case IH

1394 TRACTOR
9-9762

Operators Manual

J I Case
A Tenneco Company

TENNECO

THIS SAFETY ALERT SYMBOL INDICATES IMPORTANT SAFETY MESSAGES IN THIS MANUAL. WHEN YOU SEE THIS SYMBOL CAREFULLY READ THE MESSAGE THAT FOLLOWS AND BE ALERT TO THE POSSIBILITY OF PERSONAL INJURY OR DEATH.

IMPORTANT

If This Tractor Is Used By an Employee Or Is Loaned Or Rented, Make Certain That The Operator(s), prior To Operating:

1. Is Instructed In Safe And Proper Use.

2. Reads And Understands The Manuals Pertaining To The Tractor.

SAFE OPERATING INSTRUCTIONS

1. SECURELY FASTEN YOUR SEAT BELT IF THE TRACTOR HAS A ROPS.
2. WHERE POSSIBLE, AVOID OPERATING THE TRACTOR NEAR DITCHES, EMBANKMENTS, AND HOLES
3. REDUCE SPEED WHEN TURNING, CROSSING SLOPES, AND ON ROUGH, SLICK, OR MUDDY SURFACES.
4. STAY OFF SLOPES TOO STEEP FOR SAFE OPERATION.
5. WATCH WHERE YOU ARE GOING, ESPECIALLY AT ROW ENDS ON ROADS AND AROUND TREES.
6. DO NOT PERMIT OTHERS TO RIDE.
7. OPERATE THE TRACTOR SMOOTHLY NO JERKY TURNS, STARTS OR STOPS.
8. HITCH ONLY TO THE DRAWBAR AND HITCH POINTS RECOMMENDED BY TRACTOR MANUFACTURER.
9. WHEN TRACTOR IS STOPPED, SET BRAKES SECURELY AND USE PARK LOCK IF AVAILABLE.

PER OSHA 1928 51

EMPLOYER SHALL NOTIFY EMPLOYEES WHO OPERATE AGRICULTURAL TRACTORS OF THESE INSTRUCTIONS AT INITIAL ASSIGNMENT AND ANNUALLY THEREAFTER.

Case Tractors Meltham HUDDERSFIELD England HD7 3AR
September, 1983 (Revised October 1985)

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TO THE OWNER OF A CASE TRACTOR

Use this manual as your guide. If you follow the instructions given in this manual, your Case Tractor will work well for many years.

Your Authorized Case Dealer can give you assistance with J I Case Company made parts and persons with special training that know the best methods of repair and maintenance for your tractor.

Call your Authorized Case Dealer if you need any assistance or information.

1394 TRACTOR WITHOUT CAB
Figure 1

NOTE: *The right-hand and left-hand of the tractor are the same as your right-hand and left-hand when you are in the tractor seat looking forward.*

1394 TRACTOR WITH CAB
Figure 2

SAFETY

Safety Rules

Understand that your safety and the safety of other persons is measured by how you service, and operate this machine. Know the positions and operations of all controls before you try to operate. MAKE SURE YOU CHECK ALL CONTROLS IN A SAFE AREA BEFORE STARTING YOUR WORK.

READ THIS MANUAL COMPLETELY and make sure you understand the controls. All equipment has a limit. Make sure you understand the speed, brakes, steering, stability, and load characteristics of this machine before you start to operate.

The safety information given in this manual does not replace safety codes, insurance needs, federal, state and local laws. Make sure your machine has the correct equipment needed by the local laws and regulations.

J I Case is continuing to work for your safety by making tractors with better protection and by giving these rules for safe operation.

Before Starting

CAUTION: ***To help prevent personal injuries during tractor operation and maintenance, use safety shoes, a hard hat, safety glasses or goggles and good fitting clothing.***

CAUTION: ***Provide a first aid kit for use in case of accident.***

CAUTION: ***It is good practice to carry a fire extinguisher on the tractor. Be sure that the extinguisher is properly maintained and be familiar with its proper use.***

WARNING: *Before starting engine study Operators Manual safety messages.*
Read all safety signs on machine.
Clear the area of other persons.
Learn and practice safe use of controls before operating.
It is your responsibility to understand and follow manufacturers instructions on machine operation, service, and to observe pertinent laws and regulations.
Operator and Service Manuals may be obtained from your equipment dealer.

CAUTION: *Check the machine for leaks or any parts that are broken, not working correctly, or not there at all. Before you start the machine, tighten all caps, dipsticks, battery covers, etc.*

WARNING: *To help prevent injury before starting engine, put shields in place. Sit in the seat and place controls in neutral.*
Before operating tractor, clear people away, no riders and fasten seat belt. When operating tractor, keep away from power driven parts, avoid steep slopes, embankments, ditches, rough terrain and reduce speed when turning.
In high speed travel, couple the brake pedals together where applicable. On road travel, use flashing warning lights where permitted and keep SMV emblem visible from rear.
When stopped, engage park lock or brake, lower implement to ground and stop engine before dismounting to service or clear machines.

WARNING: *Before starting the engine, be sure all operating controls are in neutral. This will ease starting loads on the starter and batteries and will eliminate the accidental start up of PTO driven equipment.*

Operation

WARNING: ***Engine can start with transmission in gear when neutral safety switch is by-passed:***

1. Do not connect across terminals on starter.

2. Attach booster batteries according to safe method in Operators Manual. Then use recommended starting procedure from operators seat.

3. When necessary, repair electrical system components prompty so that "jump starting" will not be attempted.

Machine run-away can cause injury or death to operator and bystanders.

WARNING: *Cab air filters remove dust in the air, but are not capable of removing chemicals used in spraying crops or in weed control. Many chemicals used for these purposes are toxic when improperly used, and can be hazardous to operators and others in the area. Follow the instructions of manufacturers of both the equipment and the chemicals regarding prohibitions against inhalation of dust or spray, personal hygiene practices, and other precautions noted by the manufacturers.*

WARNING: *Tractor travel speed should be such that complete control and tractor stability is maintained at all times. Where possible, avoid operating the tractor near ditches, embankments and holes. Reduce speed when turning, crossing slopes, and on rough, slick, or muddy surfaces.*

WARNING: *Collision of high speed road traffic and tractors or implements can cause personal injury or death. On roads, use flasher/lights according to local laws. Keep SMV emblem visible.*

CAUTION: *Stop, look and listen before entering a highway, stay on your side of the road and pull over to let faster traffic pass. Slow down and signal as you turn off.*

CAUTION: *Brake pedals must be locked together for road travel. This will insure uniform brake application and maximum stopping ability.*

WARNING: *Extra weight and bad traction conditions such as mud or ice increase your stopping distance. Remember that liquid in the tires, weights on the tractor or wheels, tanks filled with fertilizer, herbicides or insecticides - all these add weight and increase the distance you need in which to stop.*

CAUTION: *Make sure that the weight of a trailed vehicle that is not equipped with brakes. NEVER EXCEEDS the weight of the tractor that is towing the vehicle. Stopping distance increases with increasing speed as the weight of the towed load increases, espcially on hills and slopes.*

WARNING: *A frequent cause of personal injury or death is persons falling off and being run over. Do not permit others to ride. Only one person - the operator - should be on a tractor when it is in operation.*

CAUTION: *Do not drive on roads, or at high speed anywhere, with the differential lock engaged. Difficult steering will occur, and can result in an accident. In field operation, use the differential lock for traction improvement, but release for turning at row ends.*

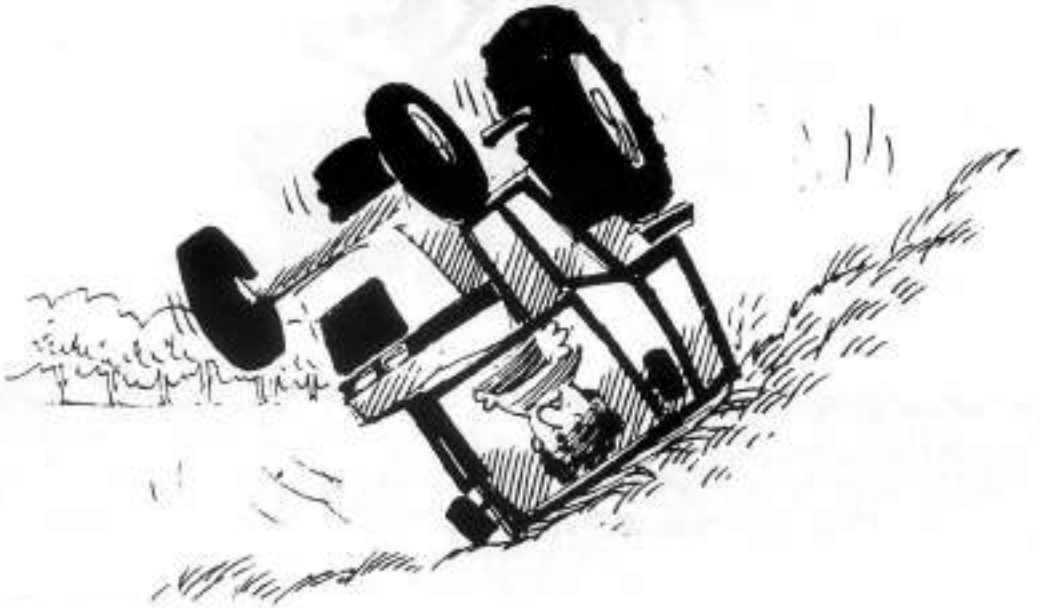
CAUTION: *Try to balance the load primarily on the implement wheels - as in loading a trailer or spreader. Avoid overloading the drawbar. Add front end weights for improved stability. Engage the clutch smoothly, avoid jerking and use the brakes cautiously to avoid jack-knifing.*

WARNING: *Rear upset can result if pulling from wrong location on tractor. Hitch only to the drawbar. Use 3 point hitch only with the implements designed for its use - not as a drawbar.*

WARNING: *When improperly operated, this tractor can roll over or upset. For low clearance use only, the ROPS can be lowered. No protection is provided in this position. For all other uses and transport, secure ROPS in upright position and fasten seat belt. Use of ROPS and seat belt minimize the possibility of injury or death if roll over or upset occurs.*

WARNING: *Securely fasten your seat belt if the tractor has a ROPS frame or cab. The seat belts can help insure your safety if they are used and maintained.*

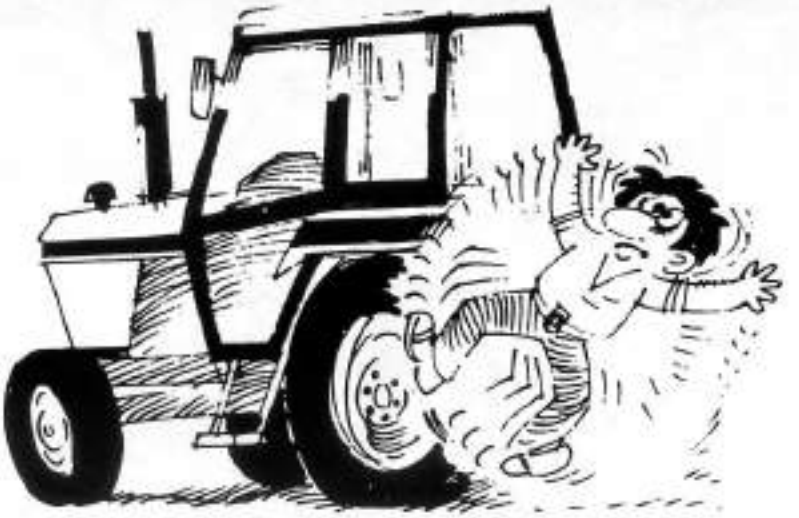
CAUTION: *Never wear a seat belt loosely or with slack in the belt system. Never wear the belt in a twisted condition or pinched between the seat structural members.*



CAUTION: *Operate the tractor with the door closed to provide proper ROPS protection and to properly utilize the heating, ventilating or cooling systems.*

WARNING: *Stay off slopes too steep for safe operation. Shift down before you start up or down a hill with a heavy load. Avoid "free wheeling".*

WARNING: *Rotating machine parts, stay clear, keep shields installed to help protect from clothing entanglement and injury. Wear close-fitted clothing.*



WARNING: *PTO driven machinery can cause serious injury. Before working on or near the PTO shaft, or servicing or clearing the driven machine, put the PTO clutch lever in the DISENGAGE position, the PTO lever in the NEUTRAL POSITION, and STOP the tractor engine.*

WARNING: *Whenever a PTO driven machine is in operation, the PTO guard must be in place for most operations to prevent injury to the operator or bystanders. Where attachments, such as pumps, are installed on the PTO shaft (especially if the tractor PTO guard is moved upward or removed) extended shielding equivalent to the PTO guard must be installed with the attachment. Install the PTO guard to its original position immediately when the attachment is removed. When the PTO is not in use, the tubular guard must be installed over the end of the PTO shaft.*

WARNING: *When doing stationary PTO work and dismounting from the tractor with the PTO running, keep clear of all moving parts as they are a potential safety hazard.*

CAUTION: *Installing an adapter on the PTO shaft, to convert the shaft diameter or to convert the number of splines on the shaft, moves the driveline connection rearward. This exposes the front universal joint and attaching mechanism. Adapters must not be installed unless the original master shield on the tractor is extended with equivalent shielding.*

The use of an adapter is not recommended.

WARNING: *To prevent personal injury due to PTO driven machine shaft bottoming or separating, drawbar front pin must be properly positioned in pivot bracket.*

PTO Shaft	PTO Shaft End To Hitch Pin Hole
540 RPM 6 Spline	14.00 inch (356 mm)
1000 RPM 21 Spline	16.00 inch (407 mm)

CAUTION: *To provide more secure hand and foot mobility, preventing slipping and possible injury, always face the tractor when mounting and dismounting.*

WARNING: *Lower or block hydraulically or mechanically elevated implements and other attachments before servicing or when leaving the equipment.*

CAUTION: *When remote cylinders are connected to the hydraulic system, cycle the control lever about three times to remove air from the cylinder and hoses. With air in the system raised equipment can drop accidentally and cause personal injury or machine damage.*

CAUTION: *The implement should be lowered to the ground before uncoupling of the remote hydraulic hoses.*

WARNING: *Contact with overhead power lines can cause severe electrical burns or death from electrocution. Make sure there is enough clearance between raised equipment and overhead power lines.*

WARNING: *Before leaving the tractor, stop the engine, place all controls in neutral, and either set the parking brake or place range lever in PARK position as equipped.*

WARNING: *Operate controls only when seated in the Operators seat.*

CAUTION: *Never use gasoline, naptha or any other volatile material for any cleaning purposes. These materials may be toxic and/or flammable.*

CAUTION: *Never refuel the tractor when the engine is hot or running.*

CAUTION: *Never smoke while refueling the tractor, servicing the fuel system, checking the batteries or using cold weather starting aids.*

WARNING: *Check and service cooling system according to maintenance instructions.*

Hot coolant can spray out if radiator cap is removed. To remove radiator cap, let system cool, turn to first notch, then wait until all pressure is released. Scalding can result from fast removal of radiator cap.

WARNING: *Never operate the engine in a closed building. Proper ventilation is required under all circumstances.*

CAUTION: *Never attempt to service the air conditioning system unless you are completely familiarized with air conditioning and the safety precautions which must be followed when handling liquid refrigerant, which can cause severe and painful frostbite. Contact your Authorized Case Dealer, who is experienced in servicing and handling of refrigerants.*

DANGER: *BATTERY ACID CAUSES SEVERE BURNS. Batteries contain sulfuric acid. Avoid contact with skin, eyes or clothing. Antidote: EXTERNAL - Flush with water. INTERNAL - Drink large quantities of water or milk. Follow with milk of magnesia, beaten egg or vegetable oil. Call physician immediately. EYES - Flush with water for 15 minutes and get prompt medical attention.*
BATTERIES PRODUCE EXPLOSIVE GASES. Keep sparks, flame and cigarettes away. Ventilate when charging or using in enclosed space. Always shield eyes when working near batteries. KEEP OUT OF REACH OF CHILDREN.

WARNING: *When working around storage batteries, remember that all of the exposed metal parts are "live". Never lay a metal object across the terminals because a spark or short circuit may result.*

WARNING: *Battery explosion and/or damage to electrical components can result from improper connection of booster batteries or charger. Connect positive to positive and negative to negative. Externally, battery acid can cause burns and blindness, and taken internally is poison.*

WARNING: *Unless instructed otherwise never service or make adjustments to the tractor with the engine running. Always set the PARK BRAKE before making adjustments.*

WARNING: *Extreme care must be exercised when adjustng and checking hitch and control linkage when the engine is running and when linkage is under hydraulic or mechanical load. Study the linkage and hitch travel-Keep the hands, arms legs and feet out of the travel arc of the hitch and linkage.*

WARNING: *Hydraulic oil or diesel fuel leaking under pressure can penetrate the skin and cause infection or other injury.*

To Prevent Personal injury:

Relieve all pressure, before disconnecting lines.

Before applying pressure, make sure all connections are tight and components are in good condition.

Never use your hand to check for suspected leaks under pressure. Use a piece of cardboard or wood for this purpose.

If injured by leaking fluid, see your doctor immediately.

WARNING: *Rotating fan and belts. Contact can injure. Keep clear.*

HAND SIGNALS

For communication under noise conditions and special operations the American Society of Agricultural Engineers has made standard agricultural hand signals. You will find that the hand signals can decrease time loss and prevent accidents.

Start the Engine

Move arm in a circle at waist level.

Stop the Engine

Move your right arm across your neck from left to right.

Move Toward Me - Follow Me

Look toward person or vehicle you need to move. Hold one hand in front of you with the back of the hand toward the machine and move your arm from the elbow to the fingers backward and forward.

This Far To Go

Put your hands in front of your face with the back of your hands outward. Move your hands in or out as an indication how far to go.

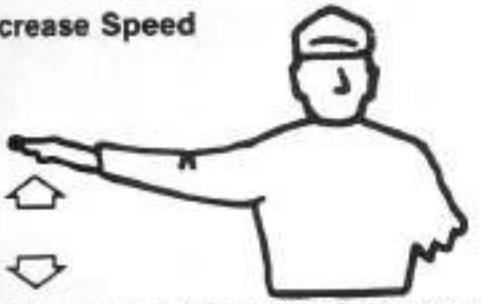
Move Out

Face in the needed direction of movement. Put your arm straight out behind you. Then, swing your arm over your head and forward until your arm is straight out in front of you with the back of your hand up.

Come to Me

(Can also be come to me because I need assistance). Lift your arm vertically over your head with the back of your hand to the rear and turn your arm in large horizontal circles.

Decrease Speed



Put your arm out horizontally with the back of your hand up and then move your arm down about 45 degrees minimum many times. Keep your arm straight and do not move your arm above your shoulder.

Increase Speed

Lift your hand to shoulder level with your fingers closed. Move your closed hand fully up and then return to shoulder level. Do this fast, many times.

Raise Equipment

Point up with one finger and at the same time, move your hand in a circle at head level.

Lower Equipment

Point to the ground with one finger and at the same time, move your hand in a circle.

Stop

Raise your arm fully up with the back of your hand to the rear. Keep this position until the signal is understood.

DECALS

IMPORTANT: *Install new decals if the old decals are destroyed, lost, painted over or can not be read. When parts are replaced that have decals, make sure you install a new decal with each new part.*

NOTE: *New decals are available from your Authorized Case Dealer, or one of the addresses below.*

J I Case Company
Agricultural Equipment Division
25th and Mead Street
Racine, Wisconsin 53403
U.S.A.

J I Case
Service Parts Supply
Bradford Road
BATLEY
West Yorkshire
England WF17 8NU

WARNING

TO PREVENT PERSONAL INJURY FROM ENTANGLEMENT IN MACHINERY-BEFORE DOING ANY WORK ON OR NEAR THE PTO SHAFT OR DRIVEN MACHINE: PLACE PTO CLUTCH LEVER IN LATCHED POSITION, PTO SHIFT LEVER IN NEUTRAL, AND **STOP** TRACTOR ENGINE.

WARNING

ROTATING MACHINE PARTS
STAY CLEAR, KEEP SHIELDS INSTALLED
TO HELP PROTECT FROM CLOTHING
ENTANGLEMENT AND INJURY

WARNING

BEFORE STARTING ENGINE

STUDY OPERATOR'S MANUAL SAFETY MESSAGES
READ ALL SAFETY SIGNS ON MACHINE
CLEAR THE AREA OF OTHER PERSONS

LEARN & PRACTICE SAFE USE OF CONTROLS BEFORE OPERATING

WARNING

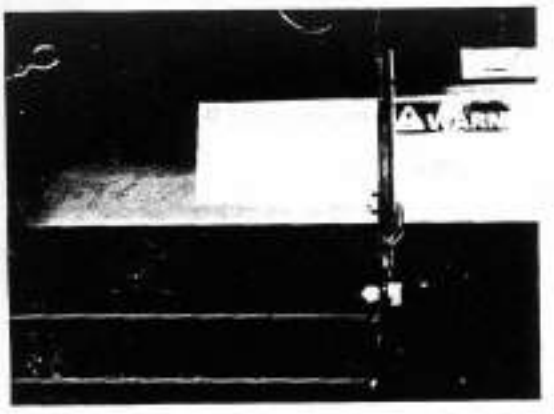
ENGINE CAN START WITH TRANSMISSION IN GEAR WHEN NEUTRAL SAFETY SWITCH IS BY-PASSED:
1. DO NOT CONNECT ACROSS TERMINALS ON STARTER.
2. ATTACH BOOSTER BATTERIES ACCORDING TO SAFE METHOD IN OPERATOR'S MANUAL. THEN USE RECOMMENDED STARTING PROCEDURE FROM OPERATOR'S SEAT.

MACHINE RUN-AWAY CAN CAUSE INJURY OR DEATH TO OPERATOR AND BYSTANDERS.

WARNING

BATTERY EXPLOSION AND/OR DAMAGE TO ELECTRICAL COMPONENTS CAN RESULT FROM IMPROPER CONNECTION OF BOOSTER BATTERIES OR CHARGER. CONNECT POSITIVE TO POSITIVE AND NEGATIVE TO NEGATIVE.

BATTERY ACID IS POISON AND CAN CAUSE BURNS AND BLINDNESS.



POISON / DANGER

BATTERY ACID CAUSES SEVERE BURNS

BATTERIES CONTAIN SULFURIC ACID AVOID CONTACT WITH SKIN EYES OR CLOTHING ANTIDOTE EXTERNAL FLUSH WITH WATER INTERNAL DRINK LARGE QUANTITIES OF WATER OR MILK FOLLOW WITH MILK OF MAGNESIA BEATEN EGG OR VEG OIL CALL PHYSICIAN IMMEDIATELY EYES FLUSH WITH WATER FOR 15 MINUTES AND GET PROMPT MEDICAL ATTENTION

BATTERIES PRODUCE EXPLOSIVE GASES

KEEP SPARKS FLAME AND CIGARETTES AWAY VENTILATE WHEN CHARGING OR USING IN ENCLOSED SPACE ALWAYS SHIELD EYES WHEN WORKING NEAR BATTERIES

KEEP OUT OF REACH OF CHILDREN

⚠ WARNING

TO HELP PREVENT INJURY

BEFORE STARTING

PUT SHIELDS IN PLACE.

SIT IN THE SEAT.

PLACE CONTROLS IN NEUTRAL.

BEFORE OPERATING

CLEAR PEOPLE AWAY.

NO RIDERS.

FASTEN SEAT BELT.

WHEN OPERATING

KEEP AWAY FROM POWER-DRIVEN PARTS.

AVOID STEEP SLOPES, EMBANKMENTS, DITCHES, AND ROUGH TERRAIN.

REDUCE SPEED WHEN TURNING.

IN HIGH SPEED TRAVEL, COUPLE BRAKE PEDALS TOGETHER WHERE APPLICABLE.

ON ROAD TRAVEL, USE FLASHING WARNING LIGHTS WHERE PERMITTED AND KEEP SMV EMBLEM VISIBLE FROM REAR.

WHEN STOPPED

ENGAGE PARK LOCK OR BRAKE.

LOWER IMPLEMENT TO GROUND.

STOP ENGINE BEFORE DISMOUNTING TO SERVICE OR CLEAR MACHINES.

⚠ WARNING

A ROLLOVER PROTECTIVE STRUCTURE (ROPS) USED WITH SEAT BELTS CAN MINIMIZE INJURY IN THE EVENT OF ACCIDENTAL UPSET. IF ROPS HAS BEEN REMOVED, RE-INSTALL.

IF THIS TRACTOR HAS BEEN PURCHASED WITHOUT ROPS AND SEAT BELT, THEY CAN BE PURCHASED FROM AND INSTALLED BY YOUR CASE DEALER.

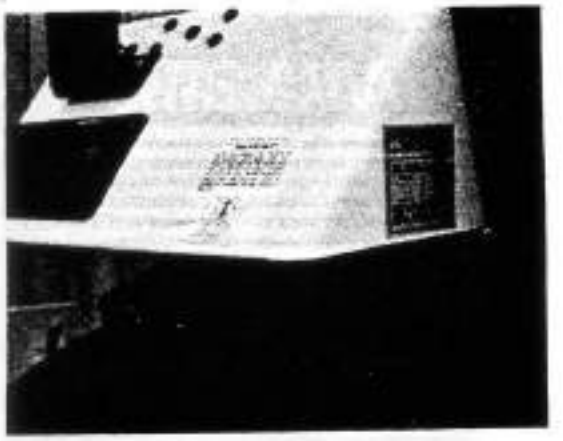
⚠ WARNING

WHEN IMPROPERLY OPERATED, THIS TRACTOR CAN ROLLOVER OR UPSET.

FOR LOW CLEARANCE USE ONLY, THE ROPS CAN BE LOWERED. NO PROTECTION IS PROVIDED IN THIS POSITION.

FOR ALL OTHER USES AND TRANSPORT, SECURE ROPS IN UPRIGHT POSITION AND FASTEN SEAT BELT.

USE OF ROPS AND SEAT BELT MINIMIZE THE POSSIBILITY OF INJURY OR DEATH IF ROLLOVER OR UPSET OCCURS.



WARNING

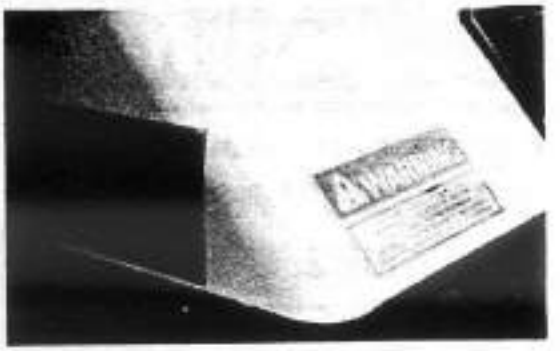
THIS TRACTOR IS EQUIPPED WITH A DUAL SPEED P.T.O. –

6 SPLINE	21 SPLINE
540 R.P.M.	1000 R.P.M.

BE SURE IMPLEMENTS ARE MATCHED FOR THE PROPER DRIVE SPEEDS. CENTER AND LOCK DRAWBAR WHEN USING P.T.O.

WARNING

THIS TRACTOR IS EQUIPPED WITH A TWO SPEED P.T.O. MAKE SURE THAT YOU USE THE CORRECT SPEED OF P.T.O. SHAFT FOR THE IMPLEMENT (540 OR 1000 r/min.) CHECK THE INSTRUCTIONS GIVEN BY THE IMPLEMENT MANUFACTURER. CENTER AND LOCK DRAWBAR WHEN USING P.T.O.



WARNING

REAR UPSET CAN RESULT IF PULLING FROM WRONG LOCATION ON TRACTOR.
HITCH ONLY TO THE DRAWBAR
USE 3 POINT HITCH ONLY WITH IMPLEMENTS DESIGNED FOR ITS USE – NOT AS A DRAWBAR.

WARNING

ANY NEW IMPLEMENT OR EQUIPMENT MUST BE CHECKED FOR CLEARANCE FROM CAB STRUCTURE BEFORE USE.

SEE SAFETY NOTES IN INSTRUCTION BOOK

DOES NOT APPLY TO NORTH AMERICA

WARNING

HOT COOLANT CAN SPRAY OUT IF CAP IS REMOVED SUDDENLY. REMOVE CAP BY TURNING TO FIRST NOTCH. WAIT UNTIL PRESSURE IS RELEASED, THEN CONTINUE REMOVAL. SCALDING CAN RESULT FROM FAST CAP REMOVAL.

WARNING

ROTATING FAN AND BELTS
CONTACT CAN INJURE
KEEP CLEAR

WARNING

CLUTCH & BRAKE FLUID RESERVOIRS
USE ONLY APPROVED
MINERAL OIL
SEE TRACTOR INSTRUCTION BOOK

WARNING

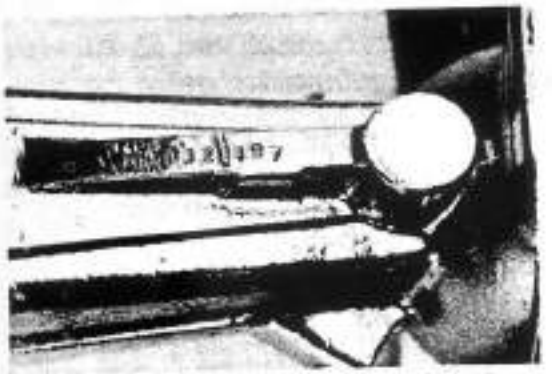
BEFORE LEAVING THE TRACTOR
STOP THE ENGINE, PLACE
ALL CONTROLS IN NEUTRAL,
APPLY THE PARKING BRAKE
AND REMOVE STARTER KEYS.

SERIAL NUMBERS

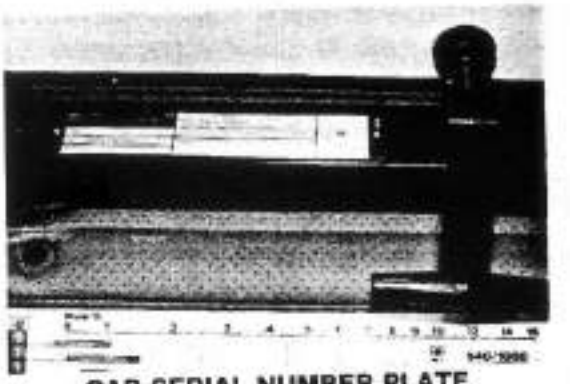
When parts or assistance are needed, or when writing to your Authorized Case Dealer, always give this information:

MODEL AND PRODUCT IDENTIFICATION NUMBER PLATE

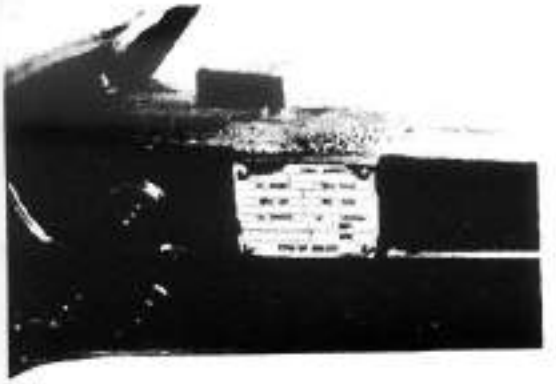
ENGINE SERIAL NUMBER PLATE



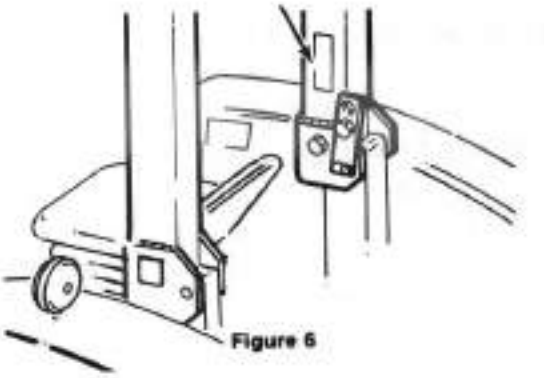
MFD AXLE PRIOR TO PIN 11503001



CAB SERIAL NUMBER PLATE



MFD AXLE FROM PIN 11503001
MFD AXLE SERIAL NUMBER



ROPS SERIAL NUMBER PLATE

Figure 3

Write the serial numbers of your tractor on the lines below.

MODEL NUMBER _____
PRODUCT IDENTIFICATION NUMBER _____
ENGINE SERIAL NUMBER _____
MFD AXLE SERIAL NUMBER _____
CAB SERIAL NUMBER _____
ROPS SERIAL NUMBER _____

DIESEL ENGINE SPECIFICATIONS

General

Type	Turbocharged 4 Cylinder, 4 Stroke Cycle, Valves in Cylinder Head, Cross Flow Porting
Firing Order	1-2-4-3
Bore	100.1 mm (3.94 inch)
Stroke	114.3 mm (4.50 inch)
Piston Displacement	3 598 cm^3 (219 in^3)
Compression Ratio	16:1
Maximum Speed (Full Load)	2200 r/min
Maximum Speed (No Load)	2350 to 2375 r/min
Idle Speed	600 to 650 r/min
Maximum Torque at 1300 r /min	280 Nm (206 lb ft)
Maximum Brake Horsepower at 2200 engine r/min	77 SAE 53 kW (72 DIN)
Rocker Arm to Valve Clearance	0.25 mm (0.010 inch)

IMPORTANT: *Rocker arm to valve clearance adjustments must be made when the engine is cold.*

Piston and Connecting Rod

Compression Rings per Piston	3
Scraper Rings per Piston	1
Type of Piston Pin	Full Float
Type of Bearings	Steel Back with Aluminum Alloy Liners

Main Bearings

Number of Bearings	3
Type of Bearings	Steel Back with Aluminum Alloy Liners. Replacement Bearings Available.

Engine Lubrication System

Working Pressure	275 to 380 kPa (40 to 55 lb/in²) at Operating Temperature
Oil Pump	Gear Type
Oil Filter	Cartridge (Spin-on) with By-Pass Valve
Oil Capacity	7.4 litres (13 U.K. pints)(7.8 U.S. quarts)

Cooling System

Type	Water Pump and Thermo Syphon
Fan	406 mm (16 inch) diameter, 7 Blades
Thermostat	Starts to Open at 79 to 83°C (174 to 181°F) Fully Open at 93 to 96°C (199 to 205°F)
Filler Cap Pressure Setting	69 kPa (10 lb/in³)
Capacity	14 litre (3 U.K. gallons)(14.8 U.S. quarts)

Fuel System

Fuel Injection Pump	Distributor Type CAV
Injection Pump Timing	17 Degrees Before Top Dead Center
Fuel Injectors	CAV
Fuel Filters	Two Paper Elements
Fuel Pump	Diaphragm Operated from the Camshaft
Water Trap	Bowl on Fuel Lift Pump
Fuel Tank Location Without Cab	One Underneath Hood
With Cab	One Under Each Side of Cab
Fuel Tank Capacity Without Cab	72 litre (16 U.K. gallons)(19 U.S. gallons)
With Cab	100 litre (22 U.K. gallons)(27 U.S. gallons)

Air Intake System

Type	Two Stage with Service Indicator and Dust Release Valves
Filter	Dry Type with Main and Safety Elements
Turbocharger	Schwitzer 310335

Starting Aid

Thermostart	Component Activated by the Starter Switch Which Injects Heated Fuel into the Intake Manifold

GENERAL SPECIFICATIONS

Electrical System

Type	12 Volt, Negative Ground
Battery	Test For Cold Start Performance
Standard Duty	420 Ampere Discharge For 1 Minute at -18°C Before Voltage Drops to 1.4 Volts per Cell.
Heavy Duty	550 Ampere Discharge For 1 Minute at -18°C Before Voltage Drops to 1.4 Volts per Cell.
Alternator	45 Ampere (65 Ampere with Air Conditioning)
Voltage Regulator	Part of Alternator
Starter Motor	12 Volt with Solenoid Switch
Head Lamps	12 Volt 40/60 Watt Sealed Beam or Quartz Halogen Bulb
Side Lamps	12 Volt 5 Watt
Direction Turn Signal Lamps	12 Volt 21 Watt
Rear and Stop Lamps	12 Volt 5/21 Watt
Instrument Warning Lamps	No. 168
Instrument Illumination Lamps	No. 194
Fuses, Tractor Without Cab	Two 35 Ampere Two 25 Ampere
Fuses, Tractor With Cab	Four 35 Ampere Four 25 Ampere One 50 Ampere

Brakes

Type	Internal Expanding, Drum Type
Tractor Without Cab	
Operation - Service Brake	Mechanical by Pedal
Park Brake	Mechanical by Lever and Rods
Tractor With Cab	
Operation - Service Brake	Hydraulic by Pedal
Park Brake	Mechanical by Lever and Cables
Brake Fluid	Agricastrol FBS

Hydraulic System

Pump Type	Gear, Front Mounted, Engine Driven, Single or Tandem
Control Valve	Open Center with Return to Neutral Position
Combining Valve (Priority Valve)	Provides for Hitch and Remote Valve Operation or Supplies Total Capacity to Remote Valves
Maximum Oil Flow to Remote Outlets	
Tandem Pump – Both Pumps	58 litres/min (15.3 U.S. gallons/min) (12.7 U.K. gallons/min)
- Front Pump Only	29 litres/min (6.4 U.K. gallons/min) (7.6 U.S. gallons/min)
- Single Pump	29 litres/min (6.4 U.K. gallons/min) (7.6 U.S. gallons/min)
Maximum Operating Pressure	2500 lb/in^2 (17 236 kPa)

NOTE: *To increase the amount of oil available for external equipment, add 4.5 litres (5 U.S. quarts)(1 U.K. gallon) to the transmission oil reservoir. The maximum amount of oil available for external equipment will be:*
Tractor Moving - 13.6 litres (14.5 U.S. quarts)(3 U.K. gallons)
Tractor Not Moving - 18 litres (19 U.S. quarts)(4 U.K. gallons)

Hitch System

Type of Sensing	Top Link
Control	Hand Lever
Lower Links	Swinging with Fixed or Float Position on Lift Arms. Adjustable Lift Link and Leveling Adjustment
Type of Hitch	Three Point, Category I and II
Lifting Capacity at 610 mm (24 inch) Load Centers	1 451 kg (3,200 lb)
Maximum Operating Load (Tractor Moving)	910 kg (2,000 lb)
Maximum Load (Tractor Static)	1 890 kg (4,167 lb)
Maximum Lift With Assist Cylinder (Links Horizontal)	2 268 (5,000 lb)

Drawbar

Type	Swinging, extendable, height adjustable
Swinging Range	330 mm (13 inch)
Lateral Positions	2 Each Side of Center
Height Positions	Two
Pin Hole Diameter	25.4 mm (1 inch)
Maximum Load on Drawbar	
PTO Work Position	1 130 kg (2,500 lb)
Trailer Work Position	1 360 kg (3,000 lb)
Pick-Up Hitch (If Equipped)	1 800 kg (4,000 lb)

Combined Pick-up Hitch Drawbar

Maximum Loads	
Drawbar In (Trailer Position)	1 400 kg (3,086 lb)
Drawbar Out (PTO Position)	1 200 kg (2,645 lb)
Pick-Up Hitch	2 000 kg (4,409 lb)

Power Steering

Type	Hydrostatic, Metering Actuated by Steering Wheel
Pump Type	Rotor, Engine Driven
Steering Cylinder	Equal Displacement
Oil Capacity	1.25 litre (1.32 U.S. quarts)(2 U.K. pints)

Clutch

Independent Type	Double Dry Plate, 305 mm (12 inch) Diameter
Operation	Pedal for Transmission, Hydraulic With Cab Mechanical Without Cab Lever for PTO
Clutch Fluid (Cab)	Agricastrol FBS

Transmission

Synchromesh	Four Speed Range Section and Three Forward, One Reverse Gear Section. Synchromesh between Second and Third Gears.
Oil Capacity	27 Litre (6 U.K. gallons)(7 U.S. gallons)
Power-Shift	Four Forward Speed Epicycilic Gearbox Three Forward and One Reverse Range Gearbox.
Number of Gear Ratios	Twelve Forward, Four Reverse
Oil Capacity	32 Litre (7 U.K. gallons)(8.5 U.S. gallons)

Differential Lock

Type	Mechanical
Operation	Engaged by Pedal, Disengaged by Spring Pressure

Final Drives

Type	Spur Gear
Ratio Prior to Tractor P.I.N. 11503001	10:49
Ratio From Tractor P.I.N. 11503001	11:49

NOTE: *Ratio is stamped on flange of drive shaft.*

Power Takeoff

Maximum Power ..... 50 kW (68 DIN)(67 SAE)
Power at 540 r/min and 1000 r/min ..... 48.5 kW (66 DIN(65 SAE)
Rotation ..... Clockwise from rear

	MULTI SPEED PTO	
PTO SPEED	REQUIRED ENGINE SPEED	NUMBER OF SPLINES
540 r/min	2000 r/min	6
1000 r/min	2000 r/min	6

	REVERSIBLE SHAFT PTO	
PTO SPEED	REQUIRED ENGINE SPEED	NUMBER OF SPLINES
540 r/min	2050 r/min	6
1000 r/min	2050 r/min	21

MFD Axle Prior to P.I.N. 11503001

Type AE 2/169 ..... Center Pivot with Planetary Reduction Hubs
Total Ratio 1:16 038
Oil Capacity
Differential ..... 6 Litres (6.3 U.S. quarts)(10.5 U.K. pints)
Hub (Each) ..... 1.5 Litres (1.6 U.S. quarts)(2.6 U.K. pints)

MFD Axle From Tractor P.I.N. 11503001

Type 709/19 ..... Center Pivot With Planetary Hubs
Total Ratio 1:14 307
Oil Capacity
Differential ..... 4 Litres (4.2 U.S. quarts)(7 U.K. pints)
Hub (Each) ..... 1 Litre (1 U.S. quart)(1-3/4 U.K. pints)

APPROXIMATE TRACTOR SPEEDS

TRACTORS PRIOR TO P.I.N. 11503001 WITH SYNCHROMESH TRANSMISSION

FINAL DRIVE RATIO: 10:49

REAR TIRE SIZE 16.9-30

ROLLING RADIUS ..... 695 mm (27.4 inch)

GEAR	700 r/min		1100 r/min		1800 r/min		2050 r/min		2200 r/min	
	mile/h	km/h	mile/h	km/h	mile/h	km/h	mile/h	km/h	mile/h	km/h
CREEPER 1	0.09	0.15	0.14	0.23	0.24	0.38	0.27	0.43	0.29	0.46
SPEEDS 2	0.15	0.24	0.24	0.38	0.39	0.62	0.44	0.71	0.47	0.76
3	0.26	0.42	0.41	0.66	0.67	1.07	0.76	1.22	0.81	1.31
1	0.34	0.55	0.53	0.86	0.87	1.41	1.00	1.60	1.07	1.72
2	0.56	0.90	0.88	1.41	1.43	2.31	1.63	2.63	1.75	2.82
3	0.68	1.09	1.07	1.72	1.74	2.81	1.99	3.20	2.13	3.43
4	0.86	1.38	1.35	2.17	2.21	3.56	2.52	4.05	2.70	4.35
5	0.96	1.55	1.51	2.43	2.48	3.98	2.82	4.54	3.03	4.87
6	1.11	1.79	1.75	2.81	2.86	4.60	3.26	5.24	3.50	5.63
7	1.41	2.27	2.22	3.57	3.63	5.83	4.13	6.64	4.43	7.13
8	1.71	2.76	2.69	4.34	4.41	7.10	5.02	8.08	5.39	8.67
9	1.92	3.09	3.02	4.86	4.94	7.95	5.62	9.05	6.04	9.71
10	2.43	3.92	3.82	6.15	6.26	10.07	7.13	11.47	7.65	12.31
11	2.81	4.53	4.42	7.11	7.23	11.64	8.24	13.25	8.84	14.22
12	4.85	7.81	7.63	12.28	12.48	20.09	14.22	22.88	15.26	24.55
CREEP R	0.15	0.25	0.24	0.39	0.39	0.63	0.44	0.72	0.48	0.77
1R	0.57	0.91	0.89	1.43	1.46	2.35	1.66	2.67	1.78	2.87
2R	1.13	1.82	1.78	2.86	2.91	4.68	3.31	5.33	3.55	5.72
3R	1.43	2.31	2.25	3.62	3.68	5.93	4.20	6.75	4.50	7.25
4R	2.86	4.60	4.49	7.23	7.35	11.83	8.37	13.47	9.98	14.46

Speed at maximum engine speed with light load 2350 r/min = 16.30 mile/h = 26.23 km/h

To calculate approximate speeds for other tire sizes, do the following

18.4-30, Rolling Radius 720 mm (28.43 inch) Multiply speeds in chart by 1.03

16.9-34, Rolling Radius 745 mm (29.33 inch) Multiply speeds in chart by 1.07

13.6-36, Rolling Radius 715 mm (28.14 inch) Multiply speeds in chart by 1.02

13.6-38, Rolling Radius 740 mm (29.13 inch) Multiply speeds in chart by 1.06

EXAMPLE: Gear selected 6

Engine Speed ..... 1800 r/min

Speed in Chart ..... 2.86 mile/h

Speed for 18.4-30 Tire = ... 2.86 X 1.03 = 2.94 mile/h

APPROXIMATE TRACTOR SPEEDS

TRACTOR FROM P.I.N. 11503001 WITH SYNCHROMESH TRANSMISSION

FINAL DRIVE RATIO: 11:49

REAR TIRE SIZE 16.9-30

ROLLING RADIUS ..... 695 mm (27.4 inch)

GEAR	700 r/min		1100 r/min		1800 r/min		2050 r/min		2200 r/min	
	mile/h	km/h	mile/h	km/h	mile/h	km/h	mile/h	km/h	mile/h	km/h
CREEPER 1	0.10	0.16	0.16	0.26	0.26	0.42	0.30	0.47	0.32	0.51
SPEEDS 2	0.16	0.27	0.26	0.42	0.43	0.68	0.48	0.78	0.52	0.83
3	0.29	0.46	0.45	0.72	0.73	1.18	0.83	1.34	0.90	1.44
1	0.37	0.60	0.59	0.95	0.96	1.55	1.10	1.76	1.18	1.89
2	0.61	0.99	0.96	1.55	1.58	2.54	1.80	2.89	1.93	3.10
3	0.75	1.20	1.17	1.89	1.92	3.09	2.19	3.52	2.35	3.77
4	0.95	1.52	1.49	2.39	2.43	3.91	2.77	4.46	2.97	4.78
5	1.06	1.70	1.66	2.68	2.72	4.38	3.10	4.99	3.33	5.36
6	1.22	1.97	1.92	3.09	3.15	5.06	3.58	5.77	3.85	6.19
7	1.55	2.50	2.44	3.92	3.99	6.42	4.54	7.31	4.87	7.84
8	1.89	3.04	2.96	4.77	4.85	7.81	5.52	8.89	5.93	9.54
9	2.11	3.40	3.32	5.34	5.43	8.74	6.19	9.96	6.64	10.68
10	2.68	4.31	4.21	6.77	6.88	11.08	7.84	12.62	8.41	13.54
11	3.09	4.98	4.86	7.82	7.95	12.80	9.06	14.58	9.72	15.65
12	5.34	8.59	8.39	13.50	13.73	22.10	15.64	25.17	16.78	27.01
CREEP R	0.16	0.27	0.26	0.42	0.43	0.69	0.49	0.79	0.53	0.85
1R	0.62	1.00	0.98	1.58	1.60	2.58	1.83	2.94	1.96	3.15
2R	1.24	2.00	1.95	3.15	3.20	5.15	3.64	5.86	3.91	6.29
3R	1.58	2.54	2.48	3.99	4.05	6.52	4.62	7.43	4.95	7.97
4R	3.14	5.06	4.94	7.95	8.08	13.01	9.21	14.82	9.88	15.90

Speed at maximum engine speed with light load 2350 r/min = 17.93 mile/h = 28.85 km/h

To calculate approximate speeds for other tire sizes, do the following

18.4-30, Rolling Radius 720 mm (28.43 inch) Multiply speeds in chart by 1.03

16.9-34, Rolling Radius 745 mm (29.33 inch) Multiply speeds in chart by 1.07

13.6-36, Rolling Radius 715 mm (28.14 inch) Multiply speeds in chart by 1.02

13.6-38, Rolling Radius 740 mm (29.13 inch) Multiply speeds in chart by 1.06

EXAMPLE: Gear selected 6

Engine Speed ..... 1800 r/min

Speed in Chart ..... 2.86 mile/h

Speed for 18.4-30 Tire = ... 2.86 X 1.03 = 2.94 mile/h

APPROXIMATE TRACTOR SPEEDS

TRACTORS PRIOR TO P.I.N. 11503001 WITH POWER SHIFT TRANSMISSION

FINAL DRIVE RATIO: 10:49
REAR TIRE SIZE 16.9-30
ROLLING RADIUS ..... 695 mm (27.4 inch)

LEVER POSITION		700 r/min		1100 r/min		1800 r/min		2050 r/min		2300 r/min	
RANGE	POWER-SHIFT	mile/h	km/h	mile/h	km/h	mile/h	km/h	mile/h	km/h	mile/h	km/h
1	1	0.31	0.50	0.49	0.79	0.80	1.29	0.92	1.47	0.98	1.58
1	2	0.43	0.69	0.67	1.08	1.10	1.77	1.25	2.01	1.34	2.16
1	3	0.56	0.89	0.87	1.41	1.43	2.30	1.63	2.62	1.75	2.81
1	4	0.76	1.22	1.19	1.92	1.95	3.14	2.22	3.58	2.39	3.84
2	1	0.84	1.35	1.32	2.12	2.16	3.47	2.46	3.95	2.64	4.24
2	2	1.15	1.85	1.80	2.90	2.95	4.75	3.36	5.40	3.60	5.80
2	3	1.49	2.40	2.34	3.77	3.84	6.17	4.37	7.03	4.69	7.54
2	4	2.04	3.28	3.20	5.16	5.24	8.44	5.97	9.61	6.41	10.31
3	1	1.98	3.18	3.11	5.00	5.09	8.18	5.79	9.32	6.22	10.00
3	2	2.70	4.35	4.25	6.84	6.95	11.19	7.92	12.74	8.49	13.67
3	3	3.52	5.66	5.53	8.89	9.04	14.55	10.30	16.57	11.05	17.78
3	4	4.81	7.73	7.55	12.15	12.36	19.88	14.07	22.65	15.10	24.30
R	1	0.87	1.40	1.37	2.20	2.24	3.60	2.55	4.10	2.73	4.40
R	2	1.19	1.91	1.87	3.01	3.06	4.92	3.48	5.60	3.74	6.01
R	3	1.55	2.49	2.43	3.91	3.98	6.40	4.53	7.29	4.86	7.82
R	4	2.11	3.40	3.32	5.34	5.43	8.74	6.19	9.96	6.64	10.69

Speed at maximum engine speed with light load 2350 r/min = 16.13 mile/h = 25.96 km/h

To calculate approximate speeds for other tire sizes, do the following

18.4-30, Rolling Radius 720 mm (28.43 inch) Multiply speeds in chart by 1.03
16.9-34, Rolling Radius 745 mm (29.33 inch) Multiply speeds in chart by 1.07
13.6-36, Rolling Radius 715 mm (28.14 inch) Multiply speeds in chart by 1.02
13.6-38, Rolling Radius 740 mm (29.13 inch) Multiply speeds in chart by 1.06

EXAMPLE: Gear selected 6
Engine Speed ..... 1800 r/min
Speed in Chart ..... 2.86 mile/h
Speed for 18.4-30 Tire = ... 2.86 X 1.03 = 2.94 mile/h

APPROXIMATE TRACTOR SPEEDS

TRACTORS FROM P.I.N. 11503001 WITH POWER SHIFT TRANSMISSION

FINAL DRIVE RATIO: 11:49

REAR TIRE SIZE 16.9-30

ROLLING RADIUS ..... 695 mm (27.4 inch)

LEVER POSITION		700 r/min		1100 r/min		1800 r/min		2050 r/min		2300 r/min	
RANGE	POWER-SHIFT	mile/h	km/h	mile/h	km/h	mile/h	km/h	mile/h	km/h	mile/h	km/h
1	1	0.34	0.55	0.54	0.87	0.88	1.42	1.01	1.62	1.08	1.74
1	2	0.47	0.76	0.74	1.19	1.21	1.95	1.38	2.22	1.48	2.38
1	3	0.61	0.98	0.96	1.55	1.57	2.53	1.79	2.88	1.92	3.09
1	4	0.84	1.34	1.31	2.11	2.15	3.46	2.45	3.94	2.63	4.23
2	1	0.92	1.49	1.45	2.33	2.37	3.82	2.70	4.35	2.90	4.67
2	2	1.26	2.03	1.98	3.19	3.24	5.22	3.69	5.94	3.96	6.38
2	3	1.64	2.64	2.58	4.15	4.22	6.79	4.81	7.73	5.16	8.30
2	4	2.24	3.61	3.52	5.67	5.77	9.28	6.57	10.57	7.05	11.34
3	1	2.18	3.50	3.42	5.50	5.59	9.00	6.37	10.25	6.84	11.00
3	2	2.97	4.78	4.67	7.52	7.65	12.30	8.71	14.01	9.34	15.04
3	3	3.87	6.22	6.08	9.78	9.95	16.00	11.33	18.23	12.16	19.56
3	4	5.29	8.51	8.31	13.37	13.59	21.87	15.48	24.91	16.61	26.73
R	1	0.96	1.54	1.50	2.42	2.46	3.96	2.80	4.51	3.01	4.84
R	2	1.31	2.10	2.05	3.31	3.36	5.41	3.83	6.16	4.11	6.61
R	3	1.70	2.74	2.67	4.30	4.37	7.04	4.98	8.02	5.35	8.60
R	4	2.32	3.74	3.65	5.88	5.98	9.62	6.81	10.95	7.31	11.76

Speed at maximum engine speed with light load 2350 r/min = 1 7.74 mile/h = 28.56 km/h

To calculate approximate speeds for other tire sizes, do the following

18.4-30, Rolling Radius 720 mm (28.43 inch) Multiply speeds in chart by 1.03
16.9-34, Rolling Radius 745 mm (29.33 inch) Multiply speeds in chart by 1.07
13.6-36, Rolling Radius 715 mm (28.14 inch) Multiply speeds in chart by 1.02
13.6-38, Rolling Radius 740 mm (29.13 inch) Multiply speeds in chart by 1.06

EXAMPLE: Gear selected 6
Engine Speed ..... 1800 r/min
Speed in Chart ..... 2.86 mile/h
Speed for 18.4-30 Tire = ... 2.86 X 1.03 = 2.94 mile/h

NOTE: *Speeds in the charts are approximate. To calcuate correct speeds do the following: Measure one rear wheel revolution (Rolling circumference). Divide this measurement by 6.283 to obtain the rolling radius. Divide your rolling radius by the one for the chart tire.*

EXAMPLE: Wheel revolution = 190 inches ÷ 6.283 = 30.24 ÷ 30.31 = 0.99
Multiply speeds in chart by 0.99

DIESEL FUEL SPECIFICATIONS

Use a good grade of Number Two Diesel Fuel in your Case Diesel Engine. Do not use other types or grades of fuel. The use of other fuels will result in loss of engine power and high fuel consumption.

NOTE: *When the temperature is very cold, the use of a mixture of Number One and Number Two Diesel Fuel is permitted for a short period of time.*

Specifications For Acceptable Number Two Diesel Fuel

A.P.I. Gravity (Min)	30
Pour Point (Max)	10°F (5°C) below ambient operating temperature
Distillation (90% Point)	540 to 625°F (282 to 329°C)
Flash Point (Min)	125°F (52°C) or legal
Kinematic Viscosity Centistokes 100°F (38°C)(Min)	2.0 to 4.3 Seconds*
Cetane Number (Min)	40 (45 to 55 For Cold Temperature or High Altitude Use)
Water and Sediment Volume (Max)	0.05%
Ash Weight (Max)	0.01%
Sulphur Weight (Max)	0.5%
Carbon Residue of 10% Residuum (Max)	0.2%
Corrosion, Copper Strip, 3 hours at 212°F (100°C)	Number 3

(*32 to 40 Saybolt Universal Seconds)

APPROXIMATE MEASUREMENTS
2WD Tractor Without Cab

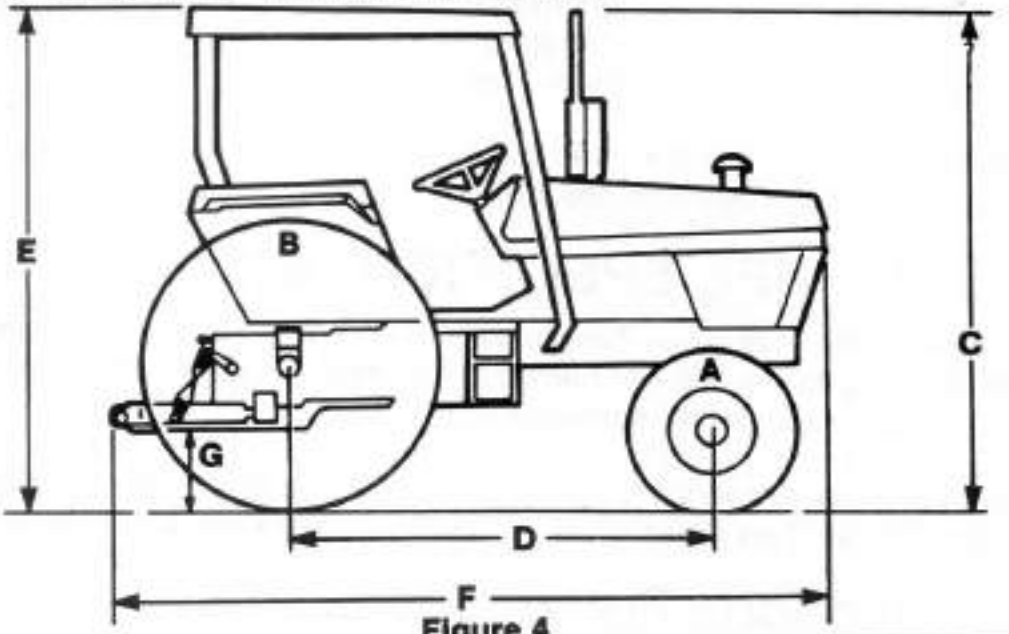


Figure 4

	TIRE	WHEEL
A	7.50-16	5.50 x 16

	TIRE	WHEEL
B	16.9-30	DW14 x 30

C	2 540 mm (100 INCHES)
D	2 108 mm (83 INCHES)
E	2 413 mm (95 INCHES)
F	3 632 mm (143 INCHES)
G	381 mm (15 INCHES)

Turning Radius Without Brake Assistance ..... 3 403 mm (134 Inches)
Turning Radius With Brake Assistance ..... 3 124 mm (123 Inches)

APPROXIMATE TRANSPORT WEIGHT

Approximate Weight of Tractor Without ROPS ..... 2 449 kg (5,400 lb)
With ROPS ..... 2 587 kg (5,700 lb)
(Equipped with most common optional equipment) Does not include iron weight or liquid ballast.

IMPORTANT: *The total tractor weight, for tractors equipped with two or four post ROPS, with all equipment and ballast must never be more than 4 445 kg (9,800 lb).*

APPROXIMATE MEASUREMENTS
MFD Tractor Without Cab

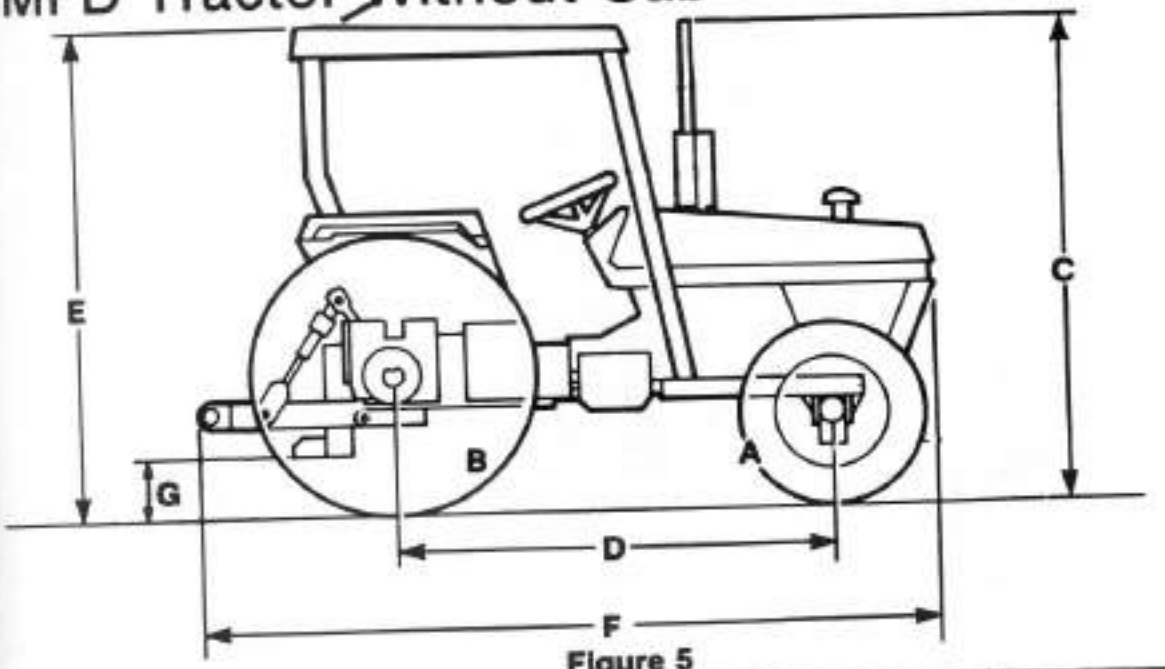


Figure 5

	TIRE	WHEEL
A	11.2-24	W10x24

	TIRE	WHEEL
B	16.9-30	DW 14 x 30

C	2 585 mm (102 INCHES)
D	2 140 mm (84 INCHES)
E	2 413 mm (95 INCHES)
F	3 632 mm (143 INCHES)
G	342 mm (13.5 INCHES)

Turning Radius With MFD Engaged, MFD Axle Prior to P.I.N. 11503001.
Without Brake Assistance ..... 4 851 mm (191 inches)
With Brake Assistance ..... 3 657 mm (144 inches)

Turning Radius with MFD Engaged for MFD Tractor PIN 11513001 and After.
Tread width set at 1 727mm (68 inches). .Lock angle set at 50°.
Without Brake Assistance ..... 4 737 mm (186 inches)
With Brake Assistance ..... 3 556 mm (140 inches)

APPROXIMATE TRANSPORT WEIGHT

Approximate Weight of Tractor Without ROPS ..... 3 044 kg (6,710 lb)
With ROPS ..... 3 124 kg (6,888 lb)

(Equipped with most common optional equipment) Does not include iron weight or liquid ballast.

IMPORTANT: *The total tractor weight, for tractors equipped with two or four post ROPS, with all equipment and ballast must never be more than 4 445 kg (9,800 lb).*

APPROXIMATE MEASUREMENTS
2WD Tractor With Cab

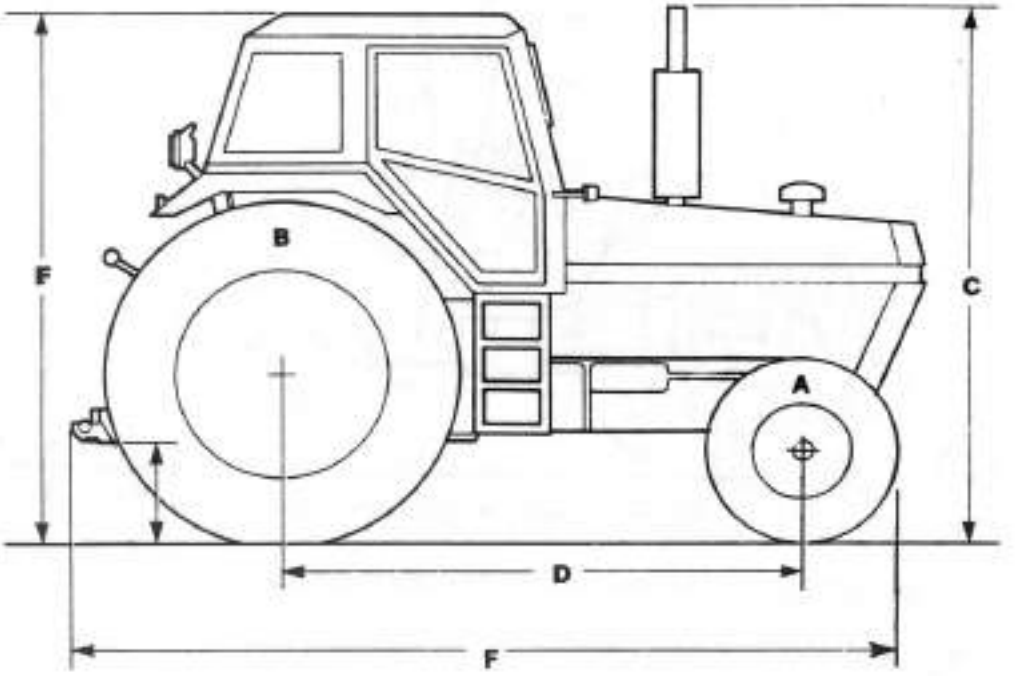


Figure 6

	TIRE	WHEEL
A	7.50-16	5.50 x 16

	TIRE	WHEEL
B	16.9-30	DW 14 x 30

C	2 590 mm (102 INCHES)
D	2 108 mm (83 INCHES)
E	2 540 mm (100 INCHES)
F	3 632 mm (143 INCHES)
G	381 mm (15 INCHES)

Turning Radius Without Brake Assistance ..... 3 403 mm (134 inches)
Turning Radius With Brake Assistance ..... 3 124 mm (123 inches)

APPROXIMATE TRANSPORT WEIGHT

Approximate Weight of Tractor (Synchromesh)..... 2 957 kg (6,520 lb) (Equipped with most common optional equipment) Does not include iron weight or liquid ballast. Add 80 kg (176 lb) for Power Shift.

IMPORTANT: *The total tractor weight, for tractors equipped with cab, with all equipment and ballast must never be more than 4 762 kg (10,500 lb).*

APPROXIMATE MEASUREMENTS
MFD Tractor With Cab

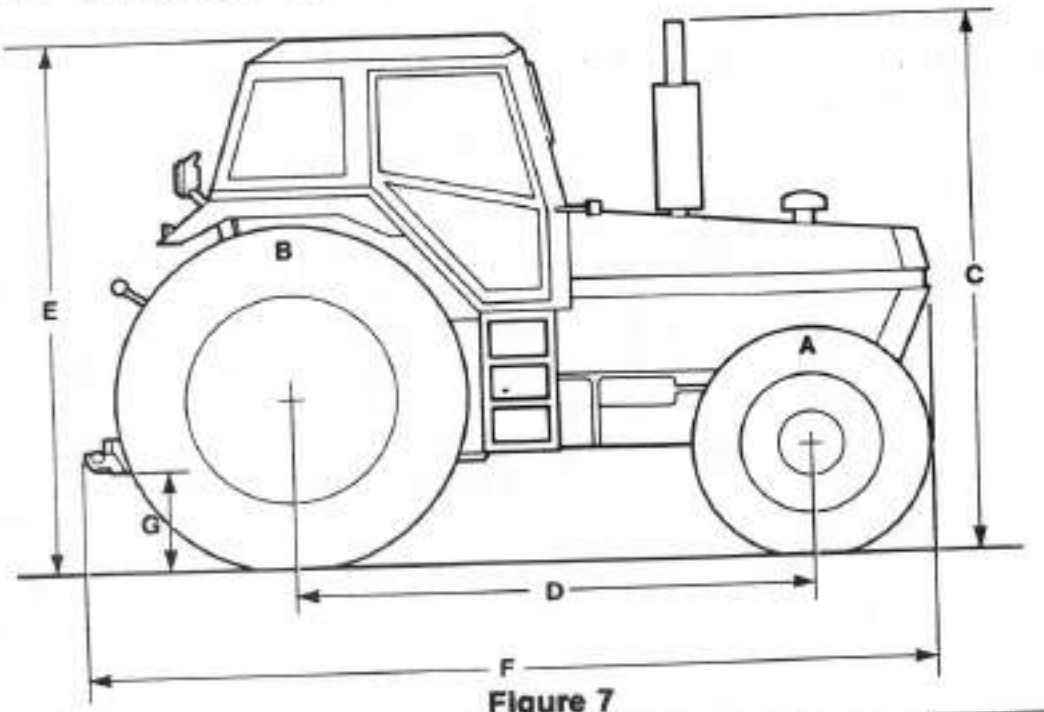


Figure 7

	TIRE	WHEEL
A	11.2-24	W10 x 24

	TIRE	WHEEL
B	16.9-30	DW 14 x 30

C	2 590 mm (102 INCHES)
D	2 140 mm (84 INCHES)
E	2 540 mm (100 INCHES)
F	3 632 mm (143 INCHES)
G	342 mm (13.5 INCHES)

Turning Radius With MFD Engaged, MFD Axle Prior to P.I.N. 11503001.
Without Brake Assistance ..... 4 851 mm (191 inches)
With Brake Assistance ..... 3 657 mm (144 inches)

Turning Radius with MFD Engaged for MFD Tractor PIN 11513001 and After.
Tread width set at 1 727mm (68 inches). .Lock angle set at 50°
Without Brake Assistance ..... 4 737 mm (186 inches)
With Brake Assistance ..... 3 556 mm (140 inches)

APPROXIMATE TRANSPORT WEIGHT

Approximate Weight of Tractor ..... 3 243 kg (7,150 lb)
(Equipped with most common optional equipment) Does not include iron weight or liquid ballast. Add 80kg (176 lb) for Power Shift
IMPORTANT: *The total tractor weight, for tractors equipped with cab, with all equipment and ballast must never be more than 4 762 kg (10,500 lb).*

TIRE AND WHEEL EQUIPMENT

Front Tires - 2WD (General Work)

TIRE SIZE	TIRE PLY	RIM SIZE	MAX LOAD EACH TIRE	TIRE PRESSURE SEE NOTE 1, 2 & 3
7.50-16	6	5.50 x 16	1,230 lb 560 kg	24 lb/in² (165 kPa)(1.65 bar)

Front Tires - 2WD (Loader Work)

TIRE SIZE	TIRE PLY	RIM SIZE	MAX LOAD EACH TIRE	TIRE PRESSURE SEE NOTE 1, 2 & 3
7.50-16	6	5.50 x 16	1,620 lb 735 kg	40 lb/in² (276 kPa)(2.76 bar)
9.00-10	10	6.00F x 10	1550 lb (703 kg)	40 lb/in² (276 kPa)(2.76 bar)
9.5L-15	6	8L8x15	1820lb (825kg)	40lb/10² (276 kPa)(2.76 bar)

Front Tires - MFD (Road and Loader Work)

TIRE SIZE	TIRE PLY	RIM SIZE	MAX LOAD EACH TIRE	TIRE PRESSURE SEE NOTE 1, 2 & 3
11.2-24	6	W10 x 24	2,210 lb 1 000 kg	24 lb/in² (165 kPa)(1.65 bar)
12.4-24	6	W10 x 24	2,640 lb 1 200 kg	24 lb/in² (165 kPa)(1.65 bar)

Front Tires - MFD (Field Work)

TIRE SIZE	TIRE PLY	RIM SIZE	MAX LOAD EACH TIRE	TIRE PRESSURE SEE NOTE 1, 2 & 3
11.2-24	6	W10 x 24	1,480 lb 670 kg	12 lb/in² (83 kPa)(0.8 bar)
12.4 x 24	6	W10 x 24	1 760 lb 800 kg	12 lb/in² (83 kPa)(0.8 bar)

Rear Tires (Maximum Speed) 29 km/h (18 mile/h)

TIRE SIZE	TIRE PLY	RIM SIZE	MAX LOAD EACH TIRE	TIRE PRESSURE SEE NOTE 1, 2 & 3
13.6-36	6	W12-36	3,365 lb 1 525 kg	20 PSI (138 kPa)(1.4 bar)
16.9-30	6	W14-30	4,200 lb 1 905 kg	18 PSI (124 kPa)(1.2 bar)
13.6-38	6	W12-38	3,470 lb 1,575 kg	20 PSI (138 kPa)(1.4 bar)
18.4-30	6	W14-30	4,300 lb 1 950 kg	14 PSI (96 kPa)(0.96 bar)
16.9-34	6	W14-34	4,460 lb 2 025 kg	18 PSI (124 kPa)(1.2 bar)

Rear Tires (Loads and Pressure)

Important: *See Notes*

PRESSURE	PSI kPa BAR	12 83 0.8	14 96 1.0	18 124 1.2	19 131 1.3	20 138 1.4	22 151 1.5	23 158 1.6
TIRE SIZE	PLY RATING	CROSS PLY ONLY (NOTE 2)		LOAD PER TIRE IN kg (NOTES 1 AND 3)				
13.6-36	6	—	1235	1360	1425	1490	1555	1615
13.6-38	6	—	1270	1405	1465	1530	1595	1660
16.9-30	6	—	—	1815	1900			
16.9-34	6	—	—	1920	2015			
18.4-30	6	—	—	2225	2320	2415		

WARNING: ***A tire can explode during inflation and cause serious injury or death. Never increase air pressure above 35 lb/n² (2.4 bars) to seat the bead on the rim. Replace a tire if it has any defect. Replace a wheel rim which has cracks, wear or severe rust. Make sure that all the air is removed from a tire before removing the tire from the rim. Double check or make sure that the tire is correctly seated before inflating. Never use force on an inflated or partially inflated tire.***

TIRE ARRANGEMENTS FOR MECHANICAL FRONT DRIVE (MFD)

MFD Tractor Prior to P.I.N. 11503001

FRONT TIRE	REAR TIRE
11.2-24	16.9-30 12.4-36
12.4-24	13.6-38 18.4-30 16.9-34 13.6-36

MFD Tractor From P.I.N. 11503001

FRONT TIRE	REAR TIRE
11.2-24	16.9-30 13.6-36
12.4-24	18.4-30 13.6-38 16.9-34

IMPORTANT: *Do not mix cross ply and radial tires. Use the same manufacturers tires on all wheels.*

NOTE: *The use of any other tire arrangement will cause damage to the transmission.*
Do not install dual wheels and tires.

NOTE: *Check the tire air pressure every 50 hours of operation or each week.*

Notes

NOTE 1: For best tire life check load on each tire and set pressure as given in the table. Too low a pressure causes early tire wall failure. Too high a pressure causes higher tread wear or damage. Check pressure every 50 hours or each week.

NOTE 2: Cross ply tires can have the pressure lowered for increased traction in field work. For speeds below 16 Km/h (10 mile/h) loads can be increased by 20%.

NOTE 3: Never use Radial Ply tires below 1.2 bar. It is not necessary to lower pressures to get better traction in the field with Radial tires.

IMPORTANT: *Before tractors leave the factory, the tire pressures are increased to approximately 2 bar. Check and adjust to the correct pressure before operating the tractor.*

WARNING: ***Do not remove, install or make repairs to a tractor tire on a rim. Take the tire and rim to a tire shop where persons with special training and special safety tools are available. If the tire is not in correct position on the rim, or if too full of air, the bead can loosen on side and cause air to leak at high speed and with large force. Because the air leak can thrust the tire in any direction, and with much force, you will be in danger of injury.***

NOTE: *When checking tire pressure on tires with liquid ballast, the valve must be at the bottom of the tire to get a correct reading.*

REAR TIRE MOUNTING

IMPORTANT: *To get the traction and cleaning action of the lugs, the rear tires must be installed on the wheels so the tread is turning in the direction shown.*

On an MFD tractor the front tires must be the same for normal operation, but can be turned around to improve rearward traction for loader work.

Figure 8

FRONT WHEEL TREAD POSITIONS
2 Wheel Drive Tractors

Measure the tread width between the centers of each tire at a point as near the ground as possible.

The tread widths for 2WD front axles are 1320 to 1828 mm (52 to 72 inches) or 1422 to 2032 mm (56 to 80 inch) according to axle fitted. The tread is adjusted in 50 mm (2 inch) steps each side of the center.

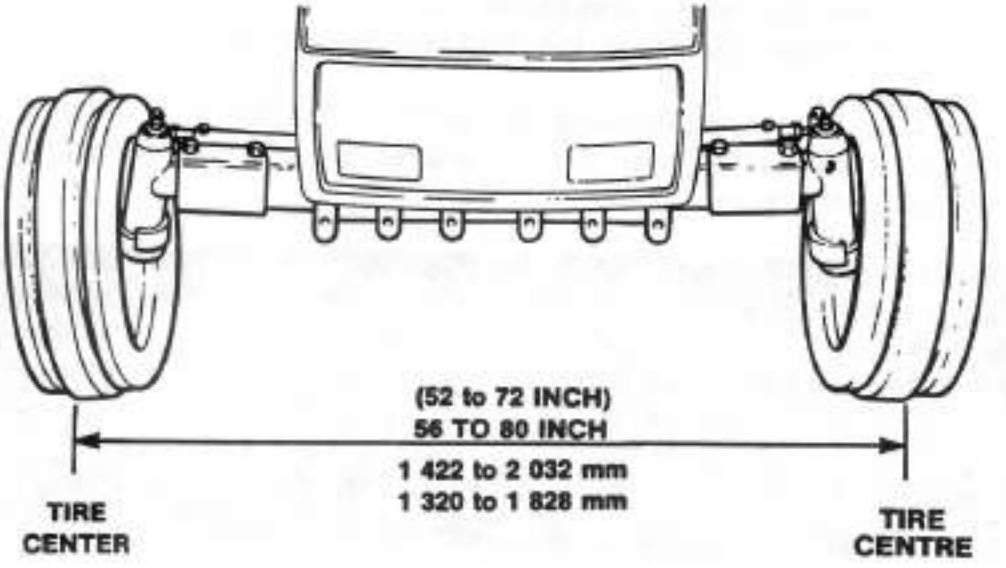


Figure 9

FRONT WHEEL TREAD POSITIONS
MFD Tractors PRIOR TO P.I.N. 11503001

Measure the tread width between the centers of each tire at a point as near the ground as possible.
The tread widths are as shown below.

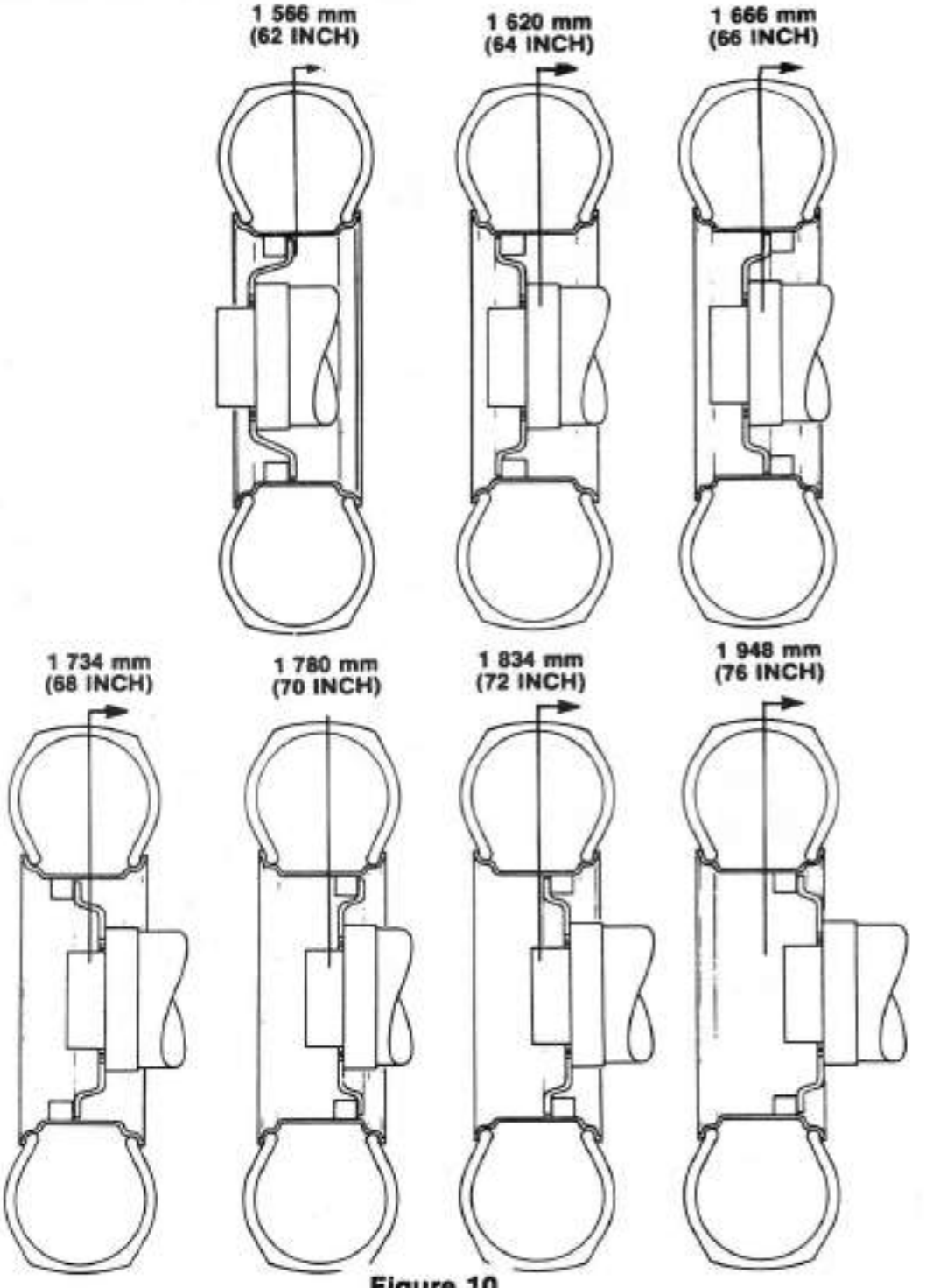


Figure 10

Tighten rim to wheel center nuts to 176 to 217 Nm (130 to 160 lb ft).
Tighten the wheel to hub nuts 140 Nm (103 lb ft).

FRONT WHEEL TREAD POSITIONS
MFD Tractors P.I.N. 11503001 and After

Measure the tread width between the center of each tire at a point as near to the ground as possible.
Adjust by fastening rim to wheel center in the positions shown.
Tighten rim to wheel center nuts to 250 Nm (185 lb ft).
Tighten the wheel to hub nuts to 300 Nm (220 lb ft).

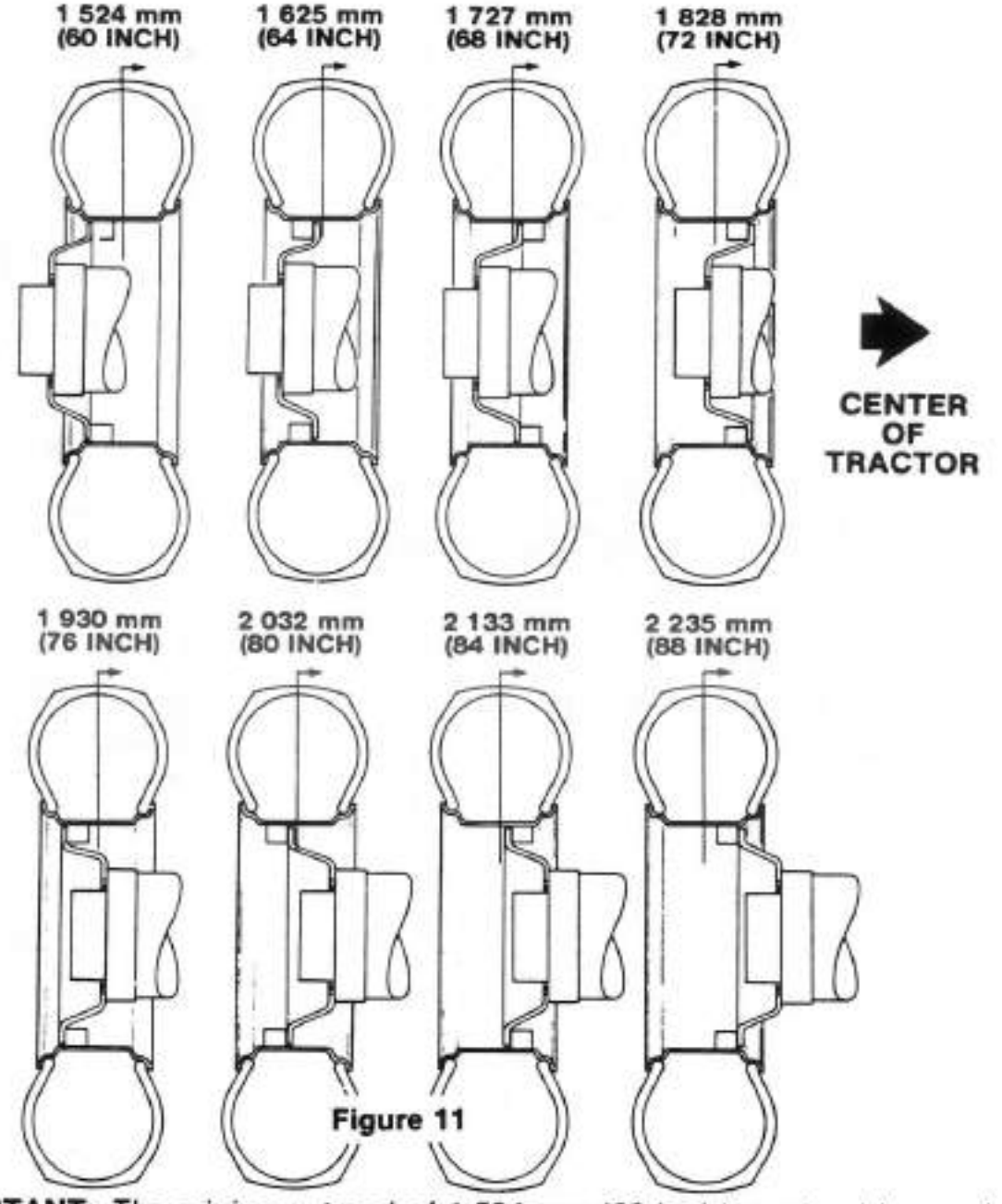


Figure 11

IMPORTANT: *The minimum tread of 1 524 mm (60 inch) must not be used with 13.6-28 tires fitted or damaged will be caused.*

REAR WHEEL TREAD POSITIONS
Manual Adjusted

Measure the tread width between the centers of each tire. The minimum tread position of 1 422 mm (56 inch) can not be used when 16.9-30, 16.9-34, and 18.4-30 tires are fitted because the tires will make contact with the fenders.
Tighten rim to wheel center nuts 176 to 217 Nm (130 to 160 lb ft).
Tighten the wheel to hub nuts 270 to 325 Nm (200 to 240 lb ft).

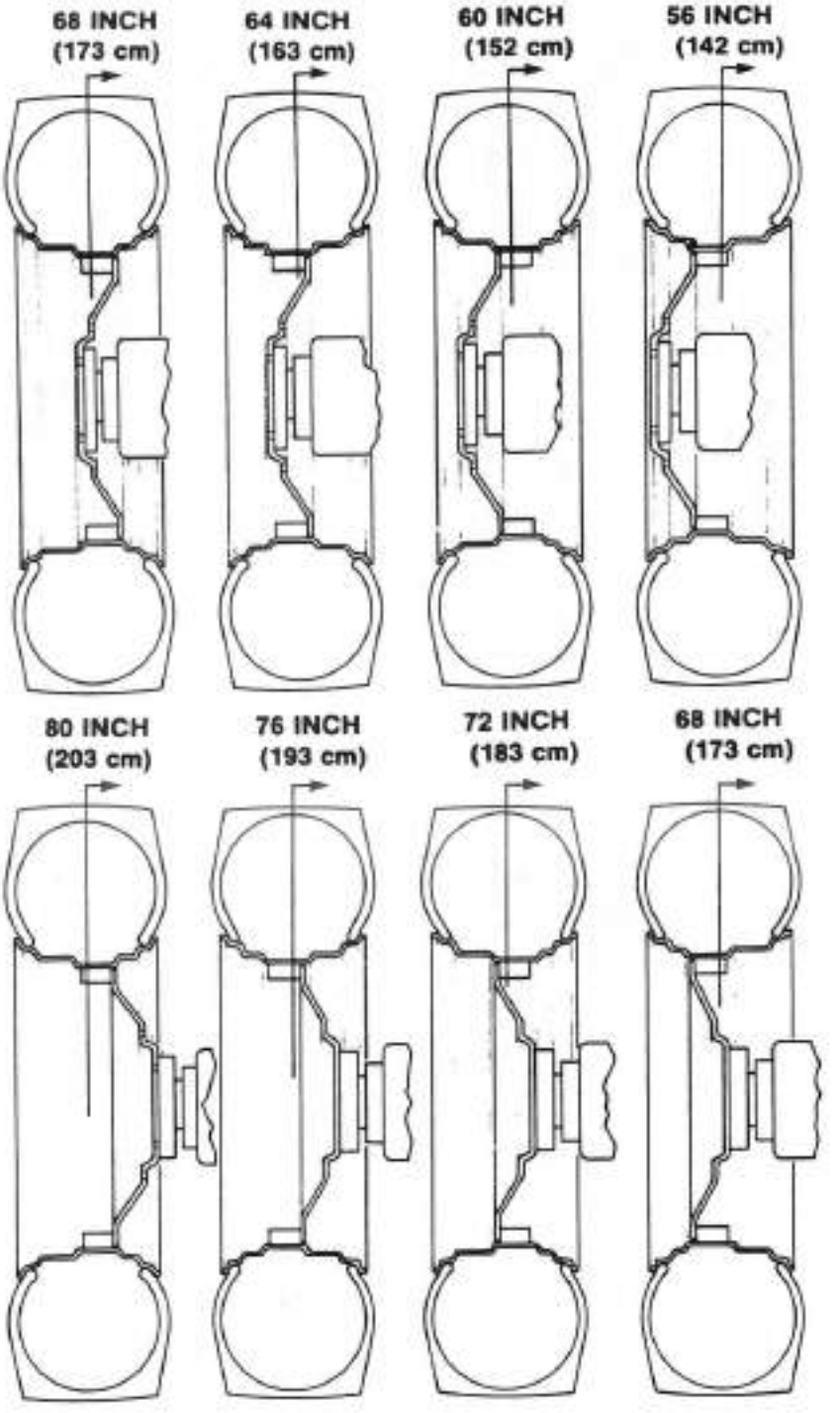
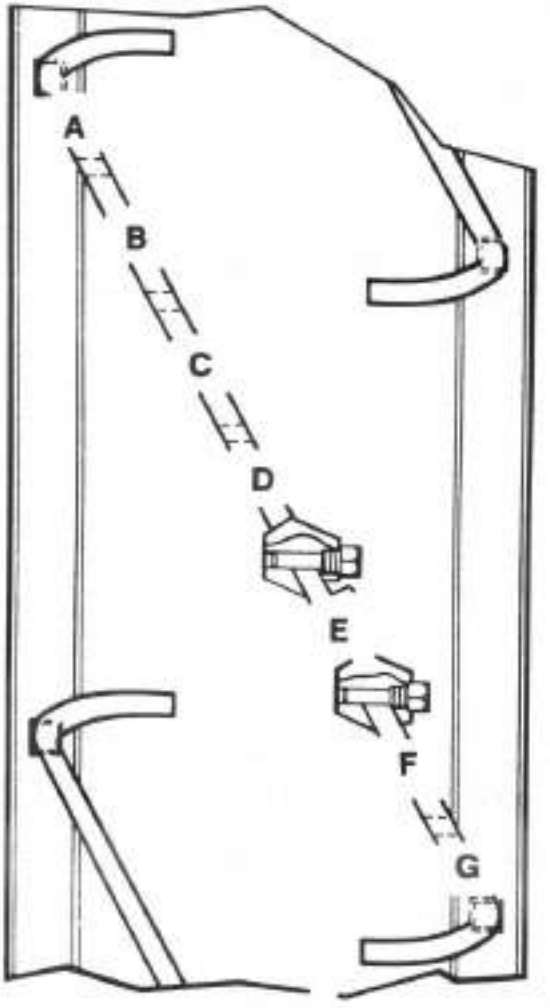


Figure 12

REAR WHEEL TREAD POSITIONS

Power Adjusted

Measure the tread width between the center of each tire.



A. 1 524 mm (60 INCH)
B. 1 625 mm (64 INCH)
C. 1 727 mm (68 INCH)
D. 1 828 mm (72 INCH)
E. 1 930 mm (76 INCH)
F. 2 032 mm (80 INCH)
G. 2 133 mm (84 INCH)

Figure 13

LUBRICATION

Service your Case tractor at the intervals and locations given on the Lubrication Chart. When you service your tractor, use only high quality lubricants.

Engine Hourmeter

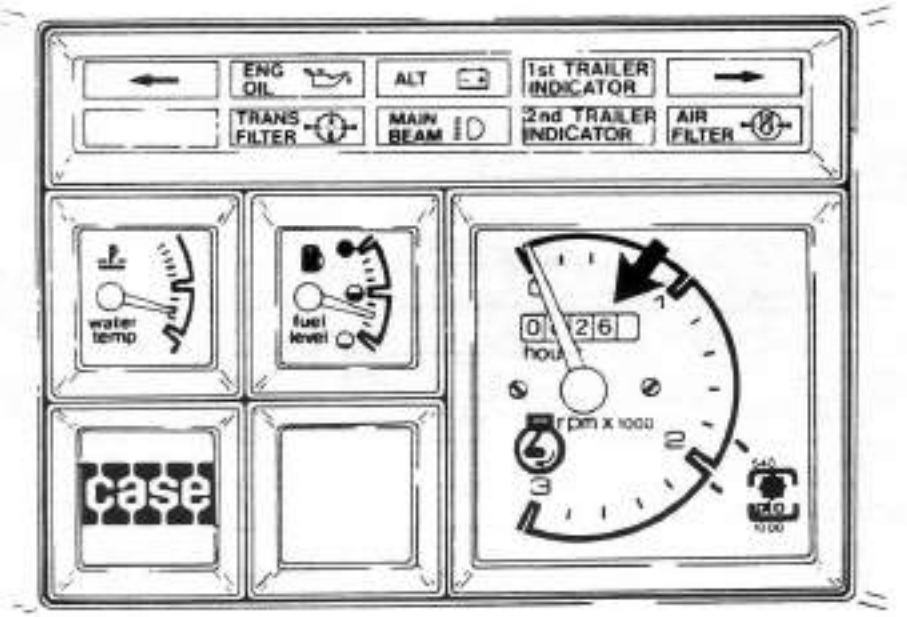


Figure 14

The hourmeter on the instrument cluster shows the number of hours that the tractor has worked. Use the hourmeter together with the Lubrication Chart to service your tractor at the correct time periods.

Selection of Engine Oil

Case HDM Engine Oil is the J I Case Company recommendation for use in your Case Tractor Engine. The Case HDM oil will lubricate your engine correctly under all operating conditions.

For the first 300 hours use an oil to a specification no higher than API service category CC and Mil-L-46152.

After the first 300 hours use an oil to a specification the same as API service category SE/CD and Mil-L-2104C.

NOTE: *Do not put "Performance Additives" or other oil additive products in the engine crankcase. The oil change intervals given in this manual are according to tests with Case lubricants.*

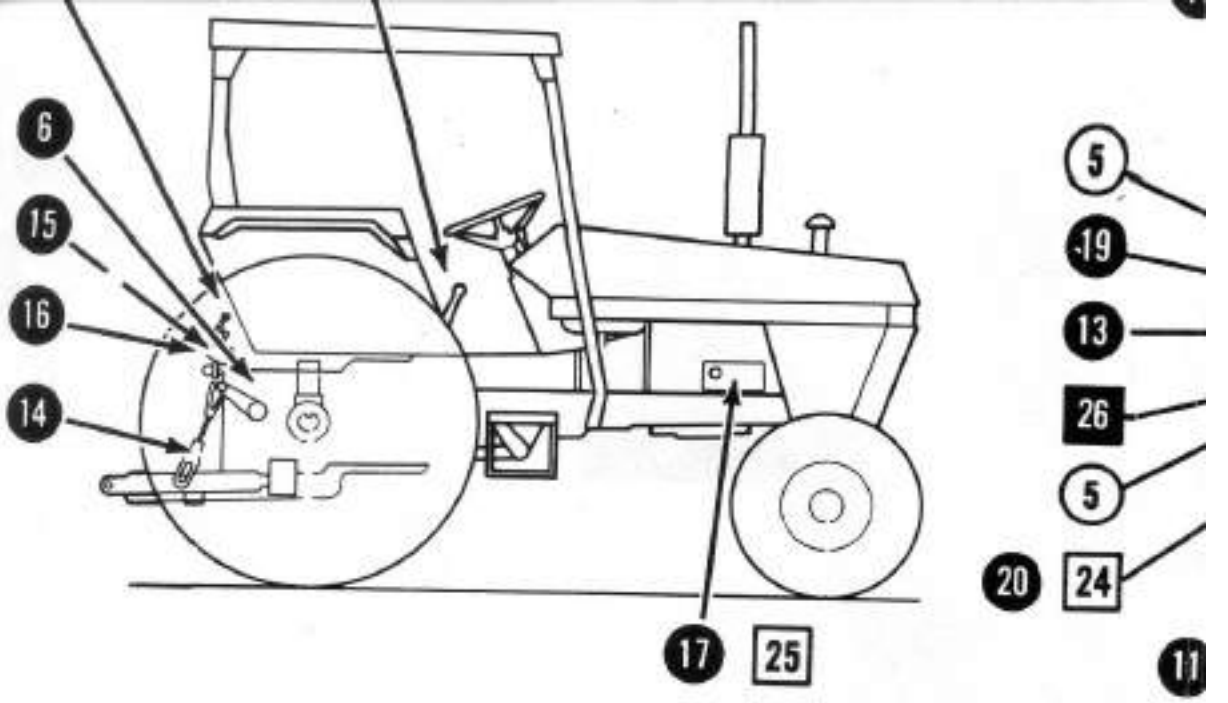
LUBRICATION CHART

REF. NUMBER	SERVICE POINTS	NO. OF POINTS	APPLY GREASE	APPLY OIL	REMOVE FLUID	CHECK	CLEAN	CHANGE	FREQUENCY
1	Engine Oil Level	1				▒			○ EVERY 10 HOURS OR DAILY
2	Axle Pivot (Severe)	2	▒						
3	King Pins (Wet)	2	▒						
4	Front Wheel Hubs (Conditions)	2	▒						
5	Link ends - Jeffes Hitch Only	2	▒						
6	Ramshaft	2	▒						● EVERY 50 HOURS
7	Axle Pivot	2	▒						
8	King Pins	2	▒						
9	Front Wheel Hubs	2	▒						
10	Park Brake Cables (Cab)	2		▒					
11	Final Drive Output Shaft	2	▒						
12	PTO Clutch Release Bearing	1	▒						
13	Sensing Unit Cable	1	▒						
14	Lift Rods	3	▒						
15	Leveling Lever Gearbox	1	▒						
16	Top Link	1	▒						
17	Power Steering Reservoir Oil Level	1				▒			
18	Control Levers Pivot Points			▒					
19	Transmission Oil Level	1				▒			
20	Transmission Oil Filter (First 50 hours Only)	1						▒	
21	Engine Oil	1						▒	⬡ EVERY 100 HOURS
22	Final Drive Oil Level	2				▒			
23	Engine Oil Filter	1						▒	△ 200 HOURS
24	Transmission Oil Filter	1						▒	□ 400 HOURS
25	Power Steering Oil and Filter	1						▒	
26	Transmission Oil	1						▒	■ EVERY 800 HOURS
27	Final Drive Oil	2						▒	
28	Power Shift Oil Pressure	1				▒			

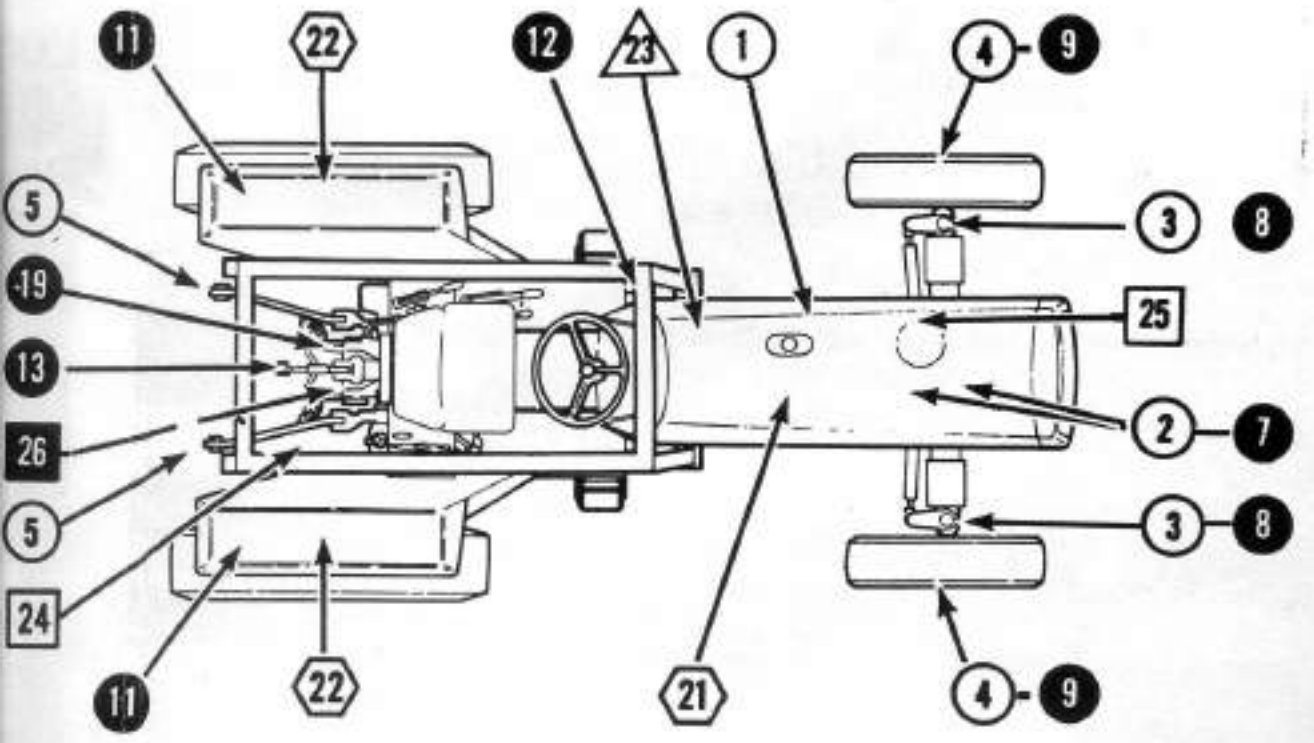
CAPACITIES AND APPROVED LUBRICANTS - NORTH AMERICA

WARNING: *Do not put fuel in the machine when you are smoking near a fire or when the engine is running.*

WARNING: *There is pressure in the cooling system which can caus injury if the radiator cap is suddenly removed. Turn the cap to the firs position then wait until the pressure is released before removing th cap.*



LUBRICATION POINTS	APPROXIMATE CAPACITIES	
	U.S. MEASURE	METRIC MEASURE
Engine Crankcase Without Filter Change	7.5 Qts	7 Litres
Engine Crankcase With Filter Change	7.9 Qts	7.5 Litres
Transmission Hydraulic System Mechanical Shift	38.5 Qts	36.5 Litres
Power Shift	45.5 Qts	43 Litres
Final Drive Units (each)	2.4 Qts	2.3 Litres
Front Differential - MFD Tractor Prior to P.I.N. 11503001	6.25 Qts	6 Litres
Front Hub - MFD Tractor Prior to P.I.N. 11503001	1.58 Qts	1.5 Litre
Front Differential - MFD Tractor from P.I.N. 11503001	4.2 Qts	4 Litres
Front Hub - MFD Tractor from P.I.N. 11503001	1 Qts	1 Litre
Steering Reservoir	1.3 Qts	1.25 Litres
All Pressure Fittings	As Many Strokes As Needed	



CITIES	AMBIENT AIR TEMPERATURE RANGES		
ETRIC ASURE	30°F (0°C) and Above Above 90°F (32.2°C)	10°F (-12°C) to 50 ° (10 °C) 90°F (32.2°C) to 0°F (-17.8°C)	Use Only Below 40°F (4°C) Below 0°F (-17.8°C)
Litres	CASE HDM	CASE HDM	CASE HDM
5 Litres	SAE 30W	SAE 20W	SAE 10W
5 Litres 3 Litres	USE CASE TFD FLUID - CASE SPECIFICATION MS1204. U.S. AND CANADA B17445 (5 Gal.) OR B17446 (55 Gal.), U.S. ONLY B17447 (30 Gal.)		
3 Litres	CASE FDL		
Litres	CASE FDL SAE 90		
5 Litre	CASE FDL SAE 90		
Litres	CASE FDL SAE 90		
1 Litre	CASE FDL SAE 90		
25 Litres	CASE TCH FLUID		

ded	AMBIENT AIR TEMPERATURE RANGES	
	32°F (0°C) and Above	Below 32°F (0°C)
	No. 2 Lithium Base	No. 1 Lithium Base

CAPACITIES AND APPROVED LUBRICANTS - NORTH AMERICA

WARNING: *Do not put fuel in the machine when you are smoking, near a fire or when the engine is running.*

WARNING: *There is pressure in the cooling system which can cause injury if the radiator cap is suddenly removed. Turn the cap to the first position then wait until the pressure is released before removing the cap.*

Lubrication Chart
MFD Tractors - Front Axle
Prior to P.I.N. 11503001

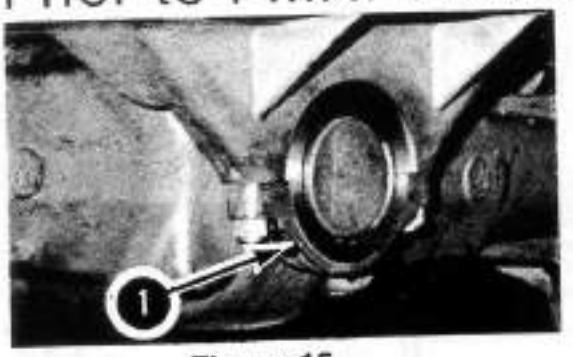


Figure 15

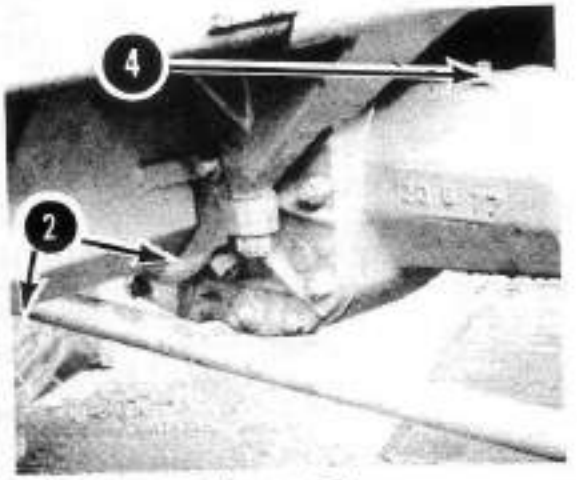


Figure 16

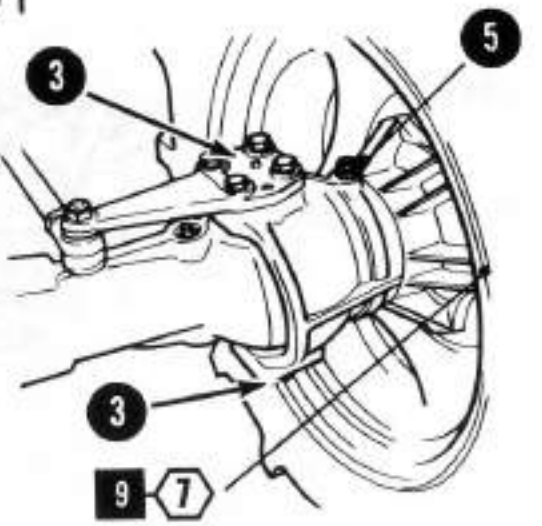


Figure 17

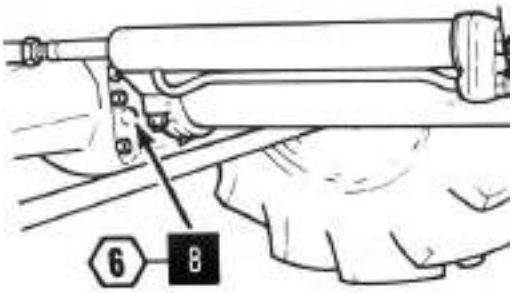
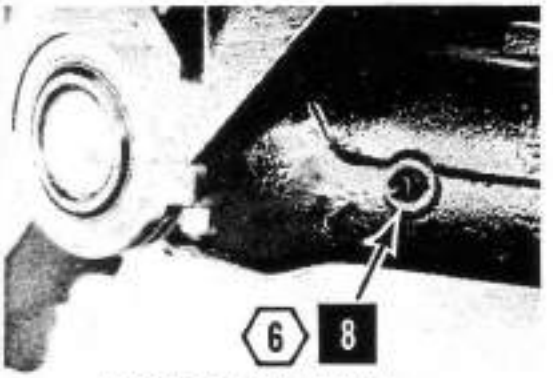


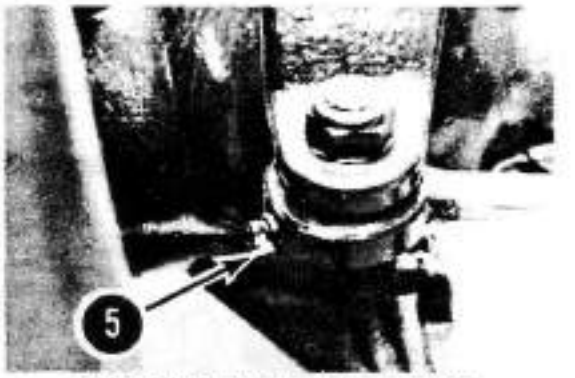
Figure 18

REF. NUMBER	SERVICE POINTS	NO. OF POINTS	APPLY GREASE	APPLY OIL	REMOVE FLUID	CHECK	CLEAN	CHANGE	FREQU
1	Pivot Bushes	2	▒						●
2	Splined Sleeve	2	▒						EVE
3	Swivel Pins	4	▒						50
4	Axle Breather	1					▒		HOU
5	Front Hub Breather	2					▒		
6	Differential Oil Level	1				▒			EVE
7	Front Hub Oil Level	2				▒			⬡
									HOU
8	Differential Oil	1						▒	EV
9	Front Hub Oil	2						▒	■
									HOU



DIFFERENTIAL LEVEL

Figure 19

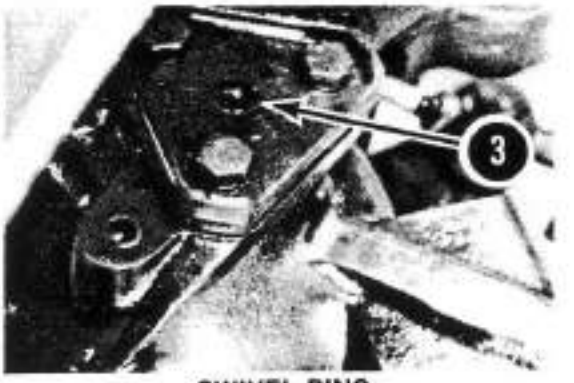


STEERING CYLINDER JOINTS

Figure 21

FRONT HUB

Figure 20



SWIVEL PINS

Figure 22

REF. NUMBER	SERVICE POINTS	NO. OF POINTS	APPLY GREASE	APPLY OIL	REMOVE FLUID	CHECK	CLEAN	CHANGE	FREQUENCY
1	Pivot Bushes	2	▒						● EVERY 50 HOURS
2	Splined Sleeve	2	▒						
3	Swivel Pins	4	▒						
4	Axle Breather	1					▒		
5	Steering Cylinder	2	▒						
6	Differential Oil Level	1				▒			⬡ EVERY 100 HOURS
7	Front Hub Oil Level	2				▒			
8	Differential Oil	1						▒	■ EVERY 800 HOURS
9	Front Hub Oil	2						▒	

Lubrication Chart
MFD Tractors - Front Axle
Prior to P.I.N. 11503001

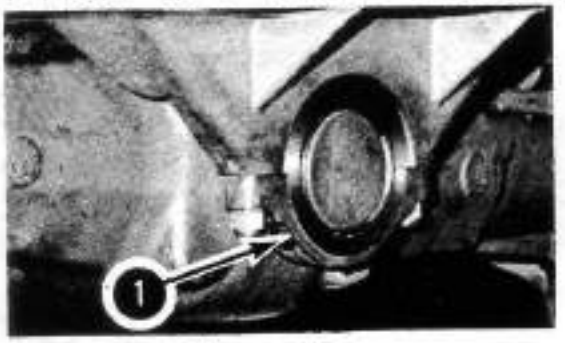


Figure 15

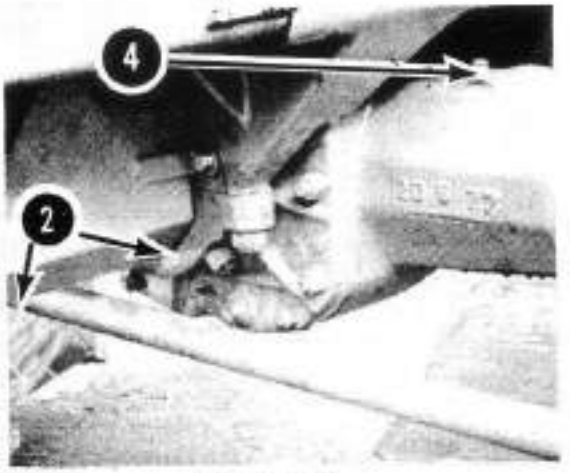


Figure 16

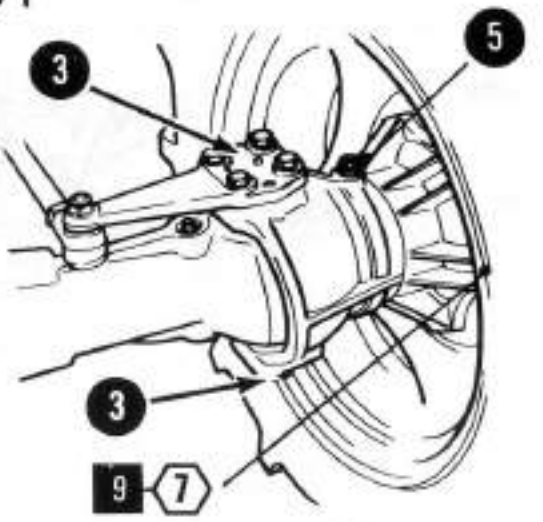


Figure 17

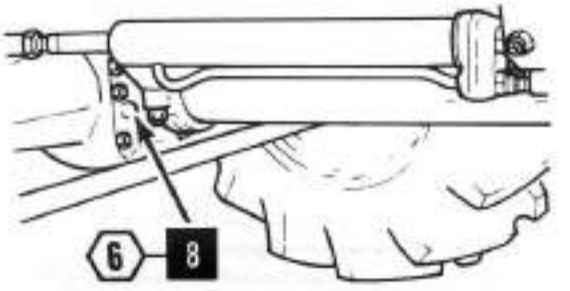
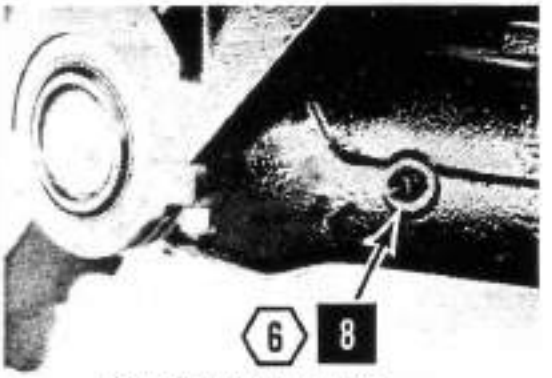


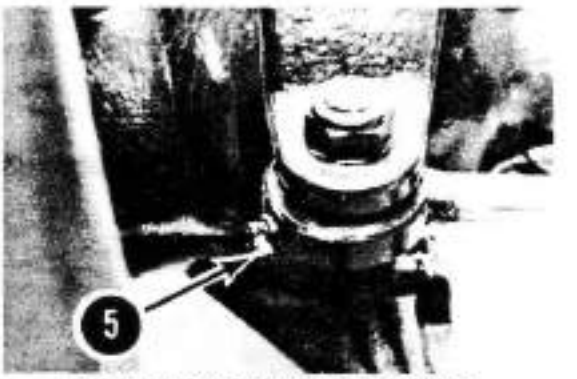
Figure 18

REF. NUMBER	SERVICE POINTS	NO. OF POINTS	APPLY GREASE	APPLY OIL	REMOVE FLUID	CHECK	CLEAN	CHANGE	FREQUENCY
1	Pivot Bushes	2	▩						● EVERY 50 HOURS
2	Splined Sleeve	2	▩						
3	Swivel Pins	4	▩						
4	Axle Breather	1					▩		
5	Front Hub Breather	2					▩		
6	Differential Oil Level	1				▩			⬡ EVERY 100 HOURS
7	Front Hub Oil Level	2				▩			
8	Differential Oil	1						▩	■ EVERY 800 HOURS
9	Front Hub Oil	2						▩	



DIFFERENTIAL LEVEL

Figure 19

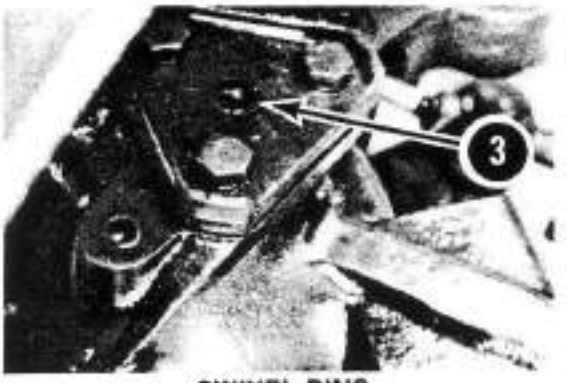


STEERING CYLINDER JOINTS

Figure 21

FRONT HUB

Figure 20



SWIVEL PINS

Figure 22

REF. NUMBER	SERVICE POINTS	NO. OF POINTS	APPLY GREASE	APPLY OIL	REMOVE FLUID	CHECK	CLEAN	CHANGE	FREQUENCY
1	Pivot Bushes	2	▩						● EVERY 50 HOURS
2	Splined Sleeve	2	▩						
3	Swivel Pins	4	▩						
4	Axle Breather	1					▩		
5	Steering Cylinder	2	▩						
6	Differential Oil Level	1				▩			⬡ EVERY 100 HOURS
7	Front Hub Oil Level	2				▩			
8	Differential Oil	1						▩	■ EVERY 800 HOURS
9	Front Hub Oil	2						▩	

Grease Fittings

The figures below and on the next page, show the position of the grease fittings.

Apply grease at the service periods given in the lubrication chart.

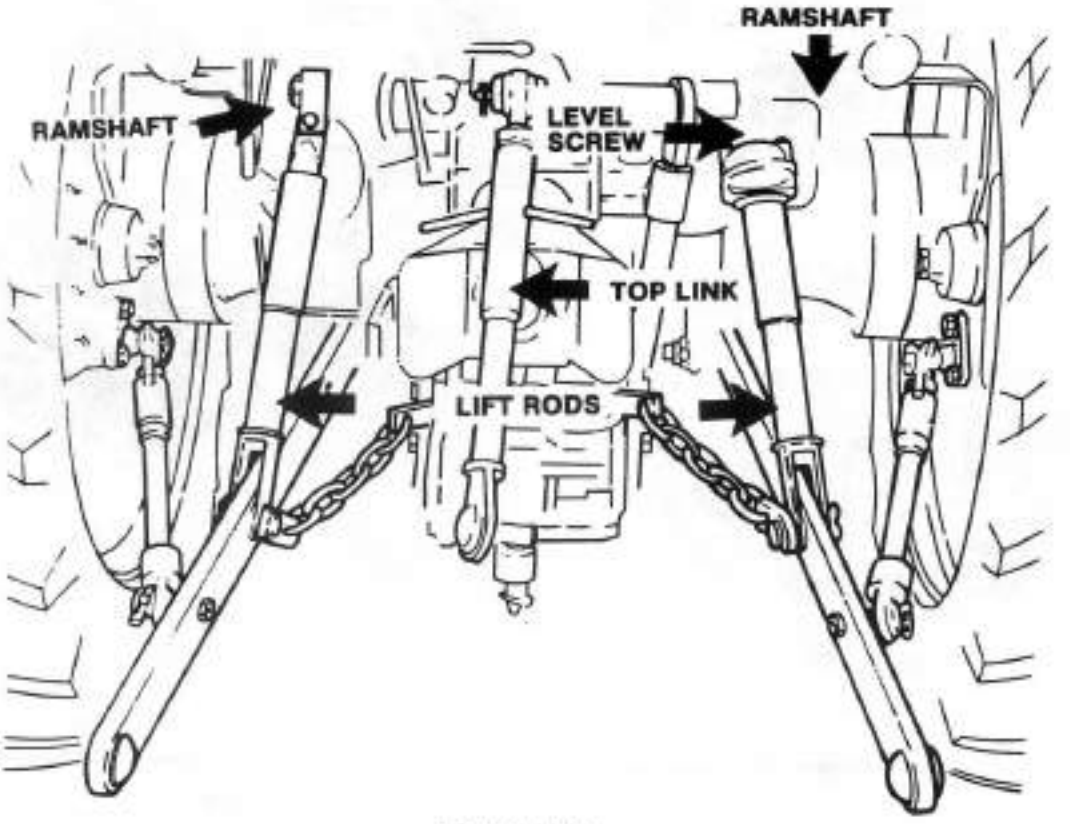


Figure 23

PTO CLUTCH RELEASE BEARING

Apply grease to the fitting on the left-hand side of the tractor. Operate the grease gun twice ONLY. There will be damage to the clutch if you apply too much grease.

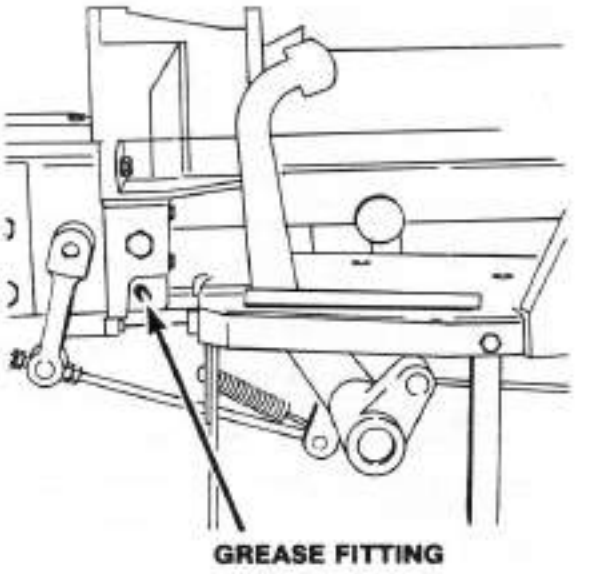


Figure 24

Grease Fittings

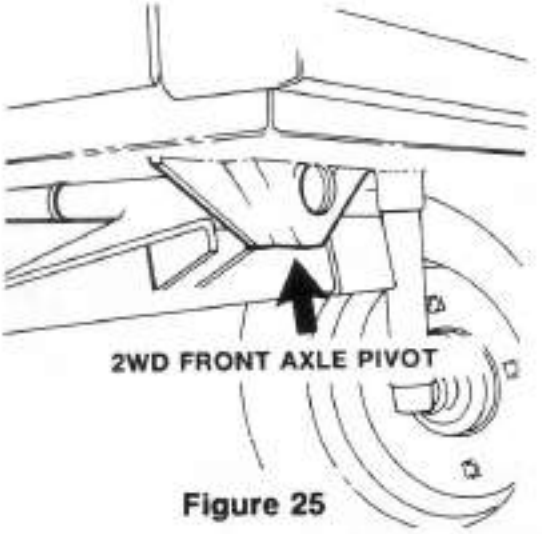


Figure 25

Figure 26

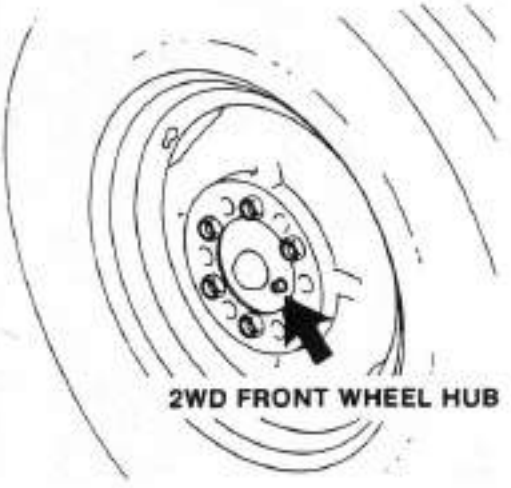


Figure 27

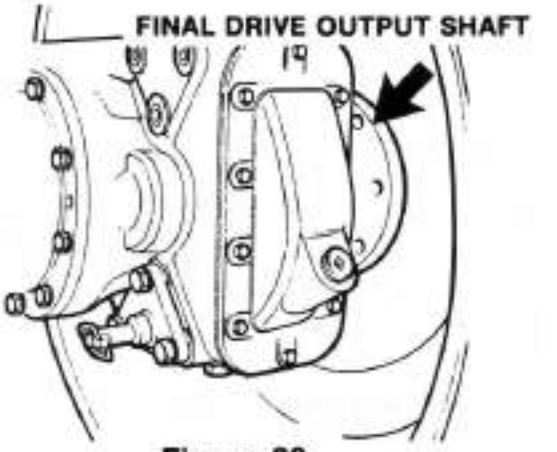


Figure 28

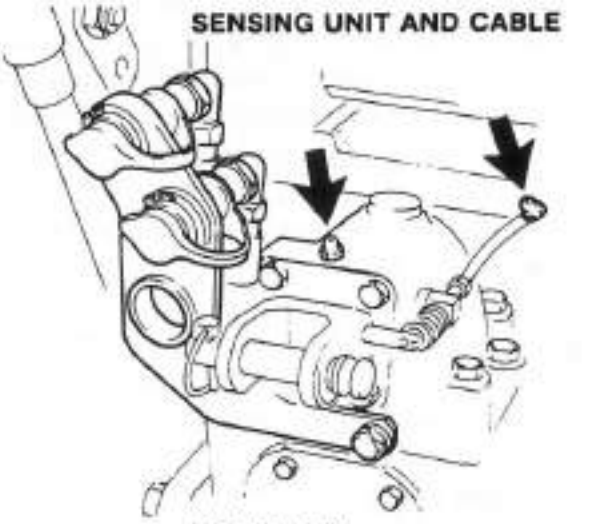


Figure 29

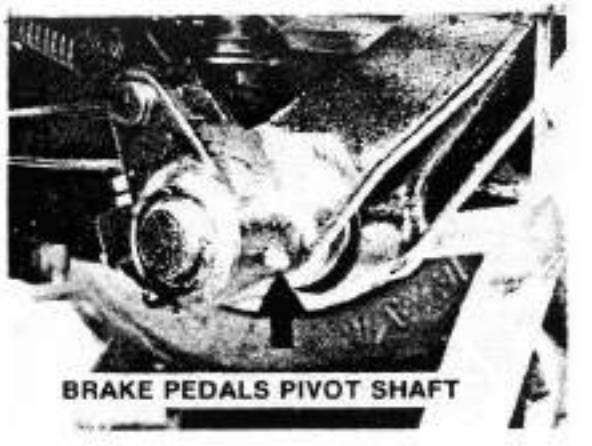


Figure 30

ENGINE OIL CHANGE

Run-In Oil

After the first 20 hours of engine operation, change the engine oil and oil filter.

Engine Oil Change Interval

After every 100 hours of operation, change the engine oil. If the tractor has been pulling heavy loads, or starting and stopping with frequency, or operating in very high or low ambient temperatures, then change the oil earlier than every 100 hours.

Changing the Engine Oil

1. If you remove the engine oil from the engine crankcase and also replace the oil filter, install the drain plug and put 7.8 U.S. quarts (13 U.K. pints)(7.4 litres) of new engine oil in the crankcase.
2. If you remove the engine oil from the engine crankcase and do not replace the oil filter, install the drain plug and put 7.6 U.S. quarts (12.6 U.K. pints)(7.2 litres) of new engine oil in the crankcase.
3. Pull the engine stop control out to the stop position.
4. Turn the starter key switch to "START" position and turn the engine for 30 seconds maximum. Release the starter key.
5. After one minute, push the engine stop control in and start the engine.
6. Operate the engine for five minutes at approximately 1000 r/min so that oil for lubrication reaches all of the engine parts.
7. Stop the engine. Before you check the oil level, wait to let the oil return to the engine crankcase.

IMPORTANT: *You must put the tractor on level ground to check the oil level with accuracy.*

8. Check the oil level on the dipstick and add oil if needed. Install the dipstick.

Figure 31

Figure 32

ENGINE OIL FILTER CHANGE

Figure 33

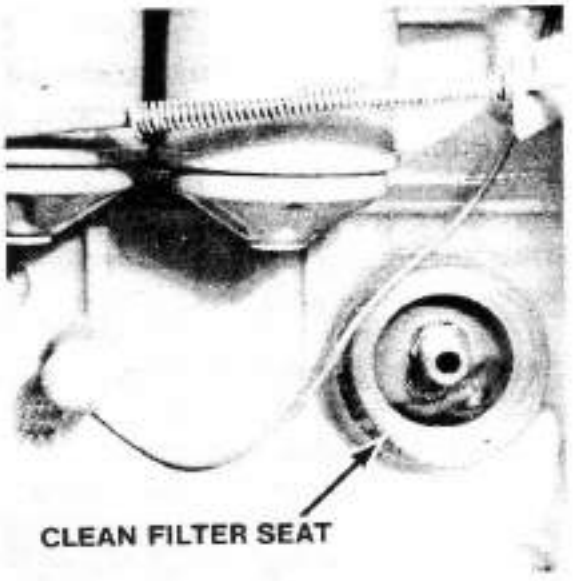


Figure 34

Change Interval ..... After the first 20 hours of operation and each 200 hours after that.

1. Remove the oil pan drain plug and remove the oil from the engine crankcase.
2. To remove the oil filter, use a strap wrench.
3. Put clean oil on the gasket of the new Case filter. Install the filter.
4. Turn the filter clockwise until the gasket comes in contact with the filter base. Use your hand to tighten the filter an additional 1/2 to 3/4 of a turn to get the filter correctly sealed.
5. Install the drain plug and new engine oil. See "Changing the Engine Oil".

IMPORTANT: *Change the oil filter at the given time intervals. Your Authorized Case Dealer has approved Case filters. Do not use other type filters.*

TRANSMISSION OIL LEVEL CHECK AND CHANGE

Before operating the tractor each day, check the transmission fluid level. Put the tractor on level ground. If the fluid level is at or below the lower mark on the dipstick, install fluid in the transmission through the fill tube on the right-hand ramshaft cover.

Every 800 hours of operation, remove all the fluid from the transmission. Remove the filter for power shift transmission. Clean the filter with paraffin or diesel oil. Fit a new O-ring and sealing washer. Install the filter and tighten. Fill the transmission with Case TFD (Transmission Final Drive) fluid.

Figure 35

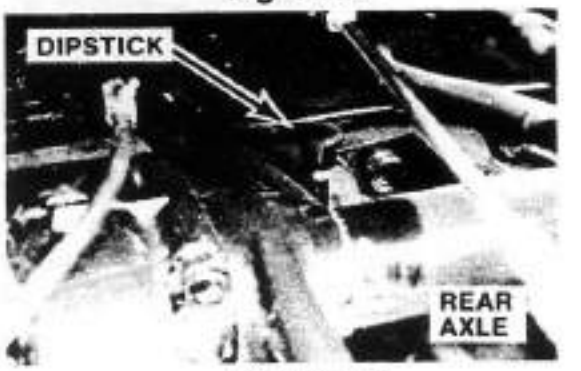


Figure 36

Figure 37

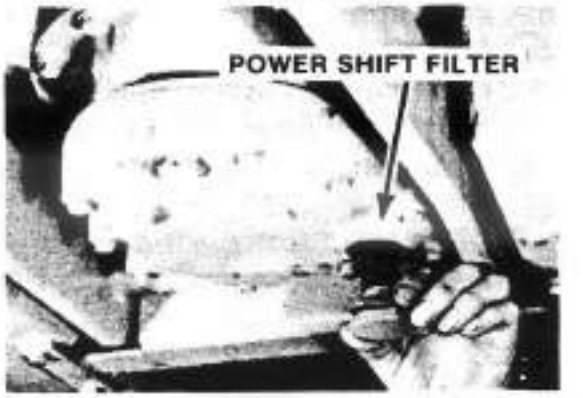


Figure 39

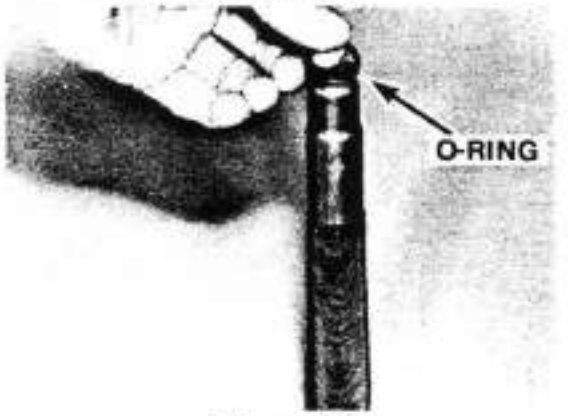


Figure 38

Figure 40

TRANSFER GEAR BOX OIL LEVEL
Mechanical Front Drive - (MFD)

The oil in the transfer gear box is common with the transmission hydraulic system and is serviced at the same intervals.

To drain the oil remove both the transfer gear box drain plug and the transmission case drain plug. See "Transmission Oil Level Check And Change".

Figure 41

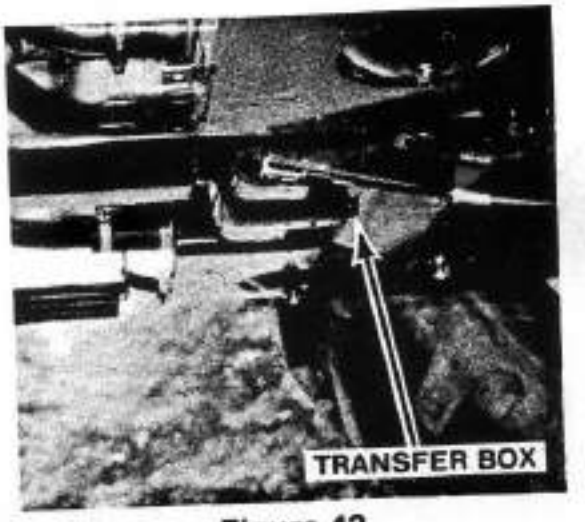


Figure 42

TRANSMISSION
HYDRAULIC OIL FILTER CHANGE

Oil Filter Change Interval ..... After the first 20 hours of operation and then every 400 hours.

Transmission Capacity
- Synchromesh ..... 27 Litres, (6 U.K. gallons)(7 U.S. gallons)
- Power Shift ..... 32 Litres (7 U.K. gallons)(8.5 U.S. gallons)

Type of Filter ..... One paper element

Type of Fluid ..... Case TFD or equivalent

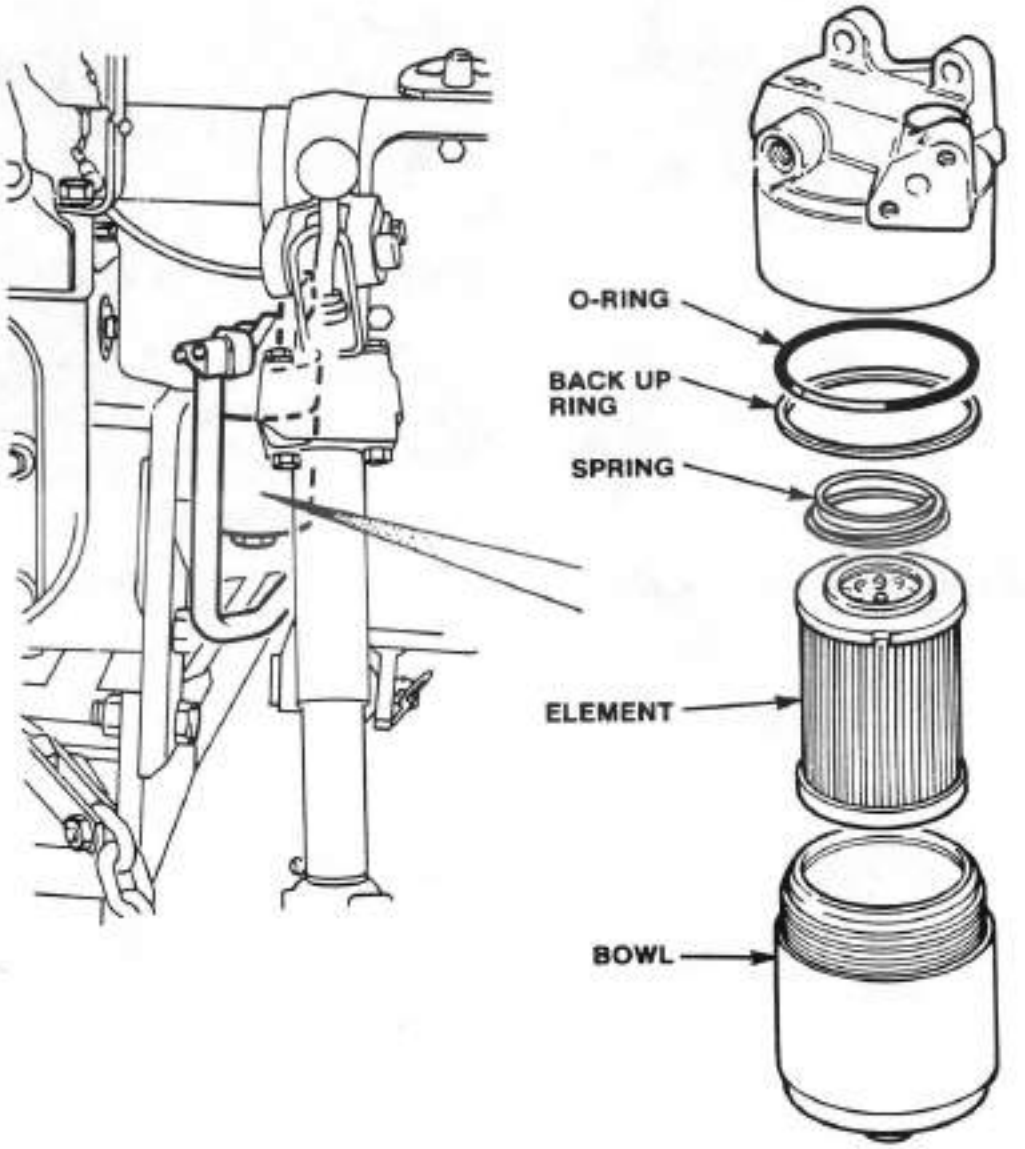


Figure 43

This filter is installed between the hydraulic pump and the distribution block.

It is fastened to the right-hand ramshaft bracket.

To replace the element, do the following:

1. Clean the area around the filter.

   Use a wrench to remove the bowl.

2. Remove and discard the element.

   Clean inside the filter bowl.

3. Remove the back up ring and the o-ring from the filter body.

4. Install a NEW o-ring and back up ring.

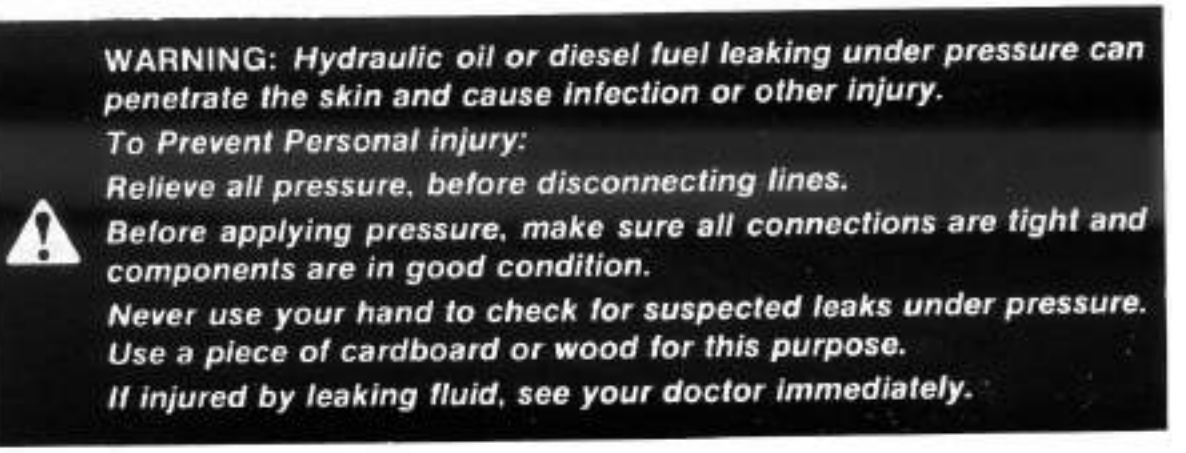
5. Install a NEW element, closed end down, in the bowl.

6. Install the bowl on the filter body.

   Tighten the bowl to 34Nm (25 lb ft).

IMPORTANT: *The transmission oil is also used by the hydraulic system. Oil pressure is very high and clearances small. Very small particles of dirt can cause a failure of the hydraulic system. Use only Case filter element K946095.*

Other elements are not made to the same specifications and will not give the required protection to the system. Do not operate the tractor for more than 400 hours without replacing the element.



DIFFERENTIAL OIL LEVEL CHECK AND CHANGE

Mechanical Front Drive (MFD)

Check the oil level in the differential every 100 hours of operation. Change the oil in the differential after the first 20 hours of operation and every 800 hours of operation after the first change.

To check the oil level, remove the fill plug. If the oil level is below the plug hole add new oil. Put new oil in the fill plug hole until the oil is level with the bottom of the hole. Install the plug.

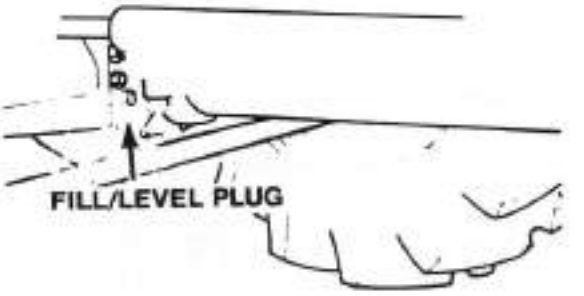


Figure 44

To change the oil, remove the drain plug at the bottom of the differential housing and drain the oil. Install the drain plug. Put new oil in the fill plug hole until the oil is level with the bottom of the hole. Install the fill plug.

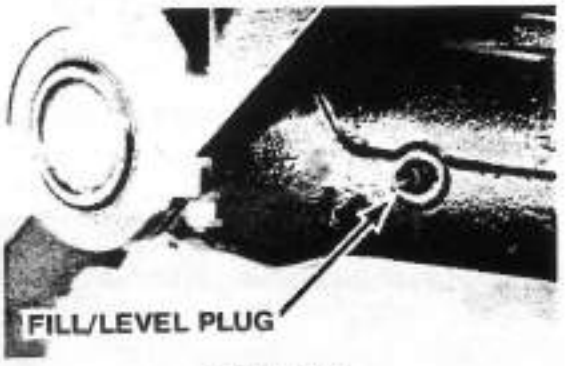


Figure 45

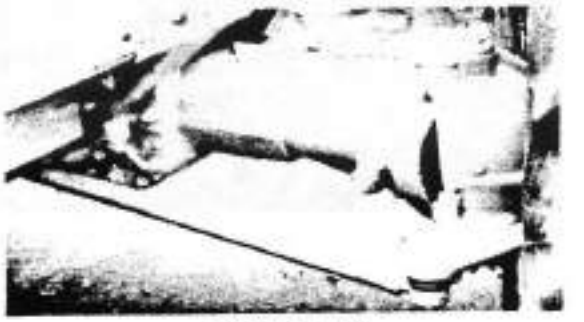


Figure 46

FRONT HUB OIL LEVEL CHECK AND CHANGE Mechanical Front Drive (MFD)

Check the oil level in the front hubs every 100 hours of operation. Change the oil in the front hubs after the first 20 hours of operation and every 800 hours of operation.

To check the oil level the fill/drain plug must be horizontal. Remove the plug and check the oil level. If the oil level is below the level of the plug hole, add new oil until the oil is level with the bottom of the plug hole. Install the plug.

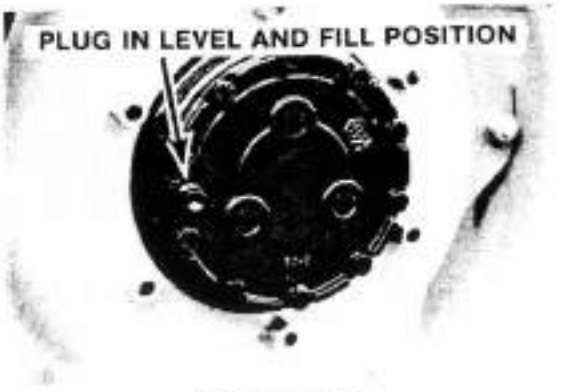


Figure 47

To change the oil, the plug must be at the bottom. Remove the plug and drain the old oil. Turn the wheel until the plug hole is horizontal. Add new oil until the oil is level with the bottom of the plug hole. Install the plug.

Figure 48

STEERING PUMP FILTER CHANGE

Install a new filter element every 400 hours in the steering pump and add new oil to the correct level.

It is a recommendation that you get your dealer to do this job.

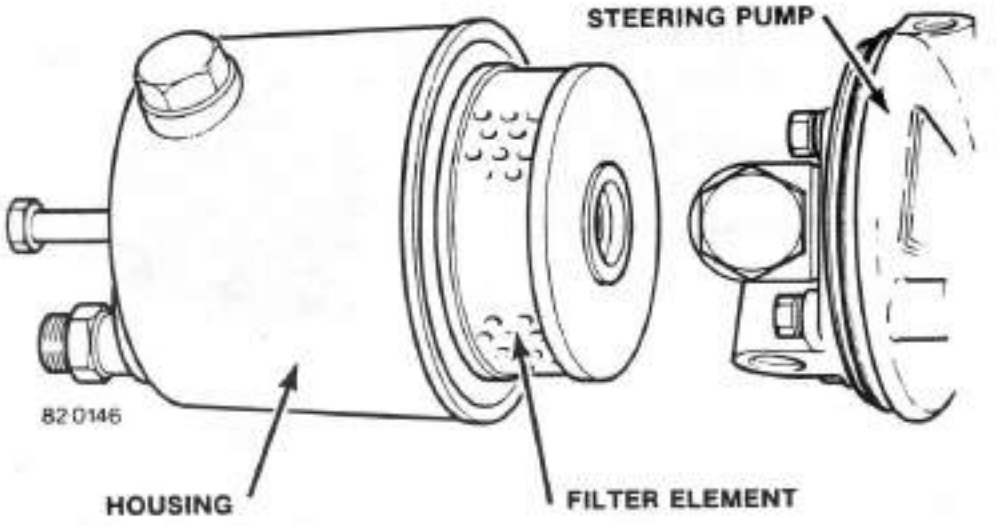


Figure 49

OPERATING INSTRUCTIONS
Run-In Procedure

If run-in instructions for a new engine are not followed, you can cause damage to piston rings and cylinder sleeves.

LOAD

During the first eight hours of operating the tractor in the field, operate in one gear range lower than normal. During the next 12 operating hours, Do Not "lug" the engine. To prevent "lugging" put the transmission in a lower gear range. A new engine must not be "lugged" below 1500 r/min.

NO LOAD

Do not run the engine at idle speed. When not operating the engine with a load, you can keep the correct engine operating temperature if you run the engine at approximately 1500 r/min.

ENGINE OIL

After the first 20 hours of operation, then every 100 hours, remove the engine oil while the engine is hot. Install new oil of the correct grade.

ENGINE OIL FILTER

After the first 20 hours of operation, then every 200 hours, change the engine oil filter.

HYDRAULIC FILTER

Change the filter after the first 20 hours of operation, then every 400 hours.

FRONT WHEEL BOLTS - 2WD

When the tractor is new or the front wheels have been removed and replaced, for the next 50 hours of operation tighten the front wheel bolts every day to a torque of 102 to 122 Nm (75 to 90 lb ft).

FRONT WHEEL NUTS – MFD

When the tractor is new, or the front wheels have been removed and replaced, for the next 50 hours check the wheel nuts every day. Tighten to 140 Nm (103 lb ft) for tractors prior to PIN 11503001. Tighten to 300 Nm (220 lb ft) from PIN 11503001.

REAR WHEEL NUTS

When the tractor is new or the rear wheels have been removed and replaced, for the next 50 hours of operation tighten the rear wheel nuts every day to a torque of 270 to 325 Nm (200 to 240 lb ft). Tighten the rim to center nuts 175 to 215 Nm (130 to 160 lb ft).

BEFORE STARTING THE ENGINE

Before starting your Case Tractor for the first time and before each operating period after that, make these checks:

1. Make sure all persons that operate or do maintenance on the tractor understand that clean fuel is important.

2. Check all lubrication fittings for grease as given in the Lubrication Chart.

3. Check the oil level in the engine crankcase. Check the fluid level in the transmission.

NOTE: *Clean around dipsticks before removing.*

4. Check the electrolyte level in the battery.

5. Check that the tractor fuel tank (s) is filled with clean fuel of the correct specifications given in this manual.

NOTE: *Clean around the fuel tank cap before you remove the cap.*

6. Check the fuel system, cooling system, engine and transmission for leaks.

7. Check that all drive belts are adjusted correctly.

8. Remove any water or sediment from the water trap of the fuel supply pump.

9. Check the air pressure in the tires.

10. Make sure the safety guards are installed on the PTO.

11. Check the coolant level in the radiator. Add water and Ethylene Glycol coolant as needed.

12. Make sure that you know how to stop the engine.

WARNING: Before starting the engine, study the Operator's Manual safety messages.
Read all safety signs on the tractor.
Clear the area of other persons.
Learn and practice safe use of controls before operating.
It is your responsibility to understand and follow manufacturer's instructions on tractor operation and service and to observe the laws and regulations in your area.

Towing

When towing a tractor, follow these rules:

1. Never pull the tractor faster than the maximum rated ground speed of the tractor.

2. Make sure all controls are in the neutral position.

3. Because of the loss of power steering when the tractor engine is not running, use only a rigid towing bar and safety chains to pull the tractor.

CAUTION: ***Make sure that the weight of a trailed vehicle that is not equipped with brakes, NEVER EXCEEDS the weight of the tractor that is towing the vehicle. Stopping distance increases with increasing speed as the weight of the towed load increases, espcially on hills and slopes.***

How to Transport the Tractor

When you transport the tractor by truck or rail, hold the tractor with tie downs and blocks. Put the gear shift lever in Neutral and engage the parking brake.

OPERATING INSTRUMENTS

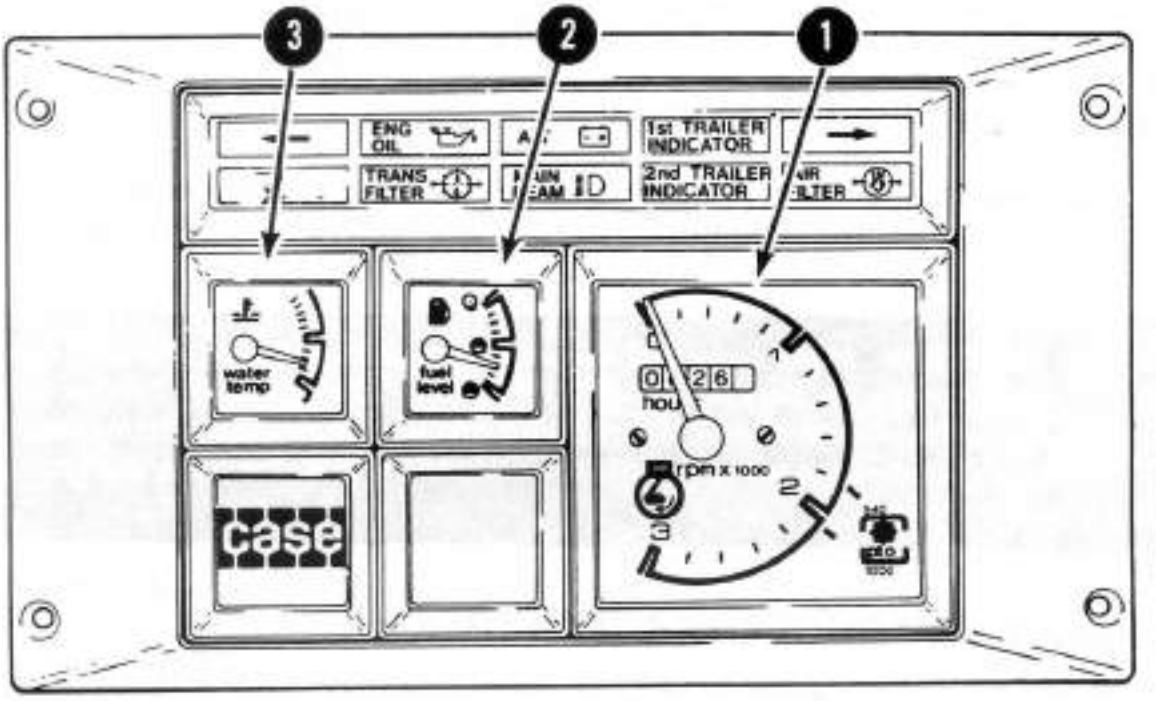


Figure 50

1. TACHOMETER AND HOURMETER - The tachometer shows the engine speed in revolutions per minute (r/min). The normal operating range of the engine must be in the green area (800 to 2200 r/min) for maximum engine life. The engine must not operate in the red area. A symbol on the right indicates the correct Power Takeoff (PTO) operating speed.

NOTE: *It is normal for the engine to operate for a moment in the amber area when you move the transmission controls to a slower gear while pulling a light load.*

The hourmeter shows the hours and tenths of hours that the engine has operated at an average engine speed. Use these hour readings for doing regular servicing.

2. FUEL GAUGE - The gauge shows how much fuel is in the tanks. If the pointer is in the red area, the fuel tanks are empty. Fuel level is shown by three balls.
   1/8 White ball - Fuel is needed.
   1/2 White ball - Fuel tanks are half filled with fuel.
   All White ball - Fuel tanks are full.

NOTE: *The pointer can be in any position when the starter key is in the OFF position. To get a fuel level indication, turn the starter key to the ACC position.*

3. ENGINE WATER TEMPERATURE GAUGE - The gauge has an amber area, green area and red area:
   Pointer in Amber area - Engine operating below normal temperature.

   Pointer in Green area - Engine operating at normal temperature.

   Pointer in Red area - Engine operating above normal Temperature. STOP THE ENGINE AND CHECK FOR THE CAUSE.

NOTE: *The pointer can be in any position when the starter key is in the OFF position. To get a coolant temperature indication, turn the starter key to the ACC position.*

IMPORTANT: *Use a soft cloth or air under low pressure to clean the instrument windows. Do not use rough material of any type which will scratch or damage the windows.*

OPERATING LAMPS

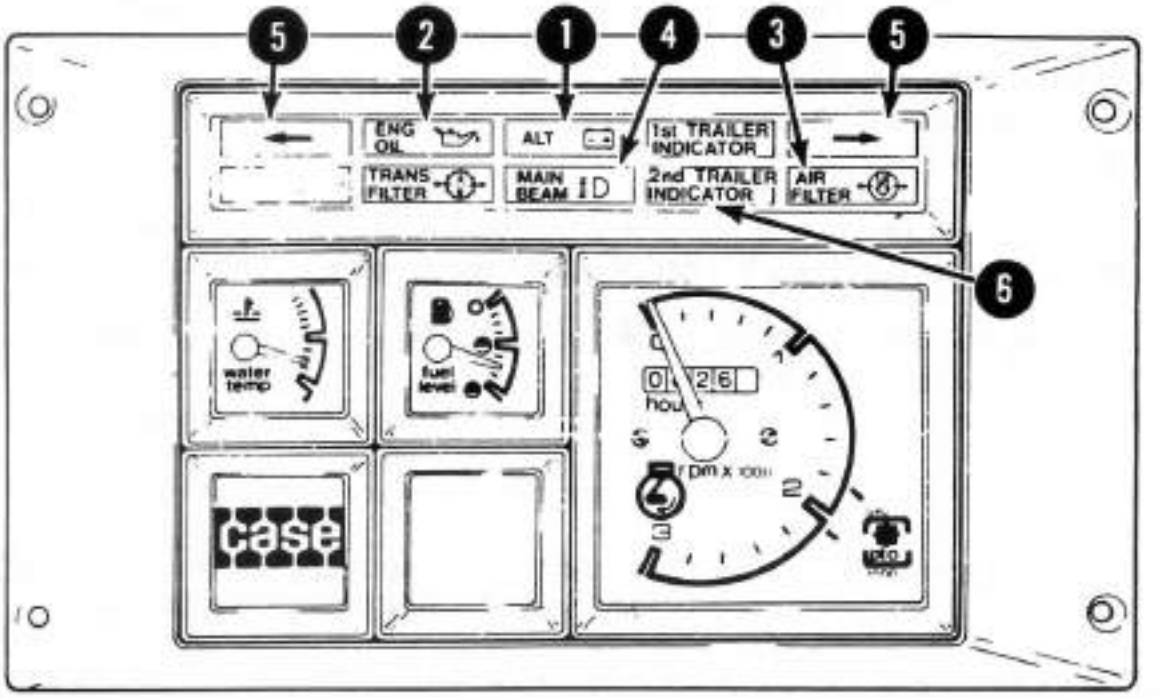


Figure 51

1. ALTERNATOR LAMP - The alternator lamp will illuminate when the key switch is turned to the ACC or START positions and must stop illuminating when the engine starts to run. If the lamp illuminates when the engine starts and runs, the battery will discharge because the alternator is not working. The lamp can illuminate if the engine is started at low idle speed. When the engine speed is increased, the lamp must stop illuminating. If the lamp continues to illuminate when the engine speed is increased or the lamp illuminates at any time during operation, STOP THE ENGINE AND CHECK FOR THE CAUSE.

2. ENGINE OIL PRESSURE LAMP - The engine oil pressure lamp will illuminate when the starter key is turned to the ACC or START positions and must stop illuminating when the engine starts to run. If the lamp keeps illuminating or illuminates at any time during operation, STOP THE ENGINE AND CHECK FOR THE CAUSE.

3. AIR FILTER LAMP - The air filter lamp will illuminate when there is a restriction in air flow during operation. STOP THE ENGINE THEN SERVICE THE AIR FILTER.

4. HEAD LAMP MAIN BEAM LAMP - The lamp will illuminate when the main beam of the head lamp is illuminated.

5. DIRECTION INDICATOR LAMPS - When the direction indicator switch is pushed to the left, the lamp on the left-hand side will operate. The right-hand lamp will operate when the switch is turned to the right.

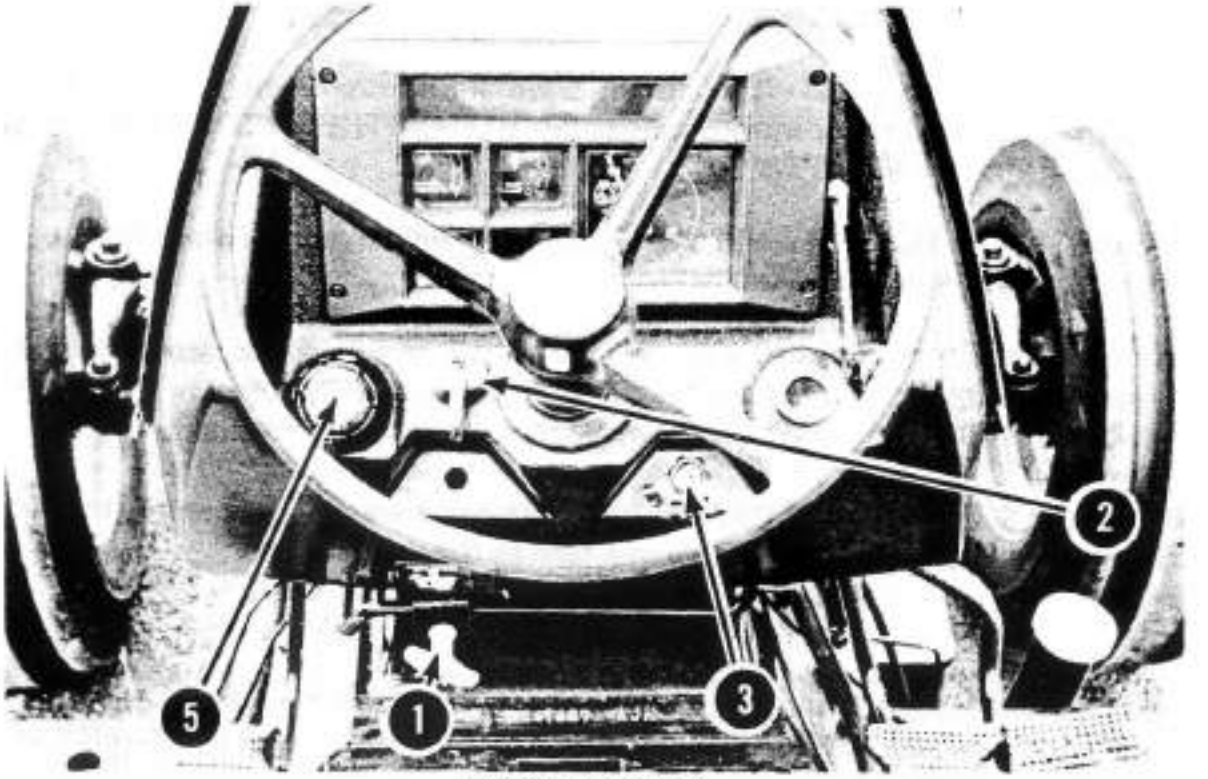
6. TRAILER DIRECTION INDICATOR LAMPS - When a trailer is connected the lamp will operate when indicating a turn to the left or right.

IMPORTANT: *Use a soft cloth or air under low pressure to clean the instrument windows. Do not use rough material of any type which will scratch or damage the windows.*

OPERATING CONTROLS

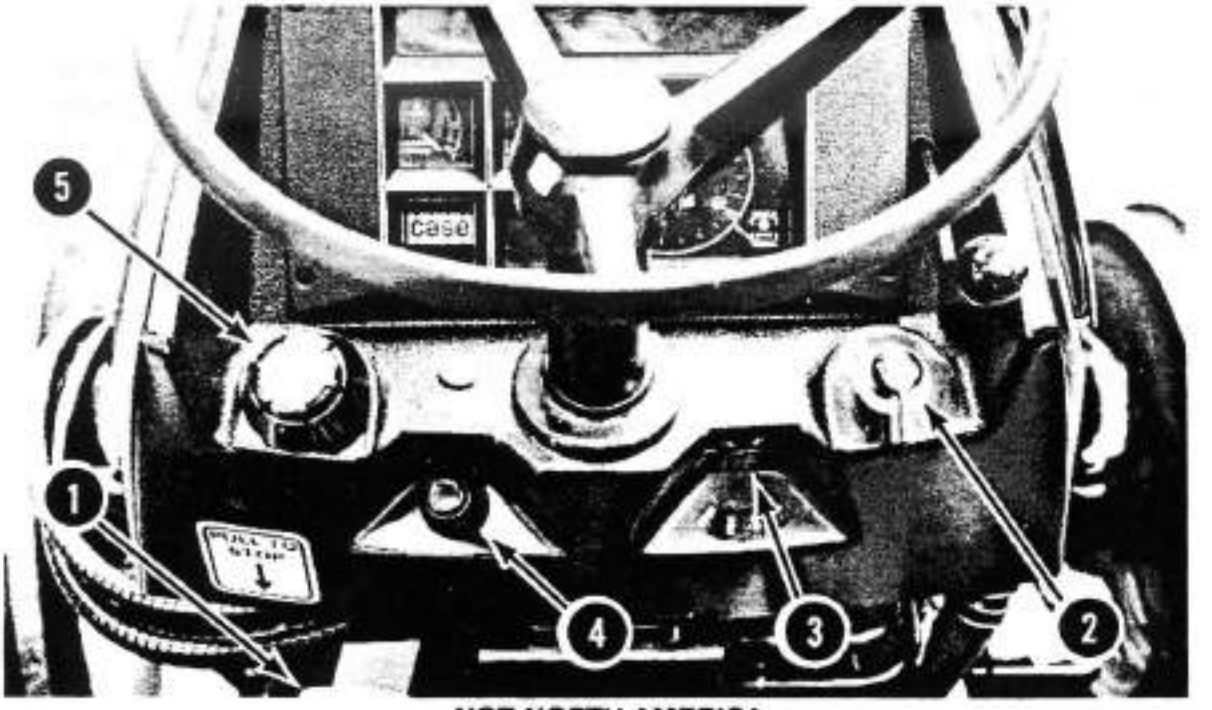
Tractor Without Cab

(Instrument Panel)



NORTH AMERICA

Figure 52



NOT NORTH AMERICA

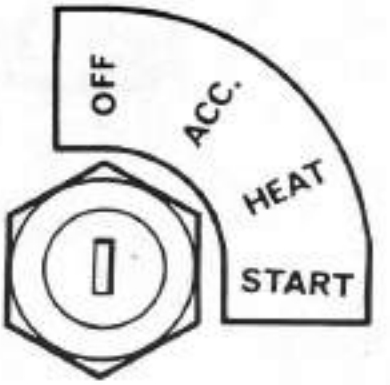
Figure 53

1. ENGINE STOP CONTROL - Pull the control out to stop the engine. The control must be pushed in to start the engine.

2. DIRECTION INDICATOR SWITCH - To indicate that you are turning the tractor to the right, push the switch to the right. Push the switch to the left to indicate a left turn.

NOTE: *The indicators will only operate when the starter key is in the ACC position.*

3. STARTER KEY SWITCH - Four position switch as follows:
   OFF Position - The key is in the vertical position. You can only remove the key in this position.
   ACCESSORY Position - First position clockwise from OFF. This position energizes the electrical accessories that is windshield washers, indicators, etc. The alternator and oil pressure lamps will illuminate. The fuel and coolant temperature gauges will show correct values.



HEAT Position - Second position clockwise from OFF. This position energizes the Thermostart for cold starting.
START Position - Turn the key fully clockwise against the pressure of the spring in the switch. Release the key when the engine starts.

NOTE: *To prevent operation by persons not authorized and the possible discharge of the battery, remove the starter key when you leave the tractor.*

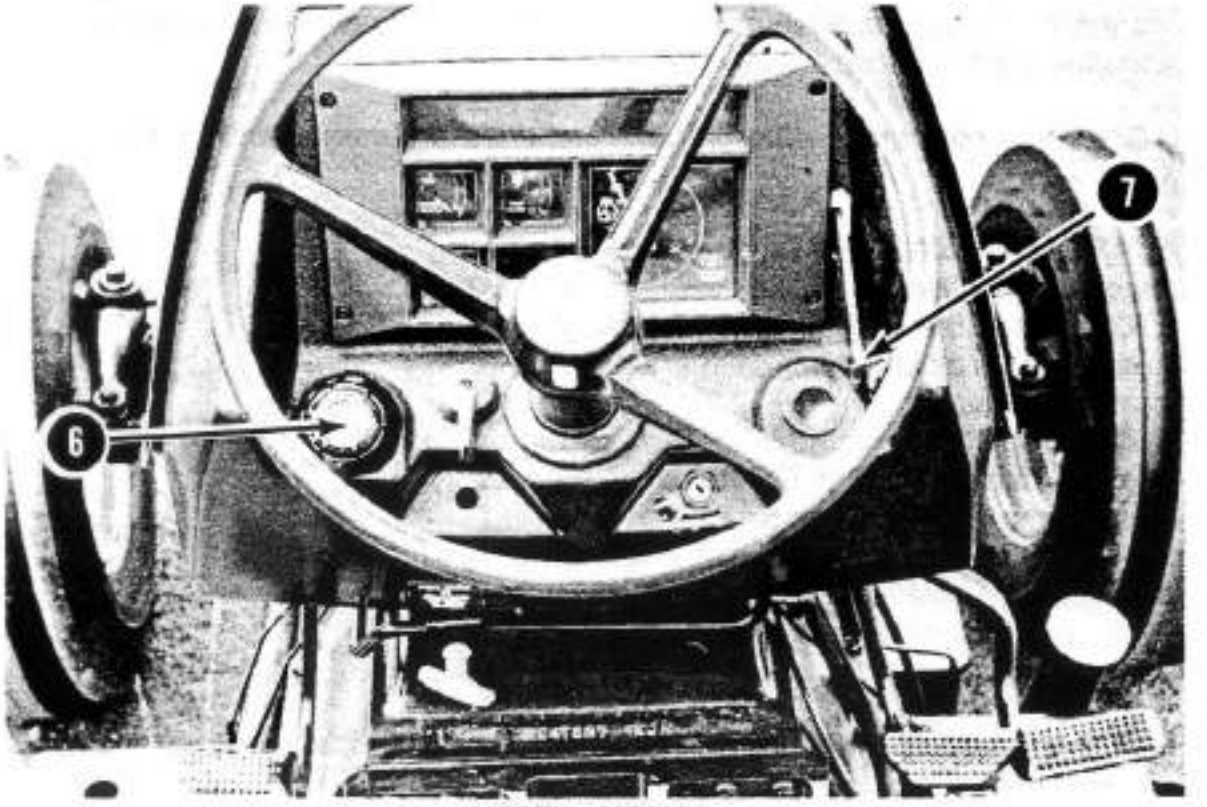
IMPORTANT: *While the engine is operating, keep the starter key in the ACC position so that the instruments and warning lamps will function. Do not keep the starter key in the ACC position for long periods of time when the engine is not operating. Warning lamps will be illuminated which will discharge the battery.*

4. HAZARD WARNING SWITCH (Not North America) - Pull the knob to operate the hazard warning lamps (all indicators operating). A red lamp in the knob will operate on and off. Push the knob to stop the lamps from operating.

5. HORN - Press the center of the main lamp switch to operate the horn.

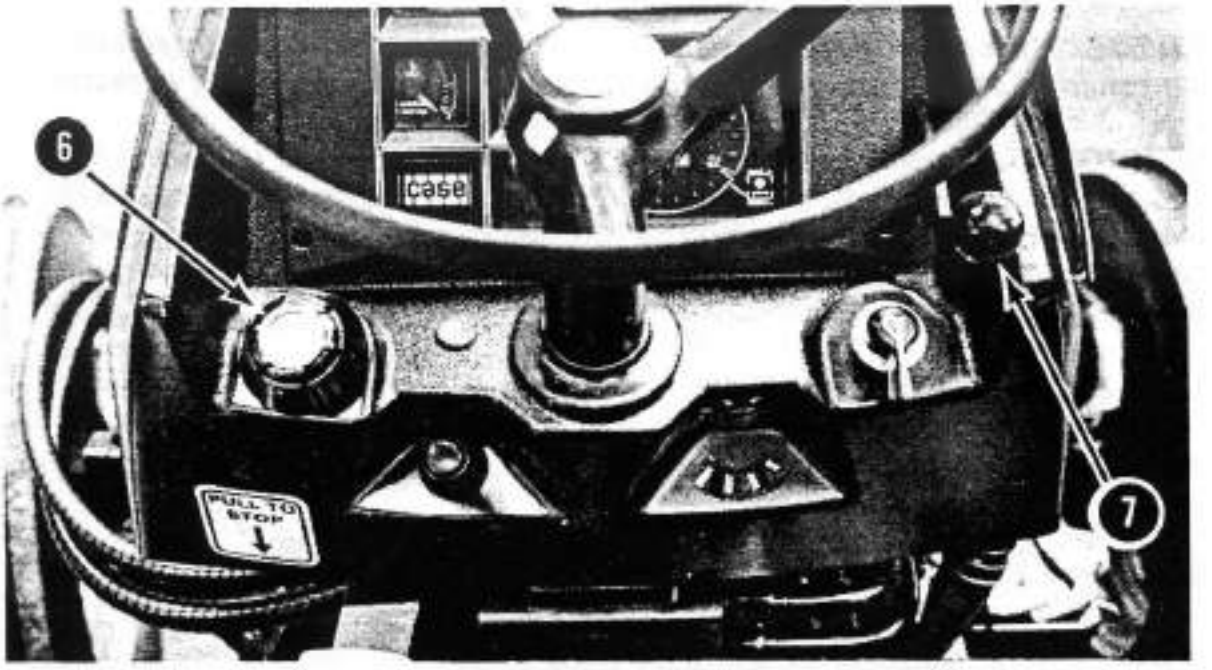
OPERATING CONTROLS

Tractor Without Cab (Instrument Panel)



NORTH AMERICA

Figure 54



NOT NORTH AMERICA

Figure 55

6. LAMP SWITCH (Not North America) - Four position switch as follows:

Number 1 - Switch fully counterclockwise. All lamps are OFF.

Number 2 - First position clockwise illuminates side lamps, rear lamps and instrument panel lamps.

Number 3 - Second position clockwise, illuminates head lamps (low beam), side lamps rear lamps and instrument panel lamps.

Number 4 - Third position clockwise illuminates head lamps (high beam), side lamps, rear lamps and instrument panel lamps.

6. LAMP SWITCH (North America) - Four position switch as follows:

Number 1 - Switch fully counterclockwise. All lamps are OFF.

Number 2 - First position clockwise illuminates, side lamps, rear lamps, and instrument panel lamps.

Number 3 - Second position clockwise, field position, as 2 plus head lamps on high beam. Flood lamp (s) if needed.

Number 4 - Third position clockwise, road position, as 2 plus head lamps on low beam and all four flashers working.

7. THROTTLE LEVER - To increase engine speed, move the lever forward (UP). Move the lever rearward (DOWN) to decrease engine speed.

OPERATING PEDALS
Tractor Without Cab

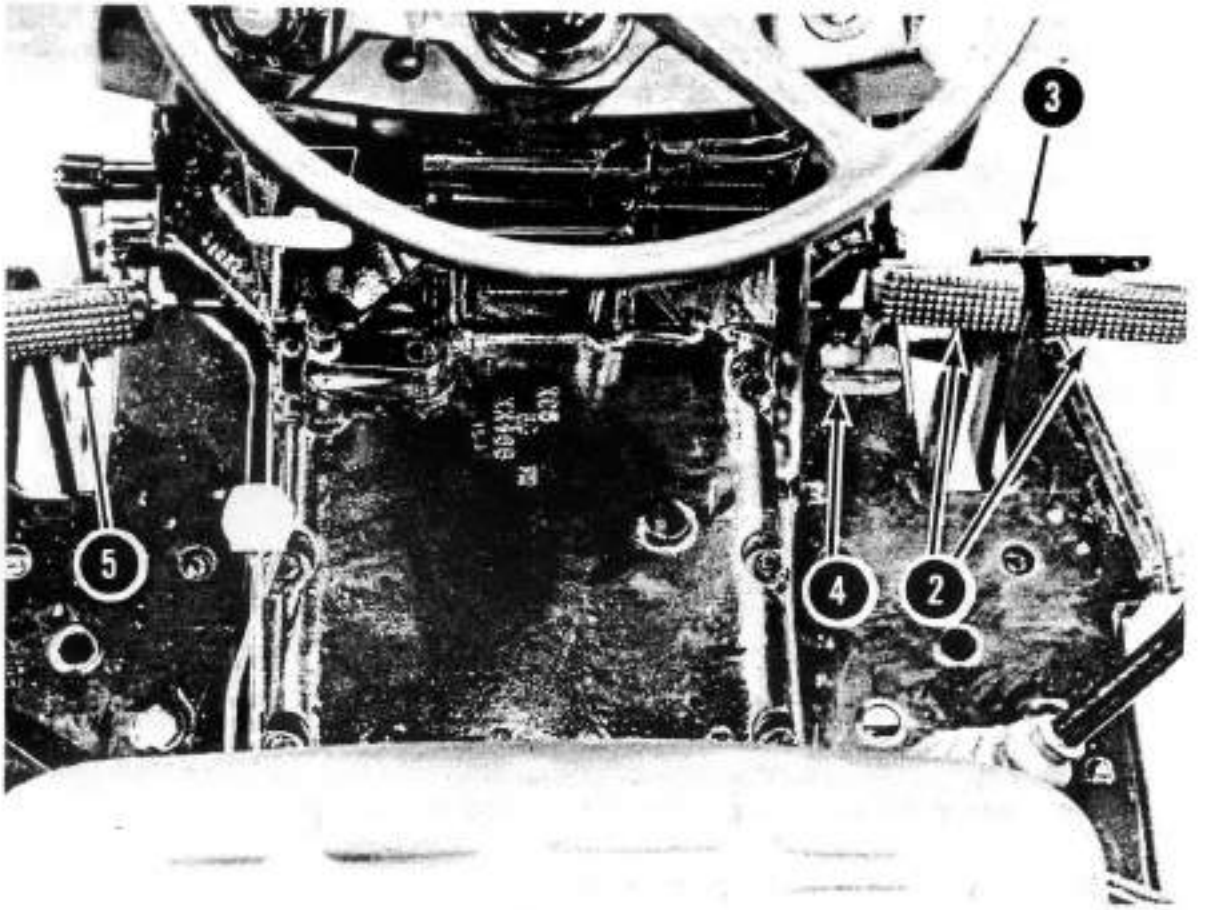


Figure 56

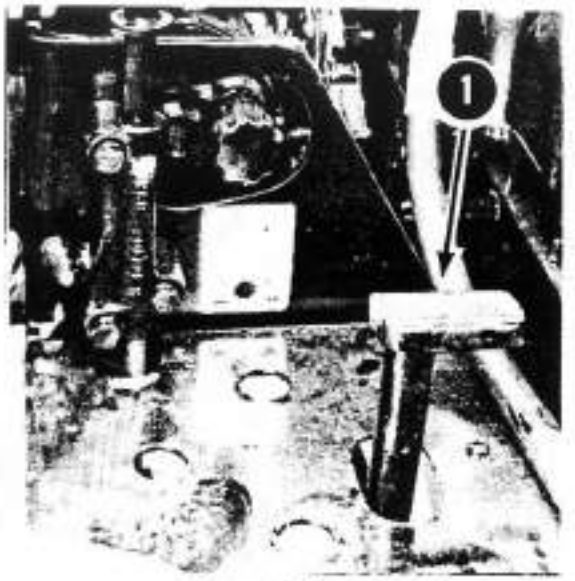


Figure 57

CAUTION: ***Do not drive on roads, or at high speed anywhere, with the differential lock engaged. Difficult steering will occur, and can result in an accident. In field operation, use the differential lock for traction improvement, but release for turning at row ends.***

1. DIFFERENTIAL LOCK - Push the pedal down to engage the differential lock. A spring inside the differential lock will push it out of engagement when the pedal is released. If the differential lock does not disengage easily, push down on either brake pedal. If the tractor is stopped and the differential lock is engaged, reverse the tractor for a short distance to disengage. Use the differential lock to increase traction of one or both rear wheels.

IMPORTANT: *Do not try to engage the differential lock if both rear wheels are not turning at the same speed that is one wheel slipping. Always disengage the transmission clutch before engaging the differential lock.*

WARNING - When the differential lock is engaged,

2. BRAKE PEDALS - The left-hand pedal stops the left-hand rear wheel and the right-hand pedal stops the right-hand rear wheel. For turning assistance in the field, use the pedals separately. Lock the brake pedals together for safe operation on the road.

3. BRAKE PEDAL LOCK - Use the lock to connect the brake pedals so that both the brakes are applied evenly.

CAUTION: ***Brake pedals must be locked together for road travel. This will insure uniform brake application and maximum stopping ability.***

4. THROTTLE PEDAL - Use this pedal when operating the tractor on the road. Move the throttle lever fully counterclockwise to get complete control of engine speed through the throttle pedal.

5. CLUTCH PEDAL - Push the pedal down to disengage the transmission clutch. Engage the clutch smoothly using the available gears and the throttle to control the tractor speed. Remove your foot from the pedal until it is necessary to stop the tractor or select a different gear. To get maximum clutch life, remove your foot from the pedal after the clutch is engaged. Do not select a high gear and then use the clutch to control the speed of the tractor.

CONTROL LEVERS

Tractor Without Cab
Left-Hand Side

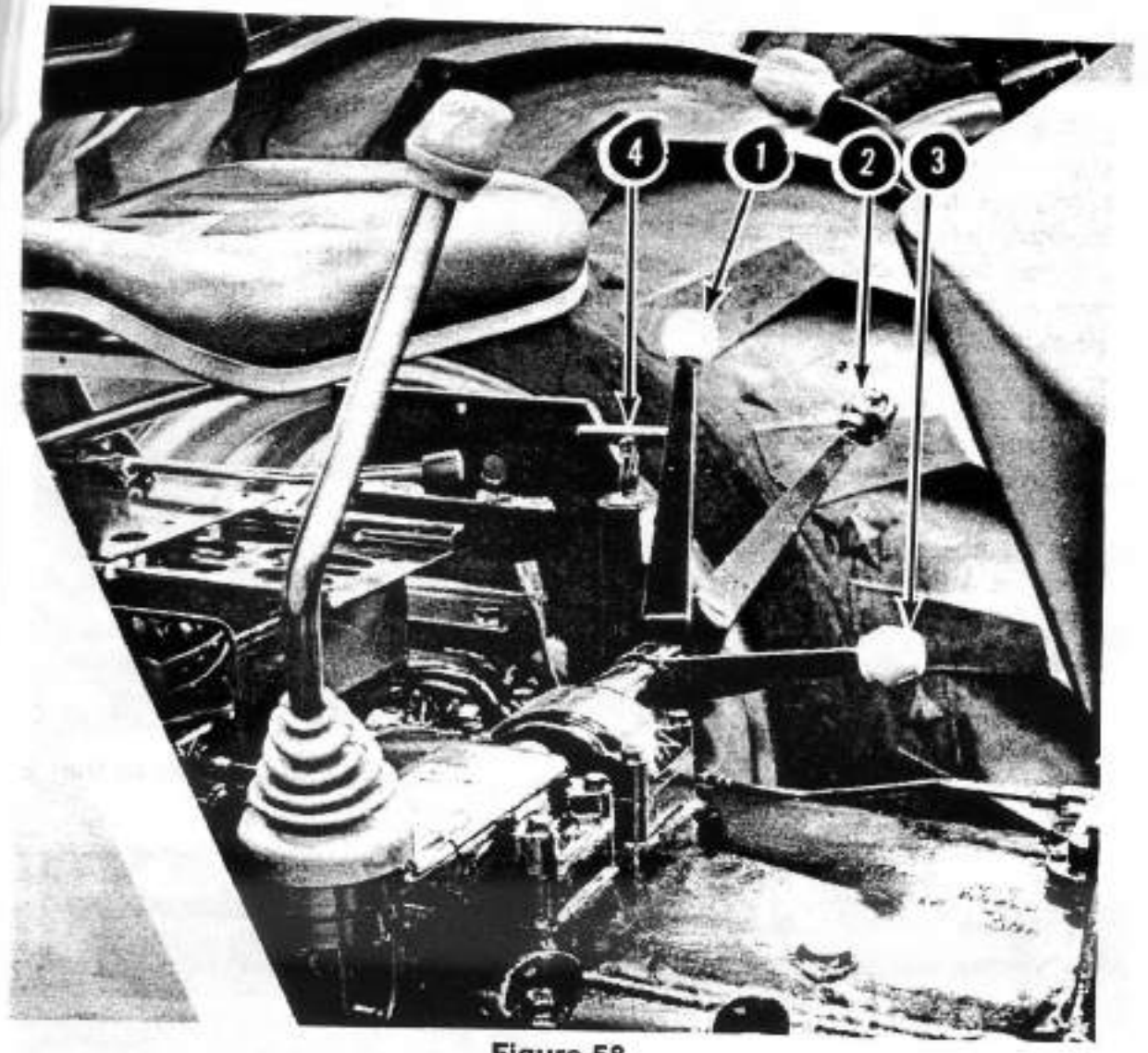
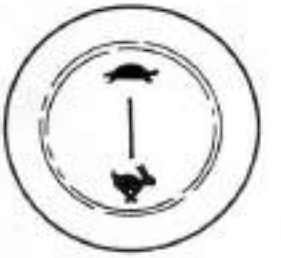


Figure 58

WARNING: ***PTO driven machinery can cause serious injury. Before working on or near the PTO shaft, or servicing or clearing the driven machine, put the PTO clutch lever in the DISENGAGE position, the PTO lever in the NEUTRAL POSITION, and STOP the tractor engine.***

1. HIGH/LOW RANGE LEVER
TRACTORS WITH SYNCHROMESH TRANSMISSION - This is the right-hand range lever. It has a white knob with the letters H (High) or L (Low) printed on top. Move the lever forward to select H and rearward to select L. Use this lever with the other range lever to select any of the four operating ranges.

2. FAST/SLOW RANGE LEVER
TRACTORS WITH SYNCHROMESH TRANSMISSION - This is the left-hand range lever. It has a black knob with the symbols of a tortoise (Slow) and and a hare (Fast) printed on top. Move the lever forward to select slow and rearward to select fast. Use this lever with the other range lever to select any of the four operating ranges.

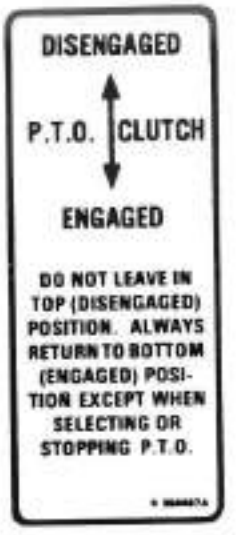


3. Select SLOW and LOW on range levers 1 and 2, then move creep lever rearward to "C" to select creep. Select 1, 2, 3 or R with the main gear lever to get the speed you need.

IMPORTANT: *The creep ranges must not be used for heavy draft work.*

NOTE: *The tractor must be stopped and the transmission clutch disengaged before moving the range levers.*

4. POWER TAKEOFF CLUTCH LEVER - The PTO clutch is operated by a lever at the left-hand side of the operators seat. When the lever is in the down position, the PTO clutch is engaged. To disengage the PTO clutch, pull the lever up, move the lever toward the seat and engage lever slot on guide tube. To engage the PTO clutch, pull the clutch lever up, move lever to the left then slowly lower the clutch lever.



NOTE: *The PTO clutch must be disengaged before engaging or disengaging the PTO.*