

OPERATOR'S INSTRUCTION BOOK

Model GG

THE CLEVELAND TRACTOR COMPANY
CLEVELAND, OHIO, U. S. A.

SAFETY FIRST

Most tractor accidents, like industrial, home and highway accidents, are caused by the failure of some individual to observe simple and fundamental safe rules or precaution. For this reason tractor accidents, just as other types of accidents, can be prevented by recognizing the cause of accidents and doing something about it before the accident occurs.

Regardless of the care used in the design and construction of equipment, there are many points that cannot be completely safeguarded without interfering with accessibility and efficient operation.

A careful operator is the best insurance against an accident.

The complete observance of one simple rule would prevent many thousand serious injuries each year. That rule is: "NEVER ATTEMPT TO CLEAN, OIL, OR ADJUST A MACHINE WHILE IN MOTION."

--- National Safety Council



PRELIMINARY INSTRUCTION BOOK
for
GENERAL TRACTOR MODEL "GG"

READ AND STUDY THIS BOOK CAREFULLY BEFORE STARTING
TRACTOR. KEEP FOR READY REFERENCE.

Give your tractor daily attention and make sure that all parts are kept tight and properly oiled. Good oil and proper care protect your tractor from undue wear, loss of power, repair expense and early replacements. Always give serial number of tractor and engine when ordering repairs.

Manufactured by
THE CLEVELAND TRACTOR COMPANY
Cleveland, Ohio, U.S.A.

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WARRANTY

It is understood and agreed that Company's products are sold subject to the following warranty, and no other warranty or guarantee is given.

Company warrants each new product manufactured by it and sold hereunder, to be free from defects in material and workmanship under normal use and service, its obligation under this warranty being limited to making good at its factory or at some other place designated by Company, any part or parts thereof which shall within six months after delivery of such product to the original purchaser be returned to it, with transportation charges prepaid, and which its examination shall disclose to its satisfaction to have been defective; this warranty being expressly in lieu of all other warranties expressed or implied, and of all other obligations or liabilities on its part, and Company neither assumes nor authorizes any other person to assume for it any other liability in connection with the sale of its products.

It is distinctly understood, however, that Company's warranty does not obligate it to bear the cost of labor in the replacement of defective parts.

This warranty shall not apply to any product which shall have been repaired or altered outside of Company's factory in any way so as, in its judgment, to affect the stability or the reliability of such products, nor to any product which has been subject to misuse, negligence, or accident, nor to any General which shall have been loaded beyond the factory rated loaded capacity. Company makes no warranty whatever in respect to trade accessories, inasmuch as they are usually warranted separately by their respective manufactures.

INTRODUCTION

Each GENERAL tractor is carefully manufactured, to enable it to give the very best service. Some owners secure better results than others as they realize that it is their responsibility to understand their tractor and then to care for it properly.

This instruction book contains information relative to the servicing of THE GENERAL tractor. READ, STUDY, and DO the things this book suggests and you will obtain the best results. This instruction book is your guide and advisor, do what it recommends, regardless of what may have been your previous practices.

LUBRICATION INSTRUCTIONS -- Use good quality oils of the proper seasonal body. High quality oils stand heat and wear for considerable time, whereas poor quality oils soon break down and lose their lubricating qualities. Lubricating oil serves to relieve friction and to carry off heat. For continuous satisfactory service, use oil of the proper body. The best of oils require replacement after certain periods of use. The results of either using poor quality oil or of failure to change oil at the time specified may not be apparent immediately, but over a period of time will prove to be very costly.

CERTIFICATE OF DELIVERY -- This certificate includes information pertaining to the tractor and accessories, special equipment, class of work, name and address of purchaser, etc., and is the basis of the service history record maintained by the distributor and factory.

INSTRUCTIONS FOR OPERATION AND CARE -- Altho The General is simple to operate and care for, it is important that the operator be thoroly instructed, at the time of delivery, in the proper use and care of the tractor. This is part of the distributor's delivery service. The manner in which a tractor is operated and cared for during the first 100 working hours determines its future life, freedom from unnecessary troubles and delays, etc. The duty of every operator placed in charge of a tractor is to strictly adhere to instructions received when machine is delivered and to the instructions in this book.

LUBRICATION AND MAINTENANCE -- Proper lubrication and maintenance are essential to satisfactory performance. Follow the MAINTENANCE SCHEDULE shown in the front part of this book.

After the first 100 hours operation, tighten all nuts, bolts and cap screws. At least once each month make a thoro check of the entire tractor and occasionally have complete service inspection made by the distributor's service representative who will call attention to any repairs or adjustments needed at that time or in the near future. Advice to the operator of certain features concerning operation or lack of care may save the owner considerable time and expense.

ANY PROBLEM WHICH MAY ARISE REGARDING PROPER CARE AND MAINTENANCE OF THE TRACTOR SHOULD BE REFERRED IMMEDIATELY TO THE DISTRIBUTOR FROM WHOM THE TRACTOR WAS PURCHASED.

BEFORE STARTING TRACTOR

Examine tractor for any damage caused by shipping or unloading.

Reduce the air pressure in the tires as follows: Front tire to 28 to 30 lbs. pressure. Rear tires to 12 lbs. pressure. Note: For shipping purposes only, the tires are inflated to a much higher pressure at the factory. Valve stem of rear tires must be at the top when checking air pressure.

Check the oil level in the crankcase by the use of bayonet gauge located on the left side of the engine and add oil if necessary.

Make sure radiator is full of clean cooling solution.

Fill the gasoline tank with good grade gasoline.

Make sure air cleaner has received proper servicing.

When engine starts, observe oil pressure gauge. If gauge fails to register, stop engine and determine cause.

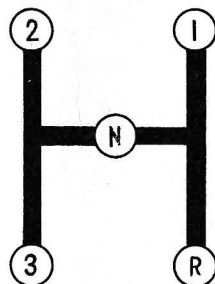
HOW TO OPERATE THE TRACTOR

TO START ENGINE:

1. Be sure transmission is in neutral position.
2. Open shut-off valve on gasoline filter on under side of gasoline tank.
3. Open the throttle approximately one-half.
4. Hold choke lever in full choke position.
5. Pull UP on crank. Do not attempt to spin the engine. The magneto is equipped with an automatic impulse which furnishes a better spark for starting. Engine should start on third or fourth quarter turn.

TO STOP ENGINE -- Press button on magneto and shut off gasoline at the gasoline filter.

GEAR SHIFT -- This tractor has three speeds forward and one reverse. Always put the gear shift into neutral when stopping the tractor. Gear shift lever positions as seen from the seat are as follows:



BRAKES -- This tractor is equipped with hand operated brakes which are adjusted at the factory and need no further adjustment for a considerable period of time. Always be conservative in the use of the brakes. To make a short turn, apply brake on side toward which the turn is to be made, applying brake gently, not abruptly. To stop the tractor, apply both brakes at the same time gently but firmly.

HITCH -- Hitch all drawn implements to the swinging drawbar. Integral implements are fastened to the frame.

COOLING SYSTEM

CAPACITY OF COOLING SYSTEM -- 11 QUARTS. The engine is water cooled by the thermo-siphon system. Always use clean water, free from dirt or other foreign matter which might clog the cooling system. Use rain water in the cooling system to insure against a clogged radiator and formation of scale in the engine block, which might cause overheating. Drain, flush, and refill the system several times during each season to remove any dirt and loose scale collected.

If engine overheats, check water level in radiator and adjustment of fan belt. Use a tire pump to clean dirt from the radiator fins by blowing air thru from the rear.

To clean cooling system partially clogged with scale or sediment, use special cleaner available at all automotive supply stores.

Do not add cold water to an overheated engine. Serious damage to cylinder head and cylinder block might result.

Water-alcohol anti-freeze solutions may be used satisfactorily in this cooling system. When operating tractor in cold weather, cover part of radiator to keep radiator warm. Always drain water in freezing weather if you do not use an anti-freeze solution.

ENGINE LUBRICATION

CAPACITY OF CRANKCASE -- 5 QUARTS. Check oil level at the beginning of each day's operation and add oil, if necessary.

Crankcase oil level is indicated by 4/4 mark on bayonet gauge which is located on left-hand side of motor. Oil level should be maintained at 4/4 mark. When checking, tractor should be on level ground and engine stopped. The oil should be changed every 60 working hours, except in extremely hot or dusty conditions, then change oil every 30 working hours.

TO DRAIN -- Remove drain plugs from filter and bottom of oil pan and drain while oil is hot. Replace plugs and fill crankcase to 4/4 mark on bayonet gauge. We recommend the use of a good quality oil.

The proper weight to use is as follows:

Above 32° Fahrenheit	-	SAE 30
32° Fahrenheit to Zero	-	SAE 20-W
Below Zero	-	SAE 10-W

MOTOR OIL FILTER

The oil filter is a non-cleanable cartridge type and its life depends upon the mechanical condition of the engine, the quality of the oil used, and general operating conditions.

CARE -- At every oil change, remove drain plug and allow filter to drain thoroly. At every 250 hours or oftener, when oil begins to get dark and smoky between changes, the cartridge should be replaced.

When replacing cartridge, be sure gasket at base of cartridge is in good condition. After starting engine, check filter for leaks.

OIL PRESSURE GAUGE

The oil pressure gauge does not tell amount or condition of oil in crank-case. It only indicates whether or not pump is working. As soon as engine starts, observe gauge. If it fails to register, stop engine at once and determine cause.

When engine is hot, pressure should be 20# at governed engine speed and not less than 5# at idle speed.

OIL PRESSURE ADJUSTMENT

To increase oil pressure, remove acorn cap nut from the regulator screw and, after loosening the lock nut, turn slotted screw in to increase pressure or out to decrease it. When correct pressure is obtained, tighten lock nut and replace cap nut.

Oil pressure adjustment is located on motor block near filler neck.

OIL PUMP

Oil is supplied to the crankshaft and connecting rod bearings under pressure by a gear-driven oil pump. The oil pump suction line is enclosed by a wire screen.

AIR CLEANER

At the beginning of each day's operation and at intervals varying from one to ten working hours, depending upon dust conditions, remove oil cup. Remove baffle in cup and wash thoroly in gasoline and refill to mark with light (SAE 10-W), clean engine oil. Also remove small cap filtering element, located in the cup at bottom of filter body, clean, and saturate with oil.

Twice each year, depending upon dust conditions, remove entire cleaner and wash thoroly in gasoline. In extreme dust conditions, clean air cleaner assembly every 100 working hours. Keep all connections between air cleaner and carburetor tight.

FAN

LUBRICATION -- Use oil only in fan bearing, same weight as used in engine. Every 60 working hours use a screw driver to remove the screw plug in the fan hub, and add motor oil until full. Replace and tighten plug.

Adjust tension on fan belt by moving fan in slot. Belt tension is correct when belt can be pulled in approximately $3/4$ inch. If fan belt is too tight, excessive wear in fan bearing and pulleys will result; while if too loose, belt will slip and cause motor to overheat. After adjustment is made, be sure to tighten fan shaft nut securely.

CARBURETOR

ADJUSTMENT - HIGH SPEED -- Turn high speed needle in bottom of carburetor in until lightly seated, then back out $1-3/4$ turns. Start engine and let it warm up to operating temperature. With throttle wide open, turn high speed needle in slowly until engine speed slows down, then back out just enough so engine runs smoothly at highest speed. This adjustment will be approximately $1-1/2$ turns open.

ADJUSTMENT - IDLE -- Close throttle and adjust low speed adjusting needle for smooth idling, then recheck high speed adjustment. Set stop screw so engine idles at about 350 R.P.M.

FUEL FILTER

Keep lines clean and tight and vent in fuel tank cap open. At the start of each day's operation, check filter for water and sediment. When removing or replacing glass bowl, do not damage gasket. It is advisable to stop engine by shutting off fuel at the filter.

GOVERNOR

The governor is of a variable speed flyball type mounted on timing gear cover and is driven by camshaft gear. The lubrication is supplied from timing gears.

Governor gear is marked for timing with camshaft. In case it is ever removed align this mark with mark on cam gear.

MAGNETO

LUBRICATION -- Twice a year, remove pipe plug at front of magneto and oil with SAE 10 engine oil. Always wipe all dirt and oil from the plug before removing.

CARE -- Never allow oil to accumulate on magneto points or on outside of magneto.

ADJUSTMENT OF POINTS -- Every 200 working hours, check points. Correct clearance is .014" to .016" when interrupter lever rests on high point of cam. Pitted points should be properly dressed flat with a stone or file. When point renewal becomes necessary, always replace both interrupter lever and contact bracket at the same time.

CAUTION -- Before removing point cover, make certain of position of rotor and reinstall in exactly this same position, as it is possible to install rotor 180° out of correct position.

REMOVAL -- Remove magneto outer cap. Crank engine until No. 1 piston is coming up on compression and align "SPK" mark on flywheel with center of timing hole in bell housing, noting that magneto rotor corresponds with No. 1 spark plug wire.

INSTALLATION & TIMING -- Bring No. 1 piston up on compression and align "SPK" mark on flywheel with center of timing hole in bell housing. Revolve magneto until rotor points to No. 1 spark plug wire in magneto cap and tongue of drive coupling lines up with the groove in governor gear and install magneto on engine in this position, with top of magneto revolved in slotted holes toward the engine as far as possible. Tighten mounting screws.

Crank engine two complete revolutions until No. 1 piston is again coming up on compression and align "DC" mark on flywheel with center of timing hole in bell housing. Loosen mounting screws slightly and rotate top of magneto, in slotted holes, away from engine, very slowly, until impulse trips. Then tighten mounting screws, being sure magneto remains in this exact position.

Repeat the above operation until this exact timing point is obtained.

(When magneto is timed as outlined the actual point of ignition occurs at "SPK" mark on flywheel when engine is running.)

If for any reason governor gear has been removed, turn engine with governor cover removed, until timing punch mark, used to time camshaft to crankshaft, can be seen thru the governor opening. Insert the governor drive gear and shaft, which has a timing mark on it, so that this mark will line up with the mark on the cam gear. Next install balance of governor and proceed with magneto timing as outlined above.

Firing Order: 1-2-4-3.

SPARK PLUGS

CARE -- Examine frequently for cracked or broken porcelains and burned points. Gaps must be .020" to .025". Measure with a feeler gauge. Once a year, new plugs should be installed. Keep ignition connections tight and replace all damaged cables at once.

VALVES

TAPPET ADJUSTMENT -- Run engine until hot. Remove cover and with hand crank turn engine until valve closes and tappet is at its lowest position. Adjust to proper clearance, using a feeler gauge between valve stem and tappet. Tighten lock nut and recheck clearances. Correct clearance is: Intake Valve .006" - Exhaust Valve .008".

When replacing cover, make sure gasket is in good condition.

CLUTCH

LUBRICATION -- Starting each day, add "three or four shots" of oil from an oil can, to throw-out bearing using same oil as used in crankcase and keep pedal linkage oiled.

CLUTCH PEDAL ADJUSTMENT -- Clutch is self-adjusting for friction facing wear and requires only that sufficient free pedal travel be maintained during life of facings. Form habit of checking free pedal travel at beginning of each day's operation. (Free pedal travel is distance pedal pad travels from extreme rear position, when lower end of pedal is against stop, to point where throw-out bearing touches release levers.)

Clutch pedal originally has 1-3/4 inches free pedal travel. As friction facings wear, this distance gradually reduces. When travel is reduced to 3/4 inch, readjust rod between pedal and release shaft lever to give original clearance (1-3/4 inches). Never allow less than 3/4 inch travel.

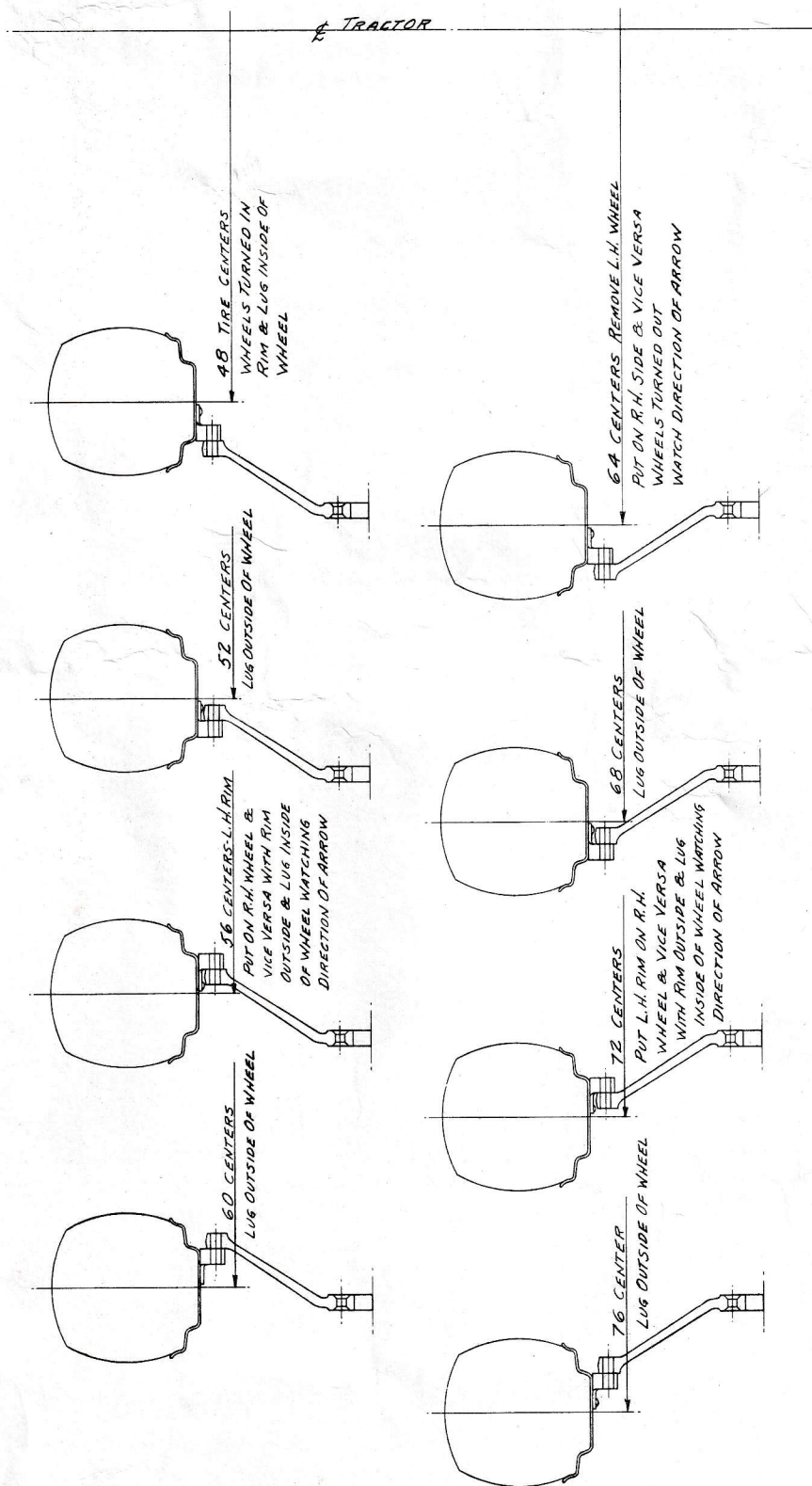
CLUTCH REMOVAL -- Remove hood, fuel tank, and fuel tank support. Disconnect throttle rod and clutch throw-out rod at clutch pedal. Remove guard over drive shaft. Remove bolts holding fenders to front fender braces. Remove two cap screws holding rear main frame cross member to front of transmission case. Remove 2 nuts and collets holding main frame to top of transmission case. Now loosen, but do not remove, the two lower nuts and collets holding main frame to transmission case. Remove cotter holding rear universal to transmission shaft. By pivoting transmission and differential case to rear on lower collets which hold main frame to transmission case, the rear universal joint will slide off splines of transmission shaft. Remove drive shaft at front universal. Remove cap screws holding clutch cover to bell housing. Pull cover and clutch shaft, as an assembly, to rear as far as possible in order to pull clutch shaft out of pilot bearing. Remove 3 cap screws holding rear clutch shaft support bearing retainer plate to cover. Pull clutch shaft with bearing out of cover. Lift cover off. Remove 6 cap screws holding clutch cover assembly to flywheel and remove clutch.

REASSEMBLY -- Before installing clutch, examine pilot bearing and pack full of medium cup grease. Place clutch shaft thru cover and drive plate and enter shaft into pilot bearing. Bolt clutch assembly to flywheel, then remove clutch shaft and replace cover and bolt to bell housing. Then replace clutch shaft, rear bearing and retainer.

Reinstall balance of parts removed and check clutch pedal free travel to 1-3/4 inches.

TREAD ADJUSTMENT

The different rear wheel tread adjustments, ranging from 48" to 76" by steps of 4" can be made as outlined in the drawing below.



BELT PULLEY ATTACHMENT

Directions for attaching:

1. Drain oil from differential housing.
2. Remove sheet metal cover and gasket from rear of transmission case.
3. Install power pulley making sure drive shaft coupling is on splines of transmission shaft and gasket in place.
4. Fill transmission and differential housing with proper lubricant to level of oil filler hole.

DRAWBAR AND HITCHING

Hitch all drawn implements to drawbar only. Keep all drawbar bolts tight.

Adjust vertical position of drawbar link to provide best traction and steering. Tools hitched too high cause difficult steering; tools hitched too low cause slippage of drive wheels.

For discing or other work, where it is necessary to turn under load, allow drawbar to swing. For plowing with drawn plow or for other work where implement must follow close behind the tractor, lock drawbar in position by putting bolts in drawbar support.

STORAGE

The tractor should be cleaned thoroly before storing.

Drain all oil from the crankcase and flush with a regular flushing oil. Refill with 5 quarts of SAE 10-W oil and run engine idle for 15 or 20 minutes.

All water should be drained by removing drain plug in elbow on left side of engine. The water drain plug should be left out so that any water that might collect in the radiator or water jacket by condensation will drain out. Wire the drain plug to the elbow casting.

Drain all gasoline from tank by removing gasoline filter glass bowl and then replace empty glass bowl. Leave the drain valve above gasoline filter open.

With the engine cold, put one-half cup of good engine oil into each cylinder thru the spark plug holes. Then replace spark plugs, but leave the wires disconnected from the plugs. Turn engine over several times with the starting crank to work oil in between pistons and cylinders.

The tractor should be stored in a dry place. Inspect the tractor for worn or damaged parts which may later cause expensive repairs. Block up tractor to remove weight from rubber tires. Raise tractor high enough so that tires do not touch ground. Protecting tires from oil, heat, and light will prevent undue deterioration. Remove all oil from the outside of the tires with a damp cloth. Between tractor working seasons is a good time to clean and paint the tractor. This can be done by the tractor operator at a very low cost and it will prove a profitable investment, as paint prevents rust, corrosion, and deterioration. Proper paint can be secured in small cans from the distributor from whom the tractor was purchased.