600
Crawler

Operators Manual

9-741

CASE

Reprinted

is located directly in front of the operator.

TORQUE CONVERTER

A single-stage hydro-kinetic type torque converter (2.17 to 1 ratio) is mounted to the engine and connected to the transmission and axle assembly through universal joints.

Speeds	Forward	Reverse
First	0 to 1.66 MPH	0 to 1.82 MPH
Second	0 to 3.22 MPH	0 to 3.51 MPH
Third	0 to 3.40 MPH	0 to 3.74 MPH
Fourth	0 to 6.56 MPH	0 to 7.20 MPH

STEERING

Hydraulically actuated disc clutches operating in oil provide effortless hand or foot control. Operator can pivot one track or maintain power on both tracks for turns with hands free to operate loader controls.

BRAKES

Automotive type hydraulic brakes are controlled by foot pedals. Hand brake for parking.

TRACK & TRACK FRAME

Standard Track Gauge	49 In.
Track Shoes (Standard)	14" Street Plates
Number of Shoes (Each Side)	34
Lower Track Rollers (Each Side)	5
Length of Track on Ground	62 5/8 In.
Total Square Inches Ground Contact (With Standard Track Shoes)	1760

TRANSMISSION AND TORQUE CONVERTER

Fill transmission to check plug hole with Type "C" torque converter oil.

FINAL DRIVE LUBRICANT

Use first quality 140 transmission gear lube during summer. In winter use 80 or 90 straight mineral gear oil.

PRESSURE LUBRICANT

Use first quality lithium soap base grease, Petroleum Industry No. 2 or No. 3 grade. To be used at all lubrication points having grease fittings.

HYDRAULIC SYSTEM

Use No. 10 H.D. oil above 10° F. and 5W oil below 10°F. Oil level should be 4-1/2 inches from top of tank.

HYDRAULIC BRAKE SYSTEM

Use a heavy duty type hydraulic brake fluid of SAE 70 R-1 specifications.

DIESEL FUEL

Use a No. 2 high speed diesel fuel.

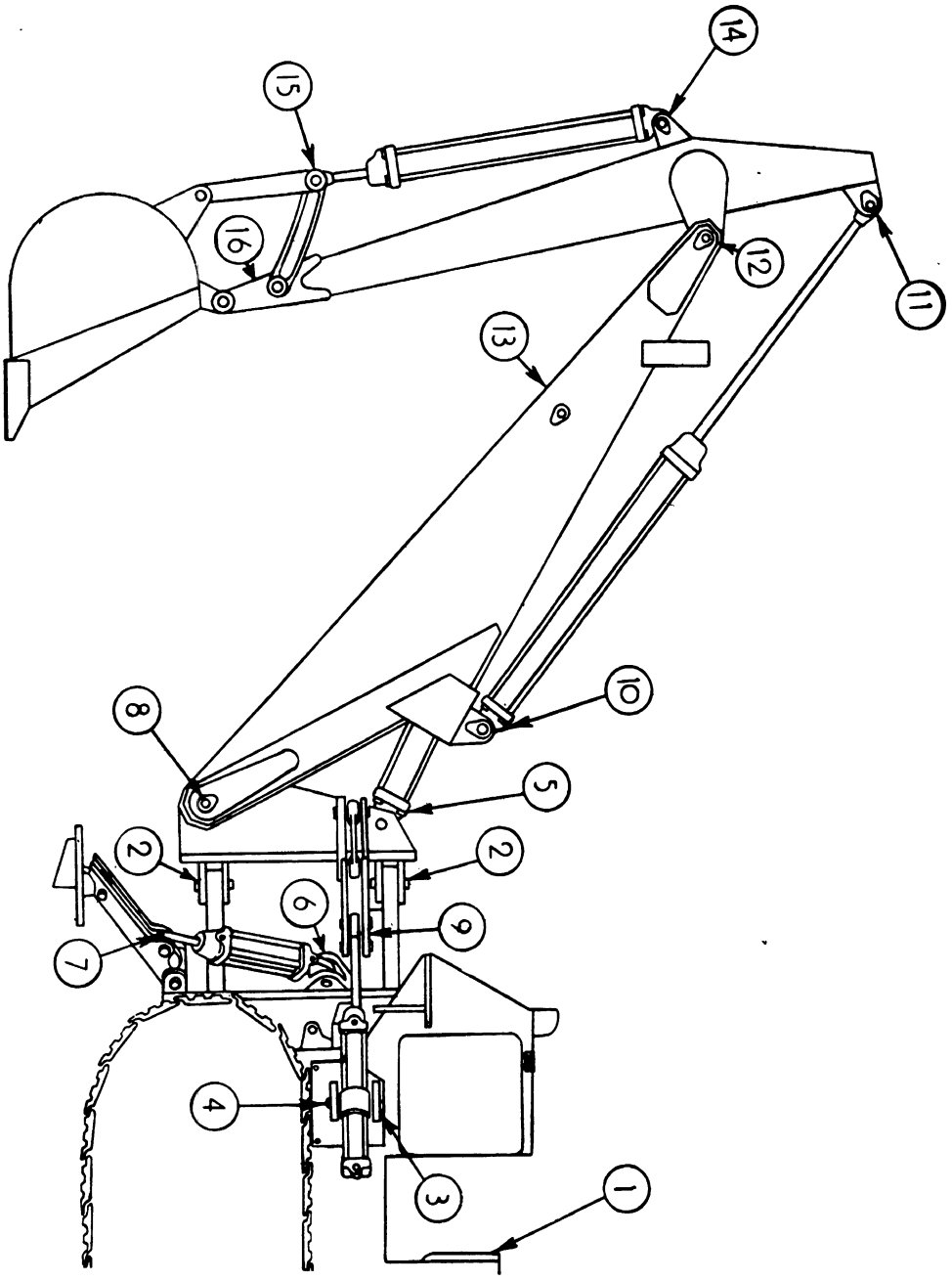
CAUTION: Grade No. 2 diesel fuel should not be confused with No. 2 furnace oil which has no definite limits on ash content, sulphur content, and octane value.

ROLLERS

Pressure lubricate daily and more often under severe operating conditions. Apply until clean grease is forced out around dust shields.

Additional information is available at your authorized dealer.

BACKHOE LUBRICATION CHART



SHIFTING AND STEERING OPERATIONS

Steering operations for the Case 600 Crawler are determined by various combinations of the two track speed control levers, the forward-reverse motion control lever, and two brake pedals. All three control levers are located on a control tower centered in the operator's compartment. Each control lever has three selections, and each lever may be operated independently of the others. Brake pedals are located in the lower left area of the operator's compartment. They correspond to each track and may also be operated independently.

CONTROL LEVERS

Track Speed Control Levers

The two outside levers on control tower are the left and right track speed control levers. They are identified by the lettering on control tower. Adjacent to these levers appear the letters:

H - denoting high speed
N - denoting neutral
L - denoting low speed

Left track speed control lever operates left track, and right track speed control lever operates right track. To power turn left put left track speed control in L position and right track speed control lever in H position. To power turn right reverse lever positions.

Forward-Reverse Motion Control Lever

Motion control lever is centered on control tower. Adjacent to this lever appear the letters:

BACKHOE OPERATING CONTROLS

Any reference to right or left is determined by the operator's position as he sits facing the backhoe unit in the normal operating position.

Five hand control levers and two foot pedals operate the backhoe unit.

1. Right Swing Control Pedal - Pushing down with the right foot swings the unit to the right.

2. Boom Control - The operator pushes the control lever to lower the boom and pulls to raise it.

3. Dipper Arm Control - The operator pushes the control lever to extend the dipper arm and pulls to retract it.

4. Bucket Control - The operator pushes the control lever to roll out or dump the bucket and pulls to roll in or load it.

5. Right Stabilizer Control Lever - Pushing the control lever lowers the right stabilizer pulling the lever raises the stabilizer.

6. Left Stabilizer Control Lever - Pushing the control lever lowers the left stabilizer pulling the lever raises the stabilizer.

7. Left Swing Control - Pushing down with left foot swings the unit to the left.

The design of the control valve assembly permits two or more levers to be operated at the same time. All the levers return to the neutral position when released.

METHODS OF OPERATION

Methods for operating excavation equipment are as varied as there are operators, however, there are basic fundamentals that help in performing maximum amount of work with the least amount of damage to the machine. Your 600 Case TerraTrac has a number of revolutionary features that will enable you to do operations that were formerly awkward and difficult.

One of the difficulties of conventional Crawler tractors in the past has been the shifting of gears. Due to the spur gear arrangement used in most machines and the difficulty in trying to synchronize engine speed with tractor speed, it is nearly always necessary to bring the machine to a full stop before changing gear speeds. Therefore, the gear selected by most operators, while low enough to start the load, is usually too slow once the load is under way.

With your 600 Case TerraTrac, you are able to shift from a low speed to a high speed in either HIGH or LOW range without a chance of damaging the machine. You are able to do this because the transmission gears are in constant mesh and require no movement on the transmission shaft. With the aid of a hydraulic valve and hydraulic clutches you are able to get multiples of gear reductions by merely moving your hydraulic control handles.

DIGGING FROM THE BANK

To load from a bank with a front end loader, the approach to the bank should be made with the bucket horizontal and at ground level. This is its strongest position, because loader arms are against the stops and the cylinders are retracted. It is also in the best position of the bucket for bank penetration.

When digging from a bank with a conventional machine, the moment that the machine reaches its maximum penetration, the engine will start to stall. The operator has to de-clutch the machine immediately or slip the clutch to prevent stalling. Slipping the clutch will hold the machine against the bank with slight pressure, but is detrimental to the friction clutch. When operator de-clutches machine, the engine RPM will rise and give more power to operate the hydraulic system.

The 600 TerraTrac uses a torque converter to increase engine torque and to cushion the tractor against shock loads. As the machine is pushed into the bank under full engine power and is slowed, the torque converter increases torque output until it reaches its maximum efficiency. At this point the engine will still be running at about 1650 RPM. This is known as the stall speed of the converter. If the bucket has reached deep penetration at this time it may be necessary to de-clutch to raise engine RPM, for more efficient hydraulic operation.

We de-clutch the 600 TerraTrac in two simple ways. One method is to pull the motion control levers into neutral. The second method is to apply the brakes. This will neutralize the transmission through the control valve and also hold the machine to the bank. If hydraulic lever is pulled without de-clutching, the RPM will drop lower than the stall speed and there may be insufficient hydraulic pressure for break out.

TRANSPORTING

When transporting dirt from one part of an excavation to another with the dozer, there is a certain amount of spillage from around the ends of the blade that has to be replenished.

One method of checking this loss is to travel the same path each time, so that the ridges built up in earlier passes prevent the dirt from leaving the blade.

Another method is to dig very slightly through the entire length of the pass, just enough to replenish the loss.

The third method is to center on a windrow of a previous pass which will replace the loss.

When rough grading, the highest possible gear speed should be used without causing loss of control.

BACKHOE DON'TS

1. Don't backfill a ditch or hole by sweeping the dirt in with the side of the bucket.

2. Don't attempt to dig without outriggers down.

3. Don't swing boom before checking to see that there is enough clearance around the machine.

4. Don't push the tractor with the hoe while the bucket is in curled position.

BACKHOE DO'S

1. Lubricate the machine daily - oftener if working under adverse conditions.

2. Change oil at first indication of dirt or other foreign material.

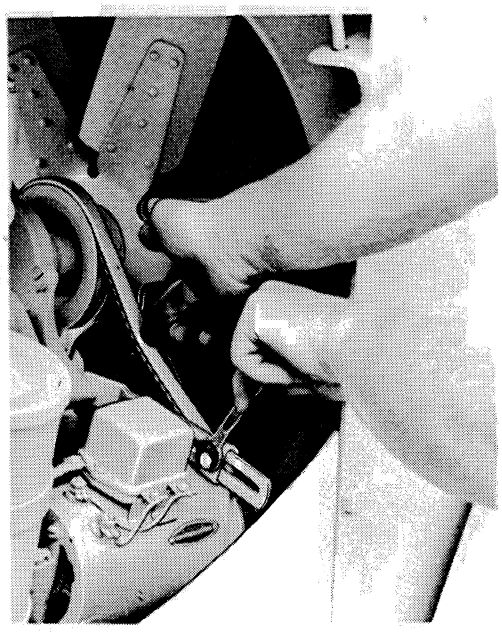
3. Replace worn or damaged parts before they completely fail. This might cause damage to related parts.

4. Check all mounting bolts regularly. KEEP THEM TIGHT!

5. Follow information in the Operating Manual.

6. Replace cutting edge or digging teeth, when they become worn or dull.

Fan belt tension should be checked weekly by pressing against it with the hand midway between pulleys opposite adjustment side of the engine. The proper tension will allow a deflection of 1/2 to 3/4 inch at this point. If allowed to run loose, overheating will result.



Fan Belt Adjustment

Tension is adjusted by loosening adjusting strap at top of generator. Move the generator pulley out against belt to tighten. Excessive tension will tend to stretch belt and increase wear on groove faces; this is detrimental to generator bearings. Replace fan belt when it becomes oil-soaked or badly worn.

Thermostat

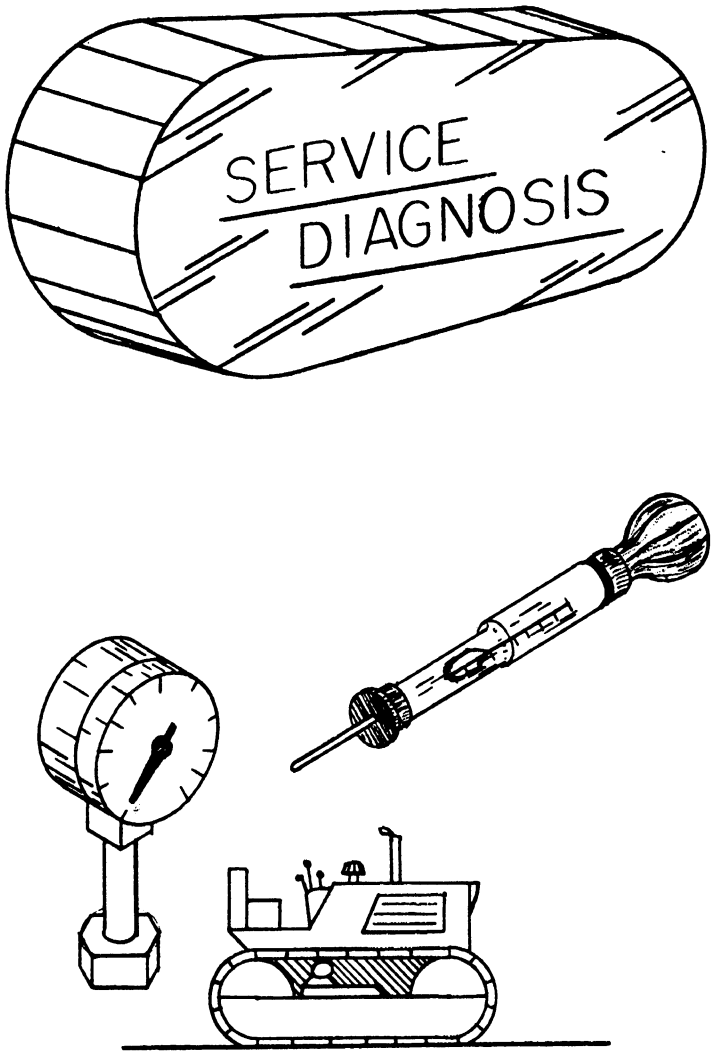
Engine over-heating or tendency to "run cold" may be caused by defective thermostat operation. The correct operating temperature, as indicated on the temperature gauge in operator's compartment, is 170^{o} to 210^{o}. A faulty thermostat may be

charging rate, and a starting motor to crank the engine. Electrical system is a single wire type, which has a grounded return to battery. Wires are color-coded in harness for easy tracing, and the schematic wiring diagram on page 110 will assist in trouble shooting. Keep all terminals clean and securely fastened. Do not paint instruments of any electrical connections. Keep battery terminals clean and greased. Inspect all wiring periodically for broken wires, damaged insulation, and poor connections.

Batteries

The batteries, lead-acid types, store electrical energy and are a vital part of the electrical system. Their primary function is to provide power for starting the engine. Cranking the engine causes a large power drain on batteries, which is replenished by the generator while the engine is running. Certain maintenance precautions must be taken to keep batteries functioning properly.

Storage batteries give off fumes that are highly corrosive and particularly affect battery posts and cable terminals. Cable terminals must be kept clean and tight. Wash corrosion from terminals and top of batteries monthly with a solution of baking soda and water, then coat with vaseline or a light grease. Make sure terminals are tight on battery studs. Disconnect cables from batteries twice yearly and polish the contacting surfaces with steel wool. Make sure insulation near terminal on the negative cable is not deteriorated allowing a contact with the hold-down clamp. Replace if necessary. Be sure to check all the battery cells weekly for proper electrolyte level, which should be 3/8 inches above the plates and separators. Add only pure distilled water to bring electrolyte to proper level. Keep vent holes in filler caps open. Replace filler cap securely.


SERVICE
DIAGNOSIS

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