

# **CALIFORNIA**

## **Proposition 65 Warning**

Diesel engine exhaust and some of its constituents are known to the State of California to cause cancer, birth defects, and other reproductive harm.



**ANY PICTURES CONTAINED WITHIN THIS OPERATOR'S MANUAL THAT DEPICT SITUATIONS WITH SHIELDS, GUARDS, RAILS, OR LIDS REMOVED ARE FOR DEMONSTRATION PURPOSES ONLY. HAGIE MANUFACTURING COMPANY STRONGLY URGES THE OPERATOR TO KEEP ALL SHIELDS AND SAFETY DEVICES IN PLACE AT ALL TIMES.**



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# MODEL 204



## OPERATOR'S MANUAL FOR HAGIE MODEL 204 DETASSELER

**HAGIE MANUFACTURING COMPANY**

BOX 273 CLARION, IOWA 50525

(515) 532-2861

COVERS MACHINE SERIAL NUMBERS: U10007701 thru U100077100

02-07 493373

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# ABBREVIATIONS

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

# TO THE OWNER

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## A WORD FROM HAGIE MANUFACTURING COMPANY

Congratulations on your selection of a Hagie Model 204 DETASSELER. We recommend that you study this Operator's Manual and become acquainted with the adjustments and operating procedures before attempting to operate your new detasseler. 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 varying 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 detasseler without obligation to existing units.

We thank you for choosing a Hagie detasseler and assure you of our continued interest in its satisfactory operation for you. If we might be of assistance to you, please call us.

We are proud to have you as a customer.

# CAUTION

READ OPERATOR'S MANUAL. BE ALERT. LEARN TO OPERATE THIS MACHINE SAFELY. OBSERVE ALL SAFETY PRACTICES. MACHINES CAN BE HAZARDOUS IN THE HANDS OF AN UNFAMILIAR, UNTRAINED, OR COMPLACENT OPERATOR. SHUT OFF ENGINE BEFORE SERVICING. WHEN MECHANISM BECOMES CLOGGED, SHUT OFF ENGINE BEFORE CLEANING. DON'T RISK INJURY OR DEATH.

## TO THE OPERATOR

The following pages and illustrations will help you operate and service your new detasseler. It is the responsibility of the user to read the Operator's Manual and comply with the safe correct operating procedures and lubricate and maintain the product according to the maintenance schedule.

The user is responsible for inspecting the machine and 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 detasseler. 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  
Box 273, Clarion, IA 50525  
(515) 532-2861

The following symbols, found throughout this manual, alert you to potentially dangerous conditions to the operator, service personnel, or the equipment.



*This symbol indicates an immanently 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.*

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# I. SAFETY/DECALS

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## SAFETY PRECAUTIONS

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 detasseler 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 detasseler. Such changes and/or modifications may become safety hazards to you and to others and will void all warranties.



## DRIVING

- Before moving the detasseler, make sure no persons or obstructions are in the path of travel.
- Do not permit passengers on the detasseler when it is moving; they may fall off or obstruct the operator's view.
- Never drive near ditches, embankments, holes, mounds, or other obstacles.
- Never drive on hills too steep for safe operation.
- Always drive at a reasonable field speed.
- Reduce the detasseler's speed before turning.
- Come to a complete stop before reversing direction.
- Pull over to the side of road before stopping.
- Use the flashing/hazard warning lights when traveling on public roads, day or night, unless prohibited by local law.
- Make sure the SMV emblem is in place and visible from the rear when traveling on public roads.

# I. SAFETY/DECALS

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## OPERATING

### TREAD WIDTH

- Select the widest tread setting to fit between the crop rows.
- Never manually adjust the tread width on the detasseler until the wheels have been properly blocked. Loosen the leg clamp bolts only enough for the leg to slide on the frame.

### OUTRIGGERS

- Make sure the outriggers are locked down either when folded in or folded out.

### GENERAL OPERATION SAFETY

- Do not adjust the factory engine RPM settings.
- Start the engine from the operator's seat only. Do not by-pass the safety-start switch.
- Handle starting fluid with care. Keep it away from open flame. Store it with the cap on in a cool place.
- Never run the detasseler engine in a closed building. Proper exhaust ventilation is required.
- If equipped with light sensing depth units, do not look directly into light beam. It emits a very low intensity microwave signal which may cause possible eye damage.
- 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.
- Never allow walking personnel in the same field as a detasseler.
- Keep a fire extinguisher close at all times.



# I. SAFETY/DECALS

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## REPAIR/MAINTENANCE

### HYDRAULICS

- Use caution when working with hydraulic fluid under pressure. Escaping hydraulic fluid can have sufficient force to penetrate your skin, causing serious injury. This fluid may also be hot enough to burn.
- Always lower load or relieve hydraulic pressure before repairing a hydraulic oil leak.
- Avoid torching, welding, and soldering near pressurized hydraulic lines.

### FUELING

- Always turn the engine off and allow it to cool before refueling.
- Do not smoke while refueling.
- Do not fill fuel tank completely. Fuel may expand and run over.

### GENERAL REPAIR/MAINTENANCE

- Turn off engine before checking, adjusting, repairing, lubricating, or cleaning any part of the detasseler.
- When servicing the radiator, let engine cool before removing pressurized cap.
- Disconnect the battery ground cable before servicing electrical system or welding on machine.
- When charging 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. Likewise, avoid battery acid contact and incurring injuries.

# I. SAFETY/DECALS

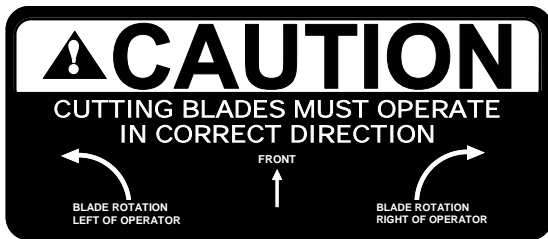
## WARNING DECALS

Decals warning you of avoidable danger are located on various parts of the detasseler. 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. Replace them if they are torn or missing. All

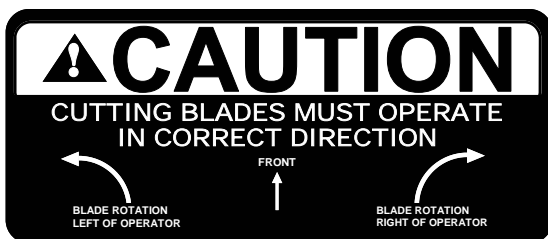
warning decals and other instructional Hagie decals or machine striping may be purchased through the Hagie Customer Support Department. To replace decals, be sure that the installation area is clean and dry; decide on exact position before you remove the backing paper.

## DECAL LOCATION



650303

Front of operator station.



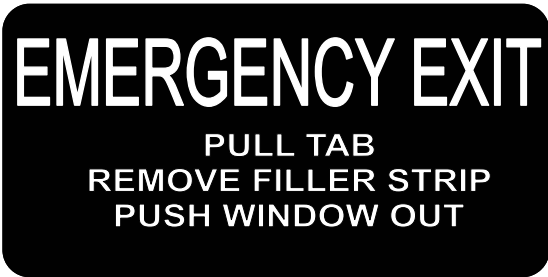
650303

Front window of cab.



DECALS CONTINUED 

# I. SAFETY/DECALS

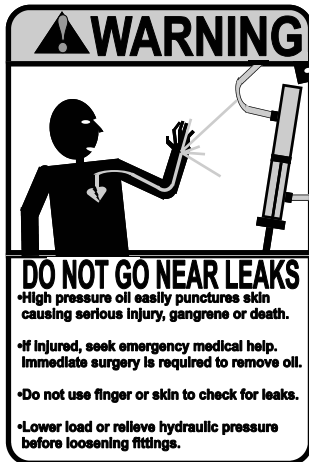


650320

Rear of right cab window.



Front of operator station. 650339



Inside cab door. 650339



DECALS CONTINUED 

# I. SAFETY/DECALS



650819

2 on each cutter housing.



650820

Quad puller head.



650820

2 on each male corn chopper.



DECALS CONTINUED 

# I. SAFETY/DECALS



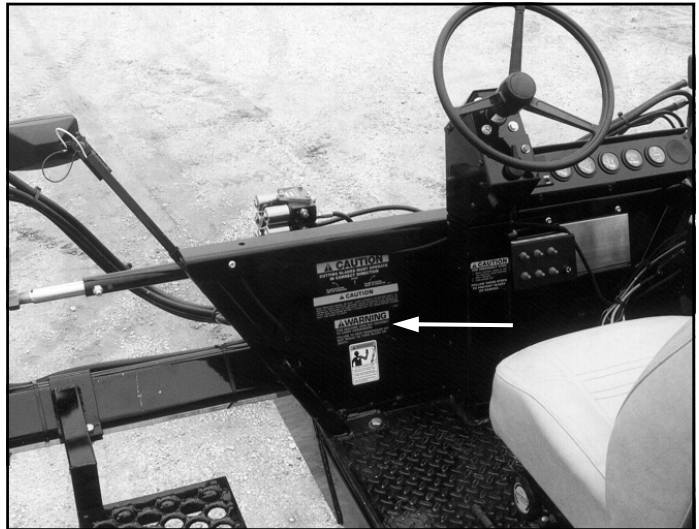
Steering column.

650831



Front of operator station.

650847



Outside cab, under back window.

650847



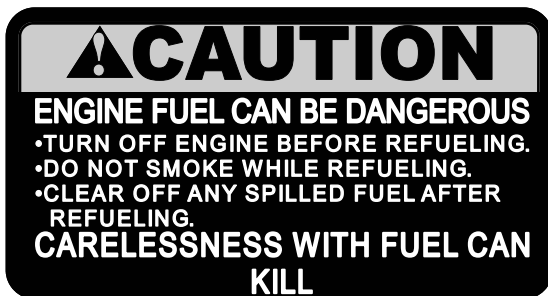
DECALS CONTINUED 

# I. SAFETY/DECALS



650848

Right of ladder on leg brace.



650849

Top of each fuel tank (diesel or gasoline).



650851

Left rear mainframe



DECALS CONTINUED 

# I. SAFETY/DECALS

**⚠ CAUTION**

**SHIELDS ARE FOR YOUR PROTECTION. KEEP THEM IN PLACE.**

650851

Right rear mainframe



**⚠ CAUTION**

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650852

Front of operator station.

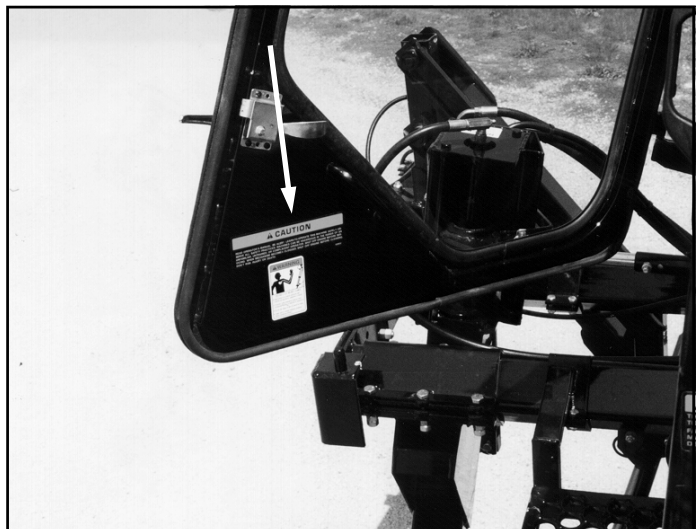


**⚠ CAUTION**

READ OPERATOR'S MANUAL. BE ALERT. LEARN TO OPERATE THIS MACHINE SAFELY. OBSERVE ALL SAFETY PRACTICES. MACHINES CAN BE HAZARDOUS IN THE HANDS OF AN UNFAMILIAR, UNTRAINED, OR COMPLACENT OPERATOR. SHUT OFF ENGINE BEFORE SERVICING. WHEN MECHANISM BECOMES CLOGGED, SHUT OFF ENGINE BEFORE CLEANING. DON'T RISK INJURY OR DEATH.

650852

Inside cab door.



DECALS CONTINUED 

# I. SAFETY/DECALS

## CAUTION

BEFORE ENGAGING HYDRAULIC MOTORS

1. REDUCE ENGINE SPEED TO AN IDLE
2. CLEAR AREA OF UNAUTHORIZED PERSONNEL

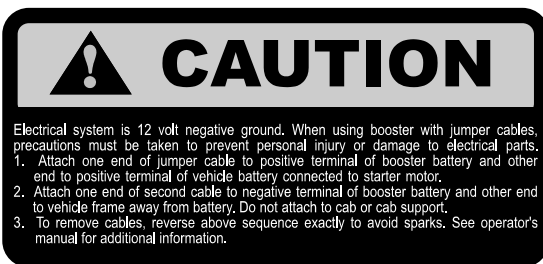
650955

Operator control station.



650981

Front of mullion to left of radiator cap.



650982

Left of battery on hydraulic oil reservoir





## II. IDENTIFICATION NUMBERS

### DETASSELER IDENTIFICATION

Each Hagie detasseler is identified by means of a frame serial number. This serial number denotes the model, year in which it was built, and the number of the detasseler. For further identification, the engine has a serial number, the hydrostatic pump has a serial number, the wheel motors have identification tags, and the planetary

hubs have identification plates that describe the type of mount and gear ratio. To ensure prompt, efficient service when ordering parts or requesting service repairs from Hagie Manufacturing Company, record the serial and identification numbers in the space provided below.

#### NOTE:

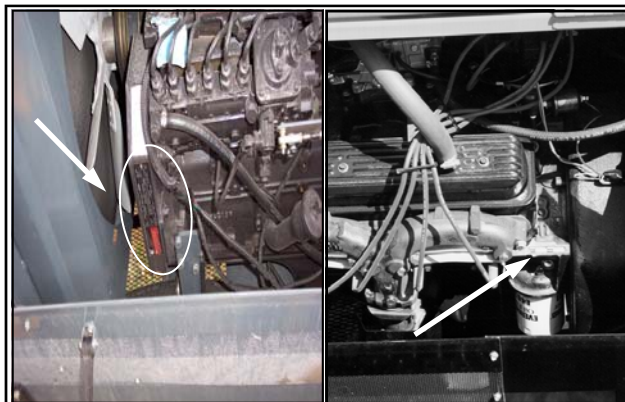
Reference to left-hand and right-hand used throughout this manual refers to the position when seated in the operator's seat facing forward.



#### Detasseler

\_\_\_\_\_

NOTE: Detasseler serial number stamped in the frame on right rear corner.



#### Engine

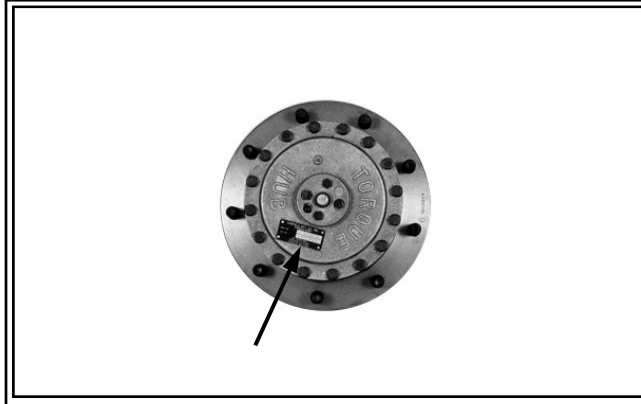
\_\_\_\_\_

NOTE: Diesel engine serial number located on the side of the front left gear housing.

\_\_\_\_\_

NOTE: Gasoline engine serial number located on the left side in front of the bell housing.

## II. IDENTIFICATION NUMBERS



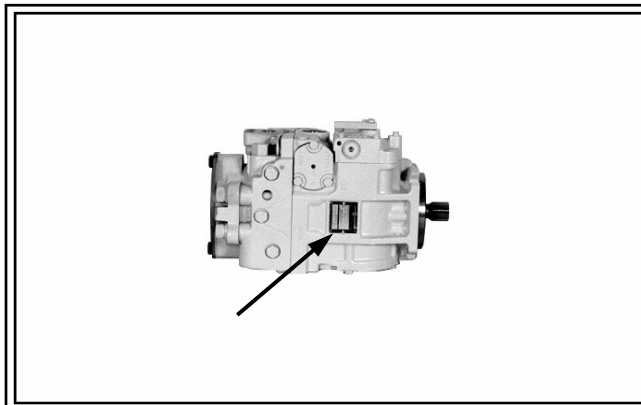
### Planetary Hubs

Left

Right

Front: \_\_\_\_\_

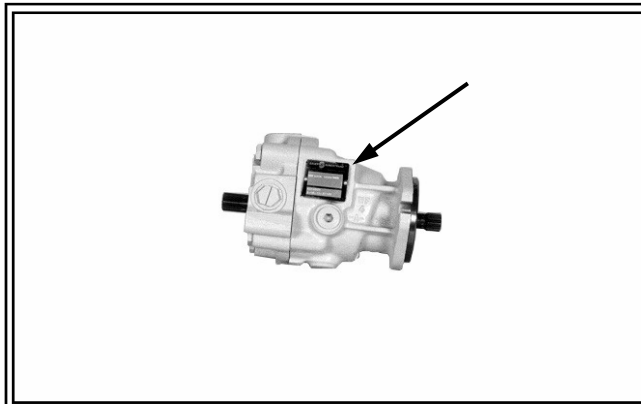
Rear: \_\_\_\_\_



### Hydrostatic Pumps

Front: \_\_\_\_\_

Rear: \_\_\_\_\_

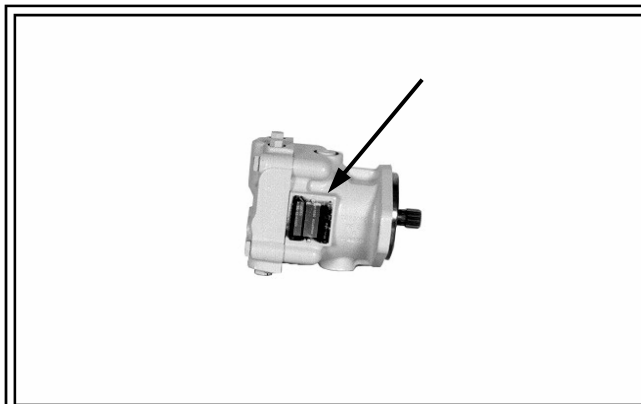


### Front Wheel Motors

Left: \_\_\_\_\_

Right: \_\_\_\_\_

Refer to parts manual.



### Rear Wheel Motors

Left: \_\_\_\_\_

Right: \_\_\_\_\_

Refer to parts manual.

# III. SPECIFICATIONS

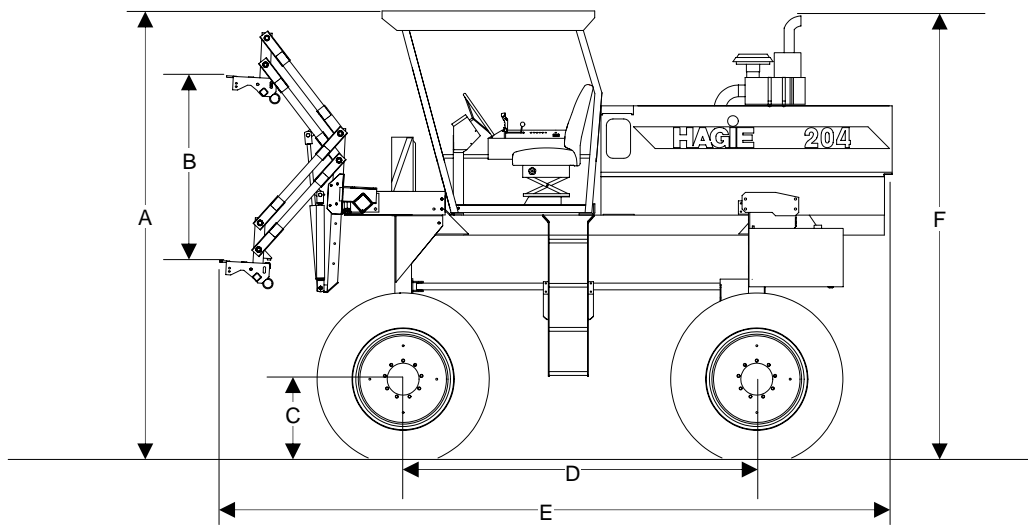
## DETASSELER DIMENSIONS

### 204 with 12.4-28 tire

A. Overall tractor height (w/cab or canopy) ....	134.5"	D. Wheel base .....	106"
B. Lift arm range .....	53"	E. Detasseler length (w/o attachments).....	198"
C. Axle height .....	22.6"	F. Diesel exhaust height .....	134"

### 204 with 11.2-38 tire

A. Overall tractor height (w/cab or canopy) ....	139.5"	D. Wheel base .....	106"
B. Lift arm range .....	53"	E. Detasseler length (w/o attachments).....	198"
C. Axle height .....	26.2"	F. Diesel exhaust height .....	139"

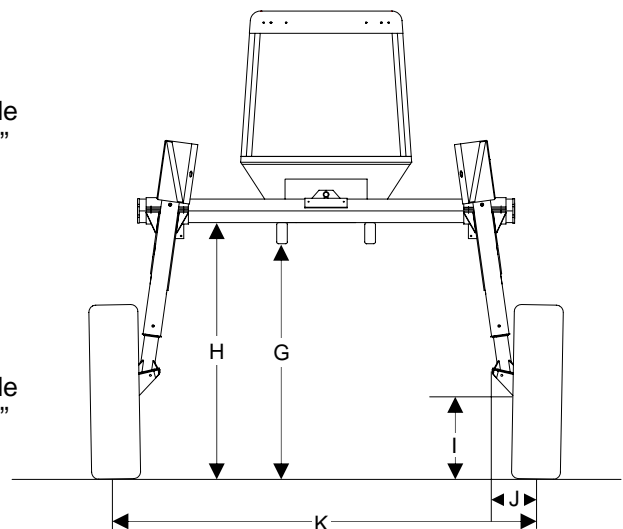


### 204 with 12.4-28 tire

G. Center clearance .....	66"
H. Frame clearance.....	72"
I. Lower leg clearance (front).....	18"
J. Tire center to inside of lower leg (front) .....	12"
K. Tread width* .....	Adjustable 78" - 120"

### 204 with 11.2-38 tire

G. Center clearance .....	71"
H. Frame clearance.....	77"
I. Lower leg clearance (front).....	24"
J. Tire center to inside of lower leg (front) .....	12.5"
K. Tread width* .....	Adjustable 78" - 120"



\*NOTE: Measure tread width at 1/2 tire height.

## GENERAL DETASSELER INFORMATION

♦Frame type .....	Hydra-Hug®
♦Approximate dry weight.....	Refer to page 22
♦Shipping width .....	143"

### III. SPECIFICATIONS

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#### ENGINE (Gasoline)

Manufacturer .....	General Motors
Model .....	3508AF
Type .....	V-8, liquid cooled
Number of cylinders .....	8
Displacement .....	5.7 liter
Horsepower .....	165, intermittent
Type of fuel .....	Unleaded gasoline
Fuel system .....	Filtered, naturally aspirated
Air cleaner .....	Dry-type, single element
Slow idle .....	650 RPM
Fast idle .....	2850 RPM

#### (Diesel)

Manufacturer .....	Cummins
Model .....	6B5.9A Turbocharged
Type .....	In line, liquid cooled
Number of cylinders .....	6
Displacement .....	5.9 liter
Horsepower .....	152, intermittent
Type of fuel .....	Number 1 or number 2 diesel
Fuel system .....	Filtered, direct-injected
Air cleaner .....	Dry-type, single element
Slow idle .....	800 RPM
Fast idle .....	2500 RPM

### III. SPECIFICATIONS

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#### POWER TRAIN

##### Drive

Hydrostatic pump .....	Sauer/Sundstrand 90 series
Range.....	100cc variable displacement (diesel) 75cc variable displacement (gasoline)
Drive train.....	All time four wheel drive
Speed.....	0-12 mph
Hydrostatic wheel motor - front .....	Sauer/Sundstrand M35
- rear .....	Sauer/Sundstrand M25
Final drives	
Type .....	Planetary Gear Reduction Hubs
- front (12.4-28 tire) .....	Torque Hub® W1B Drive ratio - 24.85:1
- front (11.2-38 tire) .....	Torque Hub® W1M Drive ratio - 24.85:1
- rear .....	Torque Hub® W1B Drive ratio - 18.25:1
Lubrication .....	Oil bath

##### Brakes

Type .....	Mechanically actuated Front wheel caliper disc
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##### Steering System

Type .....	Hydraulic, priority on demand
Control.....	Full-time power
Steering cylinders.....	Double action
Turning radius .....	18' with 120" tread

#### AUXILIARY HYDRAULIC SYSTEM

Type .....	Open
Pump type .....	Tandem gear
Pressure setting .....	2000 PSI

# III. SPECIFICATIONS

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## ELECTRICAL SYSTEM

### General Electrical System

Battery.....	Single 12V, negative ground
Alternator.....	105 AMP, voltage regulated
Alternator (Diesel).....	130 AMP, voltage regulated
Starter .....	12V with solenoid

### Circuit Breakers

A/C relay (cab only).....	30 AMP
Starter relay (diesel only) .....	30 AMP
Work lights (see below).....	40 AMP
Wire harness (diesel only).....	30 AMP
Wire harness (diesel only).....	50 AMP

### Fuses

Motor control block.....	20 AMP
Tasseltrol <sup>®</sup> box, seat motor (cab only) .....	20 AMP
Gauges, traction valve, dome light (cab only), stereo (cab only) .....	20 AMP
Hazard/warning lights/turn signal, running lights, Windshield wiper (cab only), fuel pumps (gas only), Fuel selector valve (diesel only).....	20 AMP
Depth command switch panel .....	20 AMP

### Lights (standard operator station)

Front of station .....	2 halogen field lights
------------------------	------------------------

### Lights (cab or canopy)

Front of cab .....	4 halogen field lights
Rear of cab.....	2 halogen work lights

# III. SPECIFICATIONS

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## OPERATOR STATION

### Operator station (standard)

General operator station .....	Tilt steering Flashing/hazard warning lights Turn signals
Seat.....	Adjustment for: Fore-aft Height Ride firmness

### Canopy (optional)

General canopy.....	Same as operator station
---------------------	--------------------------

### Cab (optional)

General cab.....	Same as operator station, also: Windshield wiper Side mirrors Dome light Tinted glass
Temperature control.....	Full-range
A/C charge type .....	R-134a
Fresh air filtration .....	Paper and charcoal filter
Seat.....	Air ride with adjustment for: Fore-aft Backrest Height Ride firmness Armrest tilt
Stereo.....	AM/FM stereo cassette with dual speakers

### Instruments

Dial gauges .....	Hour meter Fuel Temperature Alternator Oil pressure
Digital gauge .....	Speedometer (MPH-Km/H) Tachometer (RPM)
Engine air filter monitor (diesel only).....	Filter Minder®

### III. SPECIFICATIONS

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#### TIRES/RIMS

##### Rims (front and rear)

Standard..... 28" X 10"

Optional..... 38" X 10"

##### Tires (front and rear)

Standard..... 12.4-28 (Bias TT)

Air pressure ..... 23 PSI

Tire width ..... 12.5"

Load capacity (at 10 mph) ..... 2640 lbs.

Overall diameter ..... 49.0"

Static load radius (suggested—will vary with load) ..... 22.6"

Rolling circumference ..... 148.7"

Optional..... 11.2-38 (Bias TU)

Air pressure ..... 23 PSI

Tire width ..... 11"

Load capacity (at 10 mph) ..... 2760 lbs.

Overall diameter ..... 55.5"

Static load radius (suggested—will vary with load) ..... 26.2"

Rolling circumference ..... 165.0"

#### CAPACITIES

Fuel tanks (2) ..... 40 gallons each

Cooling system..... 7 gallons

Hydraulic reservoir ..... 20 gallons

Engine crankcase: diesel (including filter)..... 17 quarts

Engine crankcase: gasoline (including filter)..... 6 quarts

Torque Hub® ..... 16 oz. (approx.)



# III. SPECIFICATIONS

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## DETASSELING EQUIPMENT OPTIONS

Front mounted with or without 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.....	Minimum range – 34” to 87” Maximum range – 52” to 105”
Weight per head assembly.....	86 lbs.
Weight: basic machine with 8 row option.....	7550 lbs.

### Cutter

Number of rows available.....	4, 6, 8, 10, or 12
Drive.....	Hydraulic
Blade size.....	18”
Operating speed.....	Up to 3100 RPM
Cutting height.....	Minimum range – 32” to 85” Maximum range – 50” to 103”
Weight per head assembly.....	62 lbs.
Weight: basic machine with 6 row option.....	6680 lbs.

### Male corn equipment options

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

# IV. PREPARING TO OPERATE

## WHEEL TREAD AND ROW SPACING

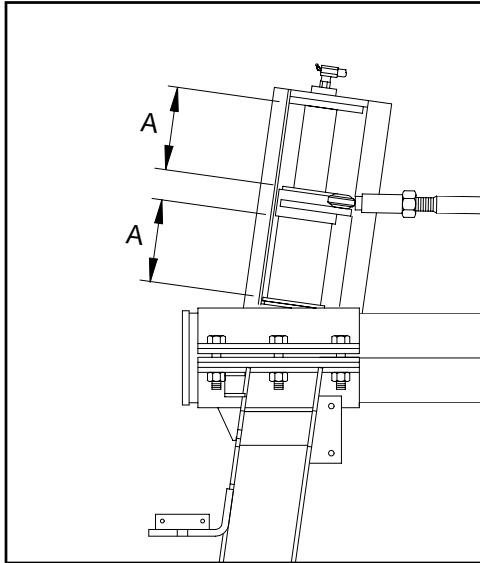


FIG 4.1

Knowing the row spacing of the field one intends to detassel, follow the steps below to properly obtain the desired tread setting.

1. To adjust the tread width in or out, park the detasseler on level ground and shut off the engine.

**NOTE:**

Dimension A (fig. 4.1) must be equal (see page 91) and steering pivot must be in vertical position (fig. 4.2, item 1).

2. Loosen tie rod bolts (fig 4.2, item 2) and tie rod jam nuts (fig. 4.2, item 3). Remove the bolts and nuts from the tie rod.

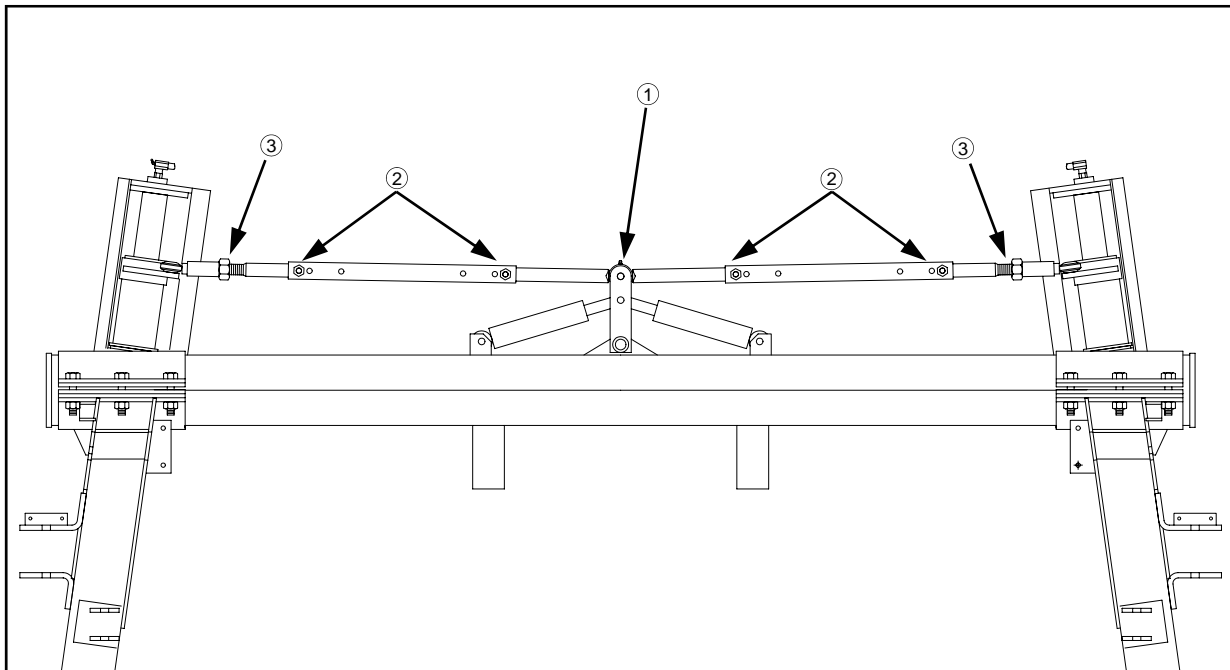


FIG 4.2

## IV. PREPARING TO OPERATE

### ▶ TREAD WIDTH CONTINUED

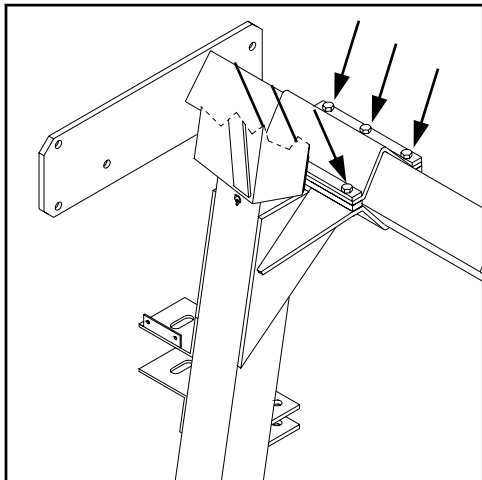


FIG 4.3

3. Loosen the leg mounting bolts on both the front and rear legs on one side of the detasseler only (fig. 4.3).

### ⚠ CAUTION

Loosen leg mounting bolts only enough to allow for free movement of leg on mainframe. DO NOT remove bolts under any condition.



FIG 4.4

4. Loosen the rear lock nut on the leg brace (fig. 4.4). This will allow one leg to move further than the other without binding while adjusting the tread setting.
5. Lubricate the slide path the leg mount will travel along mainframe.
6. Wrap a chain around the top of the leg and the steering arm before raising the detasseler (fig. 4.5). This will prevent the suspension from telescoping.
7. Raise the detasseler until the tires on the side being adjusted are just touching the ground.

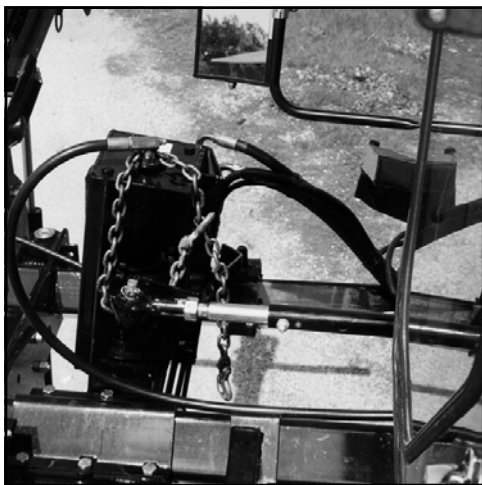


FIG 4.5

TREAD WIDTH CONTINUED ▶

# IV. PREPARING TO OPERATE

## ▶ TREAD WIDTH CONTINUED



FIG 4.6

8. To adjust the tread out, place a suitable prying tool under the center of the tire and pry out at the same time that you push out at the top of the leg (fig. 4.6). Carefully lower the detasseler to the ground which, in turn will allow the leg to slide outward. Repeat the procedure until the desired tread is obtained.
9. To adjust the tread in, raise the detasseler until the tires on the side being adjusted are just off the ground. Carefully lower the detasseler which, in turn will allow the top of the leg to slide in on the mainframe.
10. Retighten leg mounting bolts following the torque specs and sequence on page 110.
11. Retighten the leg brace lock nut.
12. Repeat the above procedures to adjust and set the opposite side legs. When finished, all four legs should be the same distance from the mainframe (fig. 4.7, dimension B).

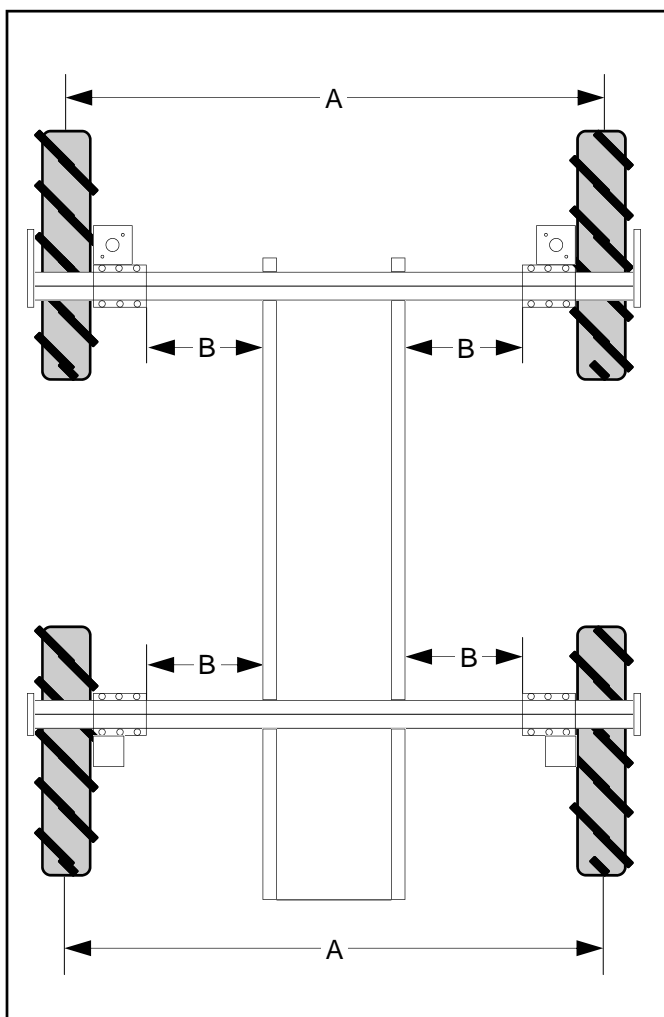


FIG 4.7

Tread Width (Standard)		
DIM A (FIG 4.7)	=	DIM B (FIG 4.7)
120"	=	25.5"
114"	=	22.5"
108"	=	19.5"

Tread Width (Narrow Tread Option)		
DIM A (FIG 4.7)	=	DIM B (FIG 4.7)
90"	=	10.5"
84"	=	7.5"
78"	=	4.5"

# IV. PREPARING TO OPERATE

## TOE-IN

To correctly gauge toe-in, use a tape measure placed at one-half tire height on the front center seam of the front tire compared to the same measurement of the rear of the front tire (subtract the front measurement from the rear measurement - it must be a positive number). Correct toe-in should fall somewhere between one half and three quarters of an inch.

Toe-in is pre-set at the factory and should not have to be adjusted unless the steering cylinders are removed.

Difficulty steering one way versus the other may also indicate incorrect toe-in and may require adjustment. For further assistance regarding toe-in measurement and adjustment, contact the Hagie Customer Support Department.

**NOTE:**  
For more information on adjusting toe-in see page 112.

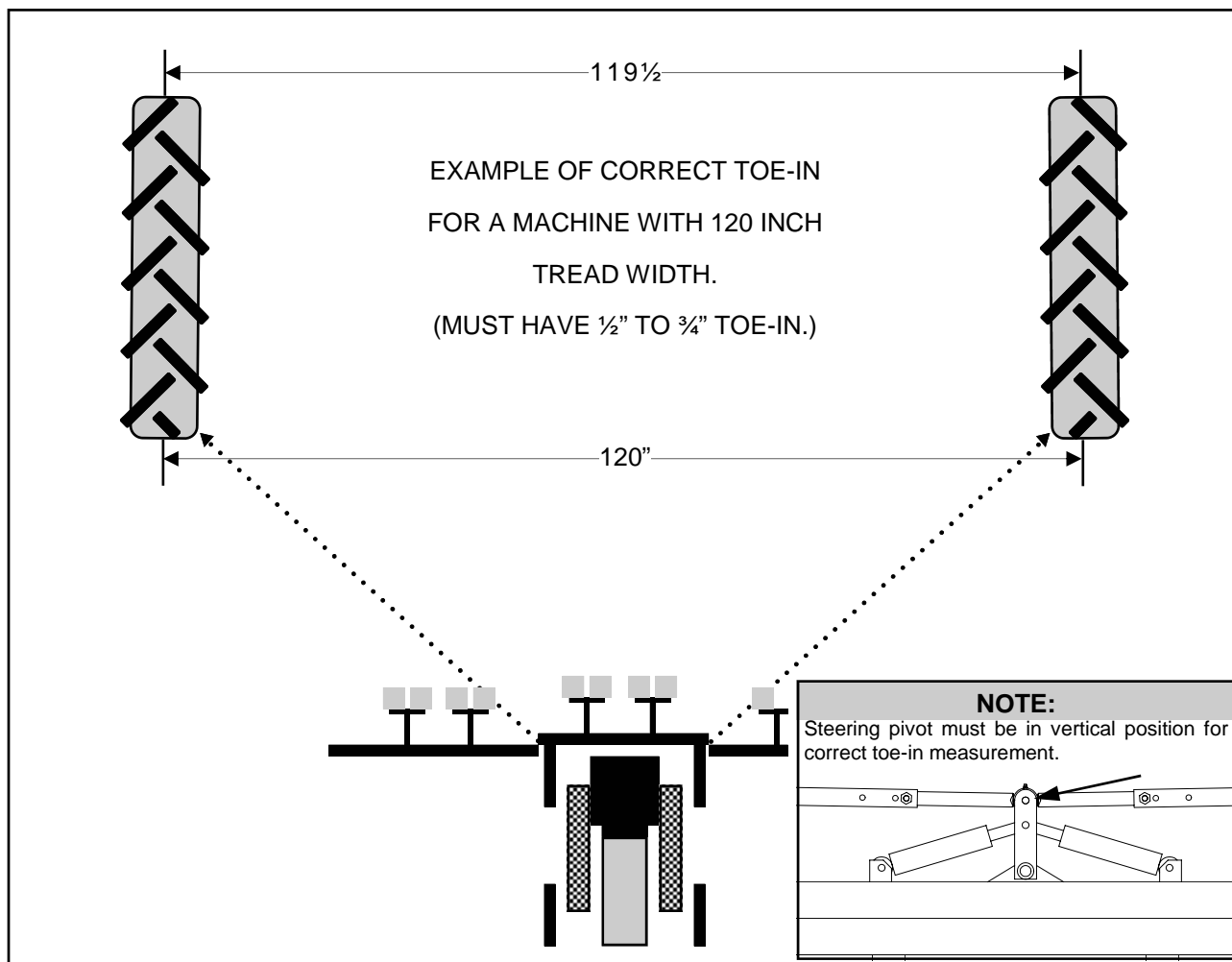


FIG 4.8

# IV. PREPARING TO OPERATE

## ATTACHING OPTIONAL COMPONENTS

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 204 Parts Manual for the correct option for outlining

the installation, hydraulic schematic, and wiring diagram. Read and comply with the following instructions. Always make sure you have proper equipment and help when installing the attachments.



FIG 4.9

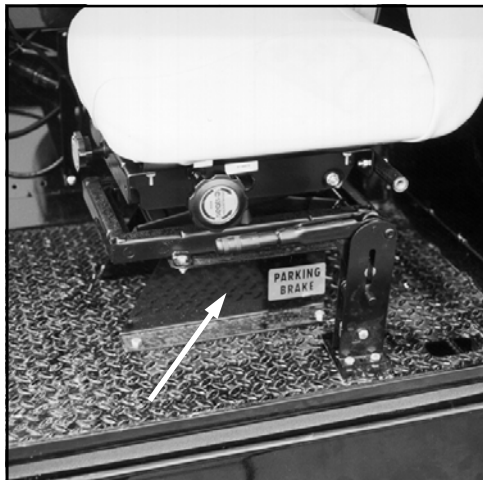


FIG 4.10

### **CAUTION**

Firmly set the parking brake (fig. 4.10) and shut off engine before attaching components. For more information regarding parking brake operation see page 70.

OPTIONAL ATTACHMENTS CONTINUED 

# IV. PREPARING TO OPERATE

## ▶ ATTACHING COMPONENTS CONTINUED

### 4 – 6 – 8 ROW OUTRIGGER ASSEMBLY

1. Attach the center tool bar (fig. 4.11, item 1) to front frame cross member with supplied hardware according to 204 DETASSELER Parts Manual for correct hardware.

**NOTE:**

The guide pin that is welded to outrigger mount should be located toward the bottom (fig. 4.11, item 2).

2. Attach left and right outrigger (fig. 4.11, item 3) with supplied hardware. Refer to 204 DETASSELER OPTION Parts Manual.
3. Attach outrigger support rods if required.

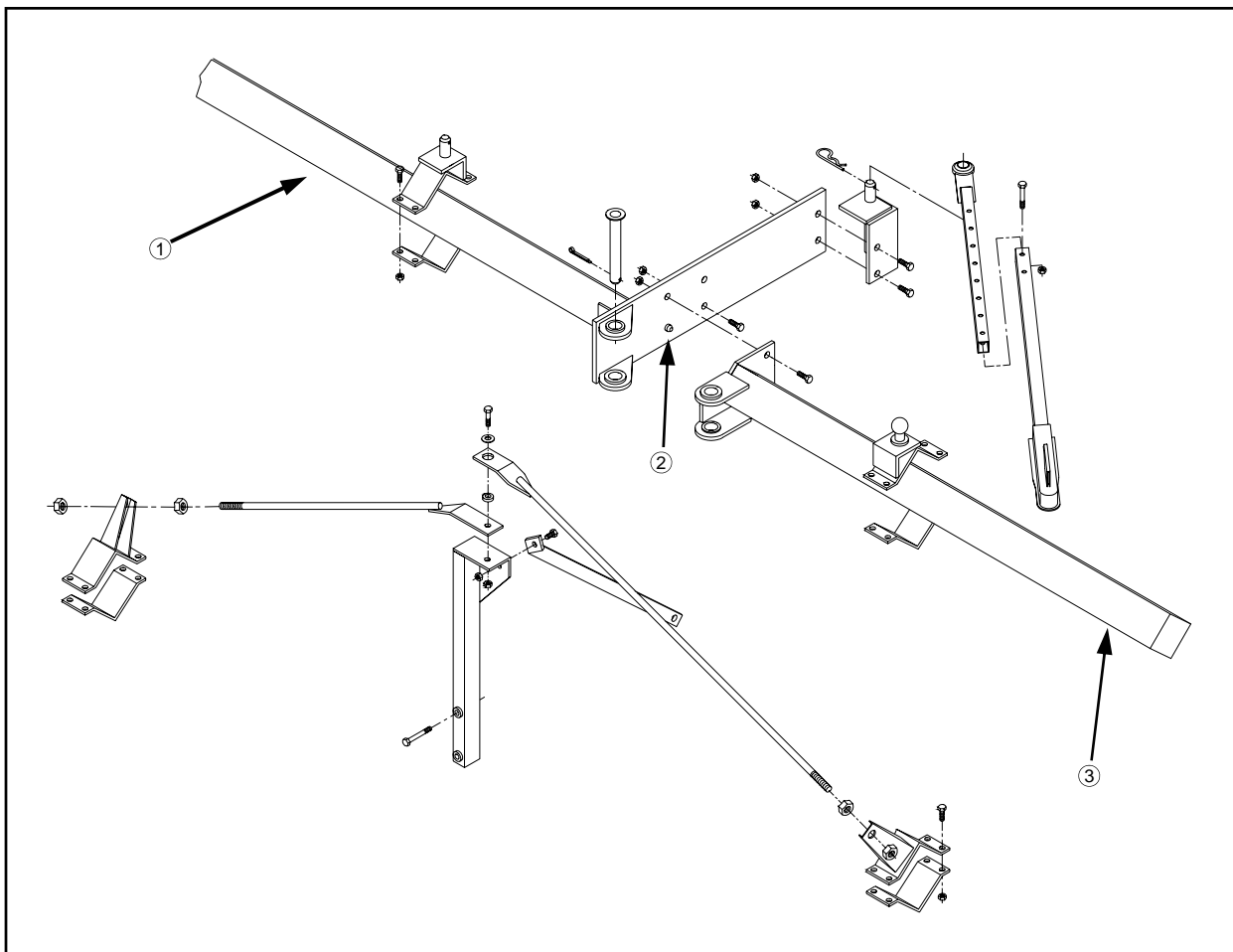


FIG 4.11

# IV. PREPARING TO OPERATE

## ▶ ATTACHING EQUIPMENT CONTINUED

### 10 – 12 ROW OUTRIGGER ASSEMBLY

1. Attach the center tool bar (fig. 4.12, item 1) to front frame cross member with supplied hardware according to 204 DETASSELER Parts Manual for correct hardware.

**NOTE:**

The guide pin that is welded to outrigger mount should be located toward the bottom (fig. 4.12, item 2).

2. Attach left and right outrigger (fig. 4.12, item 3) with supplied hardware. Refer to 204 DETASSELER OPTION Parts Manual.
3. Attach outrigger support rods.

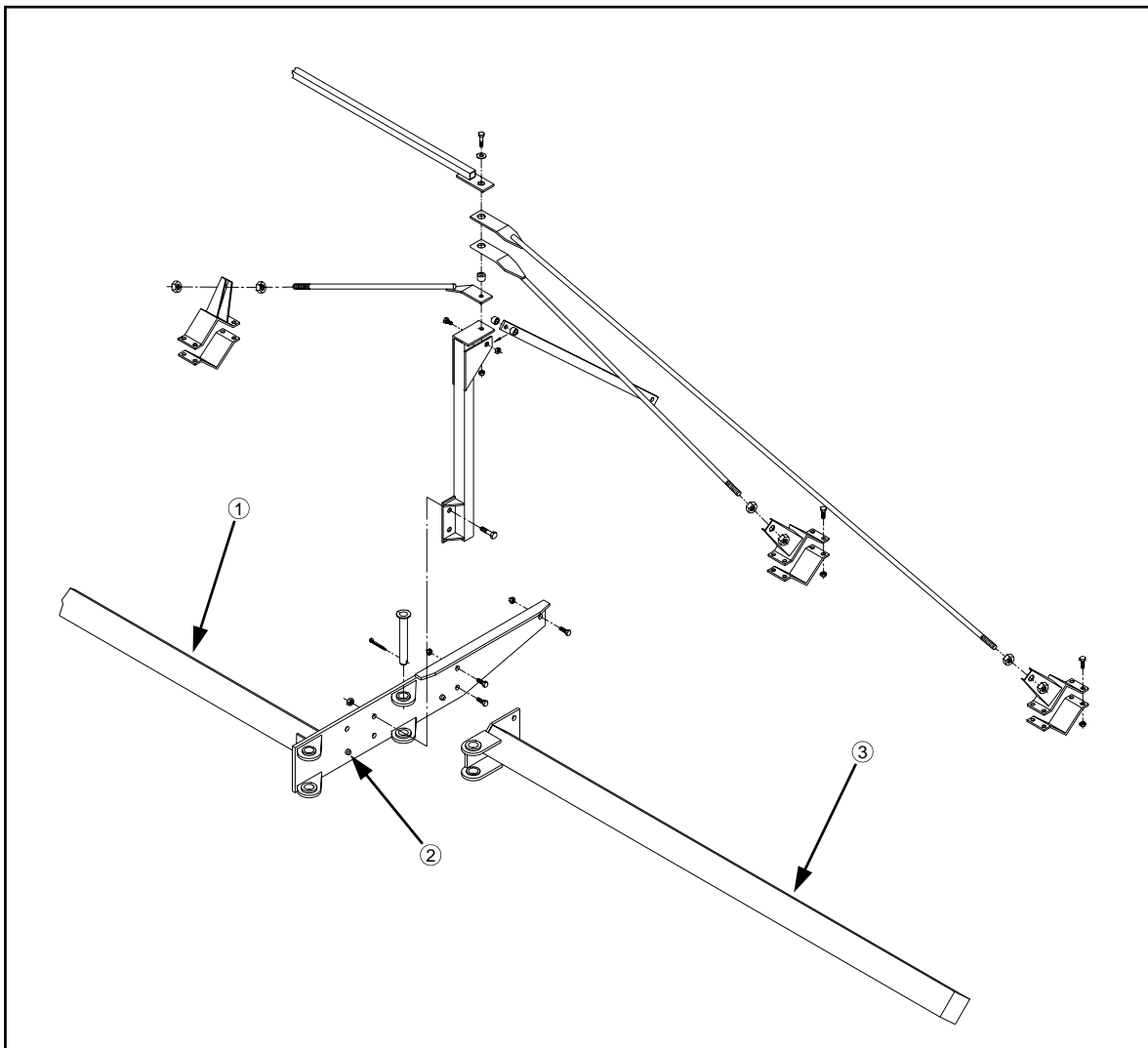


FIG 4.12



# IV. PREPARING TO OPERATE

## ▶ ATTACHING EQUIPMENT CONTINUED

### Attaching Lift Assemblies

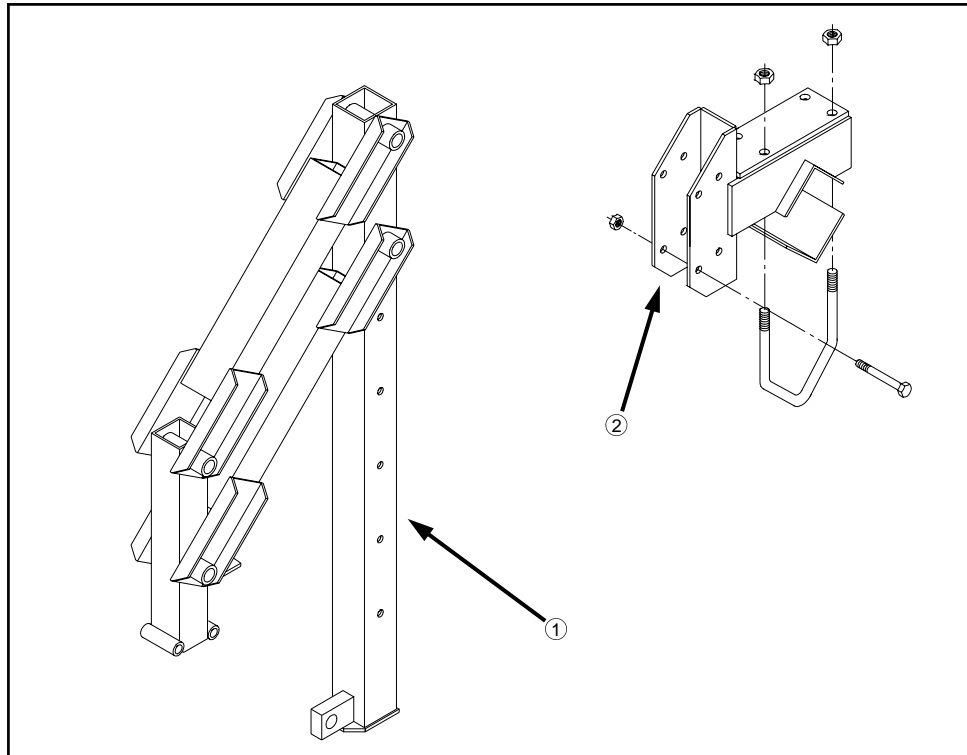


FIG 4.13

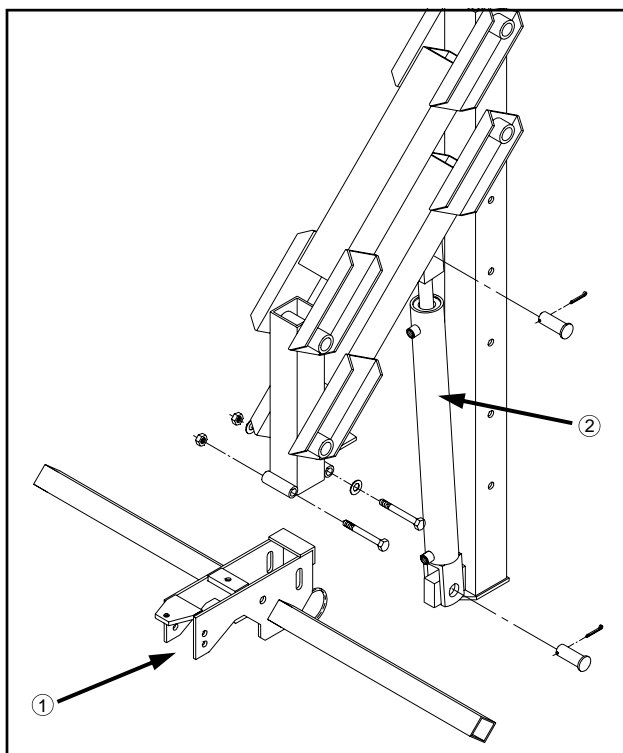


FIG 4.14

Refer to 204 DETASSELER Parts Manual for correct hardware when following these steps:

1. Attach the lift mounts (fig. 4.13, item 2) to the tool bar and outriggers at the appropriate spacings.
2. Attach the lift arms (fig. 4.13, item 1) to the lift mounts.
3. Attach the lift arm cylinders to the lift arm assemblies (fig. 4.14, item 2).
4. Attach the tool bar weldment to the lift arm assemblies (fig. 4.14, item 1).
5. Connect hydraulic hoses to lift cylinders. Refer to 204 DETASSELER Parts Manual for correct hydraulic schematics.

ATTACHING EQUIPMENT CONTINUED ▶

# IV. PREPARING TO OPERATE

## ATTACHING QUAD PULLERS



FIG 4.15

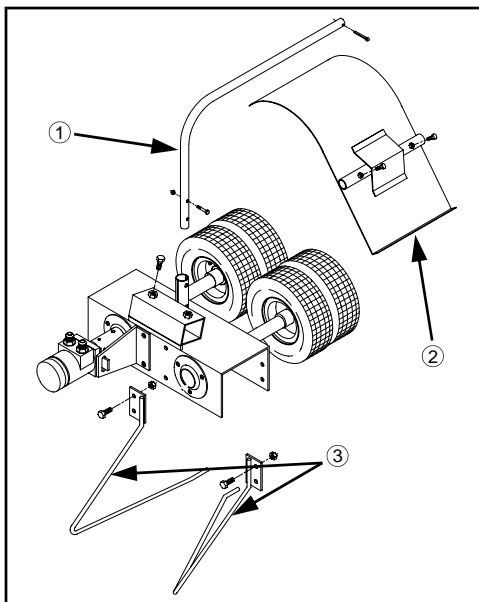


FIG 4.16

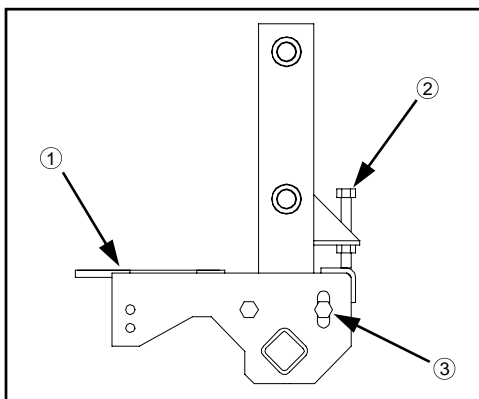


FIG 4.17

1. Attach the quad pullers to each lift arm tool bar (fig. 4.15).

### NOTE:

Some quad pullers may come pre-assembled to the tool bar. In this case, you would attach them to the lift assembly.

2. Install the stalk guides to the quad puller head assembly (fig. 4.16, item 3).
3. Attach the deflector shield mount tube (fig. 4.16, item 1) and the deflector shields for right or left hand deflection (fig. 4.16, item 2).
4. Refer to page 32 for information about installing hydraulic hoses.
5. Normal operating angle of the quad puller is obtained when the tool bar mount surface is parallel to the ground (fig. 4.17, item 1). This angle can be varied by an adjusting bolt (fig. 4.17, item 2) and slot (fig. 4.17, item 3).
6. Adjust tire pressure to approximately 10 pounds.

### NOTE:

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

# IV. PREPARING TO OPERATE

## ▶ ATTACHING QUAD PULLERS CONTINUED

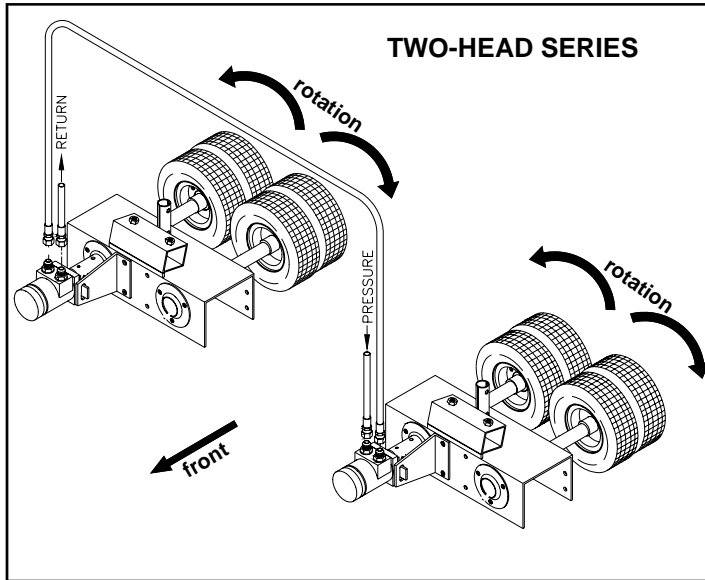


FIG 4.18

### Quad Puller Hydraulic Assembly

Hydraulic hoses on Quad Puller heads should be hooked up so tires rotate according to figure 4.18 and figure 4.19. Refer to 204 DETASSELER Parts Manual for correct hardware, hose lengths, and hydraulic schematic.

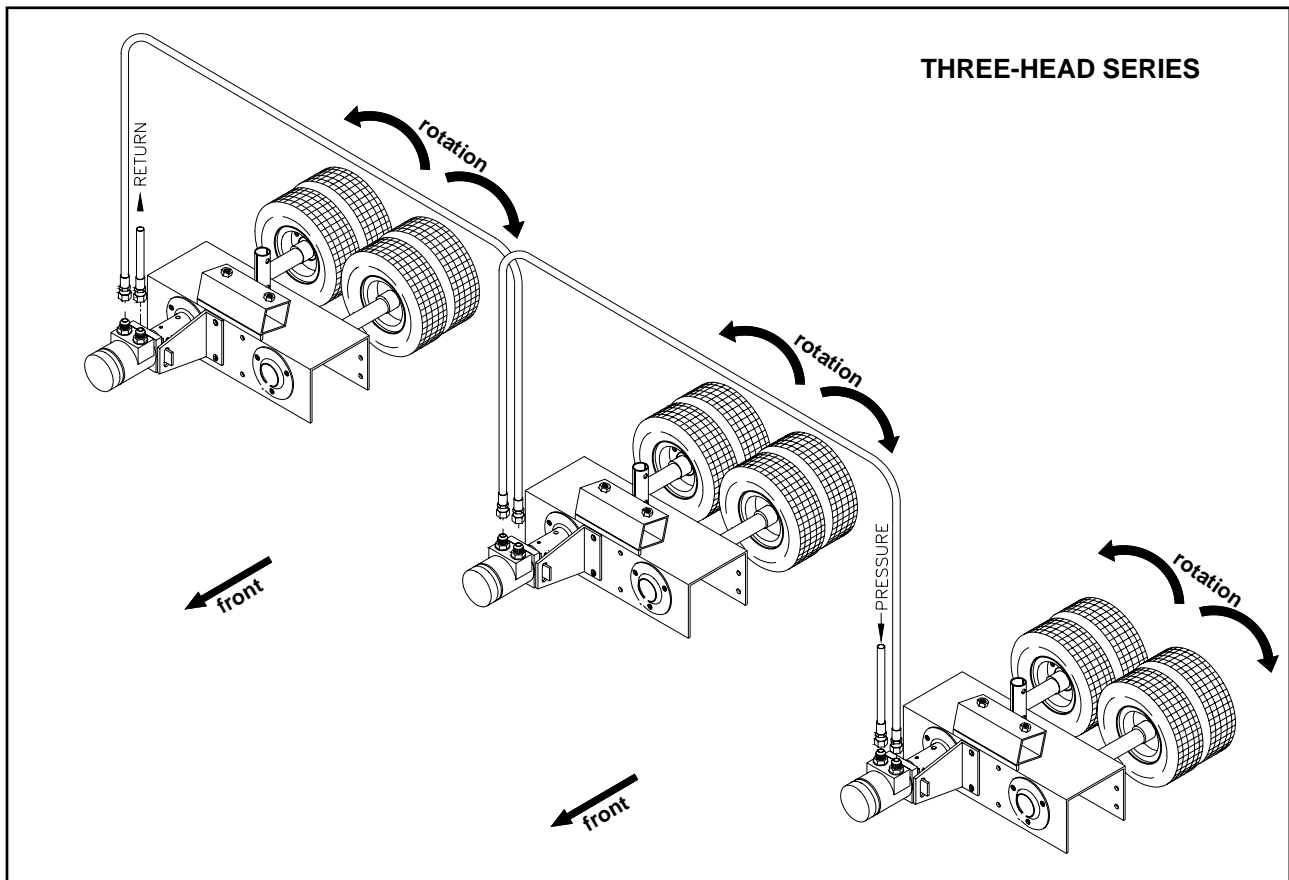


FIG 4.19

## DETASSELING ATTACHMENTS CONTINUED ▶

# IV. PREPARING TO OPERATE

## ATTACHING CUTTER HEADS



FIG 4.20

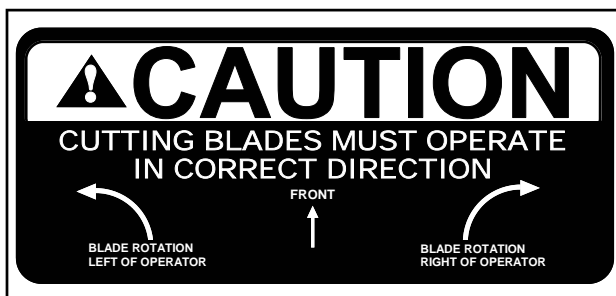


FIG 4.21

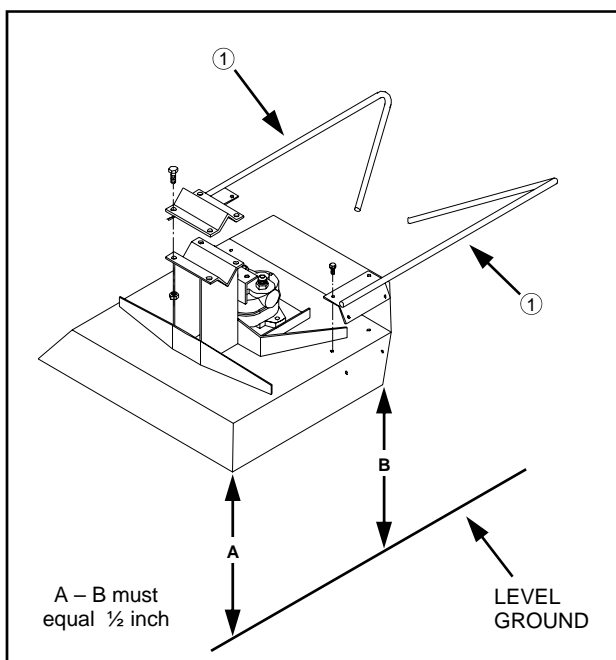


FIG 4.22

1. Attach the cutter head assembly to the tool bar (fig. 4.20).

### NOTE:

Some cutters may come pre-assembled to the tool bar. In this case, you would attach the assembly to the lift assembly.

2. Install the stalk guides to the cutter head assembly (fig. 4.22, item 1)
3. Refer to pages 34-35 for information about installing hydraulic hoses.

### CAUTION

Make sure the cutter blades operate in the correct direction (fig. 4.21).

4. Adjust the cutter heads using the adjusting bolts so the front of the cutter head is pointing downward approximately  $\frac{1}{2}$  inch (fig. 4.22).

ATTACHING CUTTERS CONTINUED 

# IV. PREPARING TO OPERATE

## ▶ ATTACHING CUTTERS CONTINUED

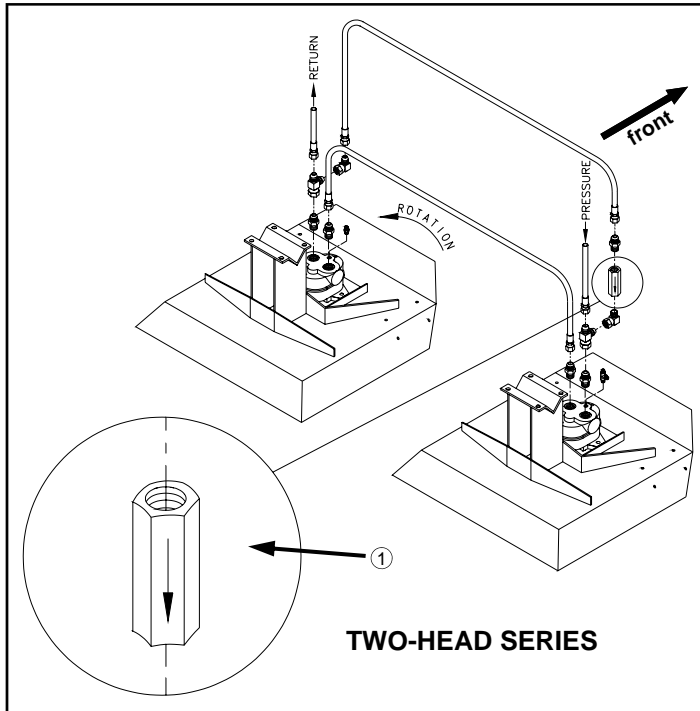


FIG 4.23

### Blade Rotation Left of Operator

Hydraulic hoses on cutter heads should be hooked up so blades on heads mounted left of operator rotate according to figure 4.23 and figure 4.24 (counter-clockwise from above). Refer to 204 DETASSELER Parts Manual for correct hardware, hose lengths, and hydraulic schematic.

#### NOTE:

Care should be taken when installing check valve (fig. 4.23, item 1) on cutter motor so the flow arrow is oriented correctly (either two-head or three-head series).

#### IMPORTANT:

Case drain hoses must be installed correctly on cutter motors to prevent motor damage. Refer to parts manual.

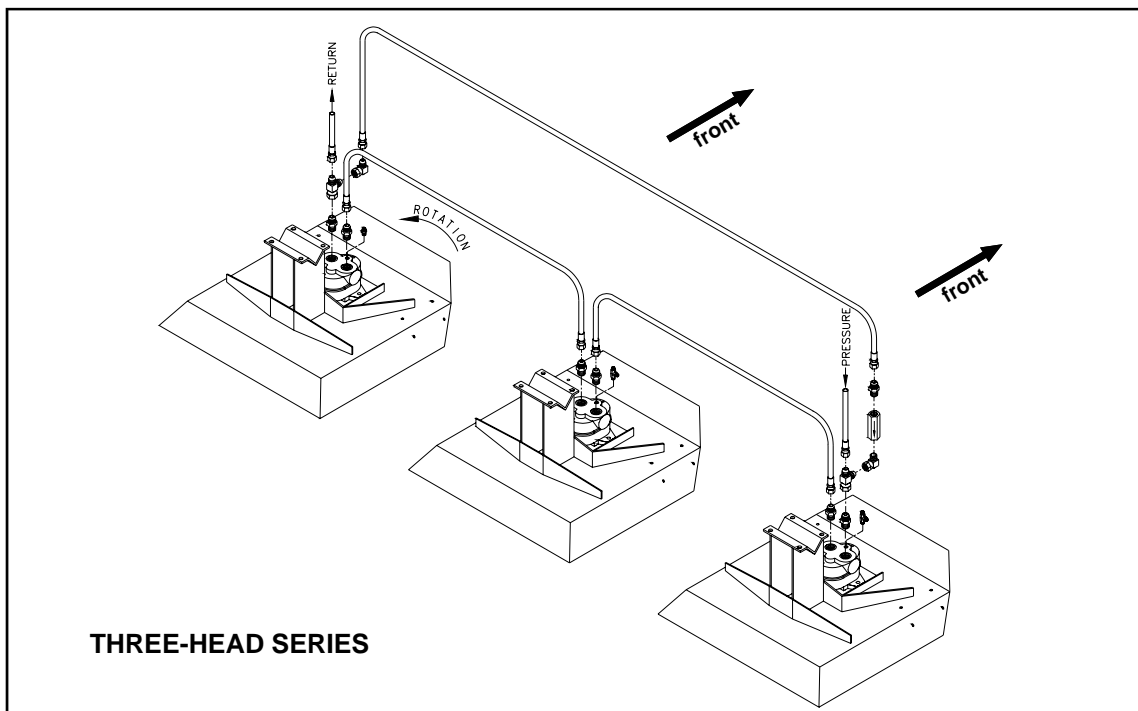


FIG 4.24

# IV. PREPARING TO OPERATE

## ▶ ATTACHING CUTTERS CONTINUED

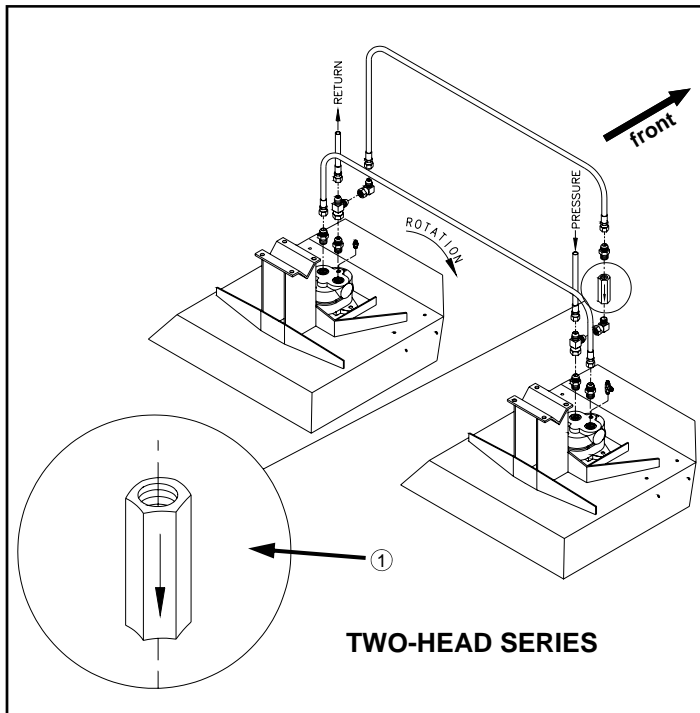


FIG 4.25

### Blade Rotation Right of Operator

Hydraulic hoses on cutter heads should be hooked up so blades on heads mounted right of operator rotate according to figure 4.25 and figure 4.26 (clockwise from above). Refer to 204 DETASSELER Parts Manual for correct hardware, hose lengths, and hydraulic schematic.

#### NOTE:

Care should be taken when installing check valve (fig. 4.25, item 1) on cutter motor so the flow arrow is oriented correctly (either two-head or three-head series).

#### IMPORTANT:

Case drain hoses must be installed correctly on cutter motors to prevent motor damage. Refer to parts manual.

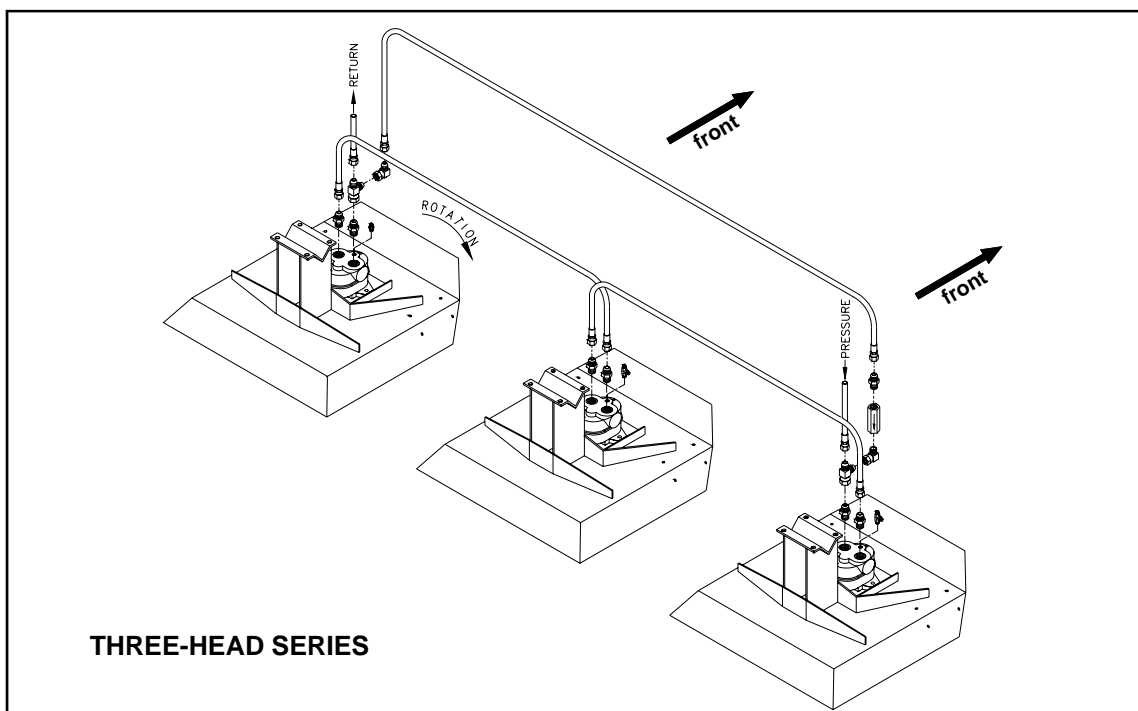


FIG 4.26

## ▶ ATTACHING EQUIPMENT CONTINUED

# IV. PREPARING TO OPERATE

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## EXPORT MACHINES

### NOTE:

Always leave switch in the on position to keep the oil cool.



## IV. PREPARING TO OPERATE

### ▶ ATTACHING EQUIPMENT CONTINUED

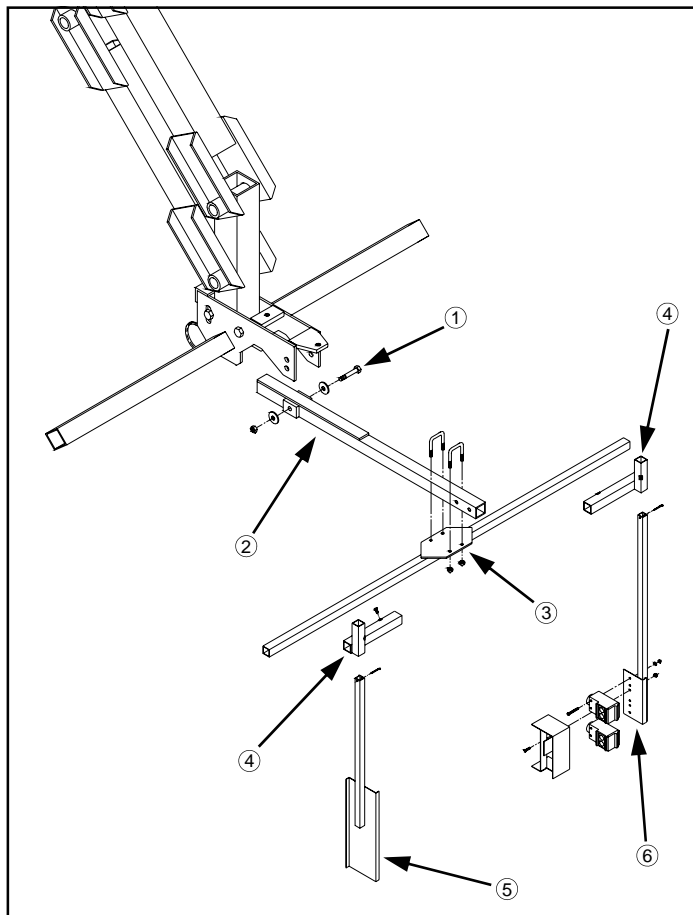


FIG 4.30

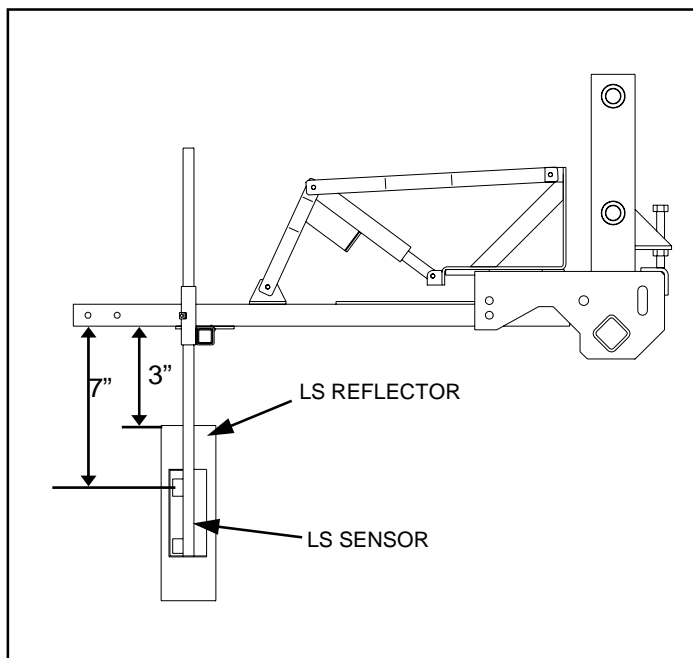


FIG 4.31

### ATTACHING LS SYSTEM

1. Install Tasselrol<sup>®</sup>/LS sensor arm weldment with the two nylon washers in the bottom hole in the tool bar (fig. 4.30, item 2).
2. Install the Tasselrol<sup>®</sup>/LS cross tube weldment (fig. 4.30, item 3) to the sensor arm.
3. Install the left and right slide mount weldments (fig. 4.30, item 4) to the cross tube weldment.
4. Install the Tasselrol<sup>®</sup>/LS reflector mount (fig. 4.30, item 5) and sensor mount (fig. 4.30, item 6) to the slide mount weldments.
5. Install the cable assembly according to the wire diagram in your HAGIE 204 Parts Manual.
6. With a tape measure, set the center of the top Tasselrol<sup>®</sup> sensor to a depth of seven inches (fig. 4.31). Set the top edge of reflector to three inches (fig. 4.31).
7. Turn the ignition key switch to the "ON" position to check the sensor installation. **DO NOT** start the engine. See page 63. for more information about the LS sensor assembly.



# IV. PREPARING TO OPERATE

## ATTACHING DEPTH COMMAND

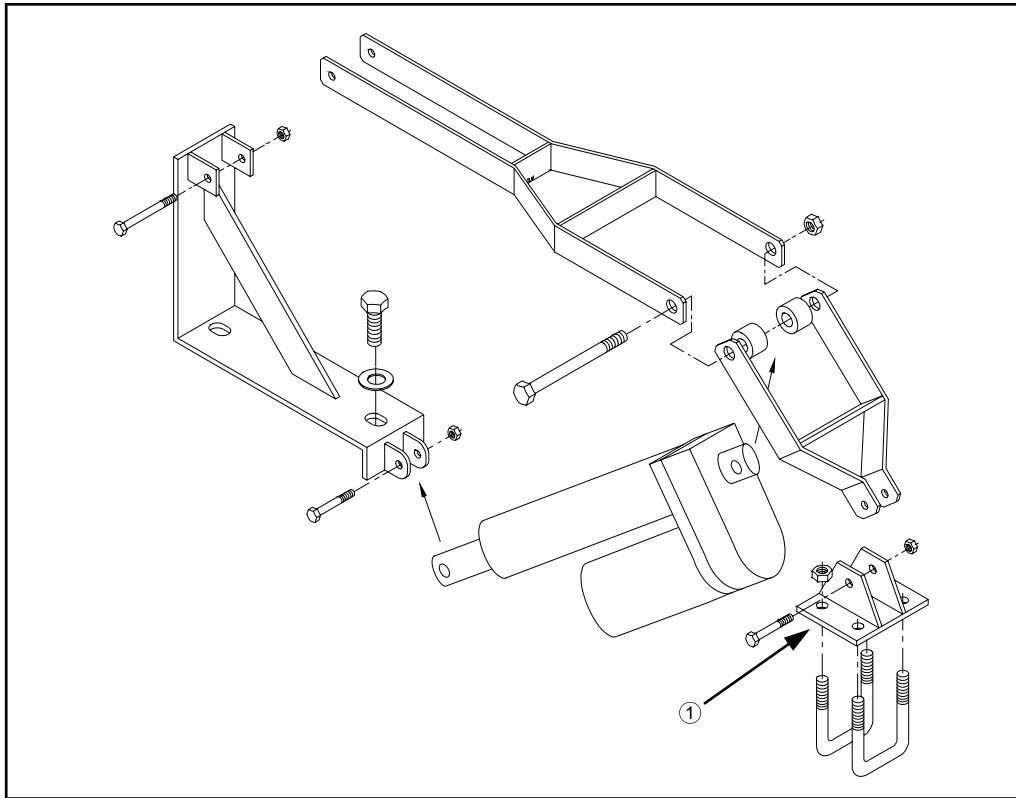


FIG 4.32

1. Attach the depth command actuator assembly (fig. 4.32) to the tool bar (fig. 4.33, item 2).
2. Attach the adjustable slide mount (fig. 4.32, item 1) to the sensor arm approximately 15 inches away from the sensor arm pivot (fig. 4.33, item 1). This should give you equal travel distance up and down of the actuator.

For operating information about the depth command option see page 64.

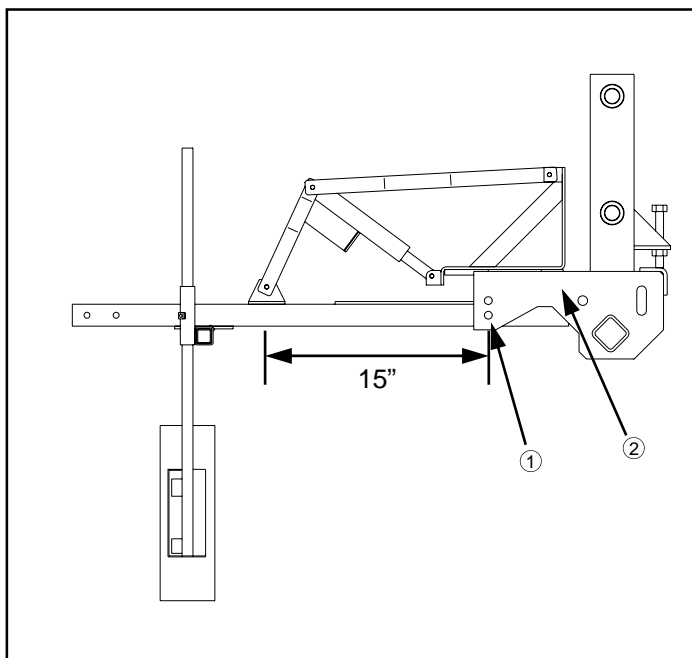


FIG 4.33

### NOTE:

Over tightening of the sensor arm pivot mounting bolt (fig. 4.33, item 1) may cause the actuator to stall.

## IV. PREPARING TO OPERATE

### ATTACHING MALE CORN CHOPPERS



FIG 4.34

1. Disconnect the hydraulic hoses from existing heads.
2. Disconnect and remove the head assemblies and, if equipped, the Tasselrol®/LS attachments 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 (fig. 4.35, item 1).
5. Adjust the support rod so there is approximately two inches of travel on each end (fig. 4.35, item 2).
6. Add weights (fig. 4.35, item 3).

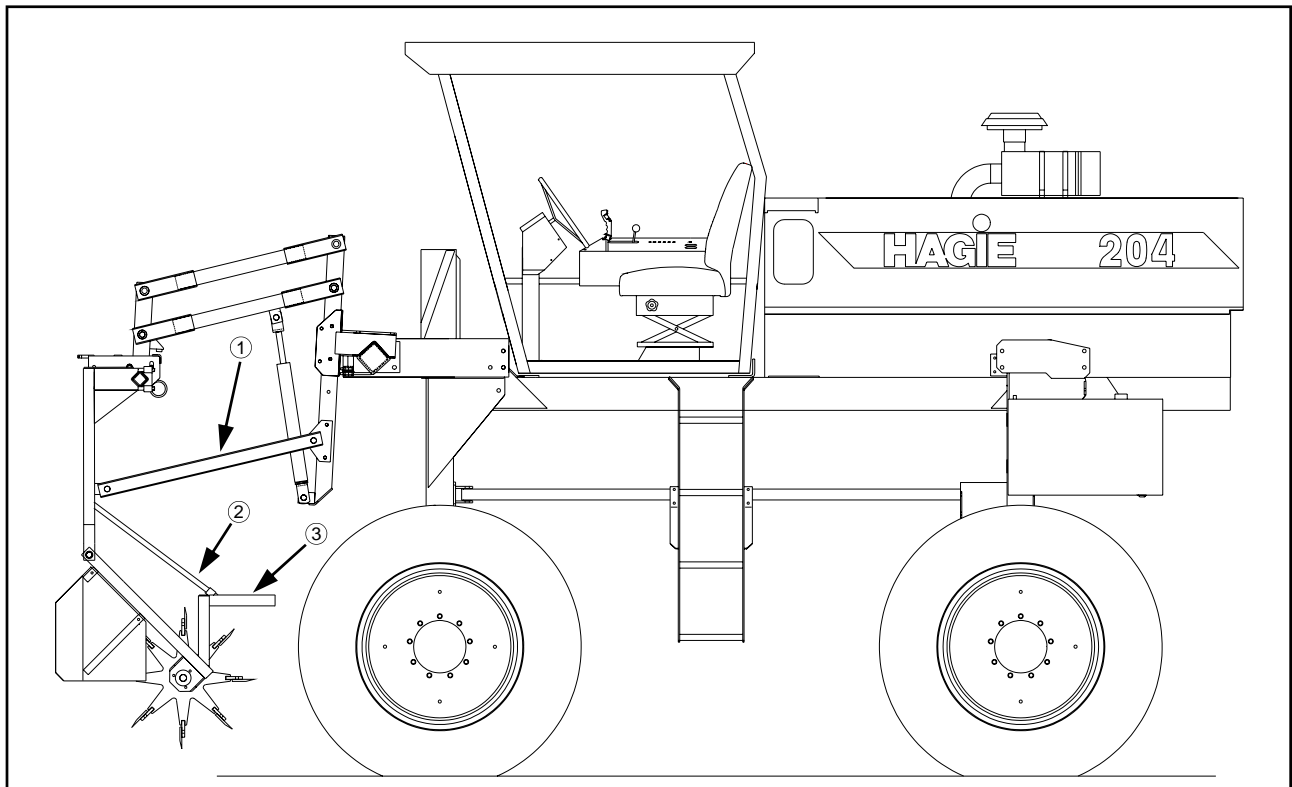


FIG 4.35

## IV. PREPARING TO OPERATE

### ATTACHING MALE CORN CUTTERS



FIG 4.36

1. Disconnect hydraulic hoses from existing heads.
2. Remove tool bar weldments with heads.
3. Install male corn cutter adapter brackets (4.37, item 1)
4. Install male corn cutter drop tube assembly (4.37, item 2).
5. Connect hydraulic hose to the male corn cutter motor as shown in schematic in HAGIE 204 Parts Manual.

#### NOTE:

Mounting brackets, case drain assembly, or a hydraulic package may need to be ordered to attach male corn cutters. For further information, contact the Hagie Customer Support Department.

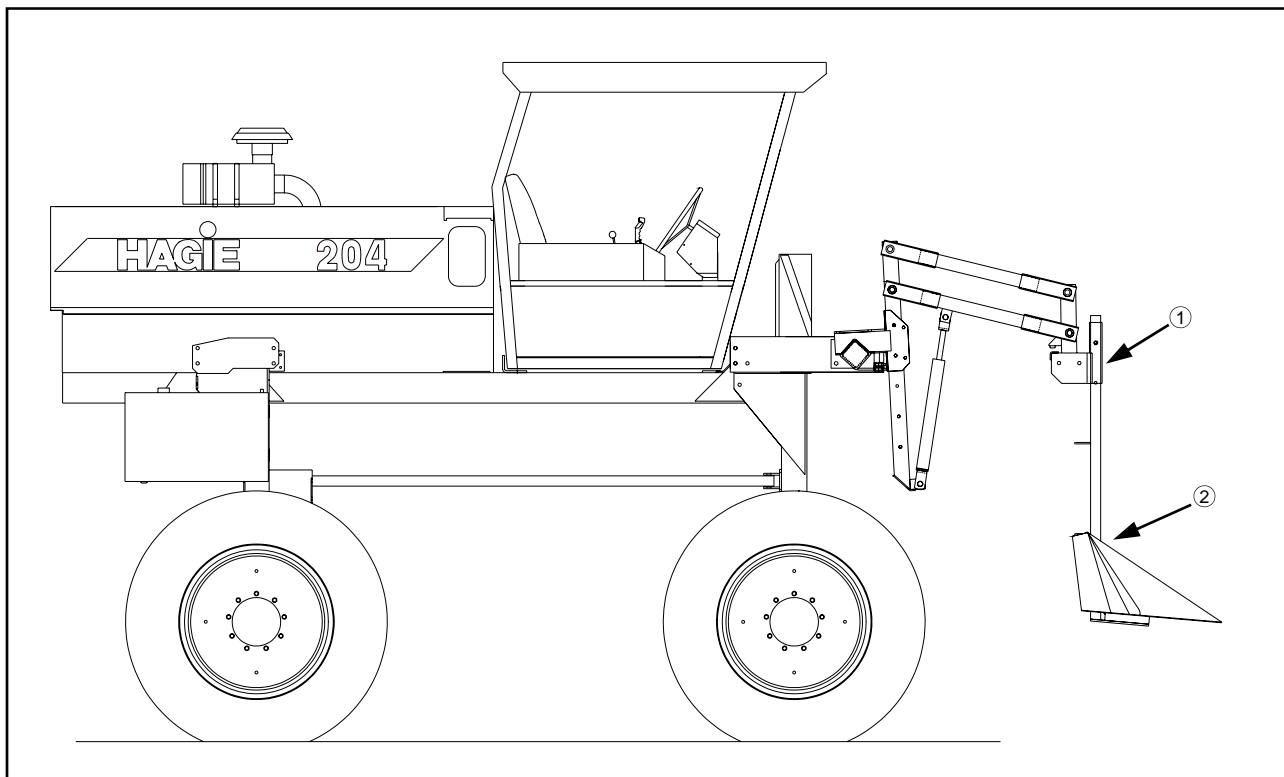


FIG 4.37

# V. OPERATING INFORMATION

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## OPERATING THE ENGINE

Pre-operational Checks	Page Reference
1. Check the engine oil level. Do not operate the engine when oil is below the low mark on dipstick.	87
2. Check the coolant level in the radiator and the coolant overflow reservoir.	89-90
3. Check the hydraulic oil reservoir level.	87
4. Check cooling air intake screens.	93
5. Check engine drive belt.	106-107
6. Drain fuel/water separator (diesel only).	97
7. Check the Filter Minder <sup>®</sup> (diesel only).	94
8. Check for any oil or fuel leaks and correct if needed.	

### Starting the Engine



1. Position hydrostatic control lever to "N" (neutral) position.
2. Apply parking brake (see page 70). When starting procedure is complete, release parking brake before moving.
3. Start the engine with the throttle at one-half speed.
4. Turn key to the "ON" position to check instruments.

## V. OPERATING INFORMATION

---

5. Turn the ignition key switch to the start position to engage the starter. If the engine fails to start after 15 seconds, turn key to "OFF", wait one minute and repeat the procedure. If the engine does not start after three attempts, check fuel supply system. Absence of blue or white exhaust smoke during cranking indicates no fuel is being delivered.
6. When engine starts, immediately reduce throttle lever setting to 1/3.
7. Inspect indicator lights and gauges for correct operation. If any lights or gauges do not operate, shut off engine and determine cause.
8. Always allow at least a five minute warm-up period before operating the engine at high RPM. This means the engine must reach operating temperature and oil pressure must stabilize in the normal operating range before it is run faster than an idle (1000 RPM or less). Cold oil may not flow in quantities adequate to prevent pump cavitation

### COLD WEATHER STARTING

Using starting fluid without metering equipment:

Spray starting fluid into the air cleaner intake while another person starts the engine. Do not move the sprayer until the other person is off the sprayer and a safe distance away.

#### **CAUTION**

Never use starting fluid near an open flame or pre-heater. This could cause an explosion. Do not breathe starting fluid fumes. Starting fluid fumes can be harmful to your health.

#### **NOTE:**

Do not use excessive amounts of starting fluid when starting an engine. The use of too much starting fluid will cause engine damage.

#### **CAUTION**

When using jumper cables to start engine, make sure to connect the cables in parallel: positive (+) to positive and negative (-) to negative. When using an external electrical source to start the engine, turn the disconnect switch to the "OFF" position. Remove the key before attaching the jumper cables to prevent unintentional starter engagement.

# V. OPERATING INFORMATION

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## HYDROSTATIC DRIVE

The power for the Hagie 204 is derived from a Cummins diesel or GM gasoline engine. The hydrostatic power system consists of a Sauer/Sundstrand heavy duty variable displacement pump and fixed displacement wheel motors.

A manual control lever connected to the pump's swashplate controls the amount and direction of oil flow to the motors determining the speed and direction of the machine.

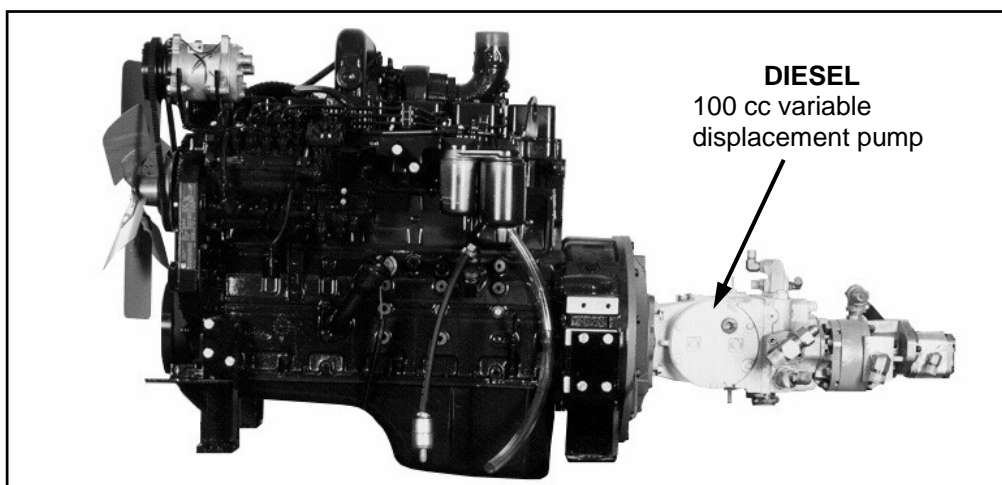


FIG 5.3

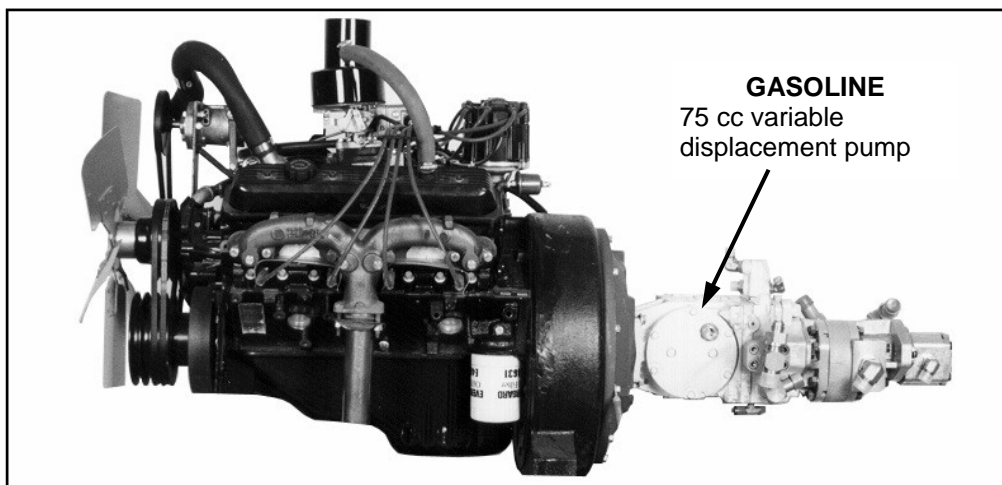


FIG 5.4

HYDROSTATIC SYSTEM CONTINUED 

## V. OPERATING INFORMATION

### ▶ HYDROSTATIC SYSTEM CONTINUED

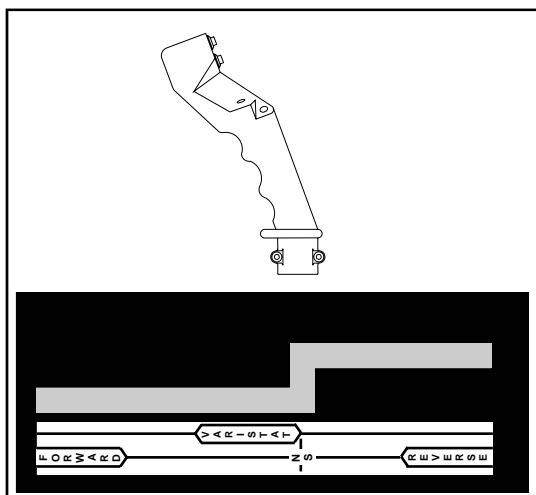


FIG 5.5

1. Open the throttle slowly to the maximum recommended engine speed setting.

**NOTE:**

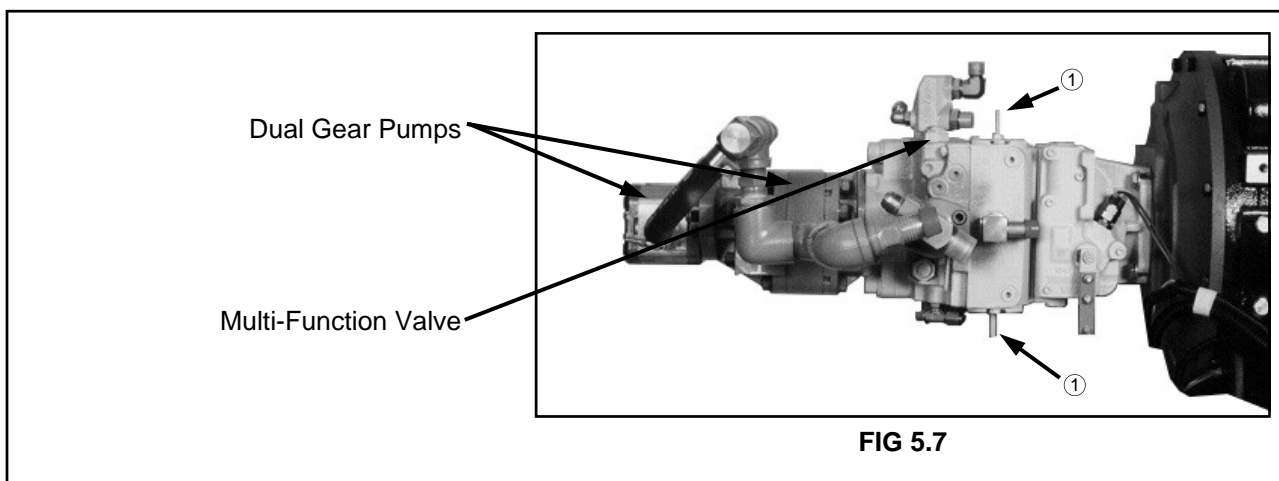
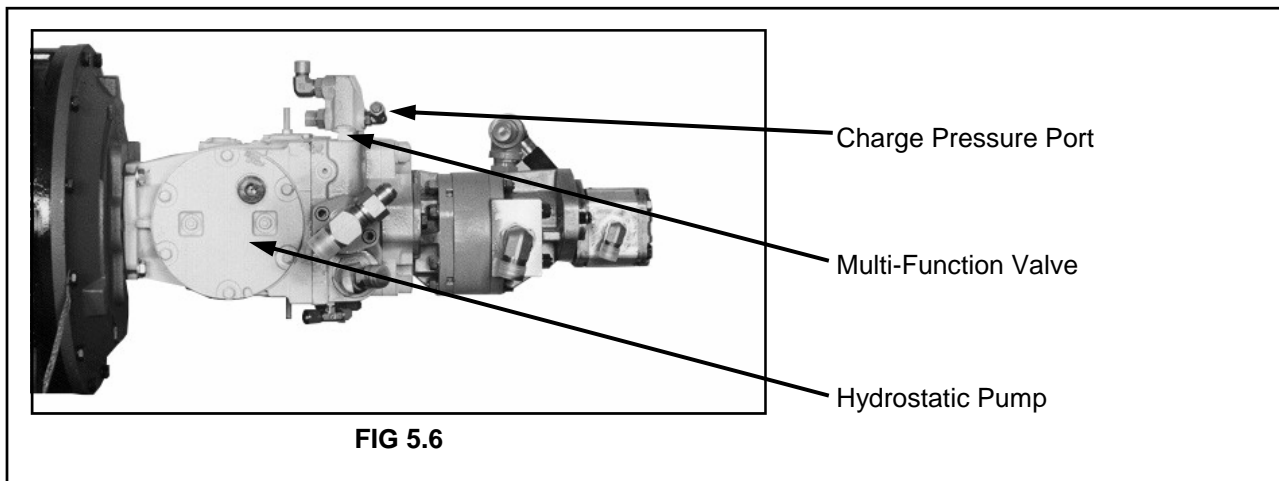
Never operate the detasseler at anything less than full recommended throttle.

2. To move forward, slowly push the hydrostatic control lever (fig. 5.5) forward. The farther the control lever is moved, the faster the detasseler will travel. To stop, slowly pull the lever to the “N” (neutral) position.
3. To reverse the machine, slowly pull the hydrostatic control lever back. To stop, slowly push the lever to the “N” (neutral) position.
4. Before turning off the engine, reduce engine speed and allow the engine to idle at least three minutes.

HYDROSTATIC SYSTEM CONTINUED ▶

# V. OPERATING INFORMATION

## HYDROSTATIC SYSTEM



### Displacement Limiter

The Sauer/Sundstrand Series 90 variable pump is equipped with a mechanical displacement (stroke) limiter (fig. 5.7, item 1)

**NOTE:**

The limiter is factory set and requires no further adjustment. If adjustments are made without contacting the Hagie Customer Support Department, damage may result to the system and void the warranty.

HYDROSTATIC SYSTEM CONTINUED 



# V. OPERATING INFORMATION

## ▶ HYDROSTATIC SYSTEM CONTINUED

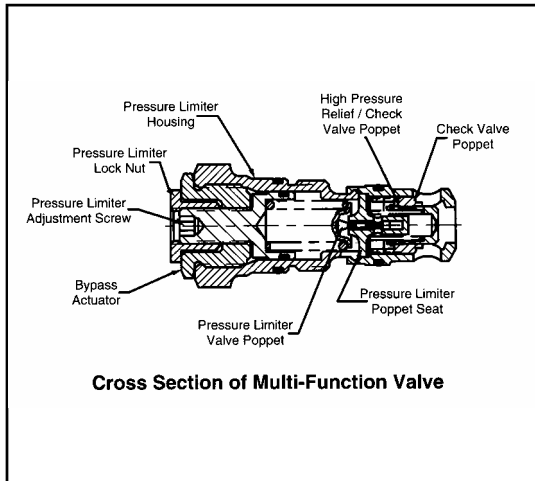


FIG 5.8

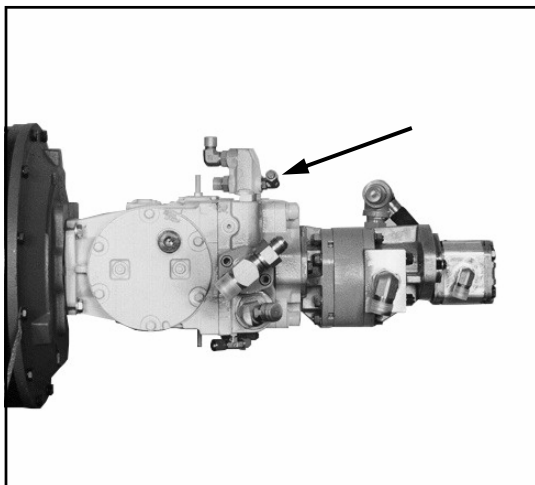


FIG 5.9

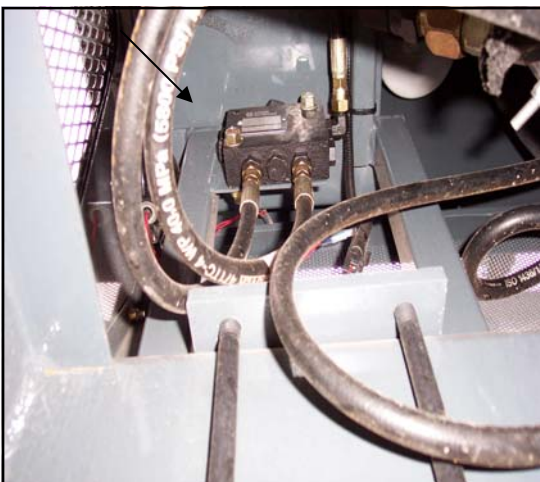


FIG 5.10

## Multi-Function Valves

Each Series 90 pump is equipped with two multi-function valves (fig. 5.8). These valves incorporate the system check valve, the pressure limiter valve, the high pressure relief valve, and the bypass valve.

When the pre-set pressure is reached, the pressure limiter system acts to rapidly de-stroke the pump in order to limit the system pressure.

## Charge Pressure

To monitor the closed loop system (hydrostatic pump), install a 500 PSI pressure gauge at the charge pressure port (see fig. 5.9). Start the engine and open the throttle to full RPM. The charge pressure should be between 348 and 365 PSI. If it is below the required pressure, contact the Hagie Customer Support Department.

## Loop Flushing Valve

The hydrostatic pump is equipped with a loop flushing valve (fig. 5.10). It is used to remove fluid from the hydrostatic system for cooling and removal of contamination.

### NOTE:

The loop flushing valve has been factory set. DO NOT adjust. Damage to the system may result if adjustment is made without contacting the Hagie Customer Support Department.

## HYDROSTATIC SYSTEM CONTINUED ▶

# V. OPERATING INFORMATION

## ▶ HYDROSTATIC SYSTEM CONTINUED

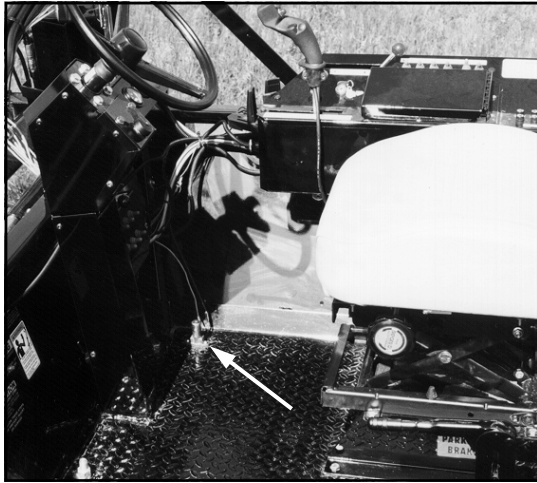


FIG 5.11

### Traction Valve

The Model 204 detasseler comes equipped with special hydraulic valves for increased traction (one in the front hydraulic loop and one in the rear hydraulic loop). These valves greatly reduce spin-out if muddy conditions prevail, or if wheels lose traction for any reason. The valve in the rear loop is active at all times. The valve in the front loop (fig 5.12) is activated by a switch on the floor in front of the operator's seat (fig 5.11). When the traction valve is activated an indicator on the instrument panel will light up (fig. 5.13).

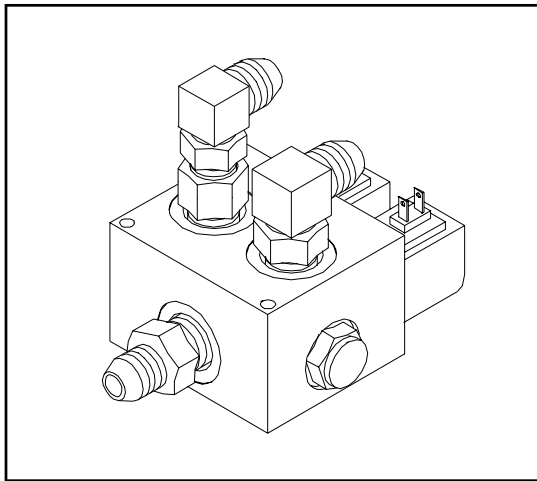


FIG 5.12

#### NOTE:

To prevent hydraulic loop damage, do not operate the front traction valve continuously. Activate the front traction valve only when needed. Shut the traction valve switch off when clear of problem area.



FIG 5.13

HYDROSTATIC SYSTEM CONTINUED ▶

# V. OPERATING INFORMATION

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## HYDRAULIC SYSTEM

The auxiliary hydraulic system is an open type directly mounted behind the heavy duty variable displacement pump. This system consists of dual gear pumps that supply the required hydraulics to operate the full time power steering unit, lift cylinders, and various cutter or pullers.

After supplying each of these systems, the

hydraulic oil is sent to the oil cooler in front of the engine coolant radiator. Here it is cooled and then sent back to the hydraulic oil reservoir.

The front, larger gear pump (fig. 5.14, item 1) supplies only the cutters or pullers. The rear, smaller gear pump (fig. 5.14, item 2) supplies power steering and the lift cylinders.

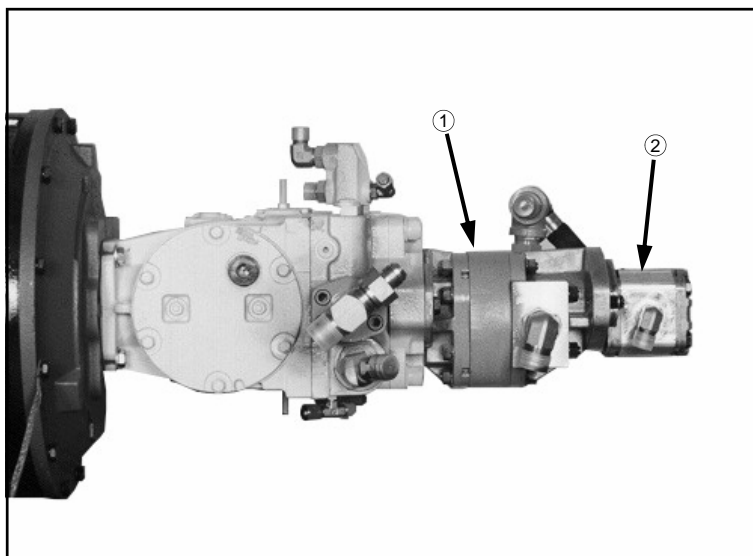


FIG 5.14

### CAUTION

**DO NOT GO NEAR LEAKS.** High pressure oil easily punctures skin causing injury, gangrene, or death. If injured, seek emergency medical help. Immediate surgery is required to remove oil. Do not use finger or skin to check for leaks. Lower load or relieve hydraulic pressure before loosening fittings.

HYDRAULIC SYSTEM CONTINUED 

# V. OPERATING INFORMATION

## ▶ HYDRAULIC SYSTEM CONTINUED

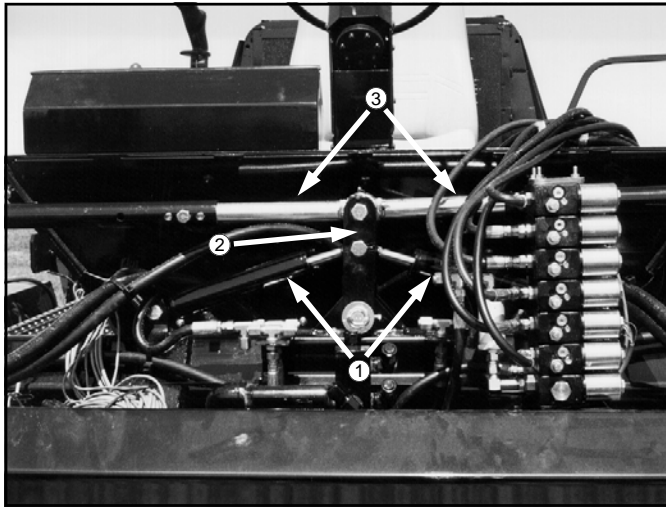


FIG 5.15

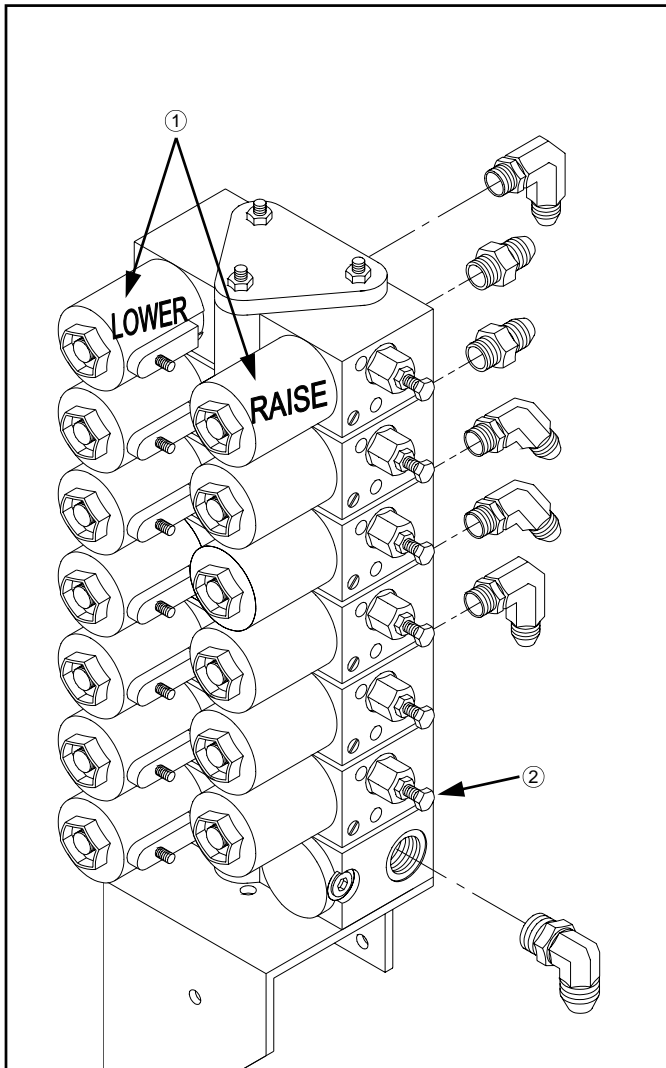


FIG 5.16

## Power Steering

The full-time power steering system consists of a hydraulic steering motor (mounted on the end of the steering wheel shaft) which is connected to a pair of double-action steering cylinders (fig. 5.15, item 1) mounted on a steering pivot (fig. 5.15, item 2) which oscillates a pair of tie rods (item 5.15, item 3) going to each steering leg. This system is powered by one of the hydraulic dual gear pumps driven by the sprayer's engine. Since these gear pumps are sensitive to engine RPM (the higher the RPM the higher the oil flow), it is best to always operate the detasseler at full recommended RPM to ensure maximum steering responsiveness.

## Electro-Hydraulic Valve

The electro-hydraulic valve which control the height of the detasseler head lift cylinders is equipped with adjustable raise and lower orifices controlled by independent coils (fig 5.16, item 1). Upon initial setup adjust the orifice screws (fig. 5.16, item 2) as follows, then see page 51 for more precise adjustment:

**RAISE** – Adjust bolt all the way in and then back it out 2½ turns.

### NOTE:

Over adjustment of raise orifice can cause excessive working pressure.

# V. OPERATING INFORMATION

## ► HYDRAULIC SYSTEM CONTINUED

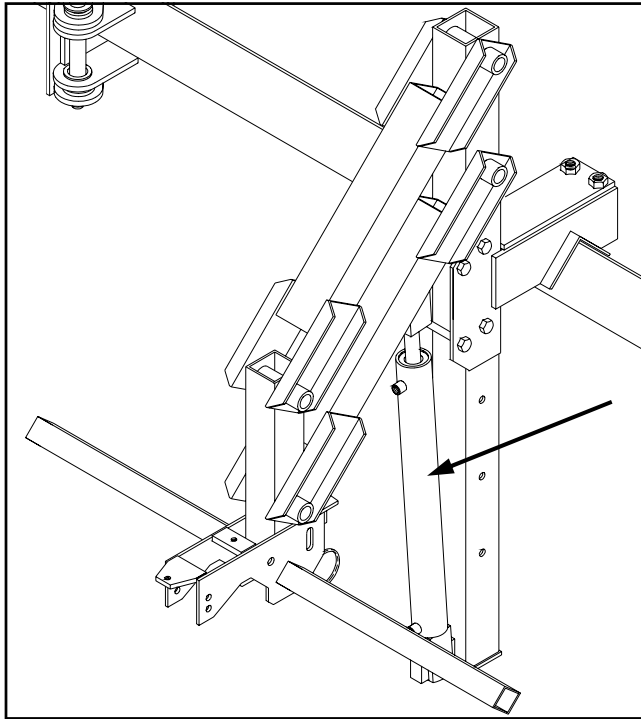


FIG 5.17

### Lift Cylinders

To adjust the height of each detasseling head assembly, cylinders mounted on each lift unit (fig. 5.17) are connected to a console-mounted lift control (fig. 5.18). The controls are either switchable from manual to automatic or manual only. The manual control box is used when the detasseler is not equipped with the Tasselrol®/LS system.

For information about operating or adjusting parameters in the Tasselrol®/LS automatic lift controls see pages 53-59.

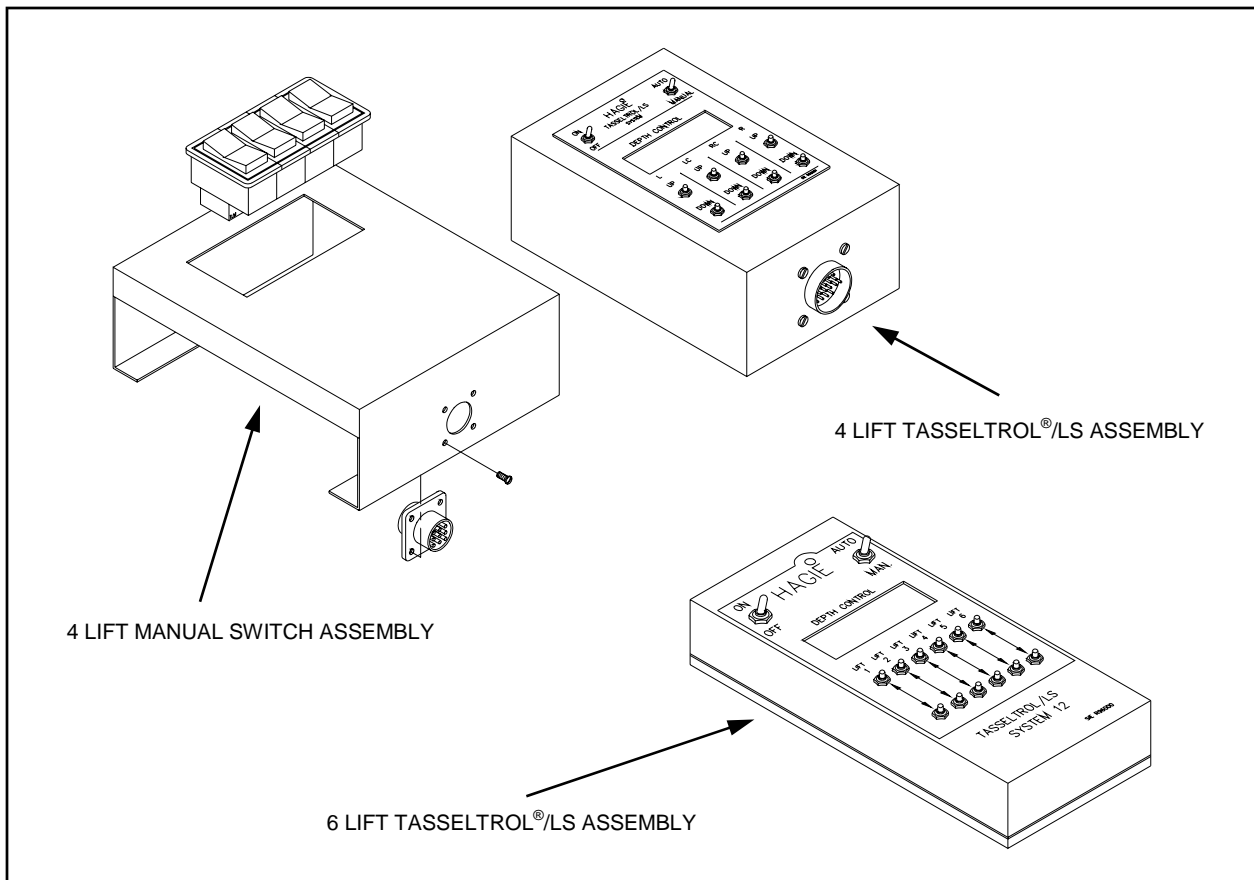


FIG 5.18

# V. OPERATING INFORMATION

## ▶ HYDRAULIC SYSTEM CONTINUED



FIG 5.19

**NOTE:**

Over adjustment of raise orifice can cause excessive working pressure.

## Setting Each Lift Assembly

Install a 3,000 PSI pressure gauge on the inlet of the electro-hydraulic valve (fig. 5.20, item 1). With the engine running at an idle, raise each unit one at a time with the Tasselrol® box while in “MANUAL” mode. Observe the pressure. Adjust each lift cylinder to 1000 PSI.

To increase the pressure of a given lift cylinder, turn the adjustable screw (fig. 5.20, item 2) on the raise orifice clockwise. To decrease the pressure of a given cylinder, turn the adjustable orifice screw counter-clockwise.

After each unit has been adjusted to 1000 PSI, test the settings by turning the Tasselrol® box to “AUTO” and activate the “ALL UP” switch (fig. 5.19) on the hydrostatic control handle (“ALL UP” dwell should be set at 20 seconds – see page 56). At this time all units should lift together.

Adjust each lower orifice as outlined on page 49.

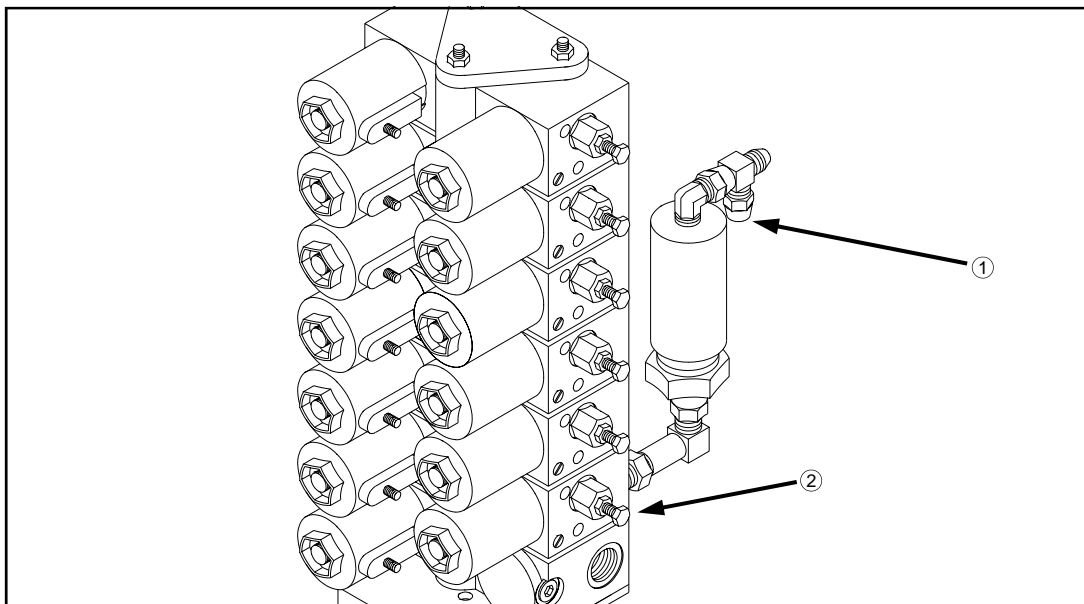


FIG 5.20

# V. OPERATING INFORMATION

## ▶ HYDRAULIC SYSTEM CONTINUED

### Detasseling Heads

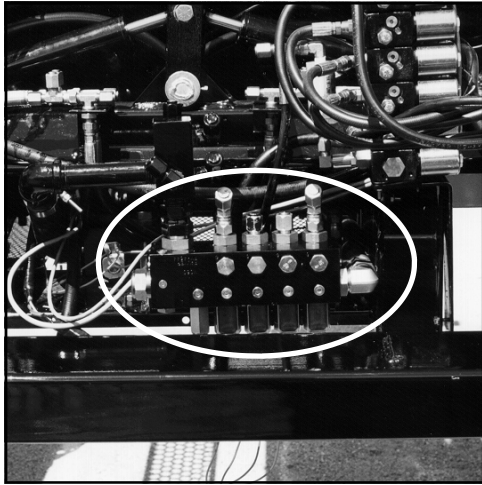


FIG 5.21

The hydraulic motors on the detasseling heads (fig. 5.23) are turned on and off with a row of switches mounted on the control panel to the right of the operator's seat (fig. 5.22). To open the solenoid on any of the motor control valves (fig. 5.21) which activate the motors, flip the corresponding switch(es) away from the operator's seat. To shut any or all motors off, flip the corresponding switch(es) toward the operator.

Each motor control valve contains a .182 inch orifice disc that restricts hydraulic flow to the hydraulic motors so they don't overspeed and become damaged.

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



FIG 5.22

## CAUTION

### BEFORE ENGAGING HYDRAULIC MOTORS

1. REDUCE ENGINE SPEED TO AN IDLE
2. CLEAR AREA OF UNAUTHORIZED PERSONNEL

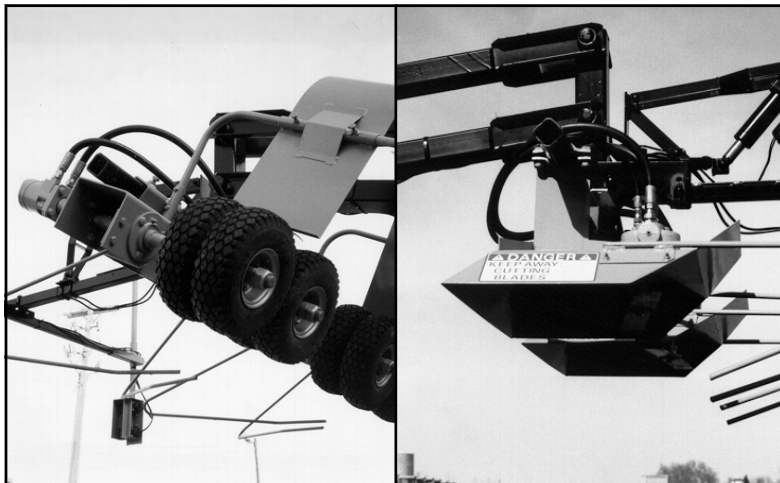


FIG 5.23

## CAUTION

DO NOT operate the hydraulic motors on detasseling heads without .182 inch orifices in place under each solenoid coil.

# V. OPERATING INFORMATION

## SETTING UP THE TASSELTROL®/LS SYSTEM



FIG 5.24

The control box (fig. 5.24) 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 59 to reprogram the bottom parameter.

**RESPONSE PARAMETER – R2** See page 57 to reprogram the response parameter.

**TOP PARAMETER – T3** See page 58 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 (page 58). If further adjustment is required for top and/or bottom parameters, see pages 58 and 59.

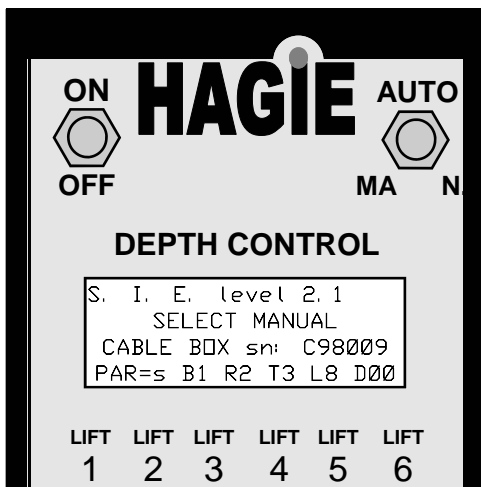


FIG 5.25

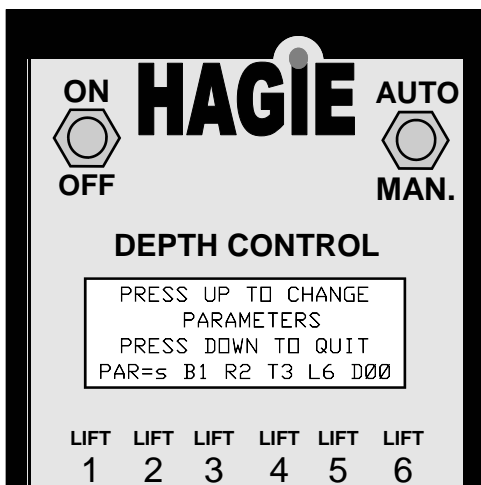


FIG 5.26

TASSELTROL® CONTINUED



# V. OPERATING INFORMATION

## ▶ TASSELTROL® CONTINUED

### OPERATING THE TASSELTROL®/LS CONTROL

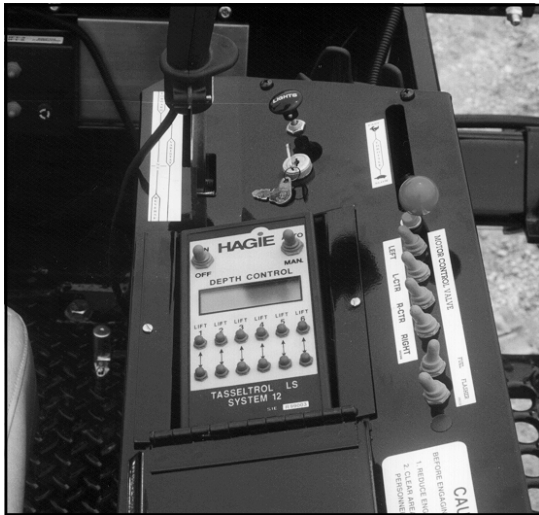


FIG 5.27

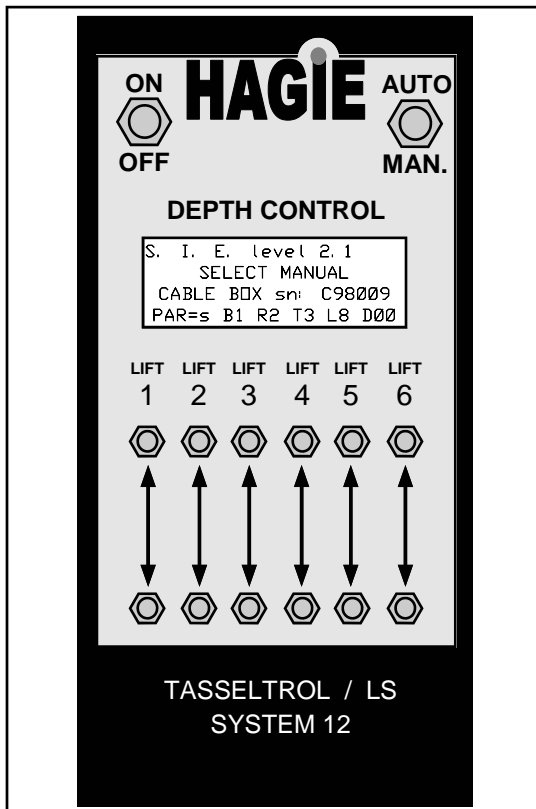


FIG 5.28

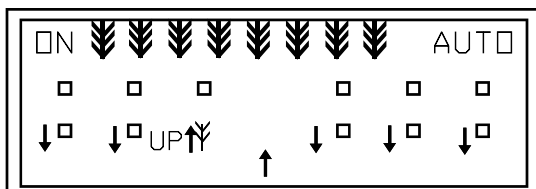


FIG 5.29

To use the control box with its normal parameter setting, use the following procedures. To adjust the given parameters, see pages 57-59.

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

TASSELTRON® CONTINUED ▶

# V. OPERATING INFORMATION

## ▶ TASSELTROL® CONTINUED



FIG 5.30



FIG 5.31

## 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. 5.30). This will allow the cutter or puller heads to maintain their cutting or pulling height when re-entering the field (fig. 5.31), then you may switch back to “AUTO.”

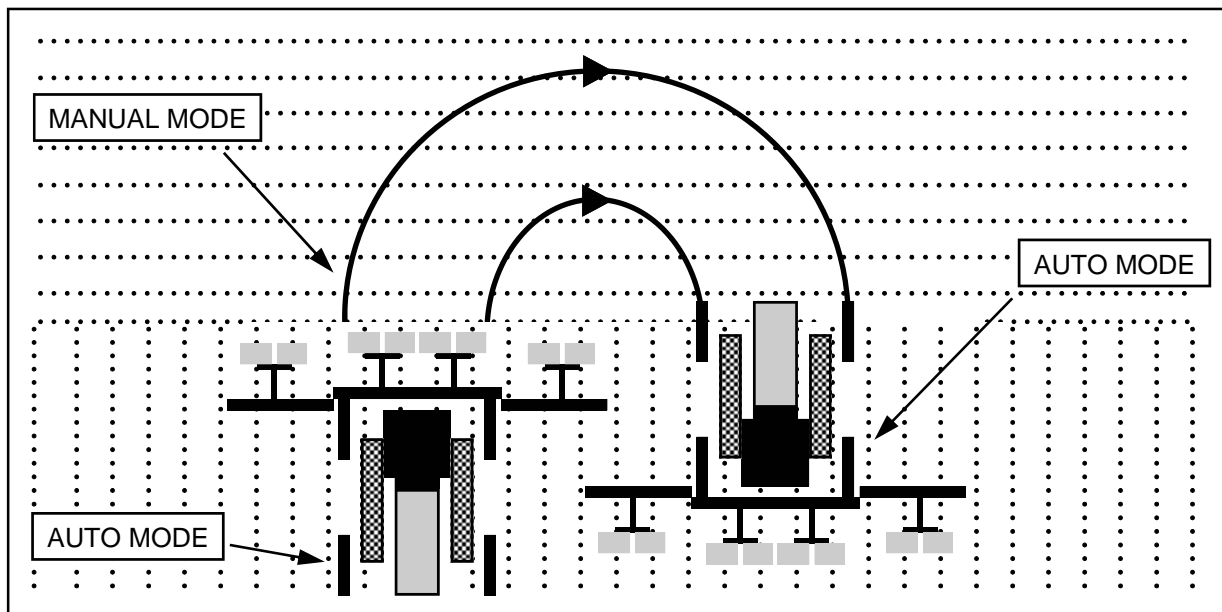


FIG 5.32

# V. OPERATING INFORMATION

## ▶ CAB OPERATION CONTINUED



FIG 5.33

### “ALL UP” and “ALL HOLD” Function

This function can be used to raise or lower all row units at the same time. The switches to control this option are located on the hydrostat control handle (5.33). All the row units will move up when the red switch (5.33, item 1) is activated and will lower when the green switch (5.33, item 2) is activated.

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 red switch in. All heads will hold this position when the parameter is reached. To resume automatic depth control, activate the green switch.

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 “MISC” (4 lift only. If 6 lift, skip to step 5.)
5. Press the “UP” button under “D” to set the dwell time.
6. After selecting one of the dwell time choices, press any of the down switches.
7. To escape the parameter mode, press down a second time to return to the original screen (this will save the information on a 4 lift control; to save on a 6 lift control, switch the AUTO/MANUAL toggle to MANUAL).

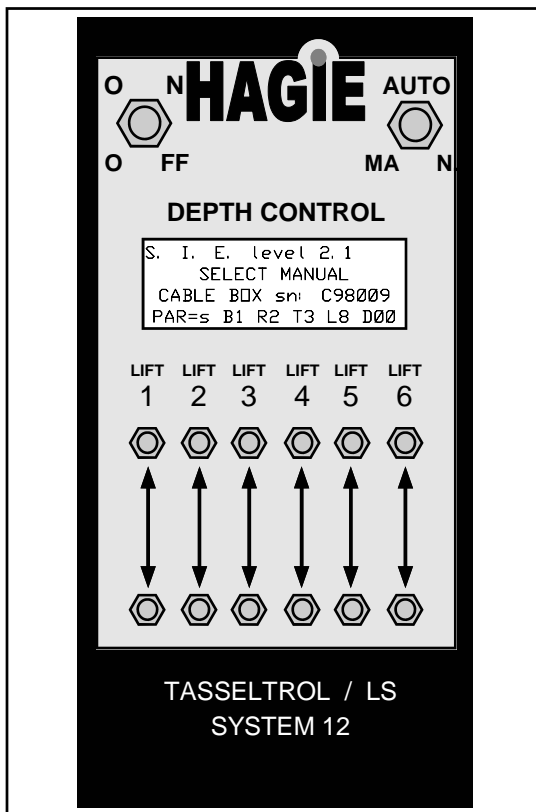


FIG 5.34

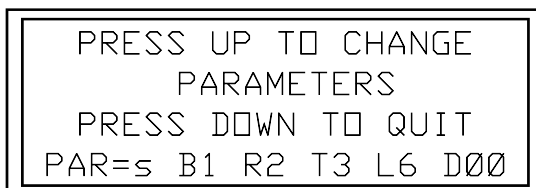


FIG 5.35

## TASSELTROL PARAMETERS CONTINUED ▶

# V. OPERATING INFORMATION

## TASSELTROL<sup>®</sup> 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.

1. The active value of the parameter is indicated by it blinking on and off, while the other three choices are displayed continuously.
2. To select a new value for the parameter, press the "UP" button under the desired choice.
3. After selecting one of the four choices, press any of the "DOWN" buttons to escape this parameter.
4. To save new values and escape the parameter mode, press "DOWN" a second time and switch "AUTO/MANUAL" toggle to "MANUAL."

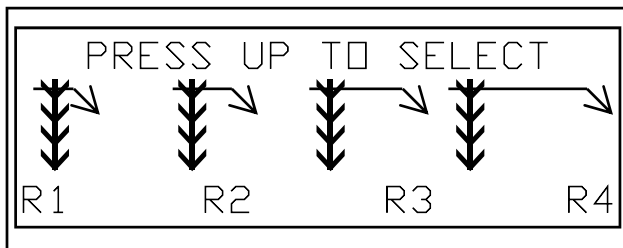
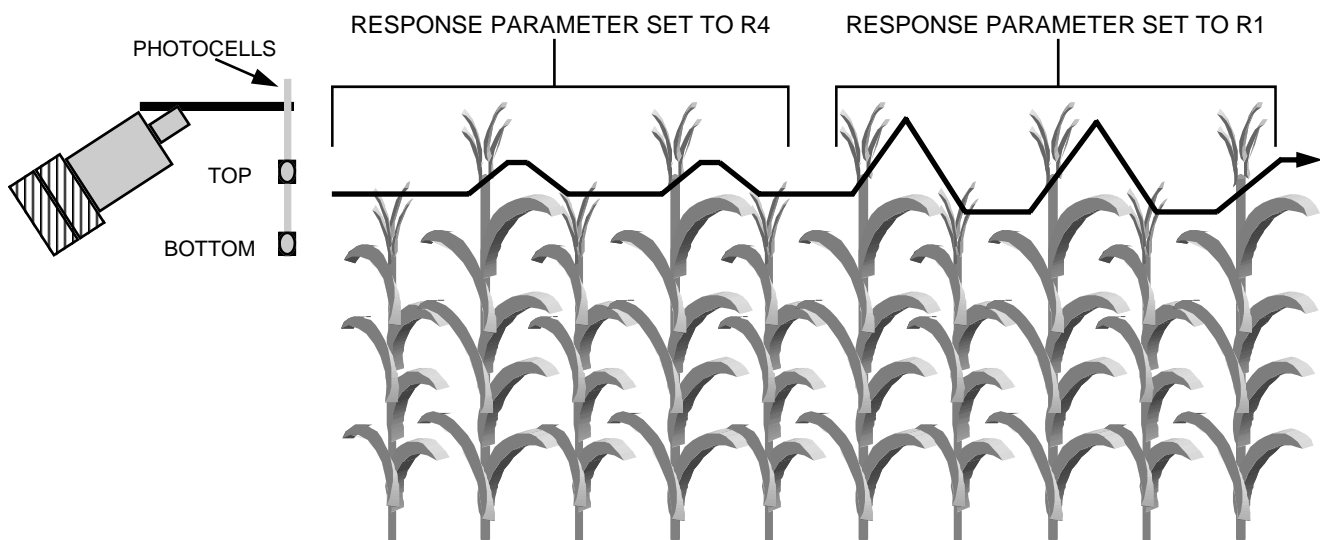


FIG 5.36

**NOTE:**  
See page 62 for more information regarding the LS photolights.



# V. OPERATING INFORMATION

## 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 sec-

onds for the "SELECT MANUAL" message. Press the "UP" button under "PAR". Now press the "UP" button under the "T" value.

1. The active value of the parameter is indicated by it blinking on and off, while the other three choices are displayed continuously.
2. To select a new value for the parameter, press the "UP" button under the desired choice.
3. After selecting one of the four choices, press any of the "DOWN" buttons to escape this parameter.
4. To save new values and escape the parameter mode, press "DOWN" a second time and switch "AUTO/MANUAL" toggle to "MANUAL."

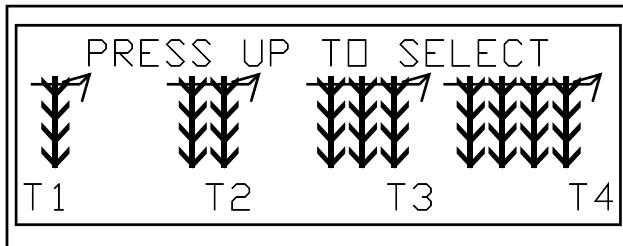
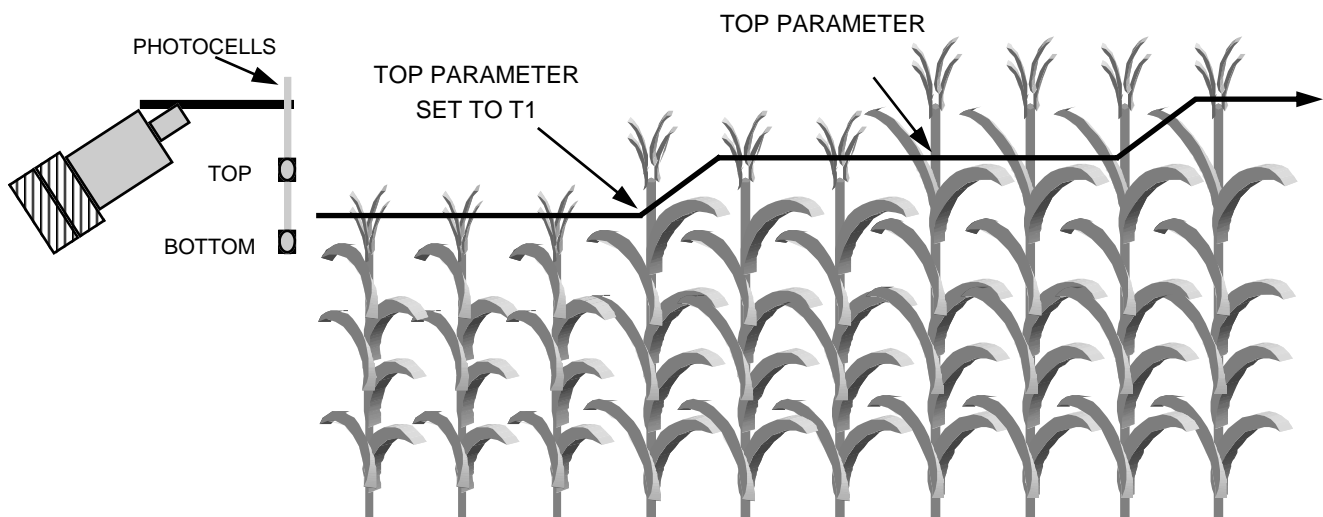


FIG 5.37

### NOTE:

See page 62 for more information regarding the LS photolights.



# V. OPERATING INFORMATION

## TASSELTROL<sup>®</sup> 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. How much 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 bot-

tom 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.

1. The active value of the parameter is indicated by it blinking on and off, while the other three choices are displayed continuously.
2. To select a new value for the parameter, press the "UP" button under the desired choice.
3. After selecting one of the four choices, press any of the "DOWN" buttons to escape this parameter.
4. To save new values and escape the parameter mode, press "DOWN" a second time and switch "AUTO/MANUAL" toggle to "MANUAL."

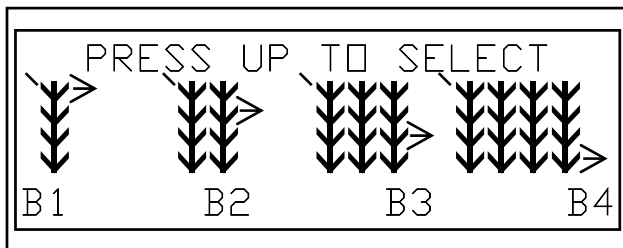
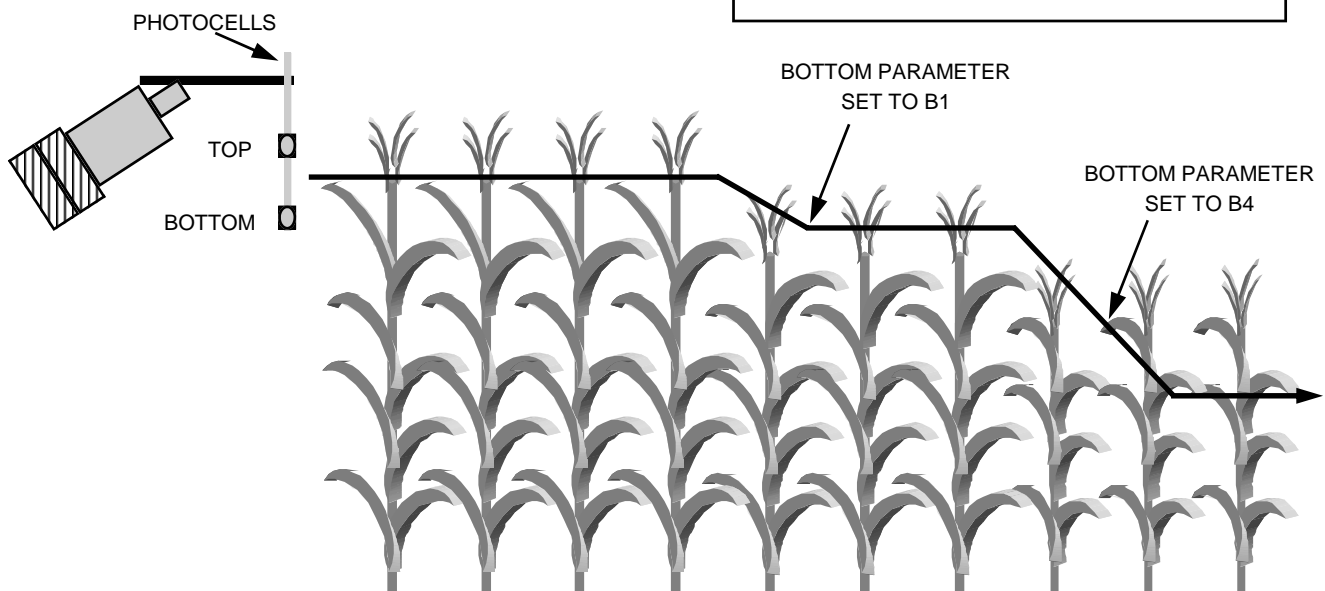


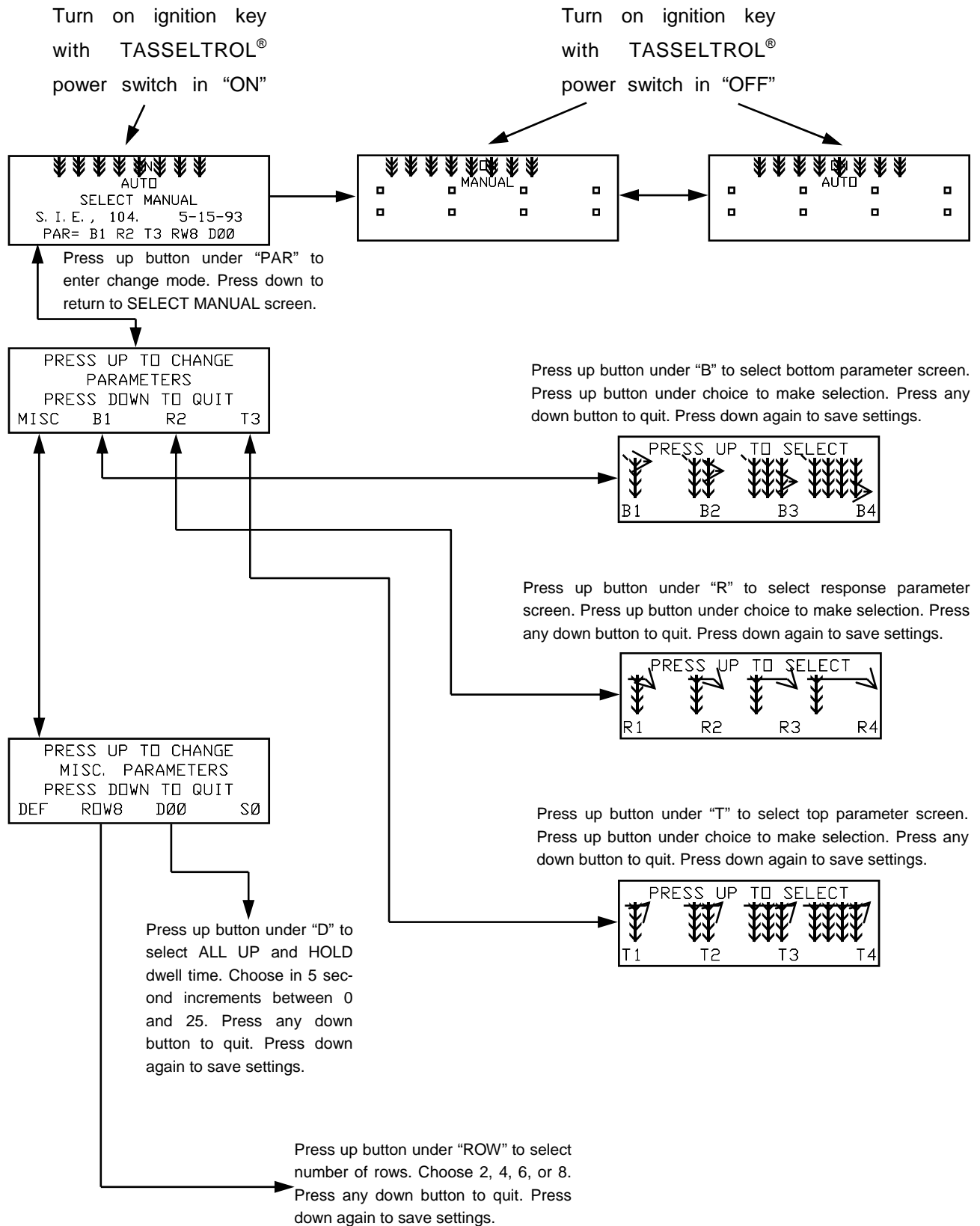
FIG 5.38

**NOTE:**  
See page 62 for more information regarding the LS photolights.



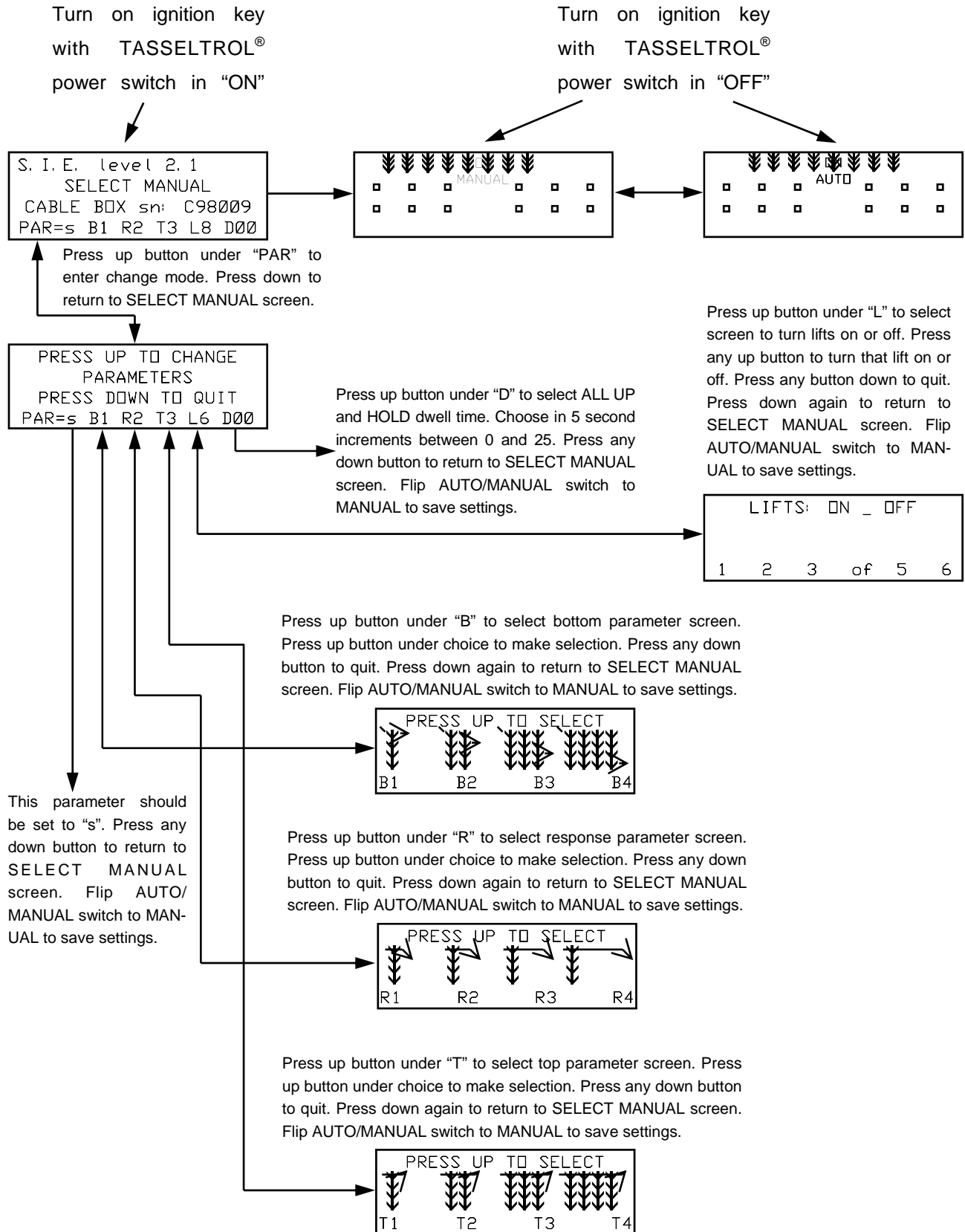
# V. OPERATING INFORMATION

## Four-Lift TASSELTRON<sup>®</sup> Display Screen Quick Reference Chart



# V. OPERATING INFORMATION

## Six-Lift TASSELTROL® Display Screen Quick Reference Chart





# V. OPERATING INFORMATION

## LS PHOTOLIGHT INDICATORS

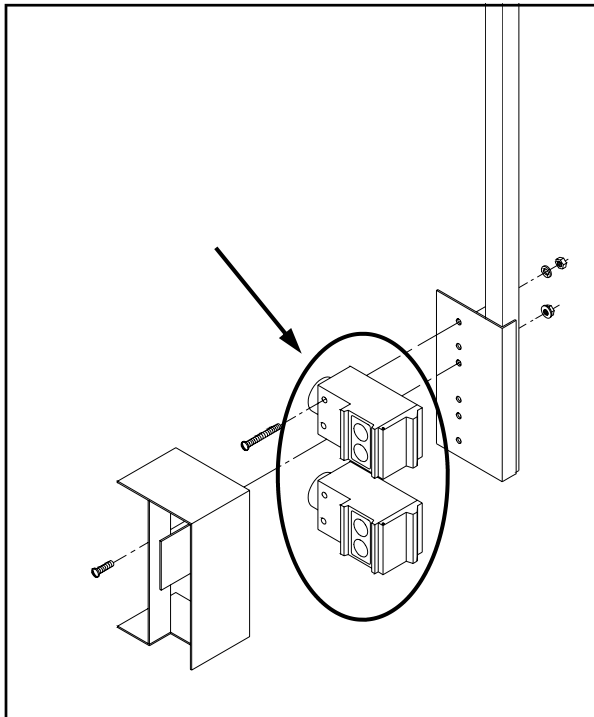


FIG 5.39

The upper and lower LS photolights (fig. 5.39) have L.E.D. lights (fig. 5.40) that indicate their operational status.

**LT/DK SWITCH** – Light/Dark switch on photolight (fig. 5.40, item 1) changes the activated condition of green L.E.D. (see below) from *ON* (“LT”) to *OFF* (“DK”). Switch does not affect the functional operation of the light, only how it is displayed. Switch should be set to “LT”.

**SENSITIVITY ADJUSTMENT SCREW** – Sensitivity adjustment screw (fig. 5.40, item 2) should always be set to maximum.

**YELLOW L.E.D.** – Yellow L.E.D. (fig. 5.40, item 3) indicates power on.

**GREEN L.E.D.** – Green L.E.D. (fig. 5.40, item 4) indicates output energized (sending a signal to Tassel-trol<sup>®</sup> box, opening the raise or lower stack valve).

**RED L.E.D.** – Red L.E.D. (fig. 5.40, item 5) indicates photolight is receiving reflected signal.

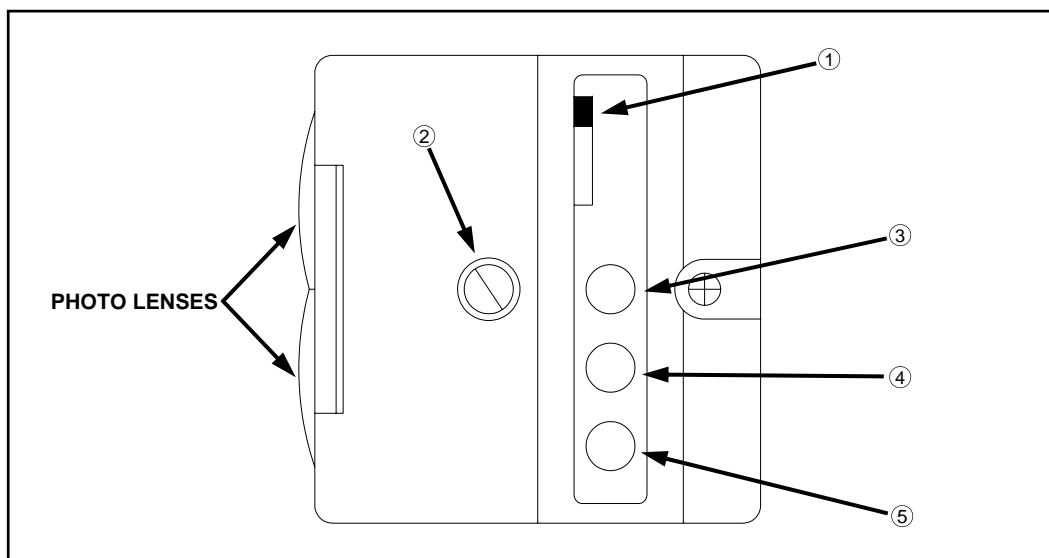


FIG 5.40

## V. OPERATING INFORMATION

### DEPTH COMMAND



FIG 5.41



FIG 5.42

The Hagie 204 comes available with optional adjustable DEPTH COMMAND (fig. 5.41). This allows the operator to adjust the depth of the LS system from the cab. The switches are located to the right of the steering column (fig. 5.42).

To lower the cutting or pulling height, select the appropriate switch and push down. This will extend the actuator (fig. 5.41, item 1), 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 (fig. 5.42). For more information on the DEPTH COMMAND fuse, see page 103.

# V. OPERATING INFORMATION

## GAUGE PANEL

### Speedometer/Tachometer - (fig. 5.44, item 1)

Unit will display either engine RPM or speed of travel depending on operator's selection. See pages 66-67 for more information on the speedometer/tachometer.

### Water Temperature - (fig. 5.44, item 2)

The water temperature gauge monitors the engine cooling system. A "RED" indicator light alerts the operator of unsafe operating temperatures.

### Engine Oil Pressure - (fig. 5.44, item 3)

The oil pressure gauge monitors pressure of the engine lubricating system. A "RED" indicator light alerts the operator of low level operation.

### Fuel Gauge - (fig. 5.44, item 4)

The fuel gauge measures the amount of fuel in either fuel tank, depending on the tank selected with the fuel switch. A "YELLOW" indicator light alerts operator of low level operation.

### Volt Meter - (fig. 5.44, item 5)

The volt meter measures voltage from the alternator on the diesel engine. A "RED" indicator light will alert the operator if the system is operating either too low or too high.

### Hour Meter - (fig. 5.44, item 6)

The hour meter progressively records elapsed time of detasseler operation. It is useful for determining service intervals.

### Filter Minder (diesel only) – (fig. 5.44, item 7)

See page 88 for information regarding the air filter monitoring system.



FIG 5.43

### NOTE:

Immediately reduce engine speed and shut off ignition if any of the above "RED" indicator lights illuminate. Determine cause and correct before continuing operation.

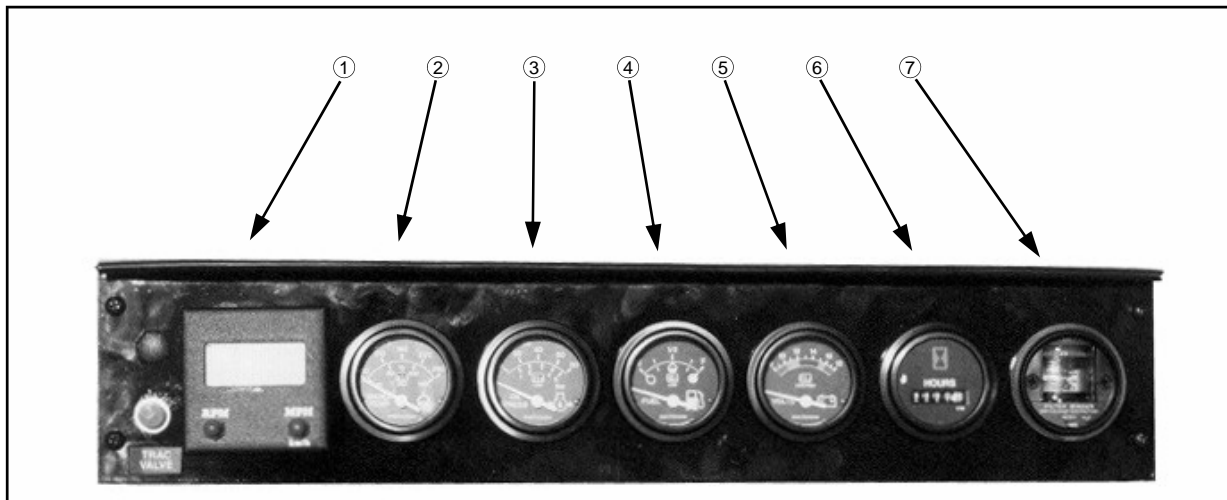


FIG 5.44

# V. OPERATING INFORMATION

## ▶ GAUGES CONTINUED

### SPEEDOMETER/TACHOMETER

The speed/tach unit is programmable with a digital read-out indicating MPH or RPM. The parameters have been factory set.

Turn the ignition key to the "ON" position. The display will show "0000", which indicates RPM. Press the MPH button; the readout will display "00.0" which indicates MPH.

To check the parameter settings, press the desired button and hold until four "8's" are shown, then release (fig. 5.45B). The parameter setting will

be displayed for four seconds.

#### PARAMETER SETTING

RPM (Diesel) ..... 357 (fig. 5.45C)  
 (Gasoline) ..... 292 (fig. 5.45D)

MPH ..... (12.4-24 tire) - 102.8  
 (11.2-38 tire) - 119.2

To change or re-enter the parameters, press the desired button and hold in until the four "8's" are displayed. Release the button and the parameter setting will appear. If you want to increase the setting, press the RPM button. To decrease, press the MPH button.

**PROGRAMMING MPH** - To program the MPH, use the formula from figure 5.46. Example (12.4-28 tires): 168 divided by front tire static load radius of 22.6 inches times Torque Hub® reduction of 18.25 times number of speedometer ring pick-up sensors on sensor disc of 43 equals 5833.5; 5833.5 divided into 600,000 equals parameter setting of 102.8.

This parameter setting should be checked when you receive your detasseler.

**ADDITIONAL PARAMETERS** – To access the miscellaneous parameters screen (fig. 5.45F), hold down both buttons at the same time until the screen with four "8's" appears.

Use the RPM buttons to scroll the parameter settings (P3 = power-up display, P4 = signal tracking speed, P5 = input device). Use the MPH button to change the setting of the displayed parameter (either 0 or 1).

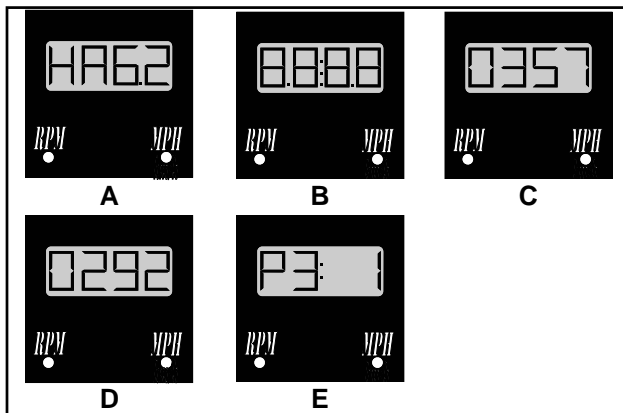


FIG 5.45

A = Torque-Hub® reduction	$\frac{168 \times A \times B}{C} = X$
B = speedometer ring pick-up	
C = tire static load radius	
Y = MPH parameter setting	$\frac{600,000}{X} = Y$

FIG 5.46

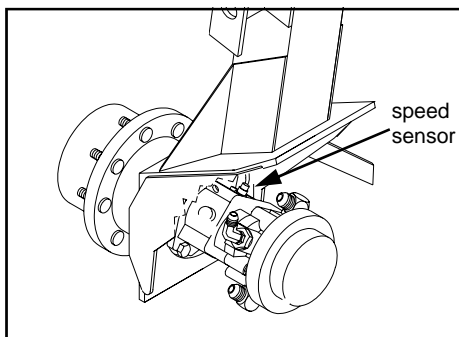


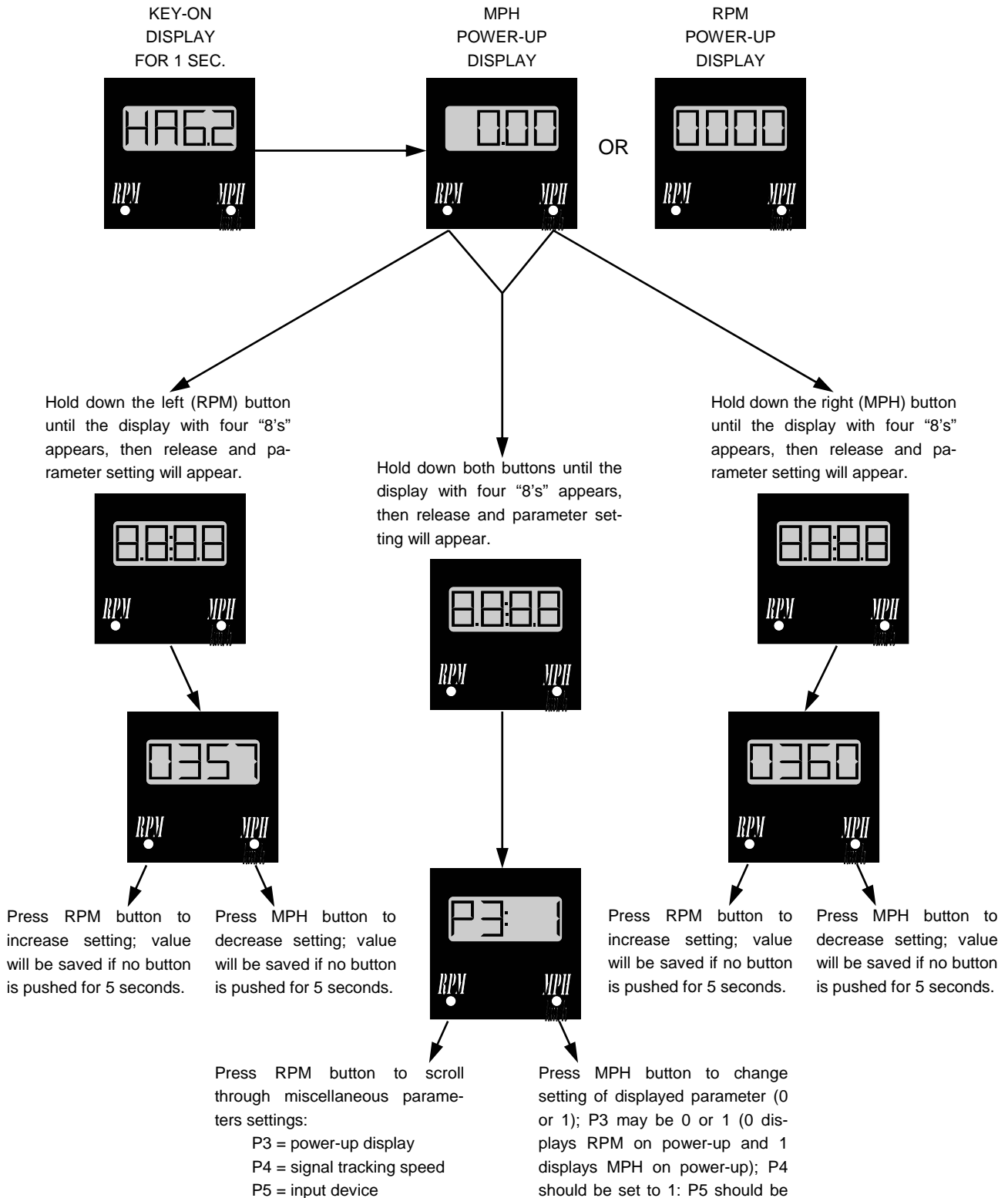
FIG 5.47

## SPEEDOMETER/TACHOMETER CONTINUED ▶

# V. OPERATING INFORMATION

## ▶ SPEEDOMETER/TACHOMETER CONTINUED

### Speedometer/Tachometer Display Screen Quick Reference Chart



CAB OPERATION CONTINUED ▶

## V. OPERATING INFORMATION

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### ▶ CAB OPERATION CONTINUED

#### STANDARD OPERATOR SEAT

- 1- **Fore-Aft Adjustment.** Pull the fore-aft lock lever to the left to unlock and adjust seat forward or rearward to desired position. Release lock lever to lock fore-aft position.
- 2- **Ride Height.** To adjust seat height, place all your body weight on the seat and locate the height adjustment dial. Rotate the dial clockwise to lower seat height and counter-clockwise to raise seat height.
- 3- **Ride Firmness.** To adjust ride firmness adjust the ride dial on the left of the seat clockwise to “soften” the ride and counter-clockwise to “stiffen” the ride.



FIG 5.48

CAB OPERATION CONTINUED ▶

# V. OPERATING INFORMATION

## ▶ CAB OPERATION CONTINUED



FIG 5.49

## STEERING COLUMN

To adjust the HAGIE 204's steering column for driver comfort or to ease cab exit and entry, locate the tilt lock lever in the center of the column (fig. 5.49). Push down on the lever to release the lock (fig. 5.50). Pull or push the column to the desired position and release the lever to re-lock the steering column.



FIG 5.50

## FUEL TANK SELECTOR

To draw engine fuel from the right fuel tank, depress the fuel selector switch (fig. 5.52) to the "RIGHT" position. To switch to the left tank, depress the fuel selector switch to the "LEFT" position. You may operate from either tank until the "YELLOW" low level indicator light illuminates. Then you must either switch to the other tank or refuel.

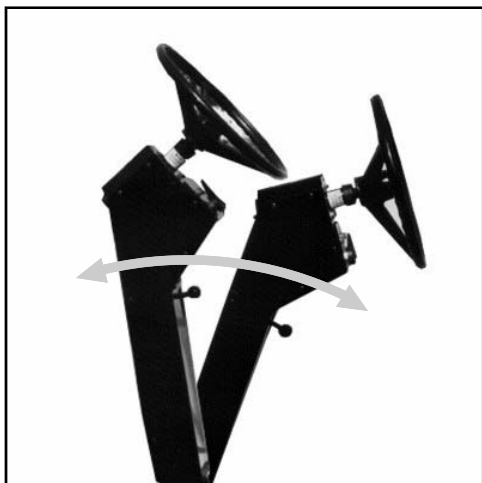


FIG 5.51



FIG 5.52

## CAB OPERATION CONTINUED ▶

# V. OPERATING INFORMATION

## ▶ CAB OPERATION CONTINUED

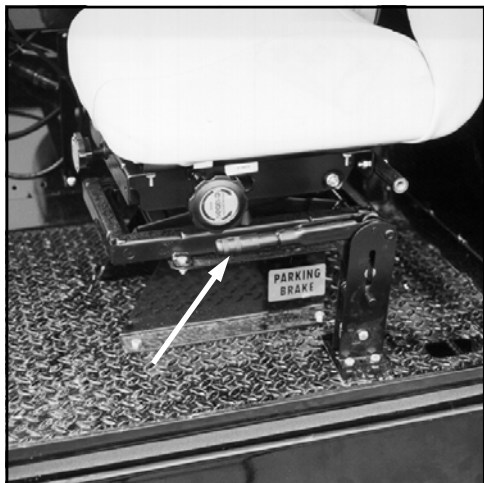


FIG 5.53

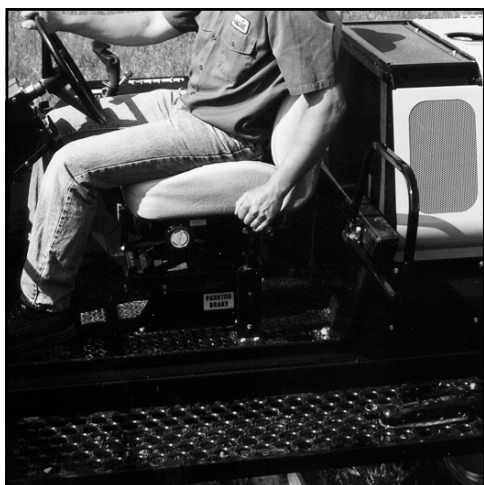


FIG 5.54



FIG 5.55

## PARKING BRAKE

The mechanically applied parking brake is located on the floor to the left of the operator's seat (fig. 5.53).

Activate the parking brake by pulling it up and back (fig. 5.54). If it is difficult to pull back, you can adjust the tension by adjusting the knob on the end of the lever (fig. 5.55). Turn it counter-clockwise to loosen and clockwise to tighten. DO NOT over loosen the parking brake adjusting knob.

### CAUTION

Over loosening of the parking brake adjustment knob may cause the brake to be ineffective.

CAB OPERATION CONTINUED ▶



# V. OPERATING INFORMATION

## LIGHTS

**WORK LIGHTS** – The front of the standard operator's station houses two halogen work lamps (fig. 5.59). The front of the optional canopy or cab houses four halogen work lamps (fig. 5.60) and the rear houses two halogen work lamps (fig. 5.58). Locate the light switch on the console panel (fig. 5.56). Pulling the switch out to the first "ON" position (fig. 5.57B) will activate all available lights. Pulling the switch out to the second "ON" position (fig. 5.57C) will deactivate the two outer front cab lights in addition to the two rear work lights (cab or canopy only).

The ignition key does not have to be on in order to operate any of the work lights, but extended use without the engine operating to charge the battery is not recommended.



FIG 5.56

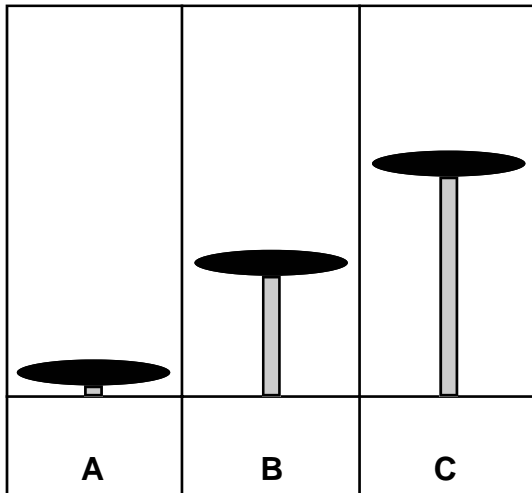


FIG 5.57



FIG 5.59

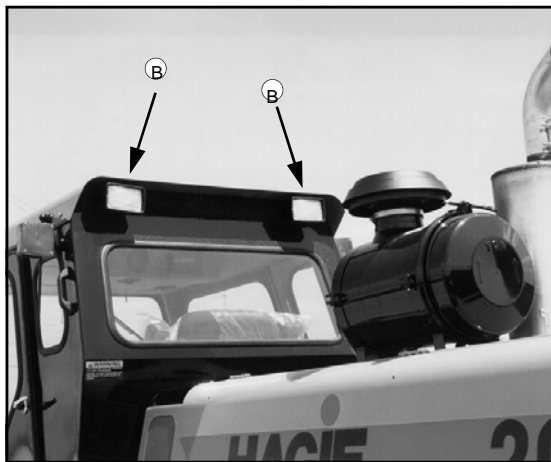


FIG 5.58

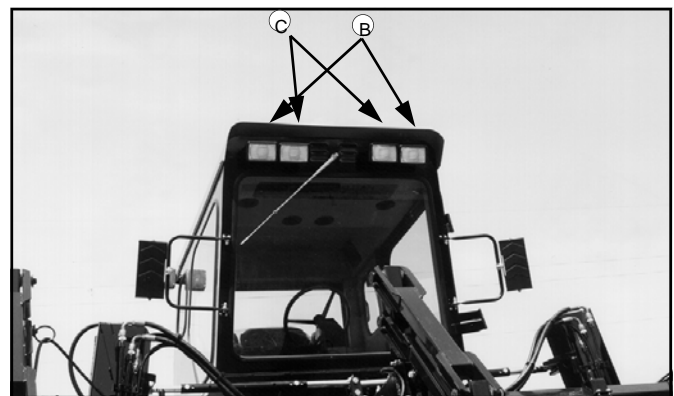


FIG 5.60

LIGHTS CONTINUED ►

# V. OPERATING INFORMATION

## ▶ LIGHTS CONTINUED

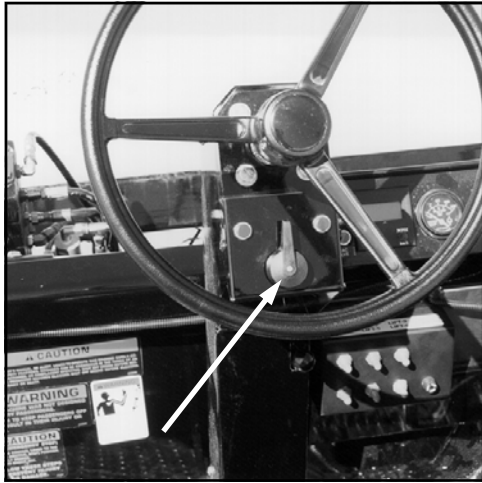


FIG 5.61

### Turn Signals

To activate the front (fig. 5.63, item 1 or 2) and rear turning signals (fig. 5.63, item 3) move the turn signal lever (fig. 5.61) right during a right-hand turn and left during a left-hand turn. Steering column-mounted turn signal indicators will correspondingly flash when either side of the turn signals is activated. The turn signal lever is not a self-centering switch; you must return it to the “OFF” position by hand after completing your turn.



FIG 5.62

### Hazard/Warning Lights

To activate the flashing hazard/warning lights (fig. 5.63, item 1 or 2) flip the “FLASHER” switch to the “ON” position (fig. 5.62). Activate the hazard/warning lights anytime traveling on a public road, day or night, unless prohibited by law.

### Running Lights

Activating any of the work lights (see page 70) will also turn on the “RED” running lights on the rear of the machine (fig. 5.63, item 3).

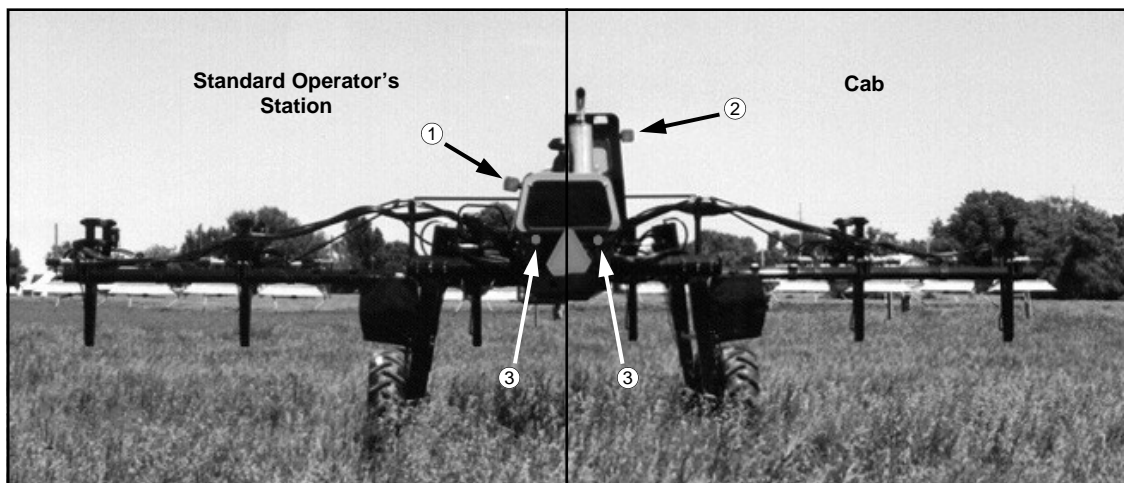


FIG 5.63

# V. OPERATING INFORMATION

---

## HAGIE 204 CAB



FIG 5.64

Emergency Exit.....	73
Climate Controls .....	74
Air Suspended Seat.....	75
Radio.....	76
Windshield Wiper .....	76
Interior Lighting .....	76

CAB OPERATION CONTINUED 

# V. OPERATING INFORMATION

## ▶ CAB OPERATION CONTINUED



FIG 5.65



## Emergency Exit

The right window in the cab is removable in the event that an emergency exit is required. To remove the rear window:

1. Grasp and pull the tag of the nylon ring next to the emergency exit decal (fig. 5.66) to remove the extrusion cord (fig. 5.67, item 1).
2. Push window outward until clear of window opening.
3. Climb out through window and away from hazardous situation.



FIG 5.66

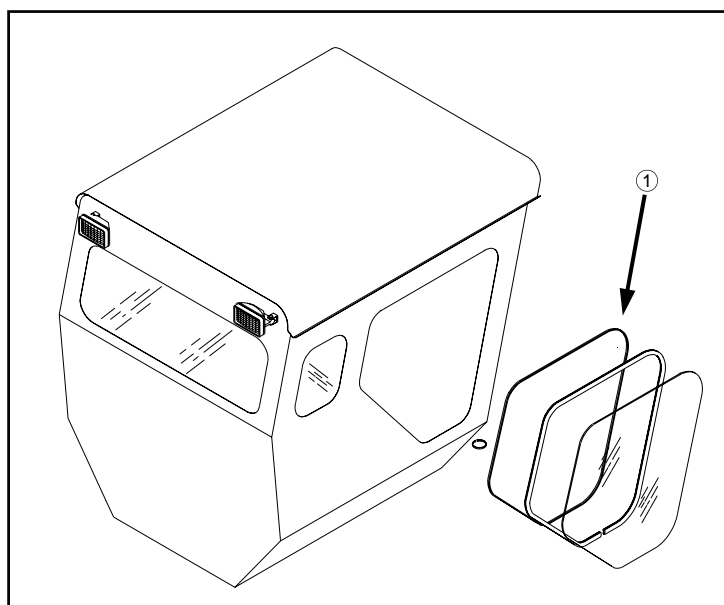


FIG 5.67

## CAB OPERATION CONTINUED ▶

# V. OPERATING INFORMATION

## ▶ CAB OPERATION CONTINUED

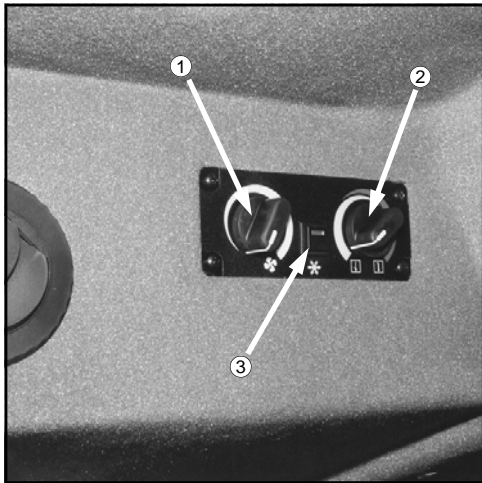


FIG 5.68

### Climate Controls

**ADJUSTING FAN BLOWER SPEED** - Fan blower speed is controlled by the left rotary dial on the cab climate control panel (fig. 5.68, item 1). The fan blower speed is a continuously variable adjustment. To increase fan speed, rotate fan blower dial clockwise. To reduce fan speed, rotate fan blower dial counterclockwise. To shut fan blower off, rotate fan blower dial all the way counterclockwise.

**ADJUSTING TEMPERATURE SETTING** - Forced air temperature adjustments are controlled by the right rotary dial on the cab climate control panel (fig. 5.68, item 2). Temperature control is a continuously variable adjustment. To increase forced air temperature, rotate temperature dial clockwise. To decrease forced air temperature, rotate temperature dial counterclockwise.

**OPERATING AIR CONDITIONING** - To activate the air conditioner, depress the air conditioning switch (fig. 5.68, item 3). Adjust fan speed and temperature accordingly.

**ADJUSTING VENTS** - Air vents may be adjusted by rotating them for desired direction (fig. 5.69) or individually turned on or off with the directional fins (fig. 5.70).

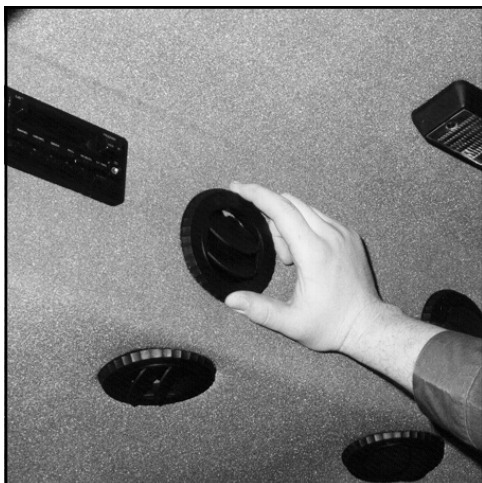
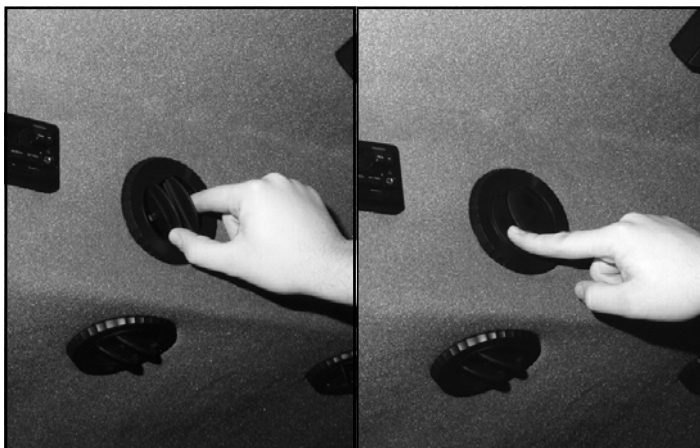


FIG 5.69

**SERVICING A/C SYSTEM** - See page 91

and pages 105-106 for service information.



A

FIG 5.70

B

## CAB OPERATION CONTINUED ▶

# V. OPERATING INFORMATION

## ▶ CAB OPERATION CONTINUED

### AIR SUSPENDED CAB SEAT

- 1- **Ride Firmness.** Pull knob out to release air and “soften” ride. Push knob in to pump air and “stiffen” ride. (Ignition key must be in the “ON” position in order to activate the seat pump.)
- 2- **Fore-Aft Adjustment.** Release fore-aft lock by pulling lever out. Slide forward or back to desired position. Release lever to lock.
- 3- **Height Adjustment.** Release height lock by pulling lever up. Apply body weight slowly to lower seat position or remove body weight slowly to raise seat position. When at desired height release lever to lock.
- 4- **Back Angle Adjustment.** Rotate knob counter-clockwise to tilt back rest forward and clockwise to tilt back rest back.
- 5- **Arm Rest Adjustment.** Unzip either arm rest to expose the arm rest adjustment bolt. Turn bolt in to raise arm rest tilt and out to lower arm rest tilt (fig. 5.71, item 6).



FIG 5.71

CAB OPERATION CONTINUED ▶

# V. OPERATING INFORMATION

---

## ▶ CAB OPERATION CONTINUED

### Radio

Your Hagie 204 is equipped with an auto reverse AM/FM cassette tuner (fig. 5.72) and two speaker system. For stereo system operation and installation information refer to the radio owner's manual that accompanies this operator's manual.

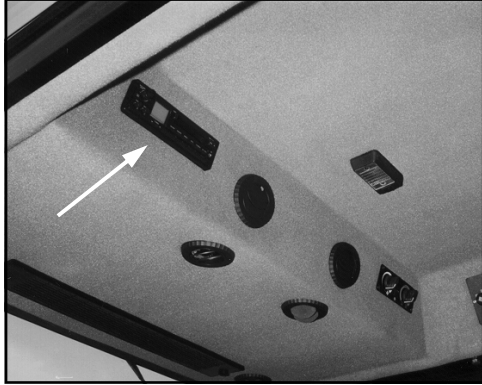


FIG 5.72

### Windshield Wiper

To turn the windshield wiper on, locate the windshield switch toward the rear of the console panel (fig. 5.73). Flip the switch to the "ON" position. The wiper will continue to operate until the switch is returned to the "OFF" position.

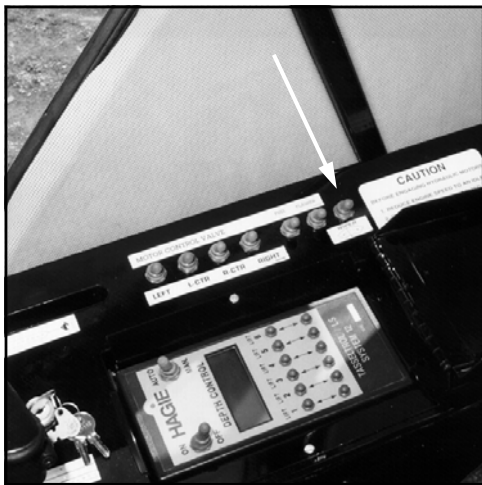


FIG 5.73

### Interior Lighting

Interior lighting is provided by a ceiling mounted dome light (fig. 5.74). The ignition key must be in the "OPERATING" position for the interior light to operate.



FIG 5.74

# VI. TRANSPORTING

---

## A. DRIVING:

When driving the detasseler on a public road or highway, drive carefully and follow these steps:

1. Always have the outrigger in the folded position and locked when driving or transporting.



**FIG 6.1**

2. Flashing hazard/warning lights have been placed on the detasseler to warn other drivers.
3. A SMV (Slow Moving Vehicle) emblem has been mounted on the detasseler to warn other drivers that one is moving slowly. Keep it properly displayed, unless prohibited by law.
4. Know and obey all state laws for driving farm equipment on a public road or highway.
5. Adjust the detasseler's speed to suit the conditions.
6. Slow down and use turn signals before turning.
7. Pull over to side of road before stopping.
8. Keep a proper lookout, and maintain control of the detasseler.
9. Do not drive under trees, bridges, wires, or other obstructions unless there is clearance.
10. Use extra care before entering or leaving a public road or highway.



# VI. TRANSPORTING

---

## B. TRAILERING:

**NOTE:**

Extra care should be taken when loading the detasseler onto any trailer. Consider whether it is best to back the detasseler on or drive the detasseler forward.

### 1. Loading:

**NOTE:**

Be sure to read and understand the trailer's owner and operator manual. Hitch the trailer to the pulling vehicle as shown in the trailer's owner and operator manual.

When moving the detasseler onto a trailer, follow these steps completely:

- a. Pull the trailer to flat ground. Apply the pulling vehicle's parking brake and turn off the engine.  
Use tire chocks to keep the trailer from moving.
- b. Fold in the detasseler's outriggers and lock them to the detasseler.
- c. Lower the trailer ramps and set the ramp spacing for the detasseler's tread setting.
- d. Get someone to help guide you onto the trailer. Keep everyone a safe distance from the detasseler.

 **WARNING**

Stopping the detasseler on the trailer loading ramps may result in detasseler tip-over.

- e. Allow enough room between the detasseler and the pulling vehicle for turning.
- f. Secure the detasseler to the trailer. See the trailer's owner and operator manual for instructions.
- g. Cover or remove the SMV (Slow Moving Vehicle) emblem when traveling over 25 miles per

TRAILERING CONTINUED 

## VI. TRANSPORTING

---



**FIG 6.2**

**NOTE:**

The loaded height and width of the trailer must conform to the law of the state in which it is being used.

### 2. UNLOADING:

When moving the detasseler off of a trailer, follow these steps completely:

- a. Pull the trailer to flat ground. Apply the pulling vehicle's parking brake and turn off the engine.  
Use tire chocks to keep the trailer from moving.
- b. Lower the trailer ramps and set ramp spacing for the detasseler's tread setting.
- c. Release securing restraints carefully.
- d. Get someone to help guide off the trailer. Keep everyone a safe distance from the detasseler.
- e. Uncover or replace the SMV (Slow Moving Vehicle) emblem.

## VI. TRANSPORTING

---

**NOTE:**

It is not recommended that the detasseler be towed, but if it should ever be necessary, follow these steps carefully:

### C. TOWING

1. Fold the outriggers in and lock them to the detasseler.
2. Disengage each Torque Hub<sup>®</sup> by removing two outer cap bolts, turning the outer cap with the extended center in towards the hub and re-installing the two outer cap bolts. This process pushes on a spring-loaded splined shaft, disengaging the Torque Hub<sup>®</sup> (fig. 6.3).



**FIG 6.3**

**NOTE:**

Wheel motors will be damaged if these steps are not taken.

**⚠ CAUTION**

When re-engaging Torque Hubs<sup>®</sup>, make sure spring-loaded splined shaft has returned to its extended position.

TOWING CONTINUED 

## VI. TRANSPORTING

---

**NOTE:**

In order for the power steering system to function, the detasseler's engine must be running.

3. Turn on the flashing hazard/warning lights.
4. When towing, it is necessary that two vehicles of sufficient size and weight for adequate pulling and braking are used. One of these vehicles is used for pulling the detasseler; the second vehicle for braking if the detasseler starts to overtake the towing vehicle, such as going downhill. The reason for this is the detasseler, once the Torque Hubs<sup>®</sup> have been disengaged, has no braking power of its own. Use extreme caution.

 **WARNING**

**Secure items (tow straps, chains, etc.) between towing vehicle, braking vehicle, and detasseler to ensure that they will not dislodge.**

5. If necessary, relocate the SMV emblem so that it is visible from the rear.
6. Always reduce towing speed well in advance of any anticipated turns.
7. Know and obey the state laws for towing farm equipment on public roads and highways.

**NOTE:**

Excessive speed may cause damage to the Torque Hubs<sup>®</sup> as well as the hydrostatic system. Do not exceed 25 MPH when towing detasseler.

# VII. SERVICE AND MAINTENANCE

PAGE NO	Service Point	CLEAN	CHANGE	CHECK	GREASE	DRAIN
	ENGINE OIL		A	DAILY		
	RADIATOR COOLANT LEVEL			DAILY		
	COOLANT OVERFLOW RESERVOIR LEVEL			DAILY		
	COOLANT CONCENTRATION		AS REQ	500 HRS*		
	RADIATOR GRILLE SCREENS	AS REQ				
	ENGINE DRIVE BELT		AS REQ	DAILY		
	A/C COMPRESSOR BELT (CAB ONLY)		AS REQ	250 HRS		
	A/C COMPRESSOR (CAB ONLY)		B			
	A/C DRYER (CAB ONLY)		AS REQ			
	PRIMARY FUEL FILTER (WATER SEPARATOR) (DIESEL)		500 HRS*			DAILY
	SECONDARY FUEL FILTER (DIESEL)		500 HRS*			
	IN-LINE FUEL PRE-FILTER (DIESEL)		AS REQ			
	IN-LINE FUEL FILTERS (2) (GASOLINE)		500 HRS*			
	CARBURETOR FILTER (GASOLINE)		500 HRS*			
	AIR INTAKE FILTER	NOT REC	C			
	FILTER MINDER® (DIESEL ONLY)		D	DAILY		
	HYDRAULIC RESERVOIR OIL LEVEL		500HRS**	DAILY		
	HYDRAULIC SUCTION FILTER		E*			
	HYDROSTATIC CHARGE PRESSURE FILTER		E*			
	HYDRAULIC RETURN FILTER		E*			
	NEUTRAL SETTING OF HYDROSTATIC PUMP		AS REQ	DAILY		
	HIGH-PRESSURE IN-LINE FILTER (LIFT STACK VALVE )	AS REQ				
	TORQUE HUB® OIL LEVEL		F	DAILY		
	TORQUE HUB® ZERK (4 PLACES - 1 EACH)				75 HRS	
	QUAD PULLER PSI (4 PLACES EACH ROW)			DAILY		
	QUAD PULLER BEARING (4 PLACES EACH ROW)				2X DAILY	
	MALE CORN CHOPPER BEARING (2 PLACES EACH ROW)				DAILY	
	LEG BEARING ZERKS (4 PLACES - 2 EACH)				DAILY	
	TIE ROD LINKAGE (4 PLACES – 2 EACH)			DAILY	50 HRS	
	LEG MOUNT BOLT TORQUE			DAILY		
	BATTERY	100 HRS	AS REQ	DAILY		
	LUG NUT TORQUE			G		
	TIRE PRESSURE			50 HRS		
	FRESH AIR CAB FILTER (CAB ONLY)	AS REQ*	AS REQ			
	CHARCOAL CAB FILTER (CAB ONLY)		AS REQ			
	RECIRCULATION FILTER (CAB ONLY)		AS REQ			
	FUSES/CIRCUIT BREAKERS		AS REQ			
	HYDRA-HUG® LEG SUSPENSION FLUID		H			

\*OR YEARLY, WHICHEVER COMES FIRST; OR AS REQUIRED

\*\*OR AT THE BEGINNING OF THE SEASON, WHICHEVER COMES FIRST; OR AS REQUIRED

NOTE A: SEE ENGINE MANUFACTURER'S HAND BOOK

NOTE B: CHARGE AS REQ; USE PROPER EQUIPMENT

NOTE C: FOLLOW FILTER MINDER READINGS

NOTE D: RESET EACH TIME YOU SERVICE AIR FILTER

NOTE E: 1ST 50 HRS, THEN 250 HRS THEREAFTER

NOTE F: 1ST 50 HRS, THEN 250HRS THEREAFTER

NOTE G: IMMEDIATELY, THEN 50 HRS THEREAFTER

NOTE H: ADJUST FLUID LEVEL ACCORDINGLY

# VII. SERVICE AND MAINTENANCE

## SERVICE INTERVALS

### Initial checks after receiving machine

**IMMEDIATELY**  then 

- 1) Check lug nut torque, then every 50 hours (page 108)

**FIRST 50 HOURS**  then 

- 1) Change Torque Hub<sup>®</sup> oil 50 hrs, then every 250 hours (page 87)
- 2) Change hydrostatic charge pressure filter, then every 250 hours (page 94)
- 3) Change hydraulic suction filter, then every 250 hours (page 94)
- 4) Change hydraulic return filter, then every 250 hours (page 94)

**Daily** 

- 1) Check engine oil (page 86)
- 2) Drain primary fuel filter (water separator) (page 96)
- 3) Check radiator coolant level (page 97)
- 4) Check radiator coolant overflow reservoir level (page 89)
- 5) Check engine drive belt (pages 105 or 106)
- 6) Check Filter Minder<sup>®</sup> (page 93)
- 7) Check hydraulic oil reservoir level (page 86)
- 8) Check for neutral setting of hydrostatic pump (page 107)
- 9) Grease all leg bearings (page 98)
- 10) Check tie rod linkage (page 98)
- 11) Check leg mount bolts (page 109)
- 12) Check battery (page 101)
- 13) Check quad puller PSI (page 30)
- 14) Grease quad puller bearings (2X) (page 99)
- 15) Grease male corn chopper bearings (4X) (page 99)

SERVICE INTERVALS CONTINUED 

## VII. SERVICE AND MAINTENANCE

---

### ▶ SERVICE INTERVALS CONTINUED

As Required



- 1) Change coolant concentration (page 88)
- 2) Clean radiator grille screens (page 92)
- 3) Change engine drive belt (page 105 or 106)
- 4) Change A/C compressor belt (page 105 or 106)
- 5) Change A/C dryer (page 95)
- 6) Charge A/C compressor (page 91)
- 7) Change primary fuel filter (water separator) (page 96)
- 8) Change secondary fuel filter (page 96)
- 9) Change in-line fuel pre-filter(s) (page 96)
- 10) Change carburetor filter (page 96)
- 11) Change hydraulic reservoir oil (page 86)
- 12) Adjust neutral setting of hydrostatic pump (page 107)
- 13) Clean high-pressure in-line filter on lift assembly stack valve (page 95)
- 14) Change battery (page 101)
- 15) Clean fresh air intake cab filter (page 97)
- 16) Change fresh air intake cab filter (page 97)
- 17) Change charcoal cab filter (page 97)
- 18) Clean recirculation cab filter (page 97)
- 19) Replace fuses and circuit breakers (pages 102-104)
- 20) Adjust Hydra-Hug<sup>®</sup> leg suspension fluid (page 90)
- 21) Grease Torque Hub<sup>®</sup> seal boot (page 99)

SERVICE INTERVALS CONTINUED ▶

# VII. SERVICE AND MAINTENANCE

## ▶ SERVICE INTERVALS CONTINUED

Every 50 HOURS



- 1) Check tire pressure (page 110)
- 2) Check lug nut torque (page 108)
- 3) Grease all tie rod zerks (page 98)

Every 75 HOURS



- 1) Grease Torque Hub® seal boot (page 99)

Every 100 HOURS



- 1) Check Torque Hub® oil level (page 87)
- 2) Clean battery (101)

Every 250 HOURS



- 1) Check A/C compressor belt (page 105 or 106)
- 2) Change hydrostatic charge pressure filter (page 94)
- 3) Change hydraulic suction filter (page 94)
- 4) Change hydraulic return filter (page 94)

Every 500 HOURS



- 1) Check coolant concentration (page 88)
- 2) Change diesel primary fuel filter (water separator) (page 96)
- 3) Change diesel secondary fuel filter (page 96)
- 4) Change hydraulic reservoir oil (page 86)
- 5) Change Torque Hub® oil (page 87)
- 6) Change gasoline in-line filters (3) (page 96)
- 7) Pack bearing in non-drive tire hub in tire puller assembly (page 100)



# VII. SERVICE AND MAINTENANCE

## FLUIDS

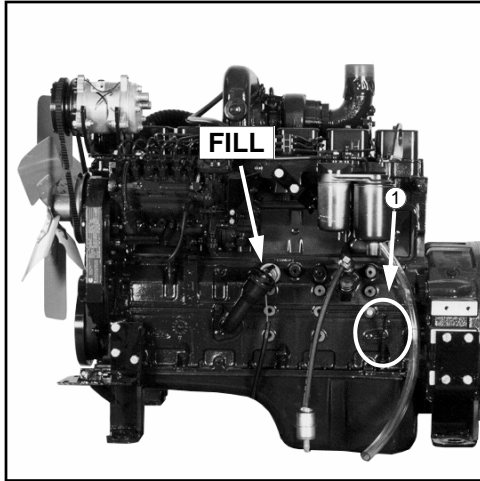


FIG 7.1

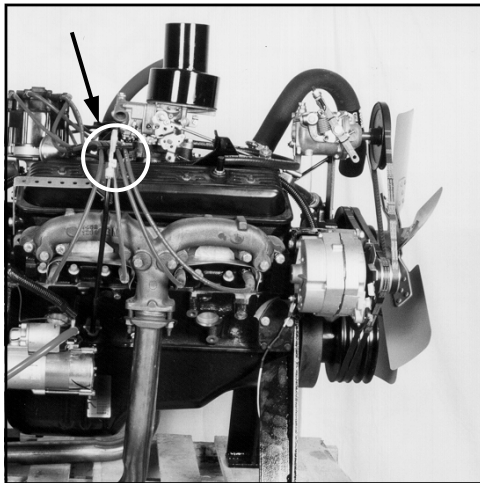


FIG 7.2



FIG 7.3

### Engine oil

**OIL LEVEL** - The engine oil level dipstick is located on the left-hand side of the diesel engine (fig. 7.1, item 1) and the right-hand side of the gas engine (fig. 7.2). Never operate the engine with the oil level below the "L" (low) mark or above the "H" (high) mark. Wait at least five minutes after shutting off the engine to check the oil level; this allows time for the oil to drain to the oil pan. Check the engine oil level daily.

**CAPACITY** - Low to high mark capacity for the diesel engine is 2.0 quarts and 1.0 quart for the gas engine. Engine oil pan capacity (including filter) for the diesel is 17 quarts (SAE 15W 40) and 6 quarts (SAE 30) for the gasoline engine. Refer to Engine Operation and Maintenance manual for maintenance schedule of the diesel engine.

#### NOTE:

The engine must be level when checking the oil level to make sure the measurement is correct.

### Hydraulic Oil Reservoir

**OIL LEVEL** - Check the hydraulic oil level in the reservoir using the dipstick daily (fig. 7.3). Add just enough fluid so the level reaches the bottom tip of the dipstick. Hydraulic oil will expand when heated in a system, and measuring the reservoir by these levels allows for expansion. Always check the hydraulic oil level when it is cool and with lift cylinders in lowered position.

**TYPE** - Premium hydraulic fluids containing high quality rust/oxidation/and foam inhibitors are required. Hydraulic oil must conform to one of the following types: anti-wear hydraulic oil, type F automatic transmission fluid, or agricultural hydraulic transmission fluid. Replace the oil in the hydraulic reservoir at 500 hours or at the beginning of each detasseling season, whichever comes first.

# VII. SERVICE AND MAINTENANCE

## ▶ FLUIDS CONTINUED

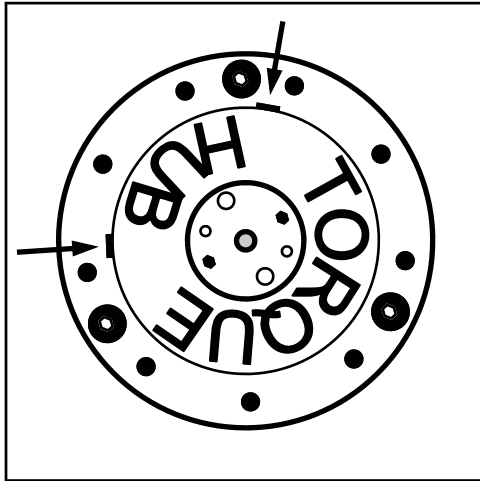


FIG 7.4

### Torque Hub<sup>®</sup> Oil

**OIL LEVEL** - Each Torque Hub<sup>®</sup> should maintain an oil level of half full at all times. Less than that would limit lubrication, and over half full could cause overheating and damage. To check oil level, position Torque Hub<sup>®</sup> so one of the drain plugs is positioned at 12 O'clock (fig. 7.4). The other plug will be either at 9 O'clock or 3 O'clock. Remove the lower plug: if no oil comes out, oil level is too low. Check Torque Hub<sup>®</sup> oil level every 100 hours.

If EP-90 oil is needed, remove the top plug and fill until it just starts to come out the lower hole (fig. 7.5). With the oil at a satisfactory level, re-install plugs.

**CHANGE** - The Torque Hub<sup>®</sup> oil should be changed after the first 50 hours of operation. Subsequently, it should be changed every 250 hours after that, or once a year whichever comes first.

To change the Torque Hub<sup>®</sup> oil, position one of the plugs at 6 O'clock, and the other at either 3 O'clock or 9 O'clock. Remove the bottom plug to drain the oil. Once all of the oil is drained, re-install the bottom plug and remove the top plug. Refill Torque Hub<sup>®</sup> with EP-90 oil as described above.

**GENERAL MAINTENANCE** - If your detasseler is going to sit for an extended period of time, occasionally rotate the hubs by driving the detasseler forward or backward a few feet to adequately coat all internal hub parts (fig. 7.6). This will prevent rusting if moisture inadvertently entered the hub during an oil change. Failure to rotate hub and disperse oil may cause rusting and internal damage.



FIG 7.5

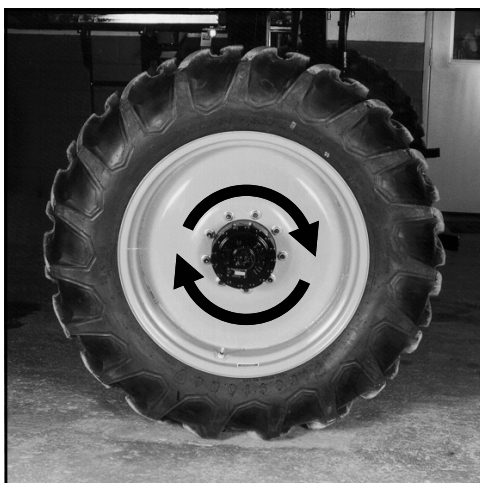


FIG 7.6

## FLUIDS CONTINUED ▶

# VII. SERVICE AND MAINTENANCE

## ▶ FLUIDS CONTINUED



FIG 7.7

### Cooling System

**COOLANT TYPE** - Your cooling system should always be sufficiently charged with an adequate mixture of antifreeze and water, regardless of the climate, in order to maintain a broad operating temperature range. Your cooling system has been factory-charged with an ethylene glycol-based antifreeze.

**NOTE:**

Ethylene glycol-based antifreeze and propylene glycol-based antifreeze should never be mixed.



FIG 7.8

**CHECKING CONCENTRATION** - The radiator cap is located immediately behind the rear of the operator's station (fig. 7.7). Never remove a cap from a hot engine. Always allow the engine to cool before servicing cooling system.

A 50/50 antifreeze/water mixture is a conservative mixture which allows good protection against both overheating and freezing. If a stronger antifreeze mixture is required, be sure not to exceed the engine manufacturer's guidelines for antifreeze mixing. The table in figure 7.9 gives a few examples of ethylene glycol antifreeze/water mixture protection values. Consult the engine manufacturer's handbook for further information.

Ethylene Glycol		
40%	-23°C	-10°F
50%	-23°C	-34°F
60%	-23°C	-65°F

FIG 7.9

Concentration should be checked every 500 hours or at the beginning of each winter, whichever comes first. It should be checked using a refractometer; "floating ball"-type density testers or hydrometers are not accurate enough for use with heavy duty diesel cooling systems.

## FLUIDS CONTINUED ▶

# VII. SERVICE AND MAINTENANCE

## ▶ FLUIDS CONTINUED

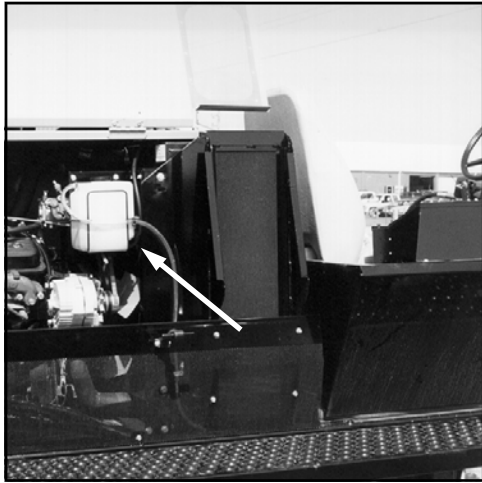


FIG 7.10

**COOLANT RESERVOIR** - The coolant reservoir is located under the right-hand hood behind the radiator (fig 7.10). Check its level everyday while the engine is cold. Maintain the coolant reservoir level within the normal cold range marks.

**CHANGING COOLANT** - Your coolant should periodically be changed to eliminate the buildup of harmful chemicals. Drain and replace the coolant every other detasseling season or every 1,000 hours of operation, whichever comes first. Refill only with ethylene glycol coolant. Antifreeze should be mixed only with soft water because hard water contains minerals which breakdown the anti-corrosion properties of antifreeze.

## Fuel

**TYPE – (Cummins)** No. 2 diesel fuel is recommended for the best economy and performance under most operating conditions. In operating conditions under 32° F, use a blend of No. 1 and No. 2 diesel fuel. The addition of No. 1 diesel fuel may cause loss of power and/or fuel economy.

**TYPE – (GM)** Unleaded gasoline is recommended.

**STORING** - See section 8 on detasseler storage.

**REFILLING** - Always turn off the engine and allow it to cool before refueling. Never smoke while fueling. Keep a fire extinguisher within reach while refueling.

Each tank holds 40 gallons - do not fill them completely: fuel can expand and run over. Wipe up all spilled fuel and clean with detergent and water before starting the engine.

**PRIMING (Diesel)** - If the fuel system should happen to run dry and lose its prime, there is a priming bulb located on the left side of the engine for use in filling the engine fuel filters (fig. 7.12).



FIG 7.11

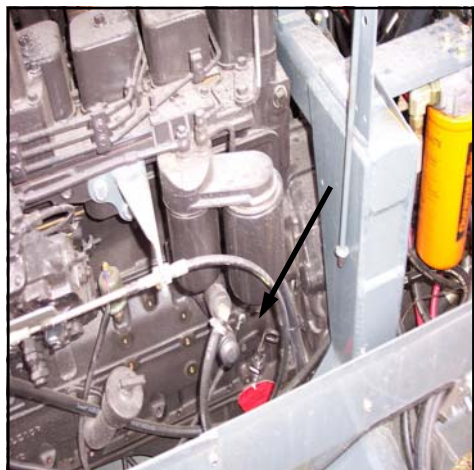


FIG 7.12

FLUIDS CONTINUED ▶

# VII. SERVICE AND MAINTENANCE

## ▶ FLUIDS CONTINUED

### Hydra-Hug<sup>®</sup> Leg Suspension

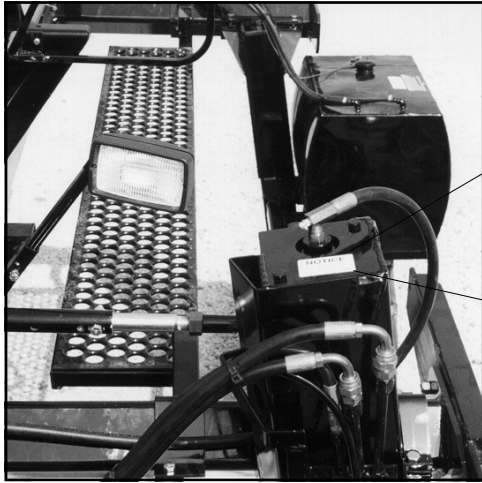


FIG 7.13

## NOTICE

USE SAE 80/90 GEAR OIL  
TO ADJUST FRONT LEGS.

SEE OWNER'S MANUAL

To adjust the Hydra-Hug<sup>®</sup> suspension system, fill a grease gun with EP-90 weight oil (fig. 7.14) and attach to the fitting located on top of the left leg (fig. 7.13).

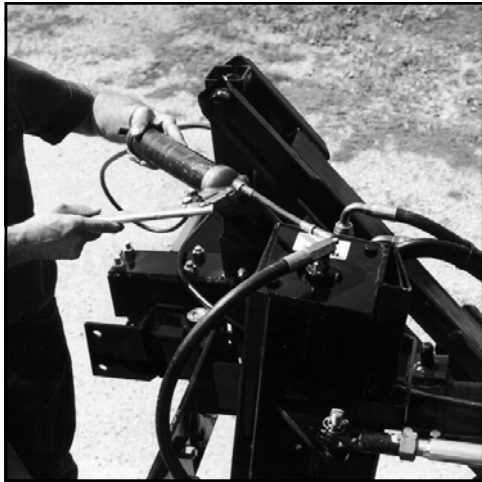


FIG 7.14

Fill the system until the dimensions above and below the steering arm are equal (fig. 7.15, dim. A).

## NOTE:

Improper fluid level will affect  
toe-in. See page 25.

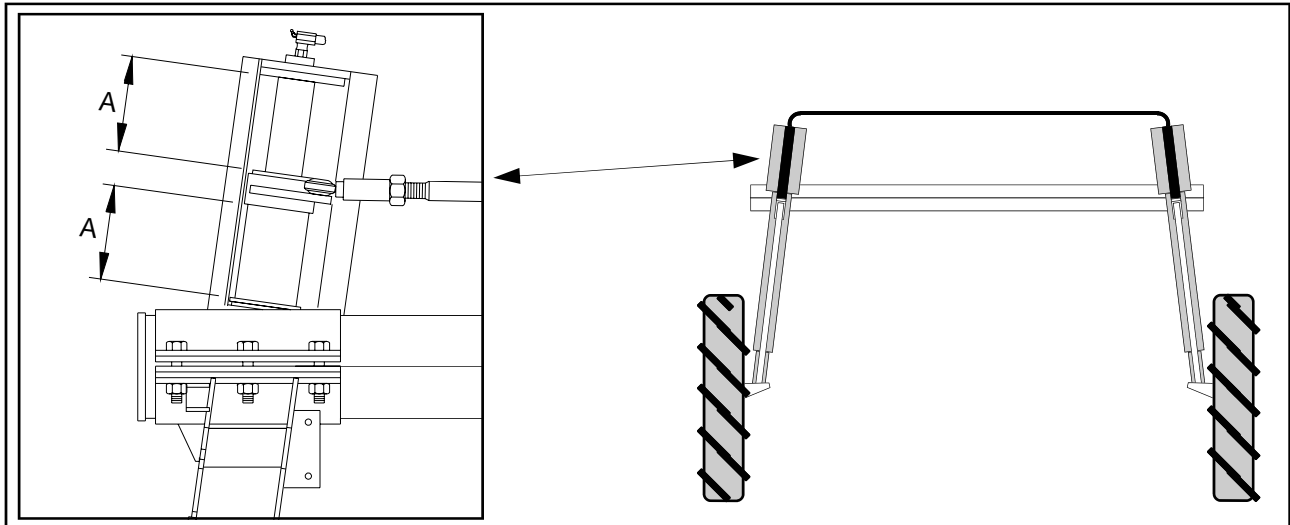


FIG 7.15

# VII. SERVICE AND MAINTENANCE

## ▶ FLUIDS CONTINUED

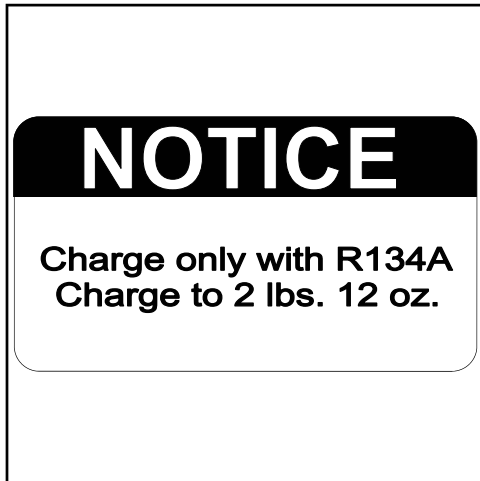


FIG 7.16

### Air Conditioning

**TYPE** - The cab on your detasseler is equipped with a R-134a air conditioning system.

**RECHARGING** - Recharge it only with R-134a refrigerant. If your air conditioning system is mistakenly charged with R-12 refrigerant, serious problems, such as compressor seizure, may result. Therefore, confirm refrigerant before recharging system.

If you do not have the proper recharging equipment, it is recommended that you allow an independent service agent service your air conditioning system.

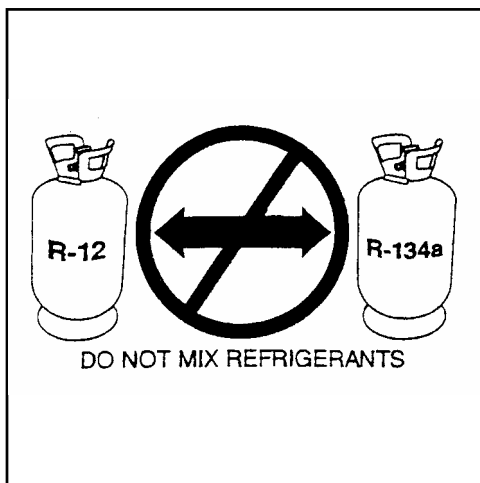


FIG 7.17

### FLUID CAPACITIES AND TYPES

Engine oil pan (diesel-including filter) .....	17 quarts SAE 15W-40
Engine oil pan (gasoline-including filter) .....	6 quarts SAE 30W
Engine oil dipstick, L-H mark (diesel).....	2 quarts
Engine oil dipstick, L-H mark (gasoline).....	1 quart
Hydraulic oil reservoir .....	25 gallons anti-wear hydraulic oil
Torque Hub® oil level .....	approx. 16 oz. EP-90
Engine cooling system.....	7 gallons ethylene glycol
Fuel tanks (2) .....	40 gallons ea. No. 1 or 2 diesel Or unleaded Gasoline

# VII. SERVICE AND MAINTENANCE

## FILTERS

### Grille Screens

In order to maintain maximum air flow through the engine cooling system's radiator, oil cooler, and air conditioning condenser, the cooling air intake grille screens must be inspected often and periodically removed for cleaning.



FIG 7.18

#### NOTE:

Failure to keep cooling systems clean can cause over heating and damage to the hydrostatic system and/or engine.



FIG 7.19

**REMOVAL** - The side grille screens are easily removed by sliding them up out of their housings (fig. 7.18). The top screen is held in place by two bolts (fig. 7.19) and may also be removed for cleaning.

**CLEANING** - Compressed air will dislodge most large trash or loose dirt after the screens have been removed (fig. 7.20). Blow out the screens away from the machine. Water from a pressurized hose may also be used, or if necessary the screens may be soaked in soapy water and scrubbed with a brush.

#### NOTE:

When cleaning cooling fins of the radiator, oil cooler, or A/C condenser with compressed air or water, be careful not to damage cooling fins which may impair cooling capabilities.



FIG 7.20

FILTERS CONTINUED 

# VII. SERVICE AND MAINTENANCE

## ▶ FILTERS CONTINUED



FIG 7.21

### Engine Air Intake

**REMOVAL** - The engine air intake filter element should only be removed if it is going to be replaced. After loosening the air cleaner clamp and removing the end cap, carefully remove the filter so as to not knock any dust off the filter and into the air intake passage (fig. 7.22).

**REPLACEMENT** - If your detasseler is equipped with a diesel engine it has a Filter Minder<sup>®</sup> to notify you of filter element efficiency. Follow its guidelines for servicing. (See below.) At appropriate service time, install the new element carefully to ensure proper sealing.

**CLEANING** - It is not recommended to clean the air filter element. However, a clean damp cloth should be used to wipe dust and foreign material from the air cleaner housing before a new element is installed.

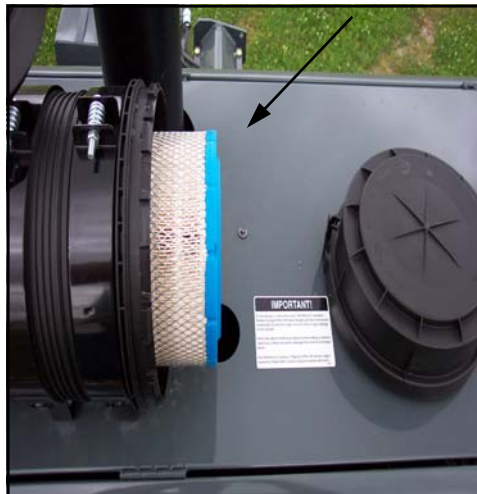


FIG 7.22

### Filter Minder<sup>®</sup>

The Filter Minder<sup>®</sup> is an air restriction monitoring system that progressively and constantly indicates how much air filter capacity remains. Check its reading daily.

Service the air cleaner when the Filter Minder<sup>®</sup> reads 20" (80% of average dirt holding capacity). Reset the Filter Minder<sup>®</sup> to zero each time you replace the air filter element.



FIG 7.23

**NOTE:**  
Service the air cleaner on diesel-equipped detassellers before the yellow indicator reaches the red line of the Filter Minder<sup>®</sup>.

FILTERS CONTINUED ▶



# VII. SERVICE AND MAINTENANCE

## ▶ FILTERS CONTINUED



FIG 7.24

### Suction Filter

Remove and install a new 10 Micron rated suction filter (fig. 7.24, item 3) at the end of the first 50 hours of use; subsequently, replace the filter every 250 hours, or once a year, whichever comes first.

### Charge Pressure Filter

Remove and install a new 4 Micron rated charge pressure filter (fig. 7.24, item 2) at the end of the first 50 hours of use; subsequently, replace the filter every 250 hours, or once a year, whichever comes first.

### Return Filter

Remove and install a new 10 Micron rated return filter (fig. 7.24, item 1) at the end of the first 50 hours of use; subsequently, replace the filter every 250 hours, or once a year, whichever comes first.

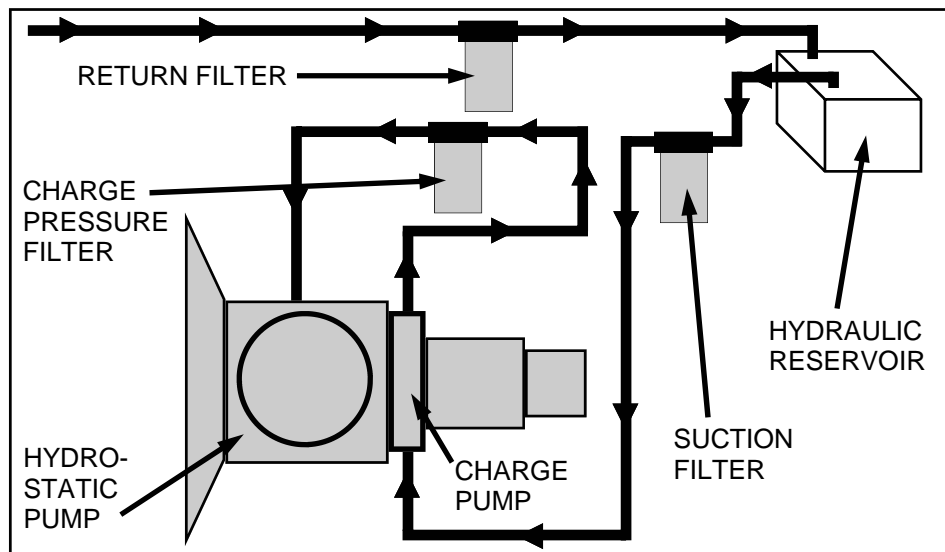


FIG 7.25

## FILTERS CONTINUED ▶

# VII. SERVICE AND MAINTENANCE

## ▶ FILTERS CONTINUED

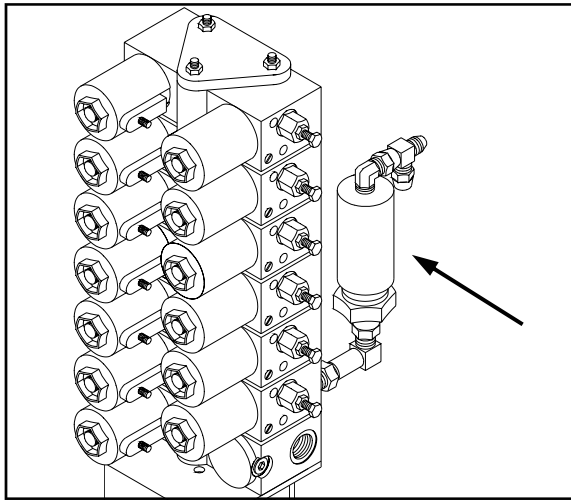


FIG 7.26

### High Pressure In-line Filters

**STACK VALVES** - The valves on the lift control stack valve are protected by a 90 Micron in-line sintered bronze filter (fig. 7.26). When the filter element is removed for cleaning, caution should be taken so the gasket is in the proper place when re-installing (fig. 7.27). Also, re-install filter paying attention to direction of flow so the end marked "OUT" is oriented correctly.

### A/C System Dryer (if equipped)

The A/C system receiver/dryer (fig. 7.28) should be replaced if the A/C loop is ever opened such as replacing a compressor or condenser line, etc.

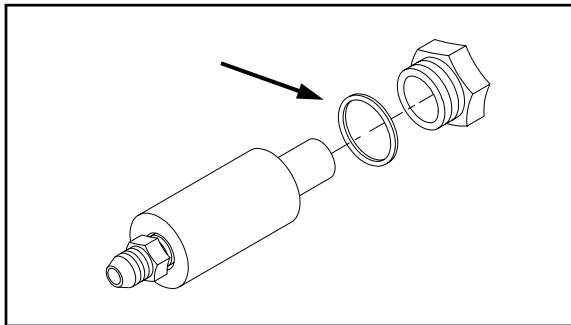


FIG 7.27

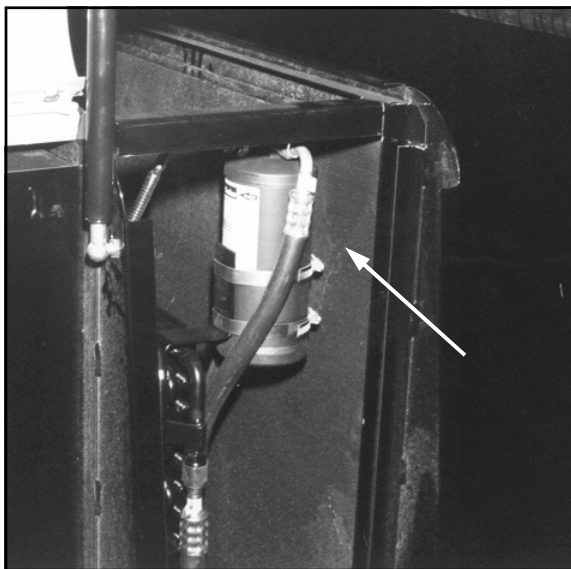


FIG 7.28

# VII. SERVICE AND MAINTENANCE

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## ▶ FILTERS CONTINUED

### FUEL FILTERS

#### Diesel

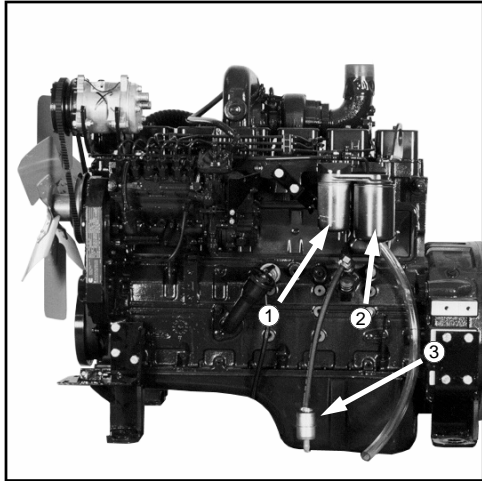


FIG 7.29

**PRIMARY (WATER SEPARATOR)** - (fig. 7.29, item 2) Drain water and sediment from the separator daily. Replace every 500 hours or once a year, whichever comes first.

**SECONDARY** - (fig. 7.29, item 1) Replace every 500 hours or once a year, whichever comes first.

**IN-LINE STRAINER** - (fig. 7.29, item 3) Note direction of fuel flow arrow when replacing.

#### Gasoline



FIG 7.30

**IN-LINE STRAINER** - (fig. 7.30) Each fuel line is fitted with an in-line fuel strainer between the fuel tank and the fuel pump. Note direction of fuel flow arrow when replacing.

**CARBURETOR** - (fig. 7.31) The carburetor is also equipped with an in-line fuel filter. Note direction of fuel flow arrow when replacing.

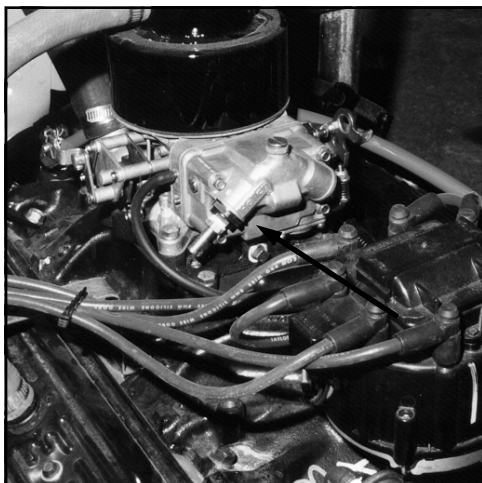


FIG 7.31

# VII. SERVICE AND MAINTENANCE

## ▶ FILTERS CONTINUED

### Fresh Air Cab Filters

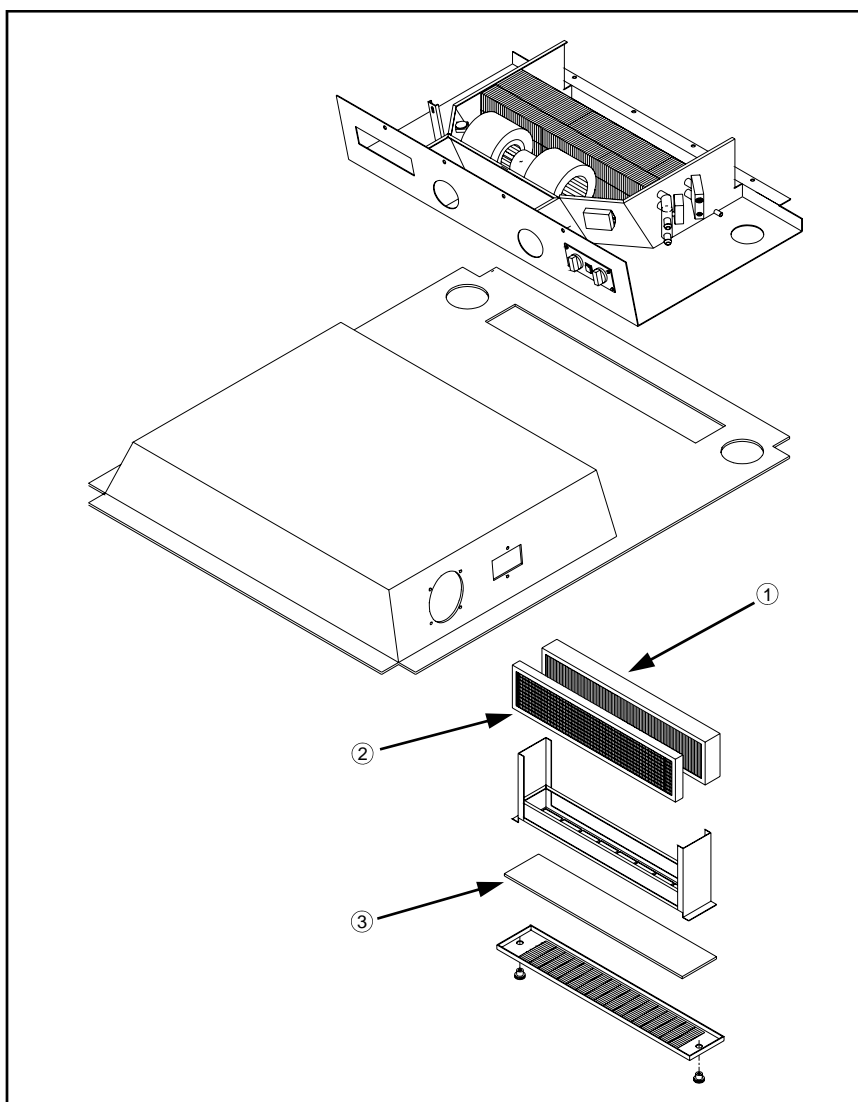


**CAB FILTER LOCATION  
FIG 7.32**

**PAPER FILTER** - (fig. 7.33, item 1) The paper filter should be cleaned once a year, or more often if necessary. Remove the paper element and gently tap it against a flat surface. Direct low pressure compressed air through the filter to remove larger particles. Replace the paper filter if necessary.

**CHARCOAL FILTER** - (fig. 7.33, item 2) Remove and replace at the first sign of chemical odor entering the cab.

**RECIRCULATING FILTER**  
- (fig. 7.33, item 3) The recirculating filter may be cleaned with soap and water. Replace, if it becomes worn.



**FIG 7.33**

# VII. SERVICE AND MAINTENANCE

## LUBRICATION

### Leg Bearings

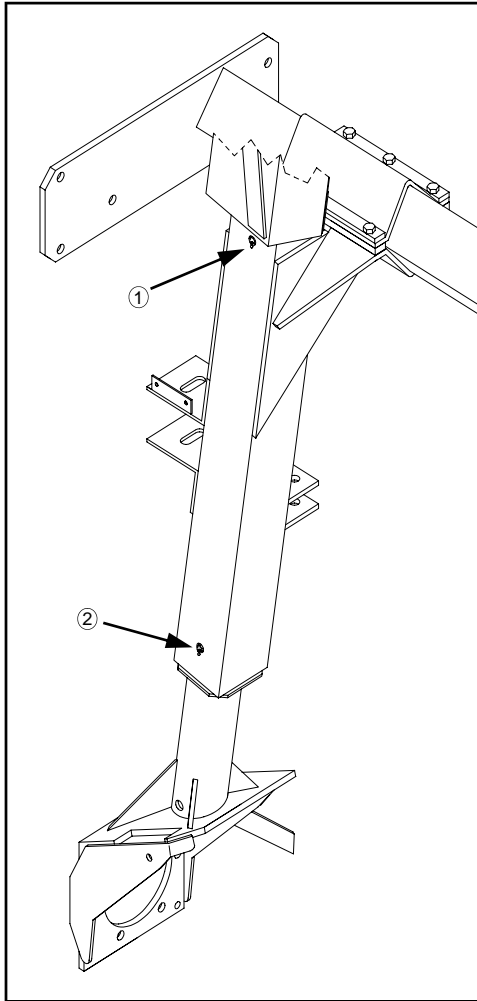


FIG 7.34

Hagie 204 leg assemblies are constructed with upper and lower nylon bearings for suspension telescoping between the inner and outer leg weldments. These bearings must be lubricated to avoid bearing failure and ensure optimal ride quality. There are grease zerks located on the sides of the leg assemblies, one for the upper bearing (fig. 7.34, item 1) and one for the lower bearing (fig. 7.34, item 2). Greasing both bearings on both front legs daily is very important.

During operation of the detasseler, the grease may possibly be wiped off by passing crop leaves, so the bearings should be greased at least twice a day. Suggested times are in the morning and at noon. If the crop is mature enough, or plant population is high enough, more frequent leg bearing grease application may be required. This will ensure proper lubrication allowing optimal performance.

### Steering

To steer, the inner leg weldment also pivots inside the outer leg weldment. The tie rods connected to the steering legs have grease zerks on both each inner tie rod end (fig 7.35, item 1) and each outer tie rod end (fig. 7.35, item 2). To maintain freely operating steering, they should be greased every 50 hours; check tie rod linkage daily.

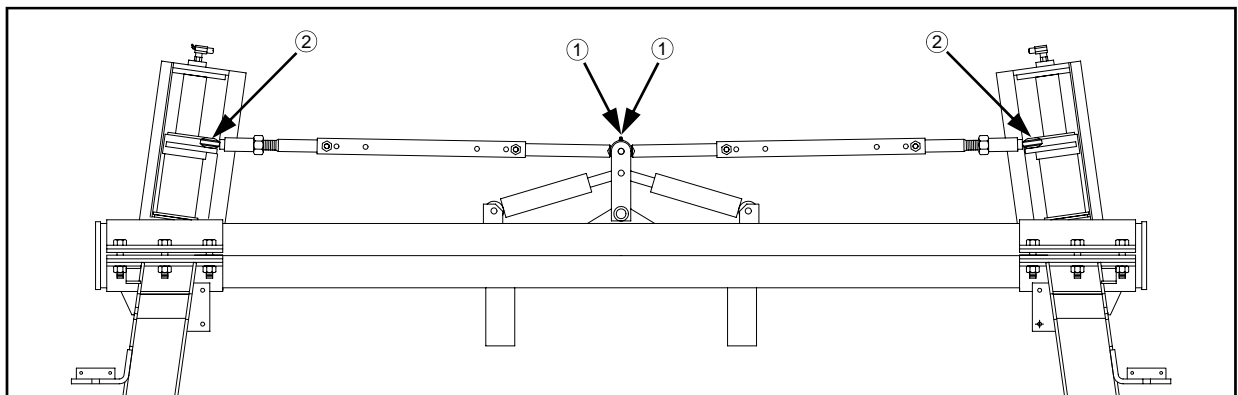


FIG 7.35

# VII. SERVICE AND MAINTENANCE

## ► LUBRICATION CONTINUED

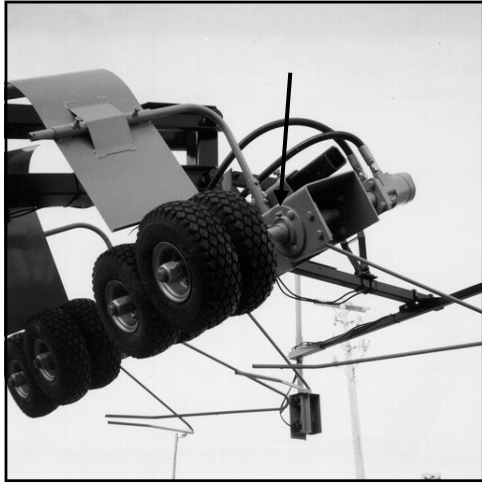


FIG 7.36

### Quad Pullers

Each quad puller head has four bearings equipped with grease zerks (fig. 7.36). 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 (fig. 7.37). Grease each bearing once a day.

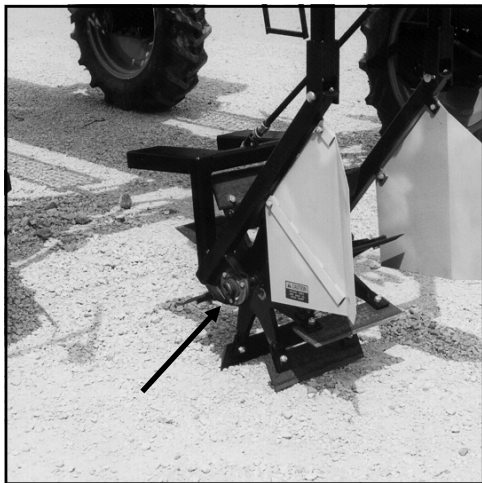


FIG 7.37

### Torque Hub<sup>®</sup> Seal Boot

Each leg has a seal boot located between the wheel motor and Torque Hub<sup>®</sup>. Seal boot grease zerks (fig. 7.38A & 7.38B) should be greased once every 75 hours or as needed. An over-greased seal boot will leak some grease out around the seal and when heated may cause the appearance of a failed wheel motor leaking hydraulic fluid. Wipe off any excess grease after servicing.



A

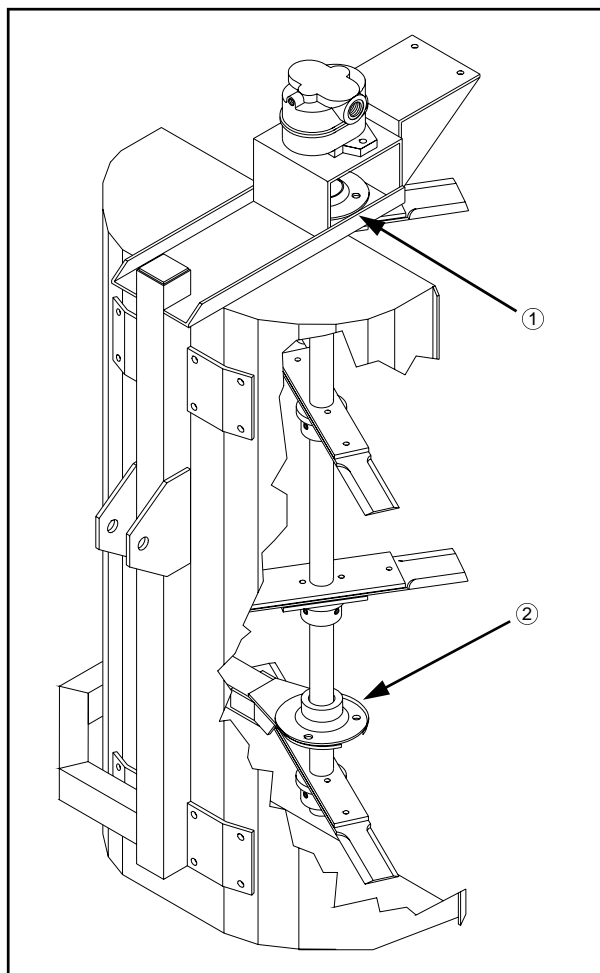
B

FIG 7.38

## VII. SERVICE AND MAINTENANCE

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### ► LUBRICATION CONTINUED



**FIG 7.40**

### Four Blade Male Row Cutters

Grease both upper (fig. 7.40, item 1) and lower (fig. 7.40, item 2) shaft bearings 4 times a day. Suggested times are morning, mid-morning, noon, and mid-afternoon.

# VII. SERVICE AND MAINTENANCE

## ELECTRICAL

### Battery SAFETY



FIG 7.41

**⚠ CAUTION**

Batteries contain sulfuric acid. Avoid contact with skin, eyes, or clothing. Do not inhale fumes or ingest liquid. Batteries contain gases which can explode. Keep sparks and flame away while servicing.

**NOTE:**

When servicing electrical system always disconnect the battery. Remove ground cable first and connect it last.



FIG 7.42

**CLEANING** - Disconnect battery cables from battery. Remove all corrosion with a wire brush or battery post brush (fig. 7.41). Wash the cable connections and battery posts with a weak solution of baking soda or ammonia. Apply petroleum jelly or grease to prevent future corrosion. Reconnect the cables to the battery making sure they are tight. Clean every 100 hours.

**⚠ CAUTION**

Electrical system is 12 volt negative ground. When using booster with jumper cables, precautions must be taken to prevent personal injury or damage to electrical parts.

1. Attach one end of jumper cable to positive terminal of booster battery and other end to positive terminal of vehicle battery connected to starter motor.
2. Attach one end of second cable to negative terminal of booster battery and other end to vehicle frame away from battery. Do not attach to cab or cab support.
3. To remove cables, reverse above sequence exactly to avoid sparks. See operator's manual for additional information.

	DIESEL	GASOLINE
<b>VOLTAGE</b>	12V (only)	12V (only)
<b>CCA (30 SEC @ 0° F)</b>	950	575
<b>RESERVE CAPACITY</b>	185 min. @ 25 amps	130 min. @ 25 amps

FIG 7.43

**STORAGE** - See page 113 for proper battery storage.

**REPLACEMENT** - When replacing the battery, install a battery with ratings equivalent to or higher than the specs listed in figure 7.43.

**NOTE:**

To ensure the best electrical contact, battery terminal connections should be as clean and as tight as possible.



# VII. SERVICE AND MAINTENANCE



**FIG 7.44**

## ▶ ELECTRICAL CONTINUED

### Fuses







Fuses protect individual lighter duty electrical circuits. They are located toward the rear console panel to the right of the operator's seat (fig. 7.44).

If a fuse blows, remove it by rotating the fuse cap counterclockwise as you push down. Then pull the fuse straight out (fig. 7.46). Replace each blown fuse with the same amperage fuse only.

Correct fuse location and amperage is shown in figure 7.45. If the fuse continues to blow, determine the cause and correct it.

Motor control block .....	20 AMP
Tasselrol® box, seat motor (cab only)....	20 AMP
Gauges, traction valve, dome light (cab only), AM/FM radio (cab only) .....	20 AMP
Flasher/turn signal, running lights, windshield Wiper (cab only), fuel pumps (gas only), F u e l selector valve	

		
MTR CTRL BLOCK	TASSELROL® BOX SEAT MTR (CAB ONLY)	
		
GAUGES TRACTION VALVE DOME LIGHT (CAB ONLY) AM/FM RADIO (CAB ONLY)	FLASHER/TURN SIGNAL RUNNING LIGHTS WIPER (CAB ONLY) FUEL PUMPS (GAS ONLY) FUEL SLCTR VLV (DIESEL)	

**FIG 7.45**



**FIG 7.46**

## FUSES CONTINUED ▶

# VII. SERVICE AND MAINTENANCE



FIG 7.47

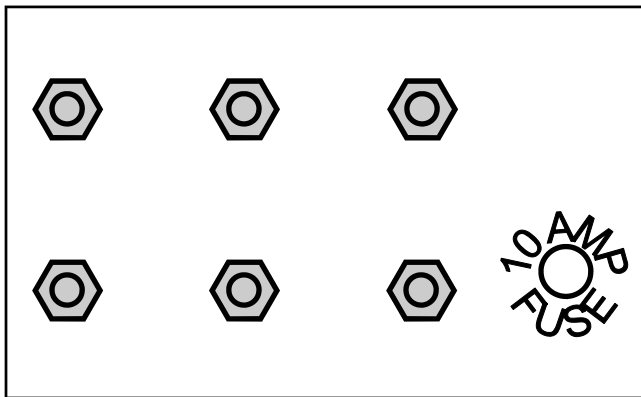


FIG 7.48

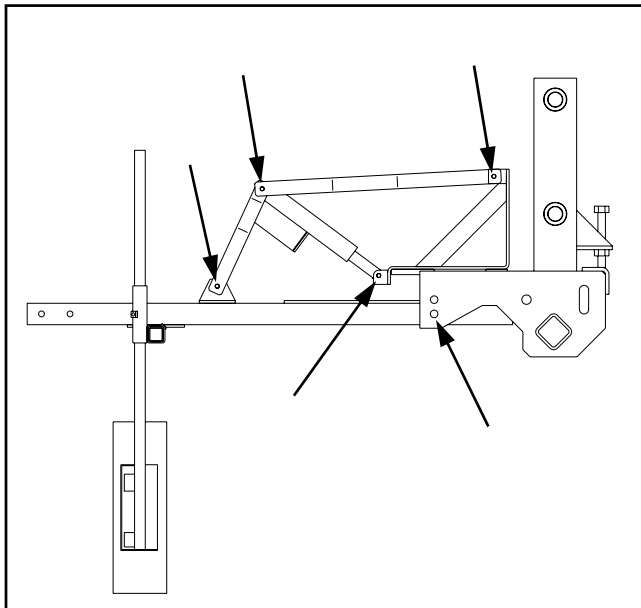


FIG 7.49

## ▶ FUSES CONTINUED

### Depth Command Fuse

The fuse for the DEPTH COMMAND is located in the switch box (fig. 7.47). If the DEPTH COMMAND 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. 7.48).

Operating more than two actuators at one time may cause the fuse to blow (see page 63). A blown fuse may indicate that the LS/DEPTH COMMAND pivot bolts (fig. 7.49) are torqued too tight. If the fuse continues to blow, determine cause and correct it.

ELECTRICAL CONTINUED ▶

# VII. SERVICE AND MAINTENANCE

## ▶ ELECTRICAL CONTINUED

### Circuit Breakers

Circuit breakers handle the functions of the heavier duty electrical circuits on the detasseler. They trip when overloaded and automatically reset themselves after they cool down. They will continue to trip and reset as long as the overload or short exists. If the circuit breaker does not reset, replace it with the same amperage breaker only. Correct circuit breaker location and amperage is shown in figure 7.52.

To access the circuit breakers remove the

hydrostatic handle (fig 7.50, item 1), VFC lever knobs (fig. 7.50, item 2), and panel screws (fig. 7.50, item 3). The circuit breakers are located toward the rear of the console.

The wire harness on the diesel engine are protected by circuit breakers mounted on the engine (fig. 7.51).

If the circuit breaker does not reset and continues to trip, determine the cause and correct it.

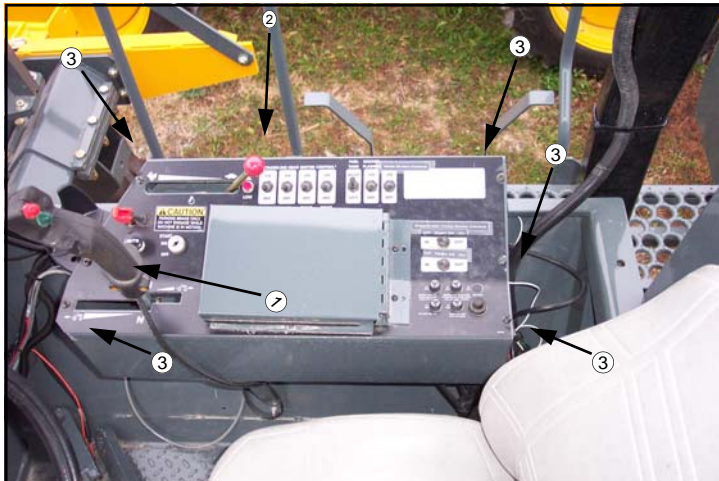


FIG 7.50

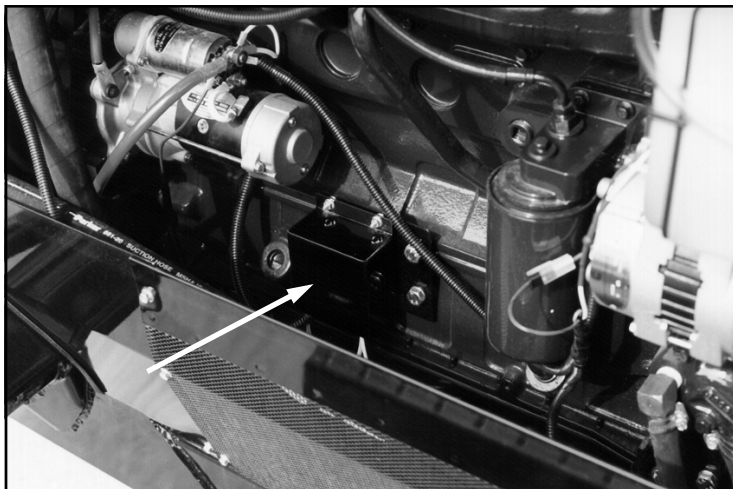


FIG 7.51

A/C relay (cab only).....	30 AMP
Starter relay (diesel only) .....	30 AMP
Lights.....	40 AMP
Wire harness (diesel only).....	30 AMP
Wire harness (diesel only).....	50 AMP

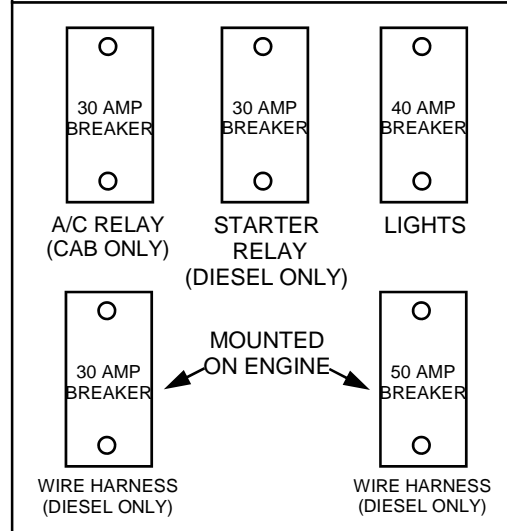


FIG 7.52

# VII. SERVICE AND MAINTENANCE

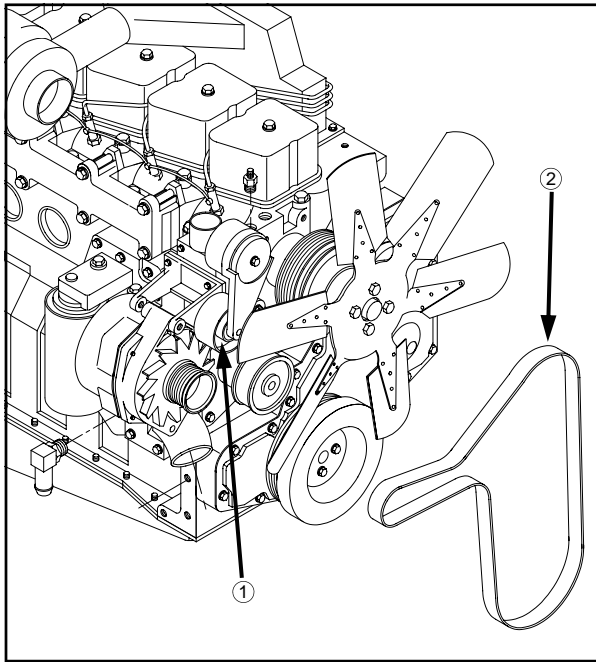


FIG 7.53

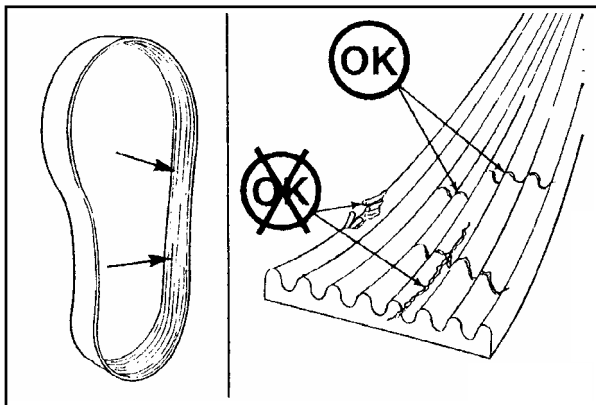


FIG 7.54

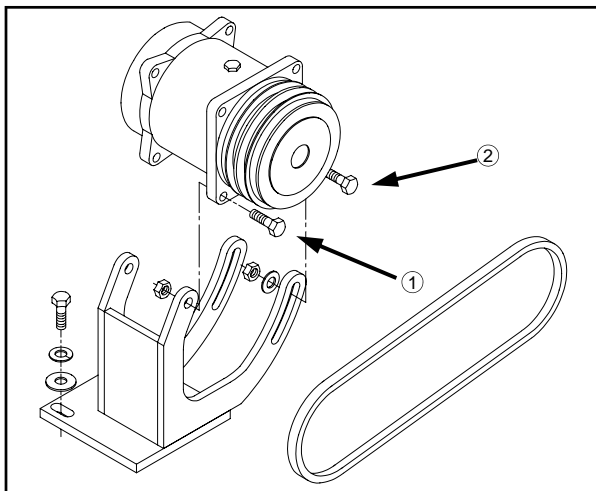


FIG 7.55

## BELTS

### Diesel Engine Drive Belt

**REMOVAL** - Insert a 3/8 inch square ratchet drive into the belt tensioner (fig. 7.53, item 1) and lift upward to remove the belt (fig. 7.53, item 2).

**INSPECTION** - Visually inspect the belt daily (fig. 7.54). Check the belt for intersecting cracks (fig. 7.54). Transverse (across the belt width) cracks are acceptable. Longitudinal (direction of belt length) cracks that intersect with transverse cracks are not acceptable. Replace the belt if it is frayed or has pieces of material missing.

### A/C Compressor Belt (if equipped)

To tighten air conditioner compressor belt, loosen the two pivot bolts (fig. 7.55, item 1) and the two slide bolts (fig. 7.55, item 2). Using a suitable prying tool, adjust tension on belt to desired tautness. While maintaining tension, re-tighten all four bolts. Inspect belt every 250 hours.

ENGINE BELTS CONTINUED 

# VII. SERVICE AND MAINTENANCE

## ▶ HYDROSTATIC SYSTEM CONTINUED

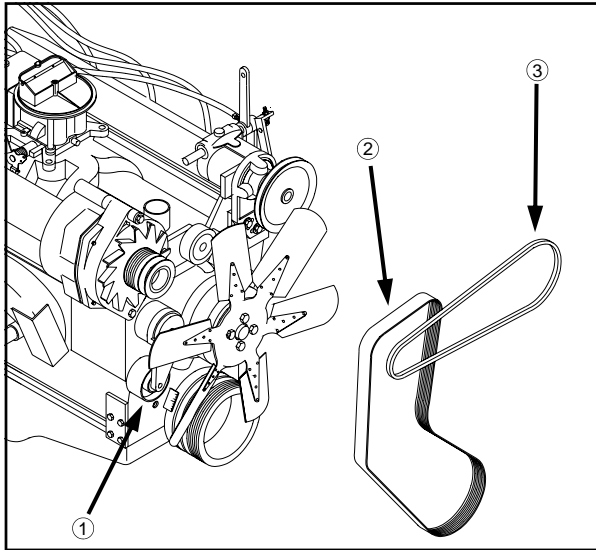


FIG 7.56

### Gasoline Engine Drive Belt

**REMOVAL** – Insert a 3/8 inch square ratchet drive into the belt tensioner (fig. 7.56, item 1) and push inward to remove the belt (fig. 7.56, item 2).

**INSPECTION** – Visually inspect the belt daily. Check the belt for intersecting cracks (fig. 7.57). Transverse (across the belt width) cracks are acceptable. Longitudinal (direction of belt length) cracks that intersect with transverse cracks are not acceptable. Replace the belt if it is frayed or has pieces of material missing.

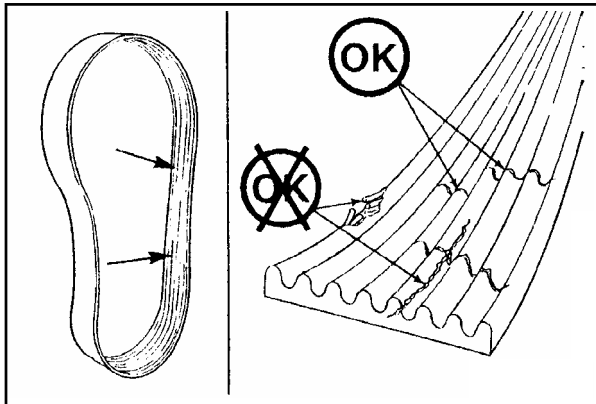


FIG 7.57

### Governor Drive Belt

Visually inspect the belt daily (fig. 7.56, item 3). Replace if it becomes cracked or worn.

### A/C Compressor Belt (if equipped)

To tighten the air conditioner drive belt, loosen the three mounting bolts (fig. 7.58) and slide the compressor mount in or out until the proper belt tension is achieved. Inspect every 250 hours.

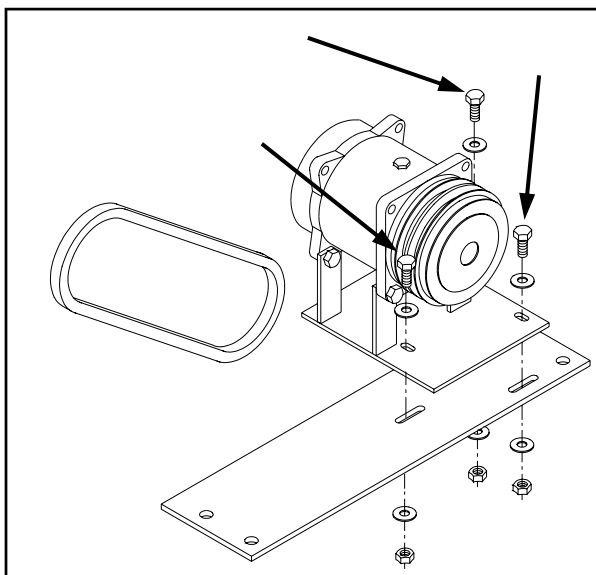


FIG 7.58

# VII. SERVICE AND MAINTENANCE

## DRIVE TRAIN

### Hydrostatic Pump



FIG 7.59

**NEUTRAL SETTING** - When the hydrostatic lever is in the neutral position, the machine should not be moving in either direction. If it does, the neutral setting of the lever (fig. 7.59) on the hydrostatic pump needs to be adjusted. See accompanying pump manual.

**CHECK CHARGE PRESSURE** - See page 46.

**REPAIR/REPLACEMENT** - See pump handbook accompanying this operator's manual. Hydrostatic pumps are available as a core exchange item from Hagie Manufacturing Customer Support Department.

### Auxiliary Gear Pumps

**REPAIR/REPLACEMENT** - See pump handbook accompanying this operator's manual. Gear pumps are available from the Hagie Manufacturing Customer Support Department.

### Wheel Motors

**REPAIR/REPLACEMENT** - See wheel motor handbook accompanying this operator's manual. Wheel motors are available as a core exchange item from Hagie Manufacturing Customer Support Department.

### Torque Hubs<sup>®</sup>

**GREASE** - Grease according to page 99.

**OIL** - Maintain oil level according to page 87.

**REPAIR/REPLACEMENT** - See Torque Hub<sup>®</sup> manual accompanying this operator's manual.

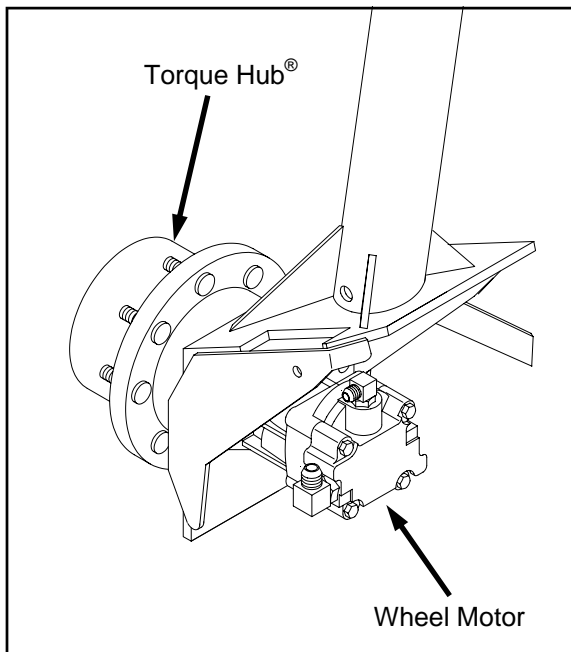


FIG 7.60

# VII. SERVICE AND MAINTENANCE

## BOLT TORQUE



FIG 7.61

### Wheel Bolts

To install wheel and tire assembly on the Torque Hub<sup>®</sup>, lubricate Torque Hub<sup>®</sup> studs with anti-seize grease. Align the wheel bolt holes with the Torque Hub<sup>®</sup> studs and mount the wheel on the hub.

#### NOTE:

To achieve even torquing consistency, the tire should be completely off the ground.

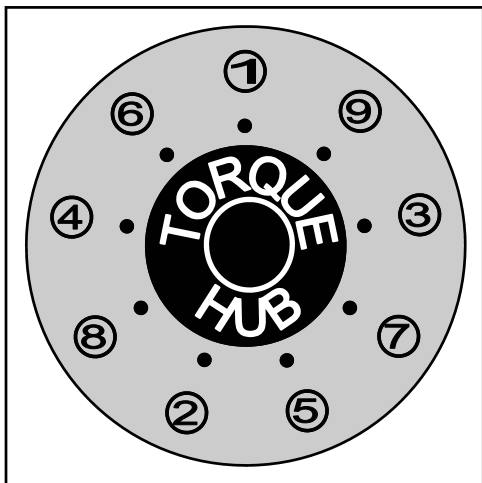


FIG 7.62

Start all of the lug nuts on and tighten them until they are just snug. Following the torque sequence in figure 7.62, first turn each lug nut to a torque value of 120 dry foot-pounds. Use slow, even pressure on the torque-wrench. Quick or jerky movements cause inaccurate values. Repeat the same sequence to 150 dry foot-pounds and again finally to 180 dry foot-pounds.

#### CAUTION

Check lug nut torque immediately after receiving machine and every 50 hours thereafter.

If the wheel turns during lug nut torquing, lower the machine to the ground just enough for the tire to touch and prevent rotation or more preferably, place a suitable wedge between the tire and the ground.

Lower the machine and resume operation. Recheck torque after 30 minutes of operation.



FIG 7.63

Keep wheel bolts tight. See owner's manual for torque specifications.

BOLT TORQUE CONTINUED 

# VII. SERVICE AND MAINTENANCE

## ▶ BOLT TORQUE CONTINUED



FIG 7.64

## Leg Mounting Bolts

### NOTE:

See page 21 for additional information regarding leg mounting bolts.

Follow these procedures for torquing the leg mounting bolts:

## ⚠ CAUTION

Never remove more than three leg mounting bolts from any single leg mount.

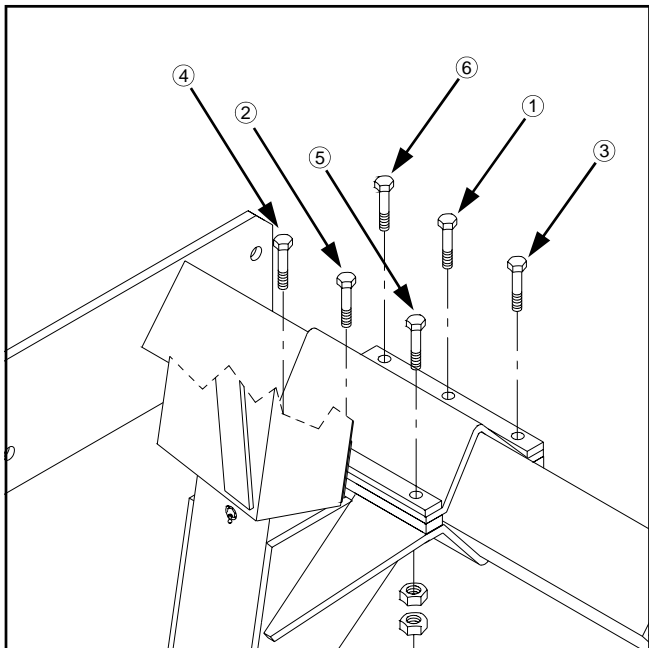


FIG 7.65

Start the nuts on the mounting bolts and tighten them until they are just snug. Following the torque sequence in figure 7.65, turn each lug nut to a torque value of 100 dry foot-pounds. Use slow, even pressure on the torque wrench. Quick or jerky movements cause inaccurate values.

Lower the detasseler to the ground and repeat the same sequence to 130 dry foot-pounds and again finally to 160 dry foot-pounds.

Resume operation and recheck torque values after 30 minutes of operation.



# VII. SERVICE AND MAINTENANCE

## TIRES

### Air Pressure



FIG 7.66

Check tire pressure once a week or every 50 hours of operation (fig. 7.66). Never inflate a tire more than the recommended maximum air pressure. Use an air line with a locking air chuck and stand behind tire tread while filling (fig. 7.67).

#### NOTE:

Tire pressure will depend on load quantity due to various options installed. Refer to page 20 for tire specifications.



FIG 7.67

#### **WARNING**

When inflating tire use extension hose with in-line air gauge and clip-on air chuck, which allow operator to stand clear of tire side wall explosion trajectory.

### Wheel Bolts

See page 108 for recommended wheel bolt torque specifications and torquing pattern.

### Mounting

If you do not have proper mounting equipment, let your local qualified tire sales/service dealer mount the tire for you. Tire should be mounted on rim according to figure 7.68 for best traction and tread cleaning action.

### Toe In

See pages 25 and 111 for information regarding toe-in measurement and adjustment.

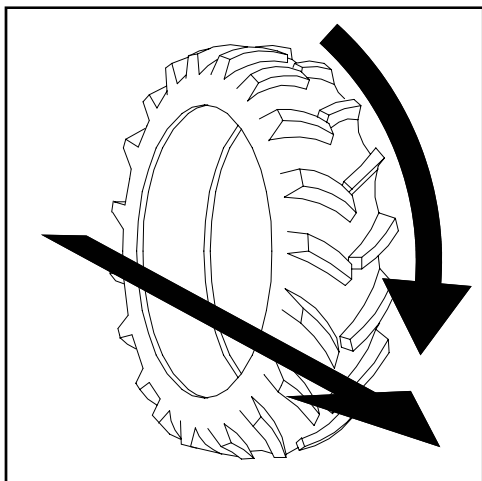


FIG 7.68

# VII. SERVICE AND MAINTENANCE

## TOE-IN ADJUSTMENT

1. Adjust Hydra-Hug® suspension until dimensions above and below steering arm are equal (fig. 7.69, dim. A — See page 90).
2. Turn steering wheel until center steering pivot (fig. 7.70, item 1) is vertical.
3. Loosen tie rod jam nuts (fig. 7.70, item 5).
4. Remove tie rod bolts (fig. 7.70, item 3) on outer end of tie rod tube (fig. 7.70, item 2).
5. Manually pry each front wheel in or out until each is lined up exactly with the corresponding rear tire.

### NOTE:

A tight string placed across the face of the tires on each side will help line them up.

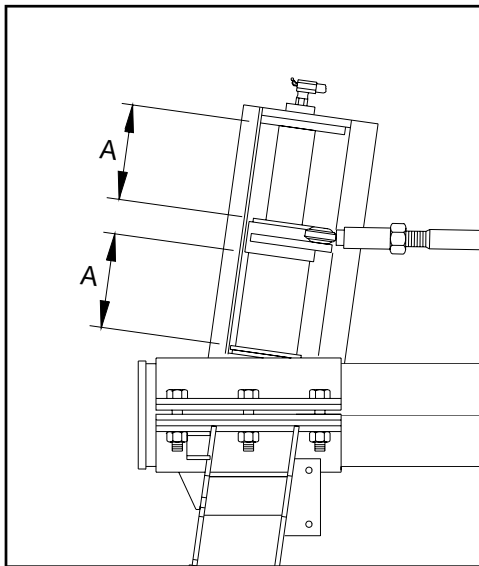


FIG 7.69

6. Turn inner tie rod (fig. 7.70, item 4) in or out until the bolt hole lines up with the bolt hole in the tie rod tube. Then turn one more full turn **OUT**.
7. Tighten jam nut.
8. Line up bolt holes on each side one at a time by turning the steering wheel one way or the other. Reinstall bolts and nuts as you line up each hole; tighten firmly.
9. Drive detasseler forward for approximately 100 yards as you cycle the steering back and forth repeatedly. Recheck toe-in (page 25) and readjust if necessary.

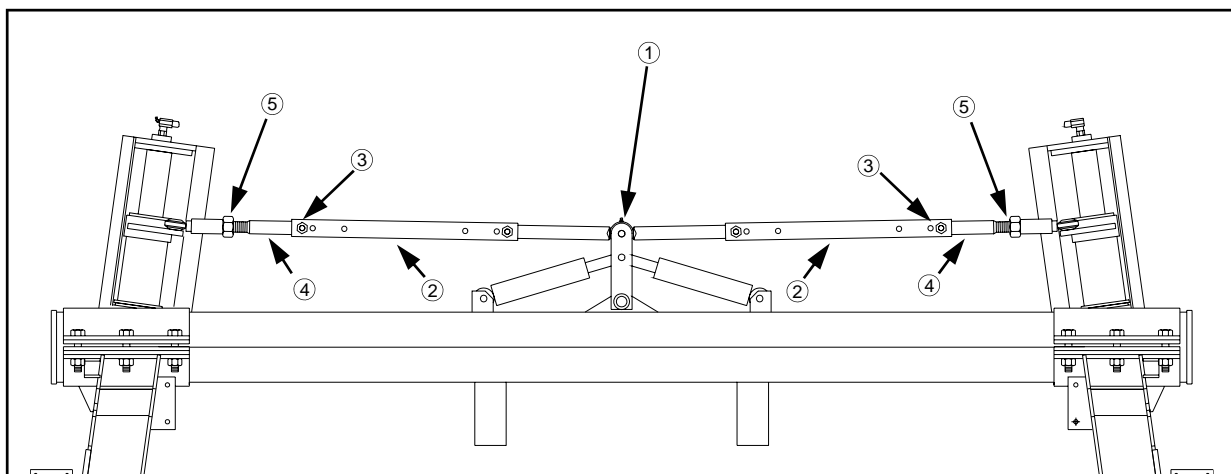


FIG 7.70

# VII. SERVICE AND MAINTENANCE

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## DAILY INSPECTION

Inspection Point	Action (if necessary)
<b>Check</b>	
Engine oil level.....	Add oil
Radiator coolant level.....	Add antifreeze solution
Coolant overflow reservoir level.....	Add antifreeze solution
Engine drive belt (diesel).....	Replace belt
Filter Minder® .....	Replace air filter element
Hydraulic reservoir oil level .....	Add hydraulic oil
Neutral setting of hydrostatic pump.....	Adjust setting
Visual inspection of leg mounting bolts .....	Tighten
Battery.....	Clean and/or tighten
Radiator grille screens .....	Remove and clean
Visually inspect tie rod linkage .....	Tighten
Look for loose or missing items such as shields.....	Tighten or replace
Look for any fluid leaks pooled on machine or ground .....	Determine cause and correct
Quad puller tire pressure (if equipped) (4 places each row) .....	Add air
Cutter blade retaining bolt.....	Tighten
Tie rod linkage.....	Tighten

## Grease

Upper and lower leg bearings .....	See page 98
Quad puller bearings (if equipped) (4 places each row) .....	See page 99
Male corn chopper (if equipped) (2 places each row).....	See page 99

## Drain

Fuel/water separator (diesel only).....	See page 96
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# IX. STORAGE

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## A. Preparing the detasseler for storage.

1. Perform daily level checks, lubrication, and bolt and linkage inspections as required in this manual in section seven on maintenance.
2. Every other season, drain the coolant from the engine and radiator. Probe the drain holes during draining to ensure they are not clogged by sludge, scale, or other deposits. Fill the cooling system to the top with a 50/50 water/antifreeze mixture. Run engine to operating temperature and re-check level.

**NOTE:**

If antifreeze is added, make sure the engine is then run to operating temperature to assure proper mixing of solution.

3. Add a fuel stabilizer to the fuel and fill fuel tank.
4. Run the engine until it is at operating temperature, then drain the engine oil. Refill with fresh oil of recommended weight and install a new lubricating oil filter element.
5. With the engine at normal operating temperature, cycle all hydraulic functions including the steering.
6. Release tension on all belts. For more detailed information, consult the manufacturer's handbook that accompanies this manual.
7. Use plastic bags and water-resistant adhesive tape to seal the air intake opening, all exhaust manifold openings, engine oil filler cap, hydraulic oil tank breather cap, and fuel tank caps.
8. Disconnect and remove battery or batteries. Completely clean and charge the battery. Coat the terminals with petroleum jelly and store battery in cool, dry place.
9. Thoroughly clean the detasseler. Touch up any painted surfaces that are scratched or chipped. For touch-up paint recommendations contact the Hagie Manufacturing Customer Support Department.
10. Replace worn or missing decals. See pages 7-13 for proper location of warning decals and their corresponding part number. Warning decals and all other Hagie decals are available through the Hagie Manufacturing Customer Support Department.

**NOTE:**

For replacement decals contact:  
Hagie Manufacturing Company  
Box 273, Clarion, IA 50525  
Ph. 1-800-247-4885

**STORAGE CONTINUED** 

# IX. STORAGE

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## ► STORAGE CONTINUED

11. Use a multi-purpose grease to coat exposed hydraulic cylinder rods to prevent rusting which could result in cylinder damage.
12. If the sprayer must be stored outside, cover it with a waterproof cover.

### **B. Removing the detasseler from storage.**

1. Inspect the condition, and test the air pressure, of all tires. Please see page 110 for information regarding proper tire maintenance.
2. Carefully unseal all openings that were sealed in the storage process.
3. Clean and reinstall the battery. Be sure to attach the battery cables to the proper terminals.
4. Tighten all belts. Inspect and replace any worn belts. For information on belts, see page 105 or 106.
5. Check engine oil, hydraulic oil, and engine coolant levels; add, if necessary. A mixture of 50/50 antifreeze and water will cool adequately in summer as well as protect in winter.

**NOTE:**

Protective compounds such as grease can harden under exposure to weather conditions.

6. Completely clean the detasseler.
7. Review section seven on maintenance (pages 82-112), and perform all needed services as instructed.
8. For starting instructions, see pages 41-43 in section five on operating information.


**NOTE:**

See Warranty on page 132 concerning **improper storage**.

# IX. TROUBLE SHOOTING

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## A. ENGINE

 **CAUTION**  
Start engine from operator's seat only. When running engine in a building, be sure there is adequate ventilation.

PROBLEM	POSSIBLE CAUSE	SUGGESTED REMEDY
Engine won't crank	Dead battery Poor battery connections Neutral safety switch (located in the Sauer/Sundstrand pump) Starter or starter relay	Recharge or replace battery Clean and tighten Adjust and/or replace if needed Test; rebuild or replace
Engine won't start	Out of fuel Clogged fuel filters Cold weather Low starter speed	Fill fuel tank Replace fuel filters Refer to engine manual for cold weather starting information Check starter and battery

ENGINE CONTINUED 

# IX. TROUBLE SHOOTING

## ▶ ENGINE CONTINUED

PROBLEM	POSSIBLE CAUSE	SUGGESTED REMEDY
Engine overheats	<p>Engine overloaded</p> <p>Dirty radiator core or dirty grill screens</p> <p>Faulty radiator cap</p> <p>Loose or faulty fan belt</p> <p>Faulty thermostat</p> <p>Low coolant level</p>	<p>Reduce load</p> <p>Remove all foreign material and clean all items</p> <p>Replace cap</p> <p>Tighten or replace fan belt</p> <p>Replace thermostat</p> <p>Refill to proper level with recommended coolant</p>
Engine misfires: runs uneven, low power	<p>Water in fuel</p> <p>Dirty air cleaner element</p> <p>Poor grade of fuel</p> <p>Fuel tank vent clogged</p> <p>Clogged fuel filter</p>	<p>Drain, flush, replace filter, fill system</p> <p>Replace element</p> <p>Drain system; change to good grade</p> <p>Open fuel tank vent in cap</p> <p>Replace fuel filter</p>
Engine knocks	<p>Low oil level in crankcase</p> <p>Cold engine</p>	<p>Add oil to full mark</p> <p>Allow proper warm-up period; refer to engine owner's handbook</p>

### NOTE:

For additional engine information, consult engine manufacturer's manual.

# IX. TROUBLE SHOOTING

## C. HYDROSTATIC SYSTEM



# CAUTION

**DO NOT GO NEAR LEAKS.** High pressure oil easily punctures skin causing injury, gangrene, or death. If injured, seek emergency medical help. Immediate surgery is required to remove oil. Do not use finger or skin to check for leaks. Lower load or relieve hydraulic pressure before loosening fittings.

PROBLEM	POSSIBLE CAUSE	SUGGESTED REMEDY
Machine won't move in either direction	Engine speed too low  Oil level in reservoir low  Control linkage  Clogged filter  Hydrostatic pump not turning  Faulty hydrostatic pump  Air leak in suction line  Low charge pressure	Set engine at operating RPM before trying to move machine  Fill reservoir to proper level w/ approved oil; see section on Service and Maintenance  Repair or replace  Replace filter  Check drive coupling  Replace pump  Inspect and tighten all fittings on suction line  See section under charge pressure
Machine will move in only one direction	Faulty high pressure relief valve	Switch relief valves from side to side; If problem reverses, replace faulty valve (Pages 46 and 47)

HYDROSTATIC SYSTEM CONTINUED 



# IX. TROUBLE SHOOTING

## ▶ HYDROSTATIC SYSTEM CONTINUED

PROBLEM	POSSIBLE CAUSE	SUGGESTED REMEDY
Hydrostatic system responding slowly	<p>Engine speed too low</p> <p>Oil level in reservoir low</p> <p>Cold oil</p> <p>Plugged filter</p> <p>Partially restricted suction line</p> <p>Internal damage</p>	<p>Set engine at operating RPM before trying to move machine</p> <p>Fill reservoir to proper level with approved oil; see section on Service and Maintenance</p> <p>Allow for adequate warm-up period</p> <p>Check and replace filter</p> <p>Inspect for collapsed suction hose</p> <p>Replace hydrostatic pump or motor</p>
Noisy hydrostatic system	<p>Cold oil</p> <p>Low engine speed</p> <p>Oil level in reservoir low</p> <p>Air in system</p> <p>Internal damage to pump</p>	<p>Allow for adequate warm-up period</p> <p>Increase engine speed</p> <p>Fill reservoir to proper level with approved oil; see section on Service and Maintenance</p> <p>Inspect and tighten all fittings on suction line</p> <p>Replace pump</p>
External oil leaks	<p>Loose or faulty fittings</p> <p>Damaged O-ring</p> <p>Faulty hose</p>	<p>Tighten or replace</p> <p>Inspect; if damaged replace</p> <p>Replace hose</p>

# IX. TROUBLE SHOOTING

## D. HYDRAULIC SYSTEM



# CAUTION

**DO NOT GO NEAR LEAKS.** High pressure oil easily punctures skin causing injury, gangrene, or death. If injured, seek emergency medical help. Immediate surgery is required to remove oil. Do not use finger or skin to check for leaks. Lower load or relieve hydraulic pressure before loosening fittings.

PROBLEM	POSSIBLE CAUSE	SUGGESTED REMEDY
Entire hydraulic system fails to function	<p>Oil level in reservoir low</p> <p>Oil not reaching pump</p> <p>Faulty hydraulic pump</p>	<p>Fill reservoir to proper level with approved oil; see section on Service and Maintenance</p> <p>Prime the pump by removing suction hose from reservoir; hold removed end higher than pump; hand feed two (2) quarts approved oil through suction hose by bumping engine w/ starter (careful not to start engine); re-install hose; tighten all fittings</p> <p>Replace hydraulic pump</p>
Noisy hydraulic pump	<p>Collapsed suction hose caused by cold oil</p> <p>Oil level in reservoir low</p> <p>Air leak in suction line</p>	<p>Allow for adequate warm-up period</p> <p>Fill reservoir to proper level with approved oil; see section on Service and Maintenance</p> <p>Inspect and tighten all fittings on suction hose</p>

HYDRAULIC SYSTEM CONTINUED 

# IX. TROUBLE SHOOTING

## ▶ HYDRAULIC SYSTEM CONTINUED

PROBLEM	POSSIBLE CAUSE	SUGGESTED REMEDY
Lifting mechanism won't lift	<p>Bad Cylinder</p> <p>Blown relief valve</p> <p>Relief valve set too low</p> <p>Lift arms frozen</p> <p>Faulty electro-hydraulic valve</p>	<p>Check cylinder; remove and rebuild or replace</p> <p>Remove, check; replace w/ new</p> <p>Reset to 2000 PSI</p> <p>Loosen mounting bolts; lubricate grease fittings if equipped</p> <p>See Tasselrol®/LS and/or Tasselrol® trouble shooting guide</p>
Cutter head blades, quad pullers, rollers, or tires won't turn	<p>Oil level in reservoir low</p> <p>Oil not reaching pump</p> <p>Faulty hydraulic pump</p> <p>Faulty hydraulic motor or motors</p>	<p>Fill reservoir to proper level with approved oil</p> <p>Remove suction hose from pump, check for proper flow. Reinstall hose; all suction fittings</p> <p>Replace hydraulic pump</p> <p>Replace motor or motors</p>
Hydraulic motor leaking	<p>Seal failure</p> <p>Restricted case drain hose</p>	<p>Replace seal; turn heads on with low engine RPM</p>

# IX. TROUBLE SHOOTING

## E. ELECTRICAL

### CAUTION

Batteries contain sulfuric acid. Avoid contact with skin, eyes, or clothing. Do not inhale fumes or ingest liquid. Batteries contain gases which can explode. Keep sparks and flame away while servicing.

### NOTE:

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

PROBLEM	POSSIBLE CAUSE	SUGGESTED REMEDY
Entire electrical system is dead	Dead battery Poor battery connection Low charging rate No charging rate	Charge or replace Clean and tighten Tighten alternator belt Replace alternator
All gauges on instrument panel not working	Blown fuse Poor ground	Replace fuse Clean and tighten ground
Tachometer/MPH Indicator not working	Blown fuse Loose connections at sensor/alternator Faulty sensor	Replace fuse Tighten or replace connectors Replace sensor
Light system does not function	Blown fuse Poor ground Burned-out bulb Separation or short in wire Faulty switch	Replace fuse Clean and tighten ground Replace bulb Check continuity and replace wire Replace switch

# IX. TROUBLE SHOOTING

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## F. TASSELTROL®/LS SYSTEM – HYDRAULIC



# CAUTION

**DO NOT GO NEAR LEAKS.** High pressure oil easily punctures skin causing injury, gangrene, or death. If injured, seek emergency medical help. Immediate surgery is required to remove oil. Do not use finger or skin to check for leaks. Lower load or relieve hydraulic pressure before loosening fittings.

PROBLEM	POSSIBLE CAUSE	SUGGESTED REMEDY
No units will lift	Oil level in reservoir low Faulty valve Relief valve in electro-hydraulic valve set too low	Fill tank to proper level Repair or replace valve Reset to 2000 PSI
No units will lower	All lift arm pivots too tight	Lubricate and loosen pivot points
Only one unit will not lower	Faulty valve Lift arm pivot too tight	Replace valve

# IX. TROUBLE SHOOTING

## ▶ TASSELTROL®/LS SYSTEM – HYDRAULIC CONTINUED

PROBLEM	POSSIBLE CAUSE	SUGGESTED REMEDY
All units lift slowly	<p>Hydraulic oil not at operating temperature</p> <p>Faulty valve</p> <p>Lift arm pivots too tight</p> <p>Plugged high pressure filter</p> <p>Raise orifice in valve adjusted incorrectly</p> <p>Relief valve in electro-hydraulic valve set too low</p>	<p>Allow time for oil to warm up</p> <p>Replace valve</p> <p>Lubricate and loosen pivot point</p> <p>Remove, clean, replace (see page 95)</p> <p>Re-adjust orifice</p> <p>Reset to 2000 PSI</p>
Only one unit lifts slowly	<p>Faulty valve</p> <p>Lift arm pivots too tight</p> <p>Raise orifice in valve adjusted incorrectly</p>	<p>Replace valve</p> <p>Lubricate and loosen pivot point</p> <p>Re-adjust orifice (see page 51)</p>
Only one unit will not hold position	<p>Oil leak between valve and cylinder</p> <p>Faulty valve</p> <p>Faulty lower poppet on stack valve</p>	<p>Repair leak or replace hose</p> <p>Replace valve</p> <p>Remove, clean, replace</p>
No units will hold position	Problem is not hydraulic	See Tasselrol® – elect. section

# IX. TROUBLE SHOOTING

## ▶ TASSELTROL®/LS SYSTEM – HYDRAULIC CONTINUED

PROBLEM	POSSIBLE CAUSE	SUGGESTED REMEDY
Only one unit lowers slowly	Faulty valve Faulty lower poppet on stack valve Lower orifice incorrectly adjusted	Replace valve Remove, clean, replace Re-adjust orifice (see page 49)
All units lower slowly	Hydraulic oil not at operating temperature	Allow time for oil to warm up
In "Manual" mode, more than one unit lifts or lowers from one up/down switch	Faulty valve	Replace valve
In "Auto" mode, more than one unit raises from photo sensor	Faulty valve	Replace valve
In "Auto" mode, wrong unit raises from photo sensor	Cylinder hoses are connected to	Attach correct hose to proper cylinder

TASSELTROL®/LS SYSTEM CONTINUED ▶

# IX. TROUBLE SHOOTING

## G. TASSELTROL®/LS SYSTEM – ELECTRICAL

**NOTE:**

Disconnect battery when servicing any part of electrical system to prevent system 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 control box Find short in wire, repair and replace fuse Tighten nut or replace coil Find loose connections, 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 unit Loose wire connections Lights 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



# IX. TROUBLE SHOOTING

## ▶ TASSELTROL®/LS SYSTEM – ELECTRICAL CONTINUED

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

# IX. TROUBLE SHOOTING

## ▶ TASSELTROL®/LS SYSTEM – ELECTRICAL CONTINUED

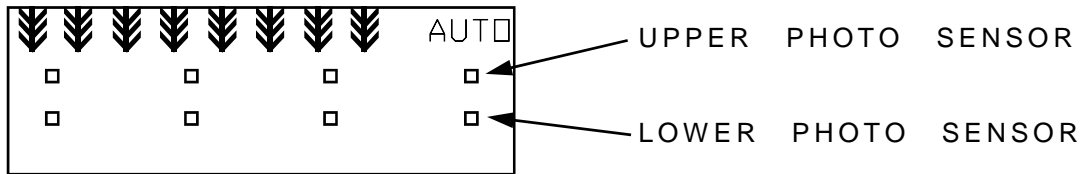
### TASSELTROL® DISPLAY TROUBLESHOOTING

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."

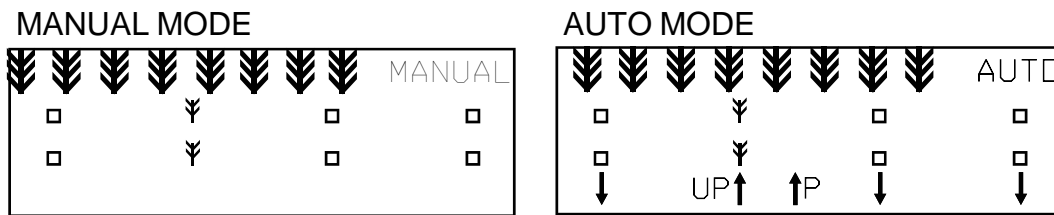
Make sure there is nothing physically blocking any upper or lower sensor's path to its reflector.

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 ("Ÿ") in one or more areas, refer to pages 125-126 for further suggested remedies.

The LEFT-CENTER sensors are used as examples.



### TASSELTROL® DISPLAY



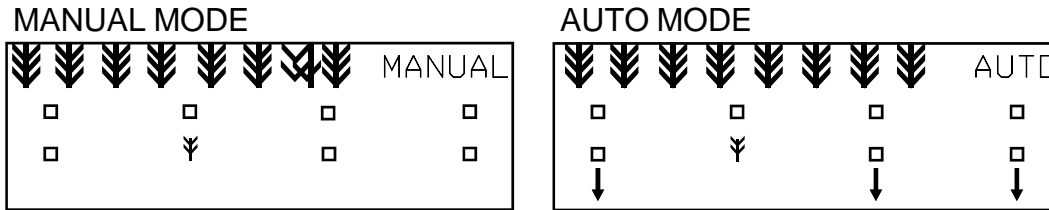
Unit rises automatically.

PHOTO SENSOR STATUS LIGHTS	POSSIBLE CAUSE
Lights at both photo sensors	Photo sensors not in line with reflector (See page 37)
No lights at either photo sensor	Faulty connector cable (See page 130, fig. 9.1, item 2)  Faulty RED and/or BLACK wire in connector cable (See page 130, fig. 9.1, item 1)

# IX. TROUBLE SHOOTING

## ▶ TASSELTROL®/LS SYSTEM – ELECTRICAL CONTINUED

### TASSELTROL® DISPLAY



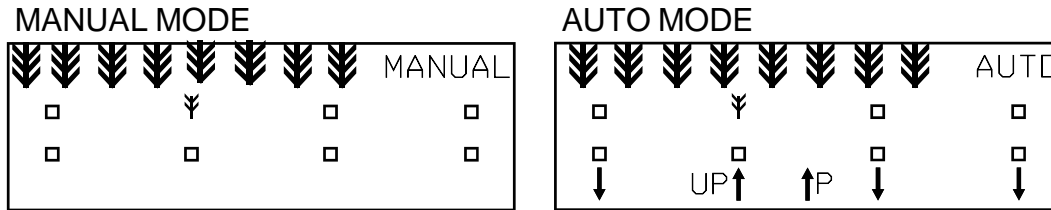
Unit does NOT rise automatically.

PHOTO SENSOR STATUS LIGHTS	POSSIBLE CAUSE
Lights at lower photo sensor	<p>Faulty GREEN wire in connector cable (See page 130, fig. 9.1, item 2)</p> <p>Photo sensor not in line with reflector (See page 37)</p> <p>Faulty BLUE wire in sensor assembly (See page 130, fig. 9.1, item 1)</p>
No lights at lower photo sensor	<p>Faulty RED and/or BLACK wire in connector cable (See page 130, fig. 9.1, item 2)</p>

# IX. TROUBLE SHOOTING

## ▶ TASSELTROL®/LS SYSTEM – ELECTRICAL CONTINUED

### TASSELTROL® DISPLAY



Unit rises automatically.

PHOTO SENSOR STATUS LIGHTS	POSSIBLE CAUSE
Lights at upper photo sensor	Faulty WHITE wire in sensor assembly (See page 130, fig. 9.1, item 1)  Faulty BLUE wire in sensor assembly (See page 130, fig. 9.1, item 1)
No lights at upper photo sensor	Faulty RED and/or BLACK wire in connector cable (See page 130, fig. 9.1, item 2)

# IX. TROUBLE SHOOTING

## ▶ TASSELTROL®/LS SYSTEM – ELECTRICAL CONTINUED

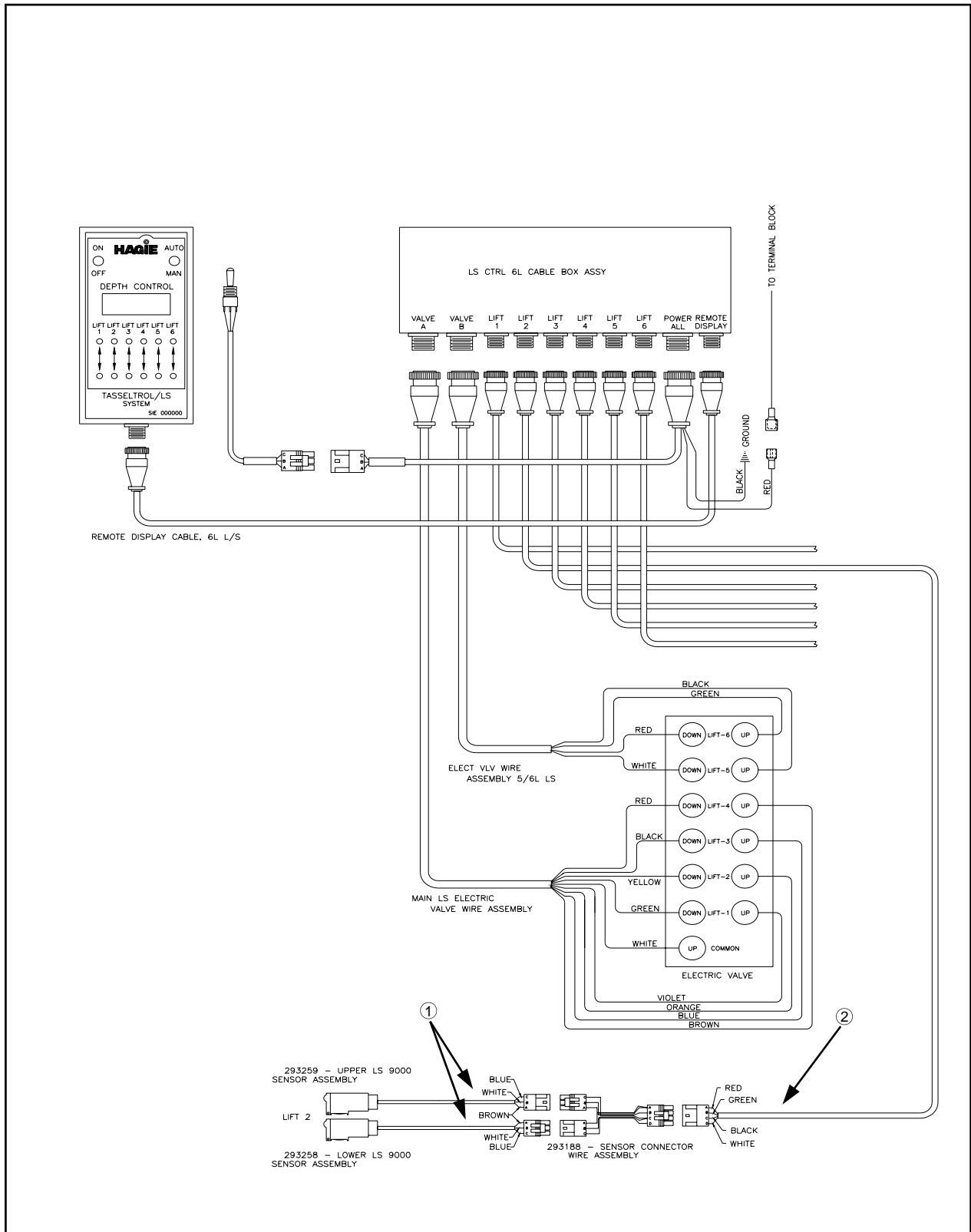


FIG 9.1

# IX. TROUBLE SHOOTING

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NOTES

# XI. LIMITED WARRANTY

## 1. The Warranty

- a. This warranty gives you specific legal rights. You may also have other rights which may vary from state to state.
- b. Hagie makes this warranty only to the original purchaser of its new equipment.
- c. The warranty period ends 12 months from the date of delivery of equipment to the original purchaser. When requesting warranty service, the original purchaser must present evidence of the date of delivery of the equipment.
- d. Parts or rebuilt assemblies furnished under the terms of this warranty are not warranted beyond the original warranty period.
- e. Exceptions to this warranty must be covered by separate warranty agreements.

## 2. Items not covered by Hagie Warranty

- a. Used equipment.
- b. Tires, tubes, engines, and batteries (under separate manufacturer's warranty).
- c. Depreciation or damage caused by normal wear, accident, improper maintenance, improper storage, or improper use.
- d. Service calls and transporting the equipment to and from the place where the warranty work is performed.

## 3. Unapproved service or modification

### NOTE:

All obligations of Hagie Manufacturing Company under this warranty shall be terminated if:

- a. . . . service is performed by someone other than Hagie authorized personnel.  
or
- b. . . . the equipment is modified or altered without Hagie approval.

## 4. No commercial loss coverage

- a. Hagie shall not be liable for incidental or consequential damages or injuries (damage and repairs of equipment itself, loss of profits, rental or substitute equipment, loss of good will, etc.).
- b. SOME STATES DO NOT ALLOW THE EXCLUSION OR LIMITATION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES, SO THE ABOVE LIMITATION MAY NOT APPLY TO YOU.

## 5. Merger clause

- a. The entire warranty agreement is included in this writing.
- b. Any oral agreements that are made by the selling persons about the equipment are not warranties, and are not to be relied upon by the purchaser.

## 6. No representations or implied warranty

- a. The parties agree that the implied warranties of merchantability and fitness for a particular purpose and all other warranties expressed or implied, are excluded from this transaction and shall not apply to the equipment sold.

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