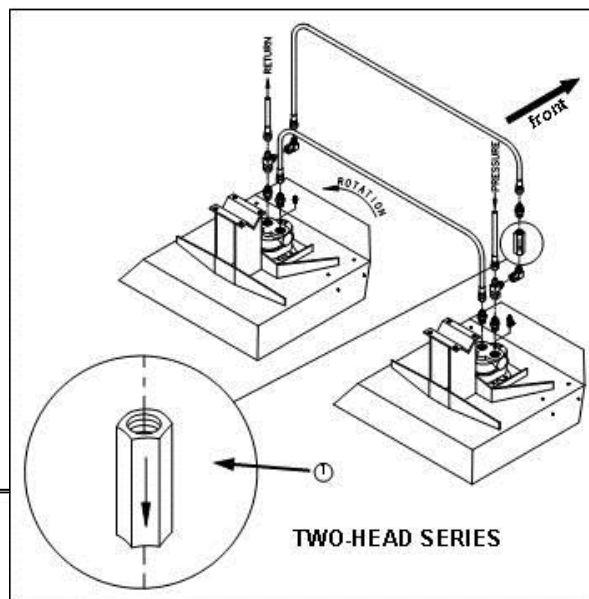


- Cutter head blades should rotate counter-clockwise on the left side and clockwise on the right side. Refer to DTS 10C Parts Manual for correct hardware, hoses and hydraulic schematic.

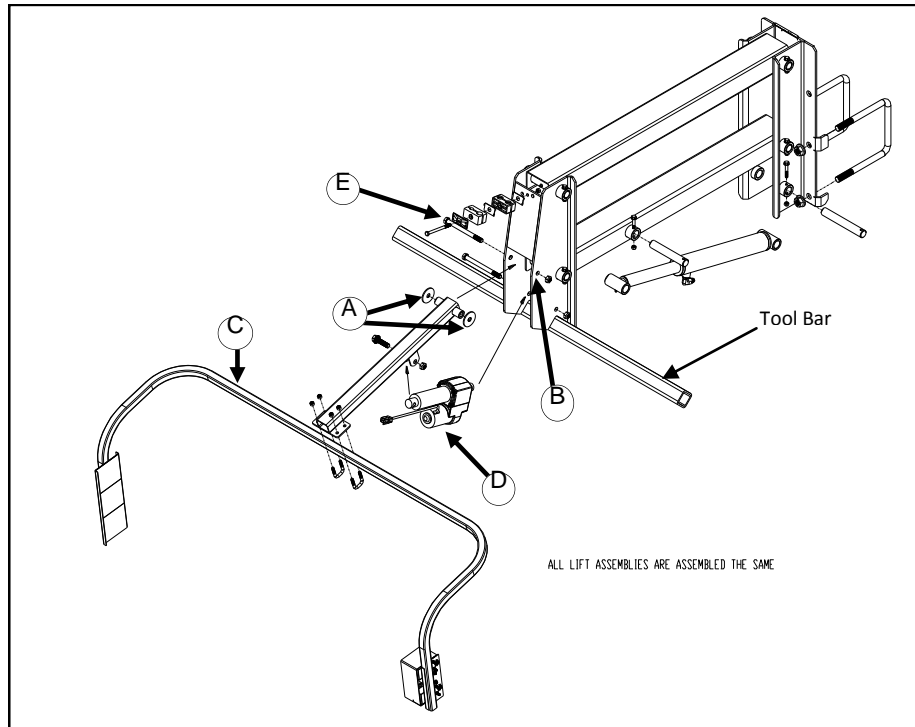


- Care should be taken when installing check valve on cutter motor so flow arrow is oriented correctly.

- Case drain hoses **MUST** be installed correctly on cutter motors to prevent motor damage



DETASSELING CONVERSION



Attaching LS System and Depth Command

1. Install the LS sensor mount support arm with the two nylon washers (A) in the forward-most hole of the tool bar (B).
2. Install the LS sensor mount weldment (C) to the sensor mount support arm.
3. Install the cable assembly according to the wire diagram in the Hagie DTS 10C Parts Manual.
4. Turn the ignition key to the ON position to check the sensor installation. DO NOT start the engine.
5. Attach the depth command actuator (D) to the light sensor mount and the toolbar.

NOTICE

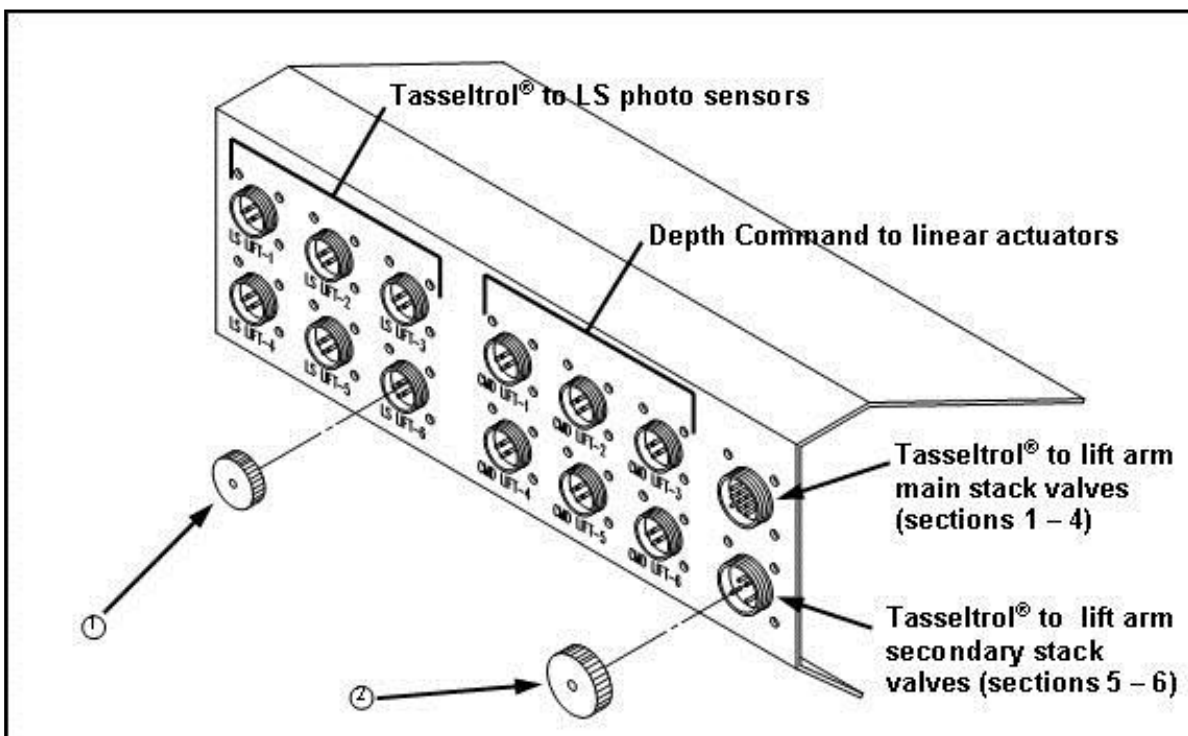
Over tightening of the sensor arm pivot bolt (E) may cause the actuator to stall.

DETASSELING CONVERSION

6. Install Tasselrol and Depth Command wires to electrical “jumper” panel. Refer to DTS 10C Parts Manual wiring schematic.



*All ports not used should be capped to protect connection points. Contact Hagie Manufacturing Customer Service if caps are needed.

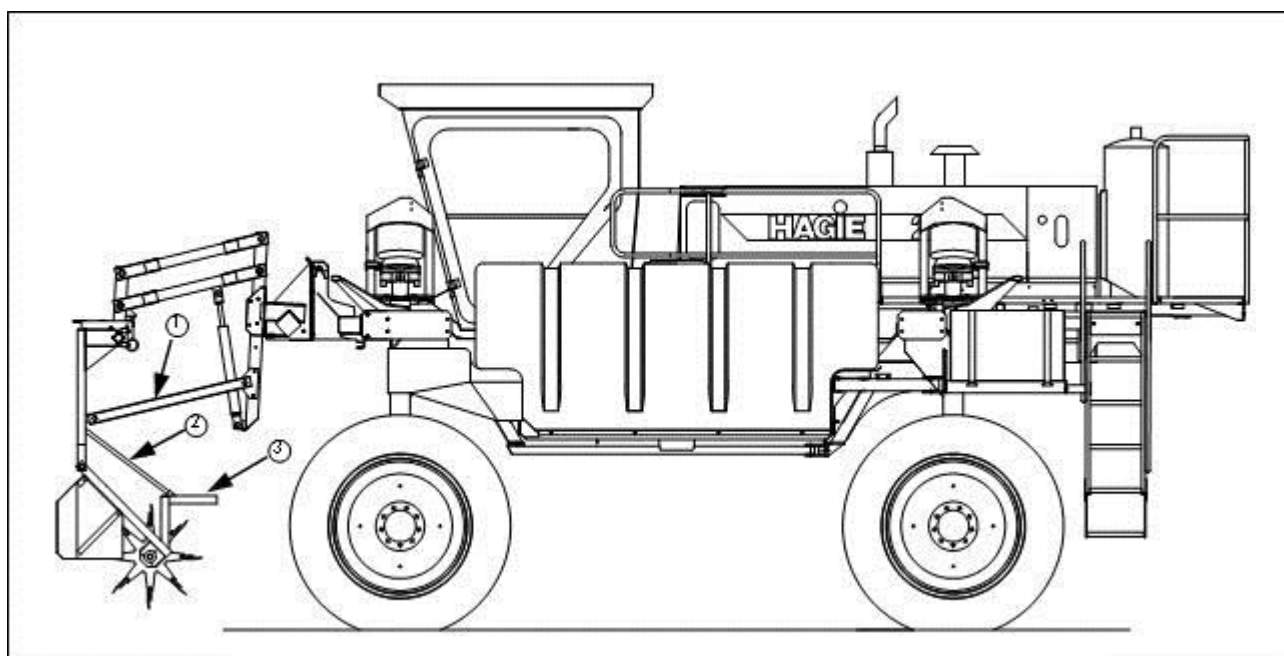


DETASSELING CONVERSION

Attaching Male Choppers

Refer to Male Row Chopper Manual

1. Disconnect the hydraulic hoses from existing heads.
2. Disconnect and remove the head assemblies and Tasselrol®/LS attachments (if equipped) from the tool bar.
3. Attach the male corn chopper to the tool bar.
4. Attach the lower stabilizer arm to the hoist column and male corn chopper (item 1).
5. Adjust the support rod so there is approximately two inches of travel on each end (item 2).
6. Add weights (item 3).
7. Install male corn cutter adapter brackets
8. Install male corn cutter drop tube assembly
9. Connect hydraulic hose to the male corn cutter motor as shown in schematic in Male Row Chopper Manual.



VIII. OPERATING SYSTEM

Operating Instructions

1. Adjust flow control valve
2. Adjust lift valve
3. Set lift arms
4. Program the Hagie [Tasselrol](#)®³/ LS System 12™⁴ control box.
5. Test the photo light sensors.
6. Start the engine.
7. Turn on the desired detasseling head motors.
8. Activate the master switch on the control box.
9. Shut the system down if there is a loss of hydraulic pressure or low oil warning. Failure to do so will result in system damage and void the warranty.

In order to achieve the recommended RPM to operate the detasseling head motors, use the throttle switch on the side console. By bumping the engine's RPM, the heads will be available for immediate use.

NOTICE

Operating the system below the recommended engine RPM will not provide the system with adequate hydraulic oil flow and may cause poor performance.

³ Tasselrol is a registered trademark of Hagie Manufacturing Company

⁴ LS System 12 is a trademark of Hagie Manufacturing Company

OPERATING SYSTEM

Fold Cylinders

To fold either outrigger out or in toward each other, depress the “OUT” or “IN” of Left or Right “HYDRAULIC BOOM FOLD” switch (fig. 4.5). While depressed, these switches activate cylinders connecting either outrigger to the center tool bar.



FIG. 4.5

NOTE:

When folding detasseling heads forward, take care to "stack" heads on outriggers so they will not collide.

Fold or unfold the outriggers in an open area only. Make sure no one is in the outrigger's travel path.

Lift Cylinders

To adjust the height of each detasseling head assembly, cylinders mounted on each lift unit (fig. 4.7) are connected to a hydraulic stack valve controlled by a steering column-mounted lift control (fig 4.8). The control is switchable from manual to automatic.

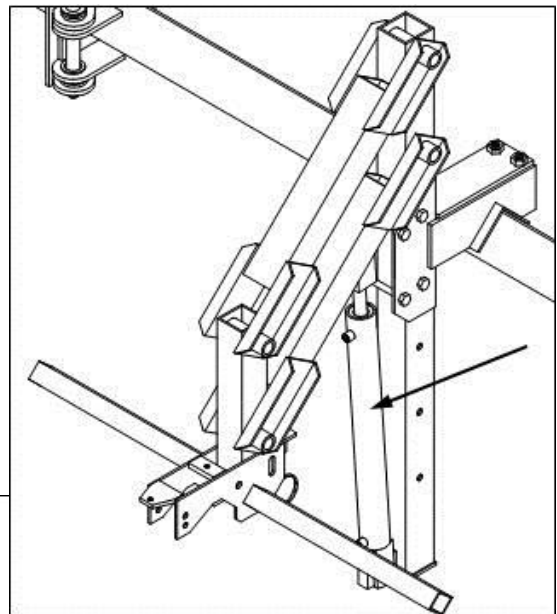


FIG 4.7

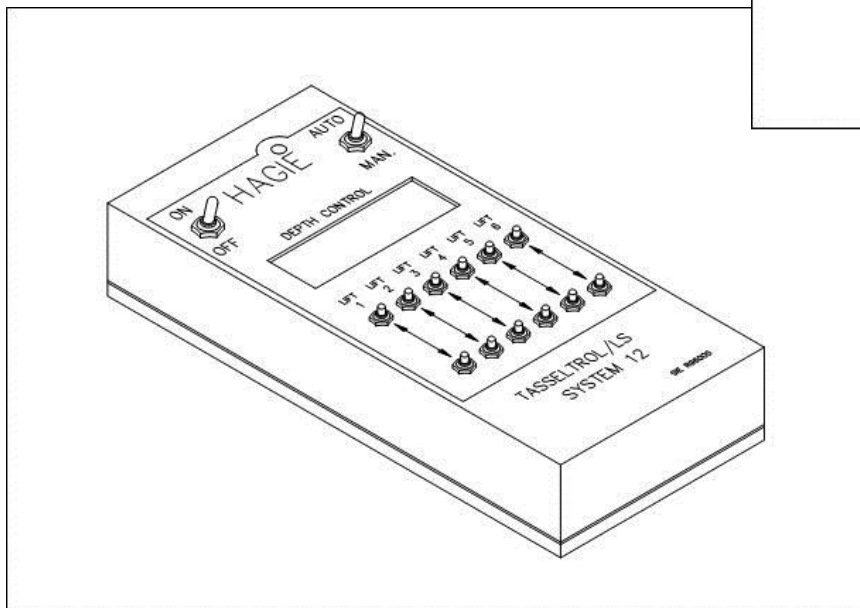


FIG 4.8

OPERATING SYSTEM

Detasseling Heads

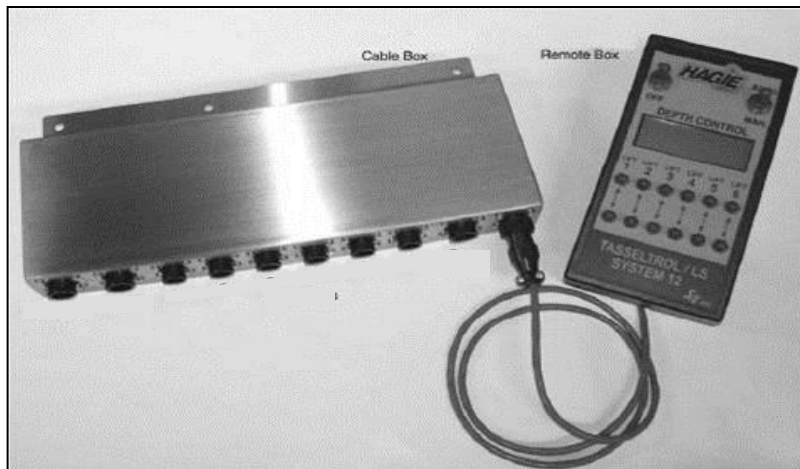
The hydraulic motors on the detasseling heads are turned on and off with a row of switches mounted on the control box to the right of the operator's seat.

To open the solenoid on any of the motor control valves which activate the motors, flip the corresponding switch up. To shut any or all motors off, flip the corresponding switch down.

Activate hydraulic motors while engine speed is at an idle, then increase engine RPM to operating speed.



IX. TASSELTROL®/LS SYSTEM 12™



Setting up the Hagie Tasselrol®/LS System 12™

The remote box has three programmable parameters and each has four different value settings. Your programmable control box is factory preset with the following parameter defaults:

BOTTOM PARAMETER – B1 See page 44 to reprogram the bottom parameter.

RESPONSE PARAMETER – R2 See page 42 to reprogram the response parameter.

TOP PARAMETER – T3 See page 43 to reprogram the top parameter.

These parameters will always be displayed until the control box is reprogrammed. Once reprogrammed, the values for the parameters will appear in the window of the control box. The new parameters will maintain their value for approximately a two week period. If the unit is not used within this time frame, the parameters will automatically return to the normal settings.

To program the unit, first select the response parameter. If further adjustment is required see Top or Bottom Parameter.

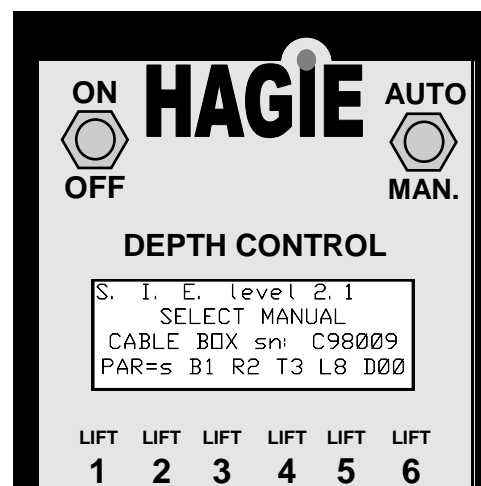


FIG 4.15

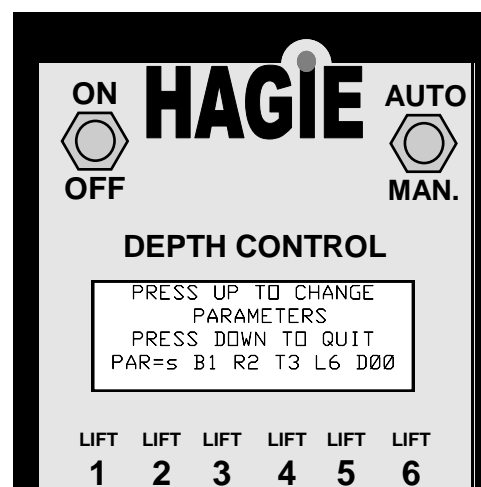


FIG 4.16

TASSELTROL®/LS SYSTEM 12™

Operating the Tasselrol/LS Control

To use the control box with its normal parameter setting, use the following procedures. To adjust the given parameters, see pages 42-44.

1. From the operator's seat, turn the ignition to the "ON" position.
2. Turn the control box power switch to the "ON" position.
3. Turn the "AUTO/MANUAL" switch to "MANUAL." At this time the display will read "MANUAL" in addition to other information identifying the control box.
4. Press the individual row switches for up and down movement. An arrow in the display will indicate direction of each lift assembly. "P" indicates pressure - "UP" only.
5. If the "AUTO/MANUAL" switch is left in the "AUTO" position when the unit is first started, the display will tell you to select "MANUAL." After you have selected "MANUAL" switch back to the "AUTO" position.
6. To raise and hold one or more units during operation, press the desired "UP" switch, select "MANUAL" and back to "AUTO." This will hold the unit up in position. To re-activate the lift, switch to "MANUAL" and back to "AUTO."
7. To override the system, press the desired "UP" switch to raise the attachment. When the switch is released, the system will go back into the "AUTO" mode.
8. If the ignition is left on and the "AUTO/MANUAL" switch is left in the "AUTO" position, the down coils on the electro-hydraulic valve will lose power after 45 seconds. To re-activate, move the "AUTO/MANUAL" switch from "AUTO" to "MANUAL" and back to "AUTO."
9. The control box is set up with a feature so that if a unit loses contact during operation in the "AUTO" mode, the unit will automatically rise. If this should happen, switch to the "MANUAL" mode and determine the cause for malfunction.

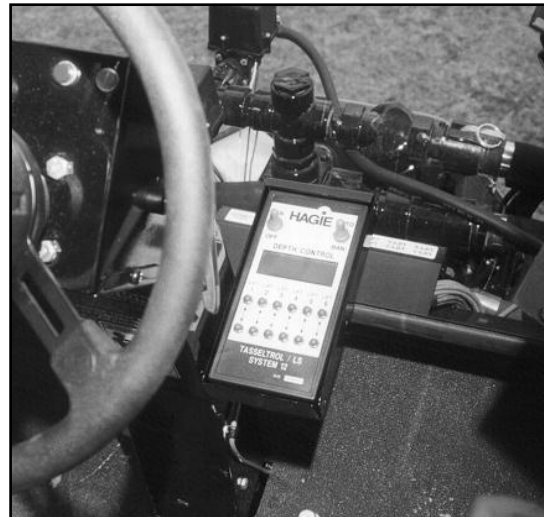


FIG 4.17

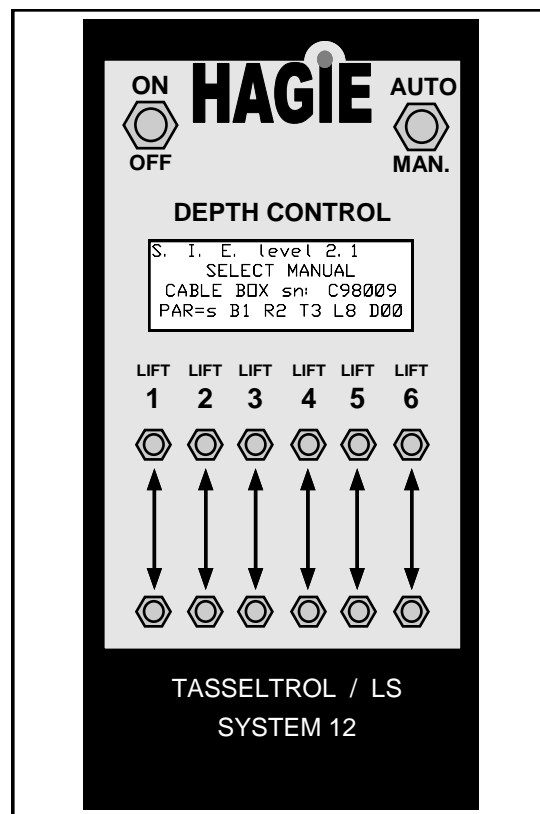


FIG 4.18

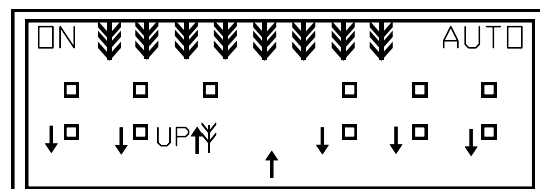


FIG 4.19

TASSELTROL®/LS SYSTEM 12™

Short Corn Operation

When operating the LS system, always select “MANUAL” when first entering the field. Once you have maintained your operating speed and the cutting and/or pulling depth, select “AUTO.” When you come to an area where the corn is very short, such as a low spot in the field, you may want to switch to the “MANUAL” position until you reach taller corn.

Always switch to the “MANUAL” position before you reach the end rows (fig. 4.20). This will allow the cutter or puller heads to maintain their cutting or pulling height when re-entering the field (fig. 4.21), then you may switch back to “AUTO.”



FIG 4.20



FIG 4.21

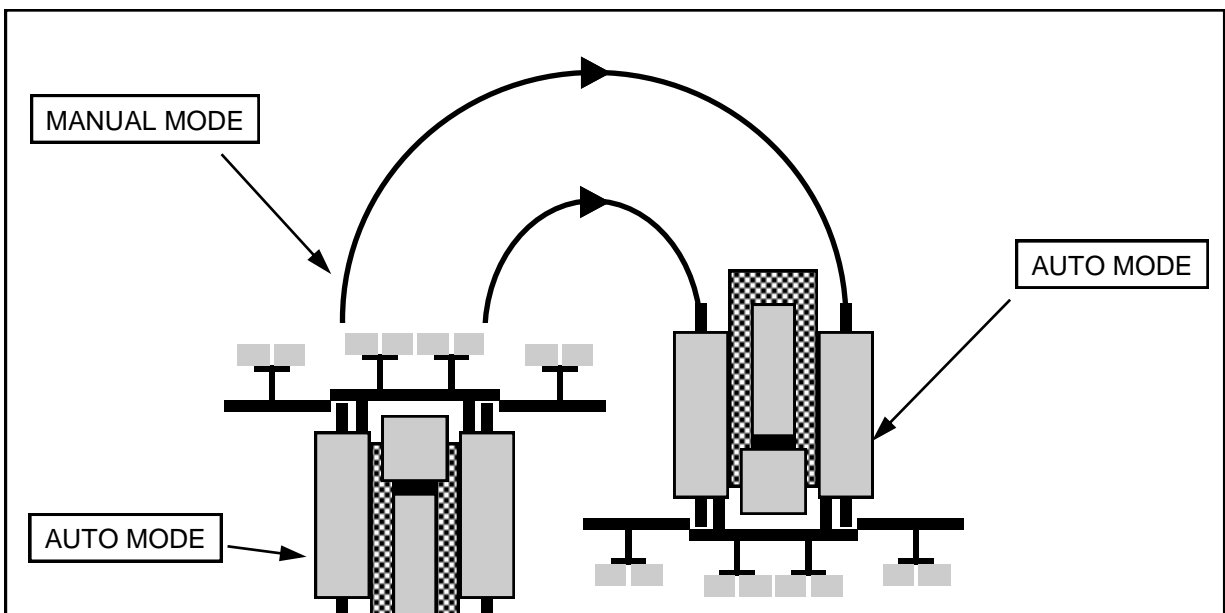


FIG 4.22

TASSELTROL®/LS SYSTEM 12™

ALL UP” and “ALL HOLD” Function

This function can be used to raise or lower all row units at the same time. The switch to control this option is located on the hydrostat control handle (fig. 4.23). All the row units will move up when the switch is pressed upward and will lower when the switch is pressed downward.

The parameters for dwell on the up move can be set to 0, 5, 10, 15, 20, or 25 seconds. The heads will move up in this amount of time without having to hold the switch up. All heads will hold this position when the parameter is reached. To resume automatic depth control, press the switch down.

To program the “ALL UP” and “ALL HOLD” function:

1. Put the “AUTO/MANUAL” switch to “AUTO.”
2. Put the “ON/OFF” switch to “ON.”
3. Press the “UP” button under “PAR.”
4. Press the “UP” button under “D” to set the dwell time.
5. After selecting one of the dwell time choices, press any of the down switches.
6. To escape the parameter mode, press down a second time to return to the original screen (to save this setting, switch the “AUTO/MANUAL” toggle to “MANUAL”).



FIG 4.23

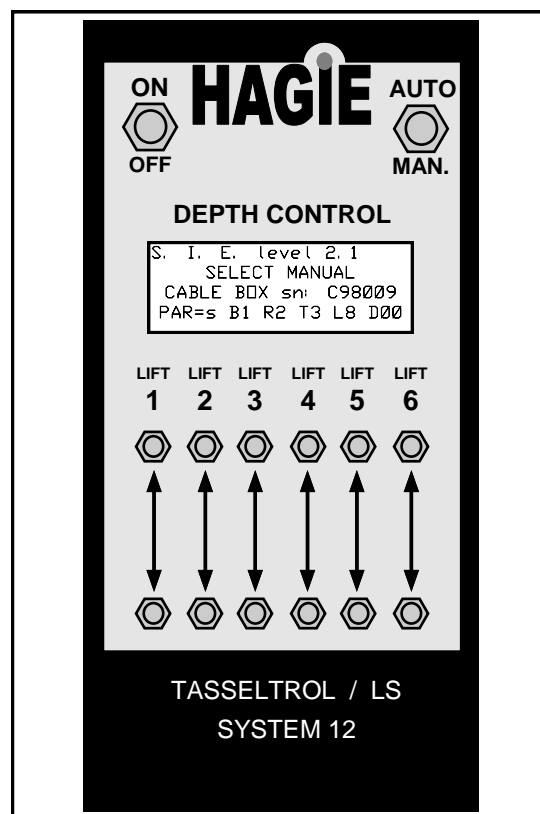


FIG 4.24

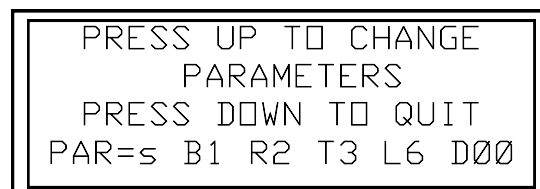


FIG 4.25

TASSELTROL®/LS SYSTEM 12™

TASSELTROL® RESPONSE PARAMETER

The response parameter is used to adjust the response time of both photocells. How quickly the down motion starts when no corn is detected by either the top or bottom cells, and how quickly the up motion is stopped when corn is no longer detected by the top cell, can be changed by selecting R1, R2, R3, or R4. More corrections will occur with R1 selected, and fewer corrections with R4 selected. The normal or default value for this parameter is R2, but can be set to any desired value.

Use the response parameter to adjust overall correction activity and to compensate for ground speed. If the pullers are moving too quickly and frequently, the response parameter can be increased toward R4. If the pullers are too slow to respond to changes in the corn depth, increase the parameters toward R1. Generally this parameter can be left at R2.

To display the response parameter, select “AUTO” and turn the control box power on. Wait three seconds for the “SELECT MANUAL” message, press the “UP” button under “PAR”. Now press the “UP” button under the “R” value.

The active value of the parameter is indicated by it blinking on and off, while the other three choices are displayed continuously.

To select a new value for the parameter, press the “UP” button under the desired choice.

After selecting one of the four choices, press any of the “DOWN” buttons to escape this parameter.

To save new values and escape the parameter mode, press “DOWN” a second time and switch “AUTO/MANUAL” toggle to “MANUAL”.

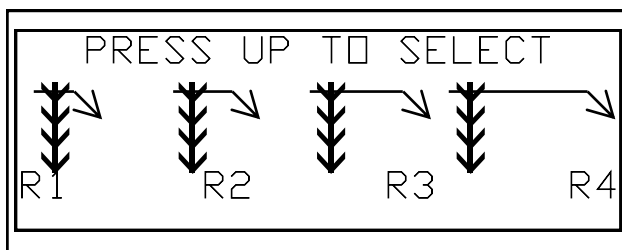
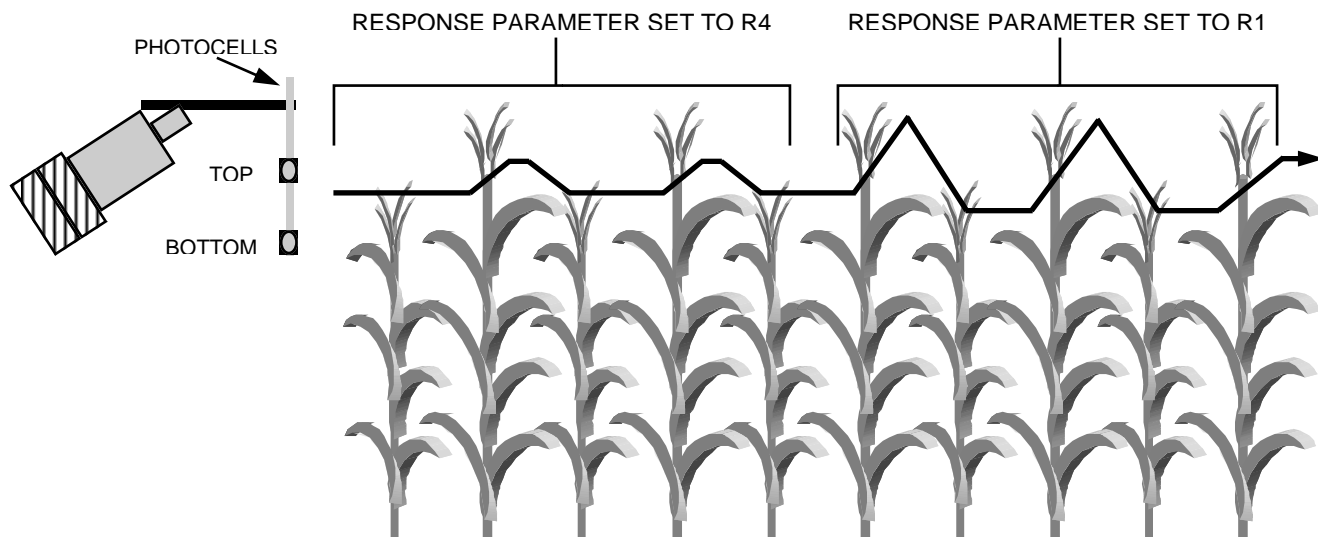


FIG 4.26



TASSELTROL®/LS SYSTEM 12™

TASSELTROL® TOP PARAMETER

The top parameter is used to adjust the sensitivity of the top photocell. The top photocell starts the up motion when its lights path is blocked by corn. How much corn it has to see before starting the up move can be changed by selecting one of the four values T1, T2, T3, or T4. With T1 selected, more corn is required to start an up move. The normal or default value for this parameter is T3, but can be set to any desired value.

If the pullers move up too easily when a taller stalk of corn passes, increase the parameter toward T4. If the pullers stay deep too long when taller corn passes, decrease the parameter toward T1. Generally this parameter can be left at T3.

To display the top parameter, select “AUTO” and turn the control box power on. Wait three seconds

for the “SELECT MANUAL” message. Press the “UP” button under “PAR”. Now press the “UP” button under the “T” value.

The active value of the parameter is indicated by it blinking on and off, while the other three choices are displayed continuously.

To select a new value for the parameter, press the “UP” button under the desired choice.

After selecting one of the four choices, press any of the “DOWN” buttons to escape this parameter.

To save new values and escape the parameter mode, press “DOWN” a second time and switch “AUTO/MANUAL” toggle to “MANUAL”.

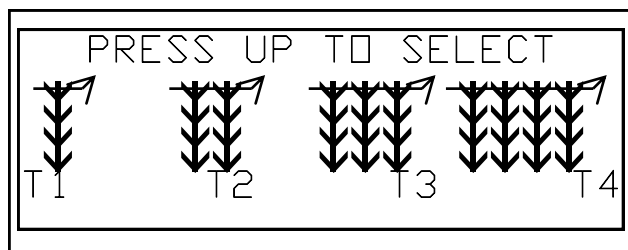
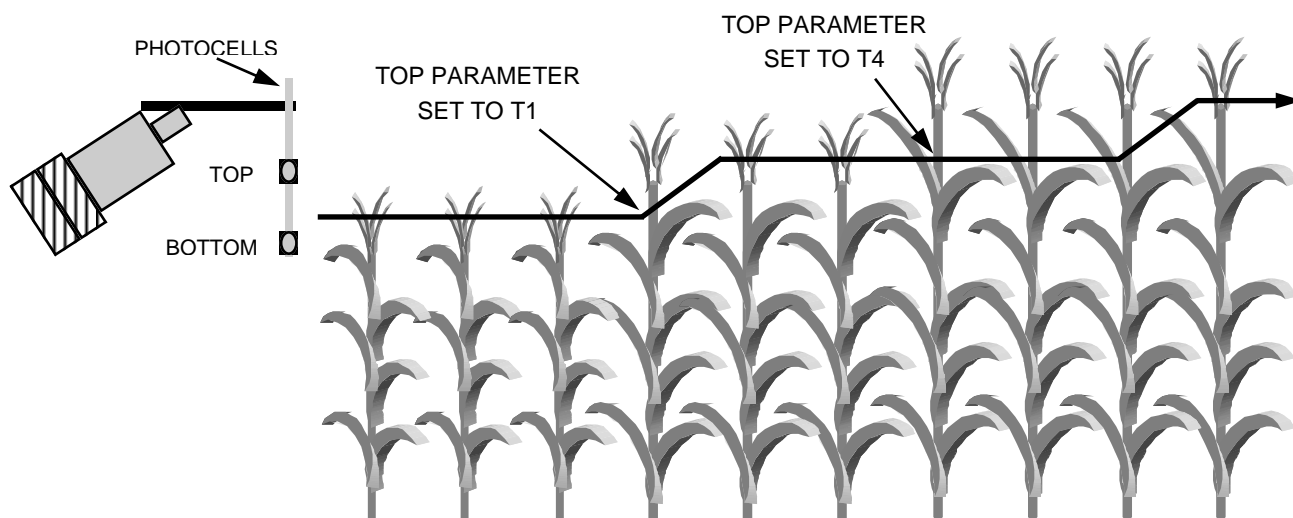


FIG 4.27



TASSELTROL®/LS SYSTEM 12™

TASSELTROL® BOTTOM PARAMETER

The bottom parameter is used to adjust the sensitivity of the bottom photocell. The bottom photocell stops the down motion when its light is blocked by corn. The quantity of corn it has to see before stopping the down move can be changed by selecting one of the four values B1, B2, B3, or B4. With B1 selected, the down move will stop as soon as corn is detected. With B4 selected the down move will continue a little longer. The normal or default value for this parameter is B1, but can be set to any desired value.

If the pullers run too shallow after moving down into shorter corn, increase the parameter toward T4. If the pullers move too deep when going into shorter corn or oscillate between the top and bottom

photocells, decrease the parameter toward B1. Generally this parameter can be left at B1.

To display the bottom parameter, select “AUTO” and turn the control box power on. Wait three seconds for the “SELECT MANUAL” message. Press the “UP” button under “PAR”. Now press the “UP” button under the “B” value.

The active value of the parameter is indicated by it blinking on and off, while the other three choices are displayed continuously.

To select a new value for the parameter, press the “UP” button under the desired choice.

After selecting one of the four choices, press any of the “DOWN” buttons to escape this parameter.

To save new values and escape the parameter mode, press “DOWN” a second time and switch “AUTO/MANUAL” toggle to “MANUAL.”

”

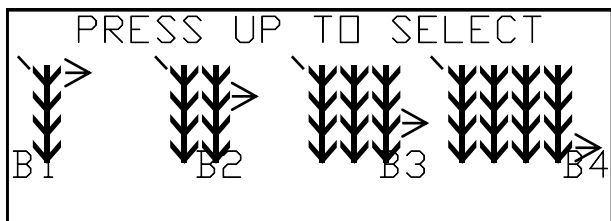
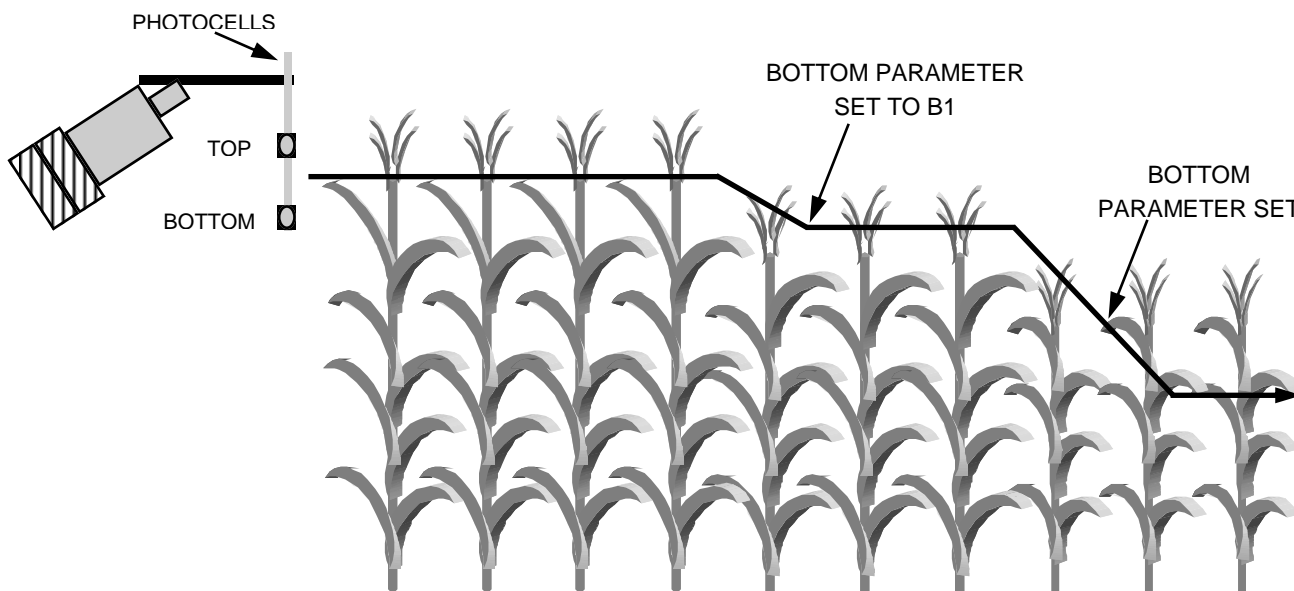


FIG 4.28



TASSELTROL®/LS SYSTEM 12™

SIX-LIFT TASSELTROL® DISPLAY SCREEN QUICK REFERENCE CHART

Turn on ignition key with TASSELTROL® power switch in "ON" position.

Turn on ignition key with TASSELTROL® power switch in "OFF" position.

S. I. E. level 2.1
SELECT MANUAL
CABLE BOX sn: C98009
PAR=s B1 R2 T3 L8 D00

ON [up/down arrows] [up/down arrows] [up/down arrows] [up/down arrows] [up/down arrows] [up/down arrows] [up/down arrows] [up/down arrows] MANUAL

ON [up/down arrows] [up/down arrows] [up/down arrows] [up/down arrows] [up/down arrows] [up/down arrows] [up/down arrows] [up/down arrows] AUTO

Press up button under "PAR" to enter change mode. Press down to return to SELECT MANUAL screen.

PRESS UP TO CHANGE PARAMETERS
PRESS DOWN TO QUIT
PAR=s B1 R2 T3 L6 D00

Press up button under "D" to select ALL UP and HOLD dwell time. Choose in 5 second increments between 0 and 25. Press any down button to return to SELECT MANUAL screen. Flip AUTO/MANUAL switch to MANUAL to save settings.

Press up button under "L" to select screen to turn lifts on or off. Press any up button to turn that lift on or off. Press any button down to quit. Press down again to return to SELECT MANUAL screen. Flip AUTO/MANUAL switch to MANUAL to save settings.

LIFTS: ON _ OFF
1 2 3 of 5 6

Press up button under "B" to select bottom parameter screen. Press up button under choice to make selection. Press any down button to quit. Press down again to return to SELECT MANUAL screen. Flip AUTO/MANUAL switch to MANUAL to save settings.

PRESS UP TO SELECT
B1 B2 B3 B4

Press up button under "R" to select response parameter screen. Press up button under choice to make selection. Press any down button to quit. Press down again to return to SELECT MANUAL screen. Flip AUTO/MANUAL switch to MANUAL to save settings.

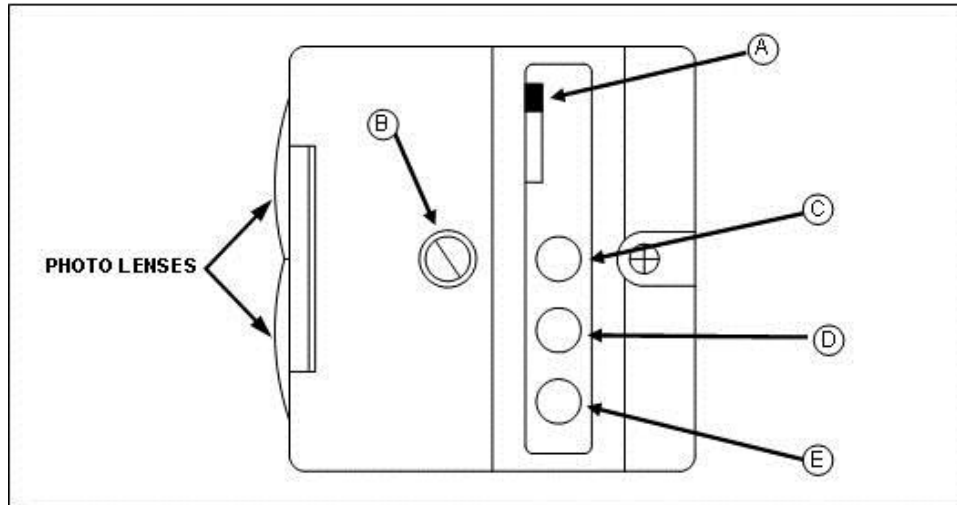
PRESS UP TO SELECT
R1 R2 R3 R4

Press up button under "T" to select top parameter screen. Press up button under choice to make selection. Press any down button to quit. Press down again to return to SELECT MANUAL screen. Flip AUTO/MANUAL switch to MANUAL to save settings.

PRESS UP TO SELECT
T1 T2 T3 T4

This parameter should be set to "s". Press any down button to return to SELECT MANUAL screen. Flip AUTO/MANUAL switch to MANUAL to save settings.

TASSELTROL®/LS SYSTEM 12™



LS Photo Light Indicators

The upper and lower LS photo lights (F) have L.E.D lights (A, C, D, E) that indicate operational status.

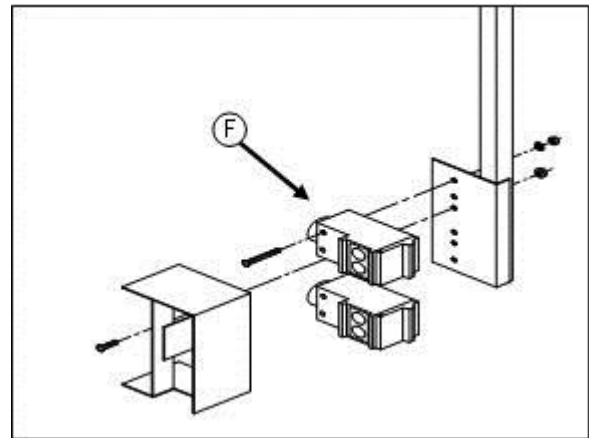
LT/DK Switch– Light/ Dark switch (A) on the photo light sensor changes the activated condition of green L.E.D (see below) from ON (LT) to OFF (DK). The switch does not affect the functional operation of the light, only how it is displayed. The switch should be set to LT.

Sensitivity Adjustment Screw– The sensitivity adjustment screw ((B) should always be set to maximum.

Yellow L.E.D– The yellow L.E.D (C) indicates that the power is on.

Green L.E.D– The green L.E.D (D) indicates output energized (sending signal to the TasselTrol®⁵ box, opening the raise or lower stack valve).

Red L.E.D– The red L.E.D (E) indicates that the photo light is receiving reflected signal.



⁵ TasselTrol is a registered trademark of Hagie Manufacturing Company

TASSELTROL®/LS SYSTEM 12™

The DTS 10 COMBO comes with adjustable DEPTH COMMAND. This allows the operator to adjust the depth of the LS system from the cab. The switches are located to the right of the operator's seat above the console.

To lower the cutting or pulling height, select the appropriate switch and push down. This will extend the actuator raising the LS system, which in turn lowers the cutting or pulling height. To raise the cutting height, lower the actuator by pushing the appropriate switch up.



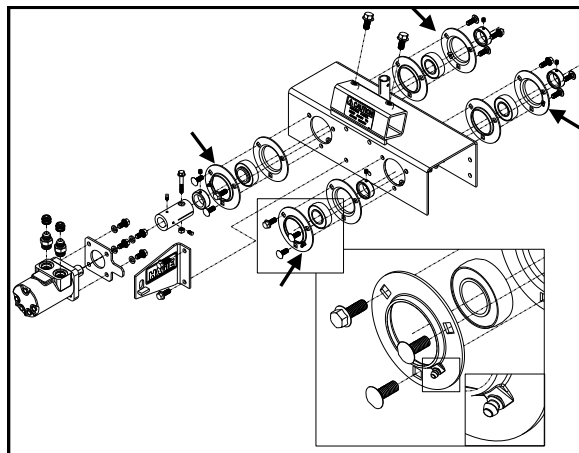
NOTE:

DO NOT operate more than two actuators at one single time. This may blow the fuse located on the switch panel.

X. SERVICE

Quad Pullers

Each quad puller head has four bearings equipped with grease zerks. To ensure the longest life and best performance, grease each bearing twice a day. Suggested times are morning and noon.

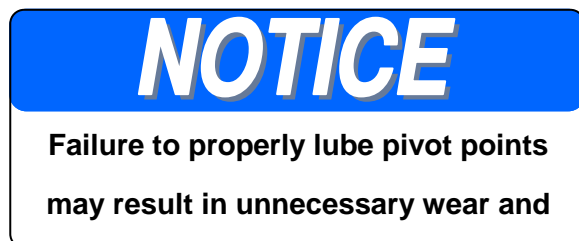


Male Row Choppers

Each male row chopper has two bearings equipped with grease zerks. Grease each bearing once a day.

Four Blade Male Row Cutters

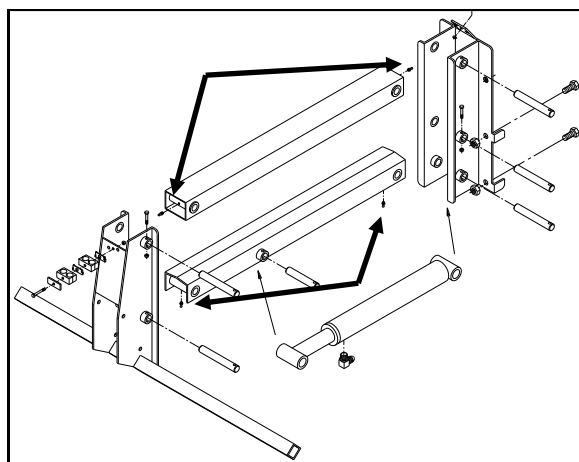
Grease both upper and lower shaft bearings 4 times a day. Suggested times are morning, mid-morning, noon, and mid-afternoon.



Lift Arm Assemblies

Each lift arm assembly has four grease zerks. There is one zerk at each end of the upper and lower lift arms.

When the combo is being used, these pivot points need to be checked daily and greased a minimum of every 50 hours.



SERVICE

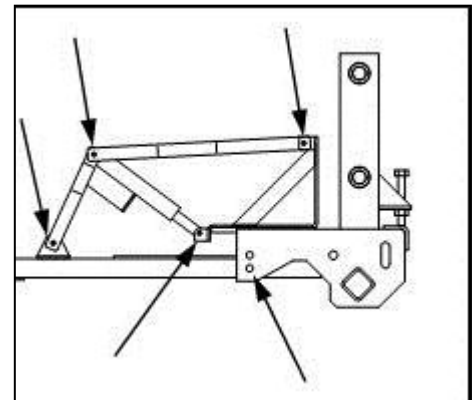
Electrical System

MOTOR CONTROL FUSE – The fuse for the motor control valves is located in the motor control switch box (fig. 5.9, item 2). If the motor control fuse blows, remove it by rotating the fuse cap counter-clockwise as you push in. Then pull the fuse straight out. Replace the blown fuse with the same amperage fuse only (fig. 5.10). If the fuse continues to blow, determine the cause and correct it.



DEPTH COMMAND FUSE – The fuse for the DEPTH COMMAND is located in the switch box. If the DEPTH COMMAND fuse blows, remove and replace it in the same manner as above. Replace the blown fuse with the same amperage fuse only.

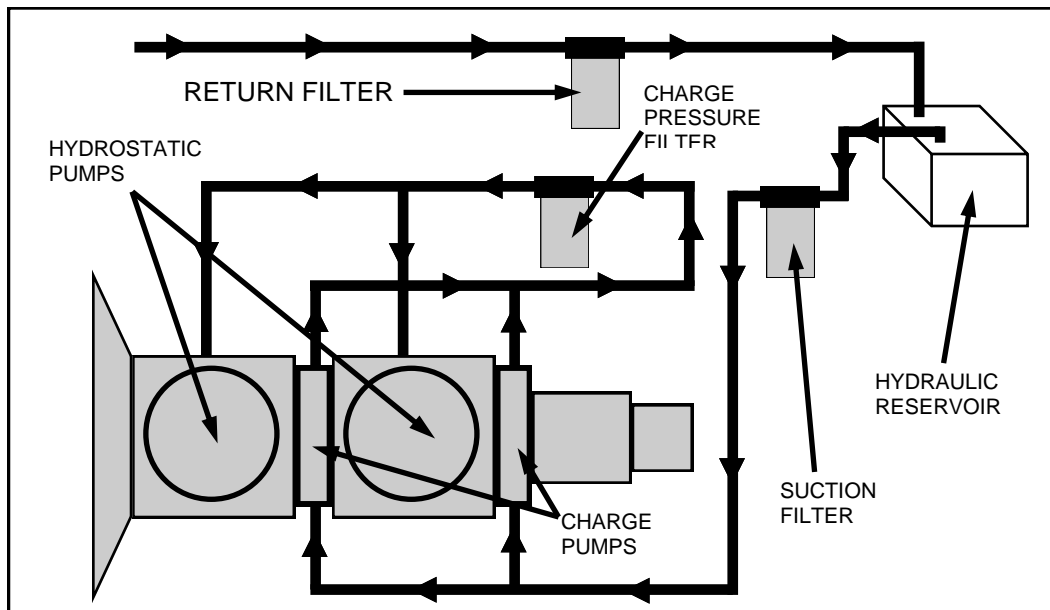
Operating more than two actuators at one time may cause the fuse to blow. A blown fuse may indicate that the LS/DEPTH COMMAND pivot bolts are torqued too tight. If the fuse continues to blow, determine cause and correct it.



SERVICE

Filters

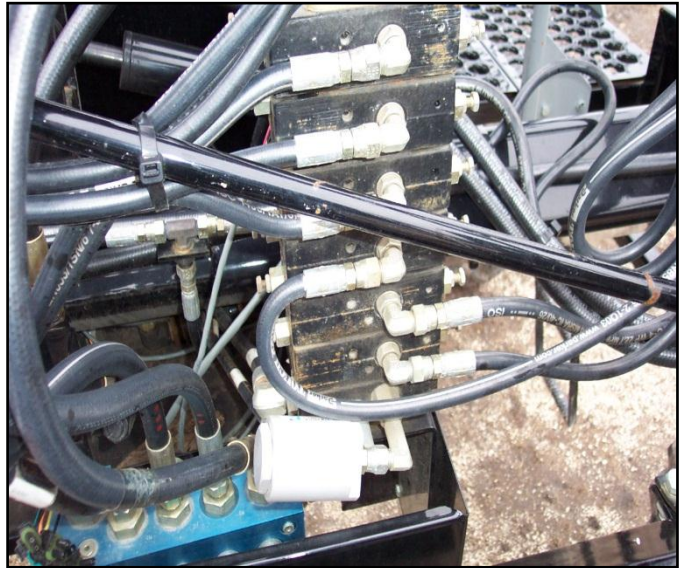
RETURN FILTER – Remove and install a new 25 Micron rated return filter at the end of the first 50 hours of use; subsequently, replace the filter every 250 hours, or once a year, whichever comes first.



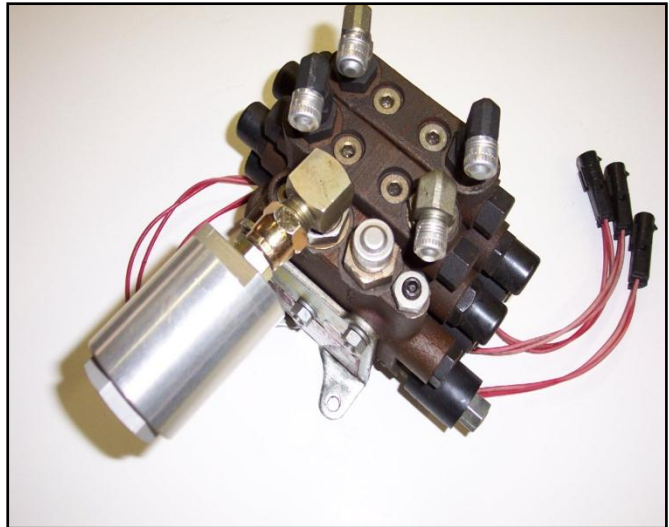
SERVICE

High Pressure In-line Filters

LIFT ARM STACK VALVE - The valves on the lift control stack valve are protected by a 90 Micron in-line sintered bronze filter.



OUTRIGGER FOLD STACK VALVE - The valves on the outrigger fold stack valve are protected by a 90 Micron in-line sintered bronze filter.



When the **FILTER ELEMENT** is removed for cleaning, caution should be taken so the gasket is in the proper place when re-installing. Also, re-install filter paying attention to direction of flow so the end marked "OUT" is oriented correctly.



XI. TROUBLESHOOTING

MACHINE VALVE TYPE

o = any machines with the original valve model year 2007 and prior

p = 204/204SP machines with the new proportionate valve model year 2008 and later

c = STS Combination sprayer/ detasseler with the proportionate valve model year 2007 and later

x = 204XP and DTS 8C (combination sprayer detasseler) with 12 valves model year 2010

NOTICE

Make sure that the machine valve is correctly selected to match the machine that the Tasseltrak® control box is installed on.

NOTICE

Disconnect the battery when servicing any part of the electrical system to prevent damage.

PROBLEM	POSSIBLE CAUSE	SUGGESTED REMEDY
No units will lift	Faulty "AUTO/MANUAL" switch Blown fuse Faulty #1 valve, coil, or loose coil mounting nut Loose wire connections Faulty wire connections Faulty main wire assembly	Replace switch Find short in wire, repair, and replace fuse Tighten or replace coil Find loose connection, tighten Replace or repair Replace or repair
Only one unit will not lift	In "MANUAL" mode: faulty "UP/DOWN" switch Light photo sensor assembly Faulty valve, coil, or loose coil mounting nut Loose wire connections Lights of photo sensor not lined up with reflector Faulty row wire assembly Faulty sensor connector wire assembly	Replace control box Replace photo sensor Tighten nut or replace coil Find loose connections, tighten Line up sensor with reflector Replace or repair Replace or repair

TROUBLESHOOTING

PROBLEM	POSSIBLE CAUSE	SUGGESTED REMEDY
No units will lower	Faulty "AUTO/MANUAL" switch Blown fuse In "AUTO " mode: LS valve assembly unplugged Loose wire connections	Replace switch Find short in wire, repair, and replace fuse Plug in wire assembly Find loose connection, tighten
Only one unit will not lower	Faulty "UP/DOWN" switch Light photo sensor assembly Faulty valve, coil, or loose coil mounting nut Loose wire connections Lights of photo sensor not lined up with reflector Faulty row wire assembly Faulty sensor connector wire assembly	Replace control box Replace photo sensor Tighten nut or replace coil Find loose connections, tighten Line up sensor with reflector Replace or repair Replace or repair
No units will hold position	In "AUTO" mode: no crop moving under assemblies	Drive forward or select "MANUAL" mode
In "AUTO" mode, wrong unit raises from sensor assembly	Row LS wire assembly plugged into wrong sensor connector	Plug correct wire assembly into proper row sensor connector assembly

TROUBLESHOOTING

To gain further information on the status of the Tasselrol®/LS system before operation: while sitting in the operator’s seat, turn the ignition key to the “ON” position (do not start the engine); turn the Tasselrol® box to the “ON” position; turn the “AUTO/MANUAL” switch to “MANUAL.”

Make sure there is nothing physically blocking any upper or lower sensor’s path to its reflector.

The display will show the status of the upper and lower photo sensor on each lift assembly. If the display shows a box (“ ”) in all upper and lower areas, the unit is ready for operation. If the display shows a corn stalk (“ ”) in one or more areas, refer to the following information for troubleshooting.

The LEFT-CENTER sensors are used as examples

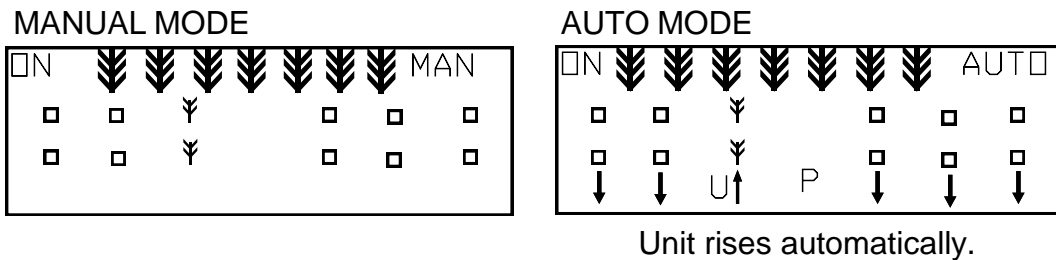
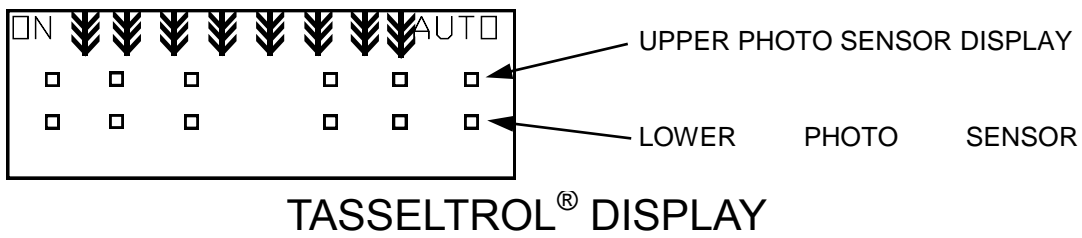
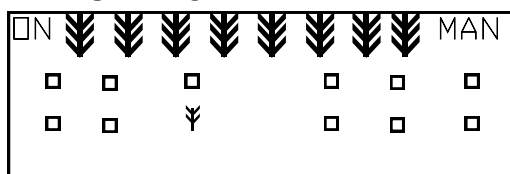


PHOTO SENSOR STATUS LIGHTS	POSSIBLE CAUSE
Lights at both photo sensors	Photo sensors not in line with reflector – call Hagie Manufacturing Customer Service
No lights at either photo sensor	Faulty connector cable (See Hagie Parts Manual)

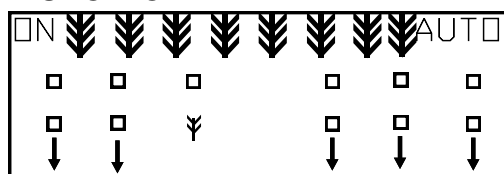
TROUBLESHOOTING

TASSELTROL[®] DISPLAY

MANUAL MODE



AUTO MODE



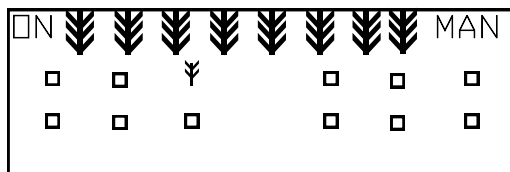
Unit does NOT rise automatically.

PHOTO SENSOR STATUS LIGHTS	POSSIBLE CAUSE
Lights at lower photo sensors	<p>Faulty wire in connector cable (See Hagie Parts Manual)</p> <p>Photo sensors not in line with reflector – call Hagie Manufacturing Customer Service</p> <p>Faulty wire in sensor assembly (See Hagie Parts Manual)</p>
No lights at lower photo sensor	<p>Faulty wire in connector cable (See Hagie Parts Manual)</p>

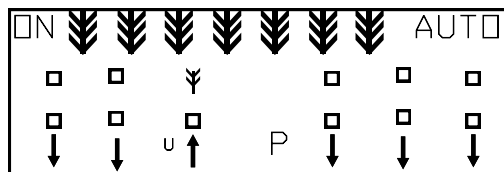
TROUBLESHOOTING

TASSELTROL® DISPLAY

MANUAL MODE



AUTO MODE



Unit rises automatically.

PHOTO SENSOR STATUS LIGHTS	POSSIBLE CAUSE
Lights at upper photo sensors	Faulty wire in sensor assembly (See Hagie Parts Manual)
No lights at upper photo sensor	Faulty wire in connector cable (See Hagie Parts Manual)

TROUBLESHOOTING

NOTES

