

PRE-DELIVERY PREPARATION OF THE TO - 30
AND
PROPER DELIVERY OF TRACTOR TO CUSTOMER



HARRY FERGUSON, INC. • DETROIT, MICH.

PRE-DELIVERY PREPARATION OF THE TO - 30

When Mr. Farmer signs an order for a new Ferguson and his money is in the cash register, the battle for his business and good will is not finished. It has only started.

Mr. Farmer is going to need implements to use with his new tractor. He may sometime need a second tractor. In any event, he will eventually be a parts and service customer. Don't forget that the most important customer is the one you already have. Unless he becomes dissatisfied he will usually return to you for any further needs.

Most important of all, Mr. Farmer, with his wife and family is one link in the most efficient communication system in the world - the grapevine. What he and other purchasers think of their new tractor will largely determine how many future tractors you sell and how easy it will be to sell them.

Every one of us, when we buy something new, reasonably expect a certain period of trouble-free enjoyment from it. We, as sellers, must leave no stone unturned to insure that our new owner receives our product in perfect condition. There is nothing more irritating than a product which starts giving us trouble as soon as we begin using it. If we encounter trouble only after a long period of satisfactory service, the use we have had from the item tends to offset the trouble. The initial impression of any product is the most lasting. It is also true that the novelty of a new piece of machinery causes the most talk and discussion among farmers during this early period. This is the most

important time in the life of the equipment from our viewpoint. A few minutes of preventive maintenance before delivery is worth more than days of work after delivery.

From raw material to finished product, Ferguson is a precision built tractor. Engineering, inspection and production departments have spared no effort to produce the finest, most modern farm machinery obtainable today. Years of engineering genius and painstaking research are translated by the drafting department into working blueprints. Modern production machinery turns out the precision parts which are checked and tested in fully equipped laboratories. From here the parts go to the skilled workers on the assembly lines. During and after assembly numerous inspections are continually made.

However - there is one fact that must be remembered. All of this painstaking design, precision manufacture and costly inspection will have been to no avail - it will have been totally wasted if you allow an improperly serviced tractor to reach the farmer. It is impossible to overstress this often neglected phase of our business. We know from records of customer complaints and from actual field experience that the large majority of petty complaints and customer dissatisfactions stem from improper pre-delivery service.

It is an old axiom that to do a job right, you must first have the proper tools with which to work. It is also an established fact that good tools are one of the soundest investments for a dealer to make. It is poor economy to buy cheap tools or makeshift substitutes. One of our biggest selling

jobs is that of bringing our Ferguson owner back to us for parts and service instead of going to some alley garage. It follows that we must have better service facilities than the alley garage before we can talk about giving better service. Our job is to make the name "Ferguson" stand for a clean, well equipped and efficient place to obtain good service work.

There must be no guess work in checking the tractor. Trouble usually comes from something we neglect because we "assume" or hope it was properly checked at the factory. Your procedure must be standardized by using the check sheet which the factory furnishes. It might seem to be easiest to just run down the sheet putting a check mark in every box and then deliver the tractor "as is". However, experience and angry customers will sooner or later drive home the fact that neglect only postpones work. Don't forget that it costs extra time and money to drive out to the angry customer's farm where working conditions are not favorable compared to the service shop even if we assume the trouble hasn't been aggravated by neglect.

These new check sheets must be filed so that our pre-delivery check is made a matter of record. Ferguson Field Service Men will periodically check these sheets. In all cases where Distributor Service Managers are called on a field complaint, they will first check this record before making the call.

This pre-delivery check has been reduced to essential operations only. It includes tightening all nuts and bolts, a visual check for leaks, a check for proper oil level, testing of dash instruments, inspection of cooling system, fuel system, steering, clutch, brakes, battery, hydraulic system and engine. When these checks have been made, the engine should be properly tuned. We will briefly discuss each of these operations.

TIGHTEN ALL NUTS AND BOLTS

Even with a brand new tractor, it is just good common sense to check every bolt and nut. Don't just grab a wrench and start yanking at the bolts. Very serious damage can be done if certain parts of the tractor are too tight or too loose. You are servicing the finest tractor of its type in the field. It is made to precise standards and close tolerances. Since you are a Ferguson Service Man you will use modern, efficient methods in your shop. So you first consult the following torque chart and then use your foot-pound torque

TORQUE	
Engine:	
* Head	70-75 foot pounds
Connecting rods	40-45
Main bearings	85-95
Flywheel	50-55
Camshaft nut	75
* Spark plugs	27
Hydraulic System:	
* Seat cover rim bolts	50 foot pounds
* Ram cylinder	45
* Pump base	38-45
* Side plates	50-55
BACK-LASH	
Rear Axle:	
Ring gear and pinion	.010 - .014 Thousandths
Steering pinion-sector	.001

wrench (Fig. 1) on the necessary points which are indicated by a star. It is just as

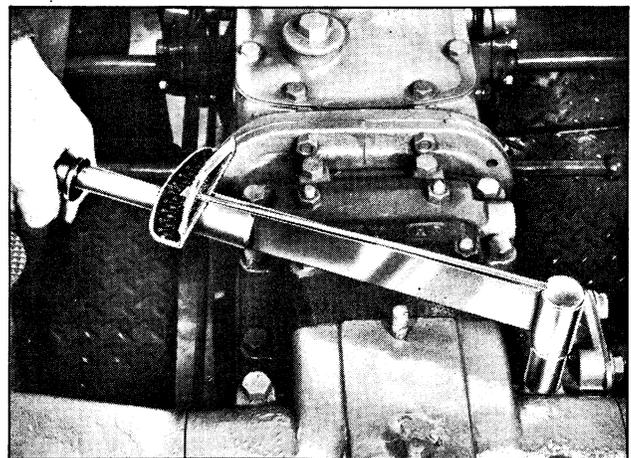


Fig. 1

easy as the wrong way and both you and the customer will be better satisfied with a job well done.

On the nuts and bolts which you do not torque you should use an open end or box wrench. Preferably an open end. With the box wrench it is possible to overtighten especially if the type with a long handle is used. Do not use a crescent wrench for this heavy duty work. It may spring or break causing personal injury.

When tightening the cylinder head nuts, special attention should be given to the sequence in which the nuts are torqued. (Fig. 2)

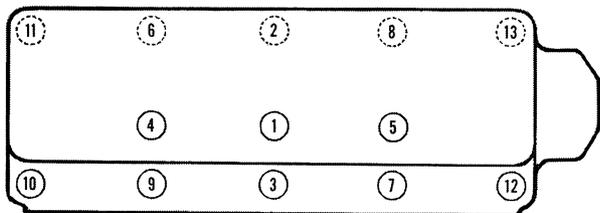


Fig. 2

The biggest problem in tightening down a cylinder head is to leave the gasket smooth and evenly compressed so that it will provide a good seal. It is for this reason that you start tightening at the center and work evenly out to the ends. Note particularly that the left hand front and rear nuts are tightened last. If these two nuts are tightened first, it is possible to crack the cylinder head. If the head has been removed for any reason, it is especially important that the new gasket be coated on both sides with a thin film of cup grease or one of the compounds such as Perfect Seal #5 used for this purpose.

VISUAL CHECK FOR LEAKS

A very small leak that is simple to stop can often develop into a source of annoyance to a new owner that will influence his entire attitude toward the tractor. See that the water hoses are not leaking and that the drain petcocks are shut off tightly. Probably

the easiest way to check is to notice whether puddles of water or oil have formed on the floor where the tractor was standing. (Fig. 3) Also look for streaks or drips on the tractor itself.

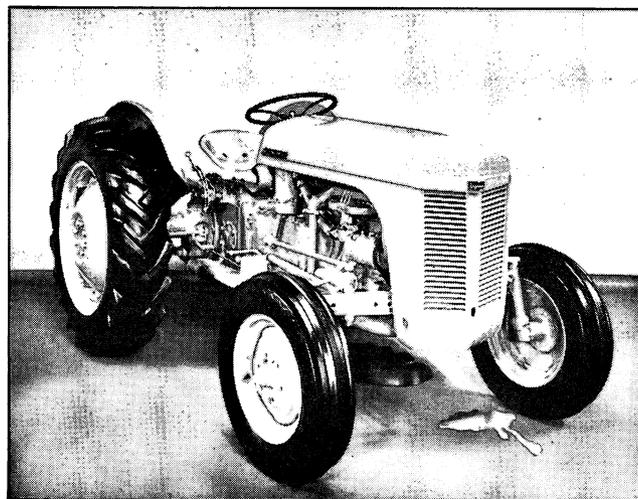


Fig. 3

Inspect the oil filter where it attaches to the block, the gasket at the base of the steering housing, the drain hole with the cotter key in it under the flywheel housing and the gasket between the transmission and hydraulic pump housings for possible leaks. Unless abnormal conditions are present, most of the leaks, if there were any, should have been taken care of and eliminated when tightening the bolts.

Another source of oil leaks that is commonly noticed in the field is the gasket under the transmission cover. Sometimes it will pay to remove the cover and hammer the portion directly over the detent springs flat on an iron surface. With minor leaking, the addition of a second gasket is usually sufficient to remedy the situation.

Finally, see that all connections in the gas line are tight.

LUBRICATION & CHECK FOR OIL LEVEL

Check the amount of oil in the engine crankcase and the oil level in the steering gear housing. If there is too much oil in

the steering housing, seepage will probably develop around the steering arms where they enter the housing. Two quarts is sufficient to give good lubrication. More than this will raise the oil level over the top of the arms and increase the tendency to leak.

Oil level in the hydraulic system is easily checked by the dip stick.

Don't neglect the oil level in the air filter. (Fig. 4) Check it before running the engine while all of the oil is drained down

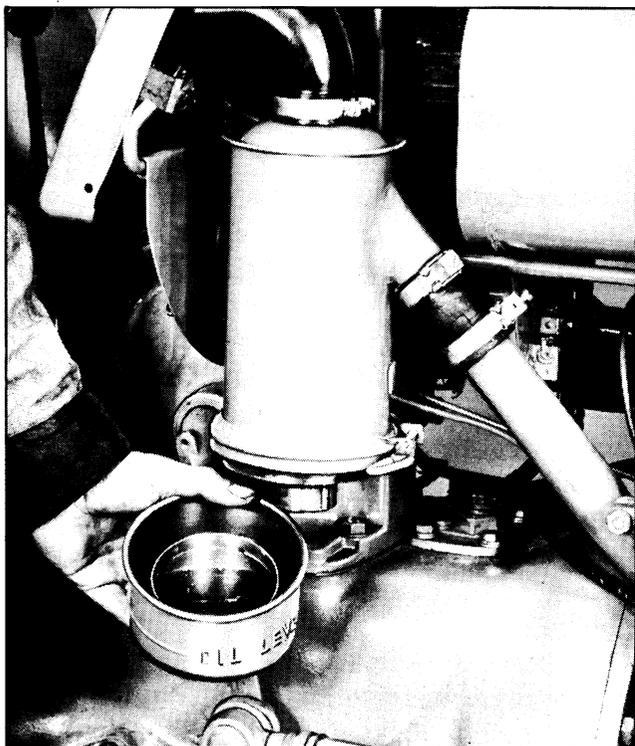


Fig. 4

into the sump. If the oil is checked after running the engine, part of the oil still remains up in the filtering element and the oil level will appear low. Adding oil will result in excess. Too much oil means that the excess amount is sucked up through the filtering material. This will appear as seepage around the rubber intake at the top of the filter can. Some can also be drawn into the carburetor - a potential source of gum and carbon. Another annoyance can be caused by this excess oil if the engine

backfires while starting. In this case, the oil is blown from the dash air intake onto the operator.

You will naturally add oil if any need is found. It is also a good time to grease all fittings shown on the lubrication chart.

DASH GAUGES

Now start the engine and watch the oil pressure gauge. (Fig. 5) At idle or 400 RPM, it should register at least 15 pounds.

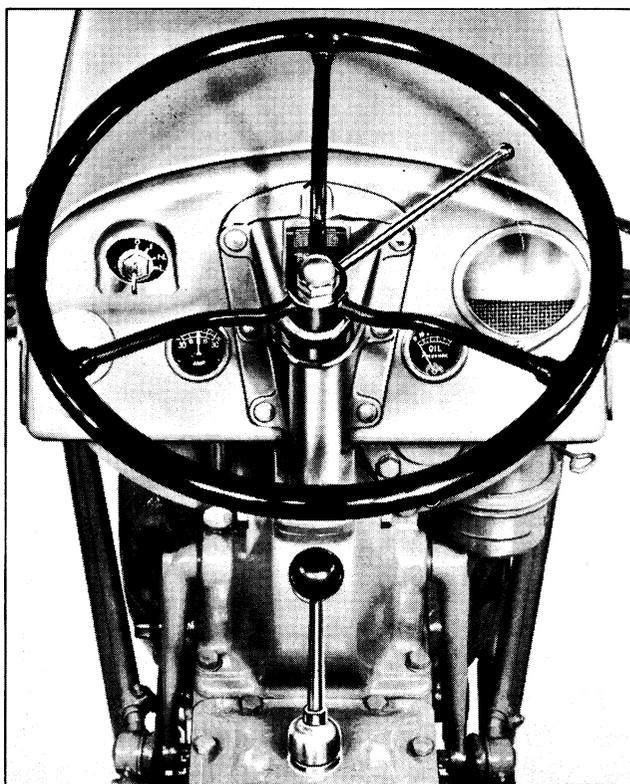


Fig. 5

Speed the engine up to 2,000 RPM, at which time the gauge should show 20-30 pounds. If the gauge gives a wrong reading or fails to show any pressure, it is most likely a defective gauge and should be replaced with a new one. Repeat the check before assuming you have oil pump trouble!

While the engine is still running, notice the ammeter reading. At idle or 400 RPM, the needle should be at zero. As RPM's are increased, the needle should swing to

the right to show "charge". A maximum reading of 10 amps is normal when the battery is run down, 2 to 3 amps is normal for a fully charged battery.

A word of caution is in order. Remember that the ammeter does not show generator output. It is connected between the battery terminal of the voltage regulator and the negative terminal of the battery. It therefore indicates the approximate battery charging or discharging rate only. The average ammeter installed in a car, truck or tractor is not accurate enough to be used for setting a regulator or generator. It is useful primarily to show only that the battery is charging or discharging and not for measuring the rate of current flow. Owners should be cautioned about this in case some amateur mechanic tries to step up his generator output to the 16 to 19 amps it is advertised to deliver, using the ammeter reading as his guide.

If the ammeter readings are abnormal, check the wiring for shorts and loose connections, using the On-The-Farm Service Unit where necessary. If none are found, install a new ammeter and re-check before you blame the voltage regulator.

COOLING SYSTEM

The cooling system is very easy to check and takes remarkably little time. First, see that the water level is correct and then check to make certain the thermostat is in place. This is very important! The thermostat is inside the top hose and can be felt by pinching the hose just below the top clamp. (Fig. 6) If you aren't certain, you can make another check without removing the hose. Start the engine while cold when the thermostat is normally closed and look into the top of the radiator. If there is any turbulence in the water, the thermostat is not installed. Some owners remove the thermostat because they can't tell any difference in the operation of the tractor and they are afraid that the thermo-

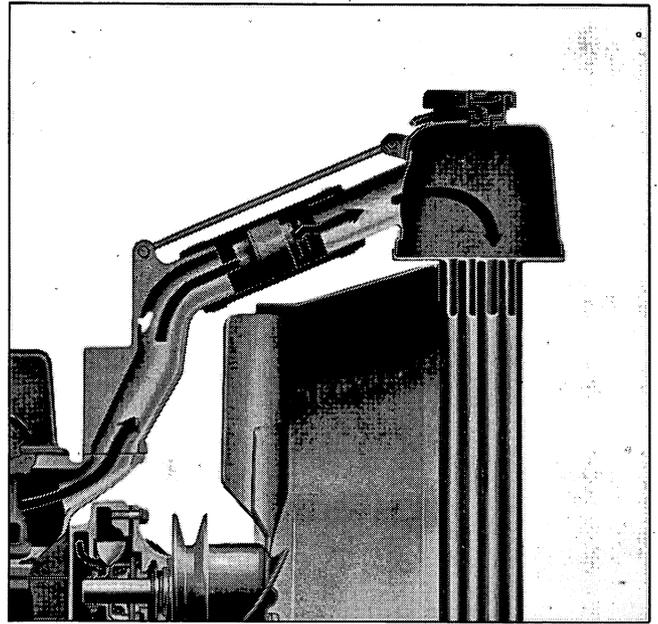


Fig. 6

stat might stick open or shut and give them trouble. What they don't know is that the serious damage is being done inside the engine where they can't see it. Later, their pocketbook suffers because a premature major overhaul is necessary and they blame the manufacturer. Lack of a thermostat causes a very undesirable delayed warm-up, particularly in cold weather, helping rapid formation of sludge and acid conditions. Worst of all, severe cylinder wall and piston wear results from lack of lubrication on starting. Because the thermostat is hidden out of sight it is often neglected. We cannot correct a faulty thermostat because the continued flexing of the bellows gradually weakens the metal which is brass and subject to fairly rapid crystallization. For this reason, best operating practices call for installing a new thermostat each fall when antifreeze is added. If this desirable rule for preventive maintenance is followed there should never be any trouble from an inoperative thermostat.

Last, you should look to see that the fan belt has the proper tension. Depress the fan belt midway between the fan pulley and the generator pulley and measure the distance from the top of the depressed belt to the bottom of a straight edge or ruler laid

across the belt where it passes over the pulleys. (Fig. 7) This distance should be 1/2". A tight belt wears out the bearings. A loose belt wastes power through slippage.

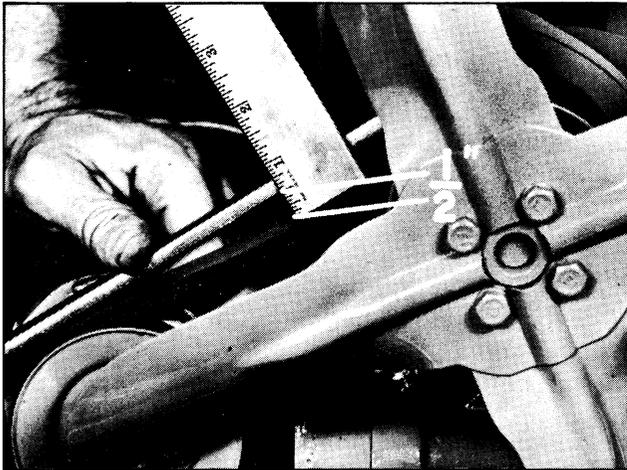


Fig. 7

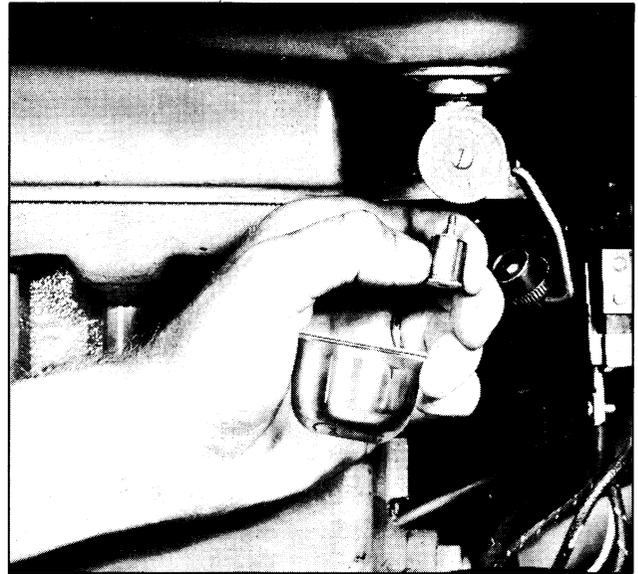


Fig. 9

it. Notice that there is now a small bypass hole drilled in the filter disc base. (Fig. 10)

FUEL SYSTEM

The old saying, "Cleanliness is next to Godliness" is true particularly in the fuel system from tank through carburetor. You can't impress your owners too forcefully or too often that clean fuel is a must. Most, if not all, of your carburetor trouble is due to foreign material plugging the small passages. (Fig. 8) Some sediment may

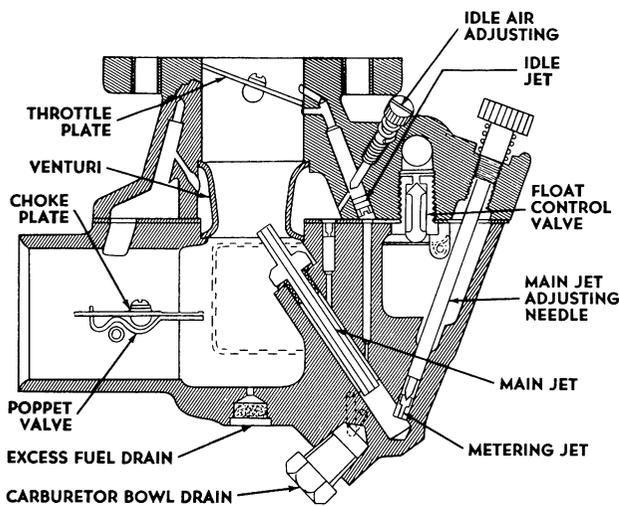


Fig. 8

have accumulated in the fuel filter bowl (Fig. 9) so you should remove and clean

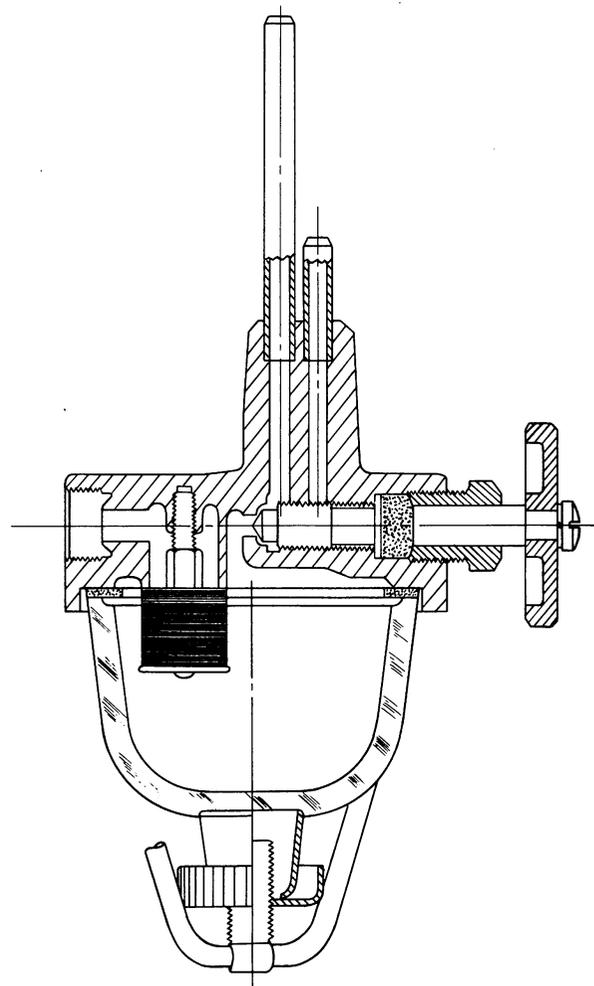


Fig. 10

This eliminates the need for checking the tightness of the filter discs which was necessary on the older models. If the discs become partially closed because of varnish formation this hole allows sufficient fuel to bypass and keep the engine functioning properly.

So-called "varnish" is actually caused by certain waxes, gums and resins present in all oils and gasoline even after refining. It is standard practice for refiners to add a chemical inhibitor which prevents these varnish materials from forming on engine parts. This inhibitor unfortunately is highly volatile and after a certain period of time, depending on the quantity originally used, it evaporates. Fuel or oil held too long in storage is especially liable to give trouble.

When these resins are subjected to engine heat and friction they form a glazed coating that is very difficult to remove. A few very powerful solvents, such as Cities Service #26, are effective. You must be cautious in using these solvents to avoid their toxic effect. Always use them outdoors or in a very well ventilated room and avoid inhaling the vapors.

STEERING

You should measure the front wheel toe-in because, (Fig. 11) in slow vehicle operation, that is the most important factor governing easy steering. Caster and cam-

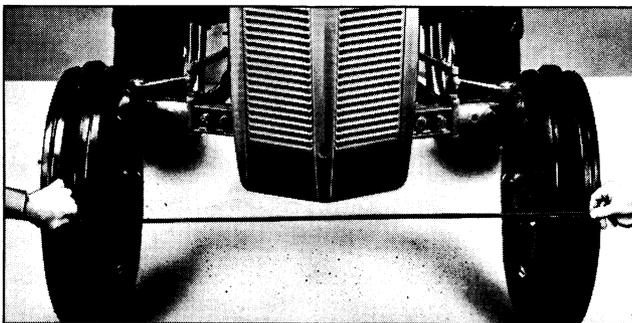


Fig. 11

ber are of relatively little importance. Toe-in is measured by noting the distance

between the centers of the tire ribs in back of the tires at axle height and subtracting the same measurement made at the front of the tires. The front distance should be from 0 to 1/4" less. To adjust the toe-in, you loosen the clamp bolts at both ends of the drag link and turn to required length. (Fig. 12) Be sure to keep the length of both

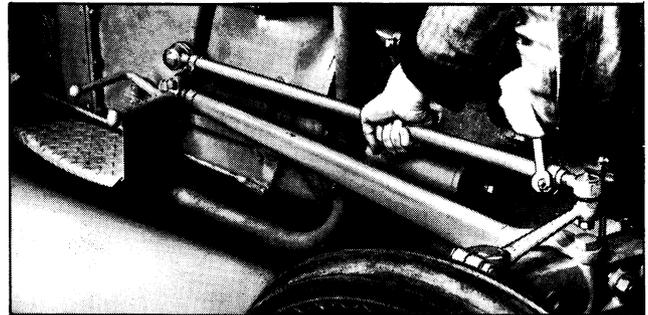


Fig. 12

right and left drag links as nearly the same as possible. Failure to do this will result in hard steering.

You should next make sure that the steering sector teeth are fully engaged with the pinion gear. This you do by placing the

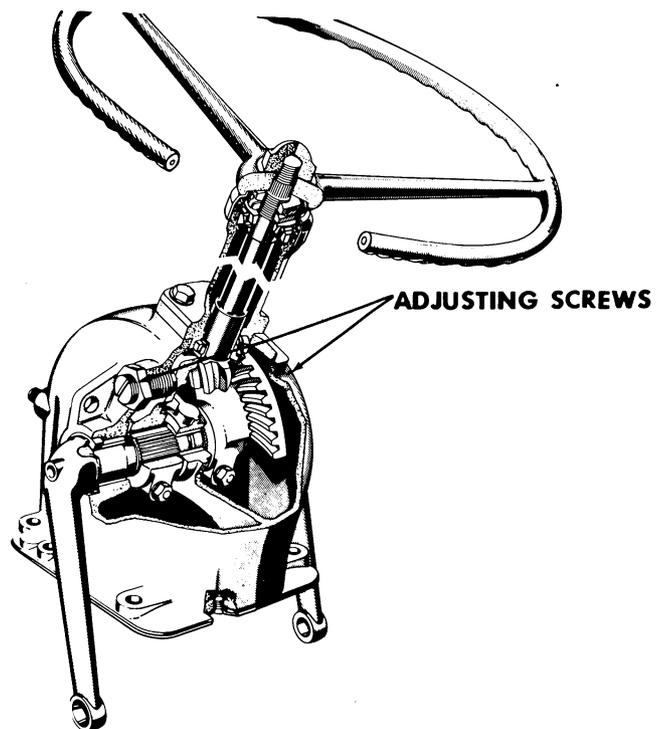


Fig. 13

front wheels straight ahead and then pulling out and pushing in on the steering arms to note any end play. Any looseness can be taken out by loosening the lock nuts and adjusting the heavy screws located just above the steering arms on each side of the housing. (Fig. 13) The wheels should be turned each way as far as possible to check against possible binding at either end of the sector gears. Note that this procedure is slightly different from the adjustments made on a used tractor when you make adjustment at the end of the sector gear instead of the middle to allow for wear.

CLUTCH

To insure proper seating of the clutch against the flywheel, it is important that the proper clearance is maintained between the throwout bearing and the release fingers. You can check this easily by depressing the clutch pedal until the fingers just touch the throwout bearing and then measuring the distance from the top of the center of the clutch arm to the bottom of the radius rod socket housing. This should be $\frac{3}{16}$ ". (Fig. 14) To adjust, you loosen

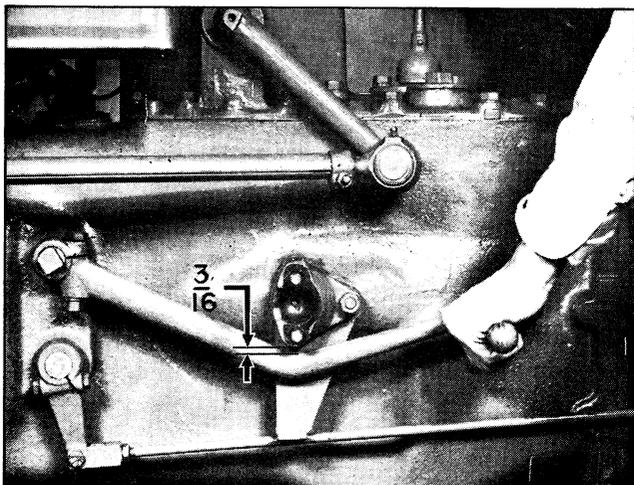


Fig. 14

the clutch pedal clamp, use a drift inserted in the cross shaft hole to maintain the finger to bearing contact and set the clearance. The clamp nut is then tightened firmly and the clearance again measured to be sure it is correct.

The tractor should also be road tested to see that the clutch functions properly. This road check can be made later, when tuning is finished and tested, to save time.

HYDRAULIC SYSTEM

Since the Ferguson hydraulic system is one of the most outstanding features, it is especially important that you make sure your customer will have no trouble with it on his new tractor.

Start at the rear of the tractor and adjust the master control spring. (Fig. 15)

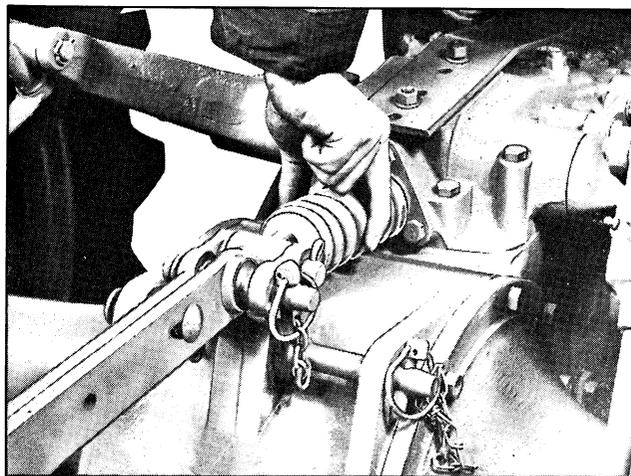


Fig. 15

With a two-bottom plow in the raised position, you should just be able to turn this spring with your thumb and forefinger. Adjustment is obtained by screwing the yoke in or out of the spring. An ideal setting results when the spring is free to turn yet it has no end play and will not bind.

QUADRANT

With the plow still attached you can check the operation of the finger-tip control lever. First you must see that the lever travel is correct so that you take full advantage of the hydraulic controls. The best way to measure this travel is to put the lever in the raised position and make a mark on the quadrant at the bottom edge of the lever. Measure down two and a half

inches from this mark and make another. The lower mark may be made permanent by notching with a file if desired. Second, starting with the plow in the raised position and the finger-tip control lever at the top of the quadrant, move the lever down the quadrant until its bottom edge is at the lower mark. (Fig. 16) At this point the plow should just start dropping slowly. If the plow doesn't move or if it drops before reaching the mark you must readjust its travel.

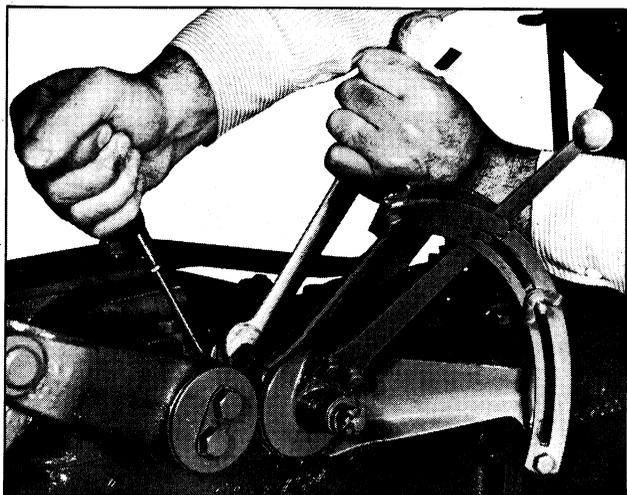


Fig. 16

If adjustment is necessary, first place the plow in a raised position and leave the finger-tip control at the top of the quadrant. The quadrant mounting plate is fastened to the tractor body by four cap screws in slotted holes allowing the plate to be moved forward and backward. You next loosen these four screws just enough so that, by striking the front edge of the plate with a soft face hammer, you force the plate as far toward the rear as possible. Now set the finger-tip control lever at the lower mark on the quadrant or two and a half inches down from its raised position. Using a long heavy screwdriver as a lever, pry against the rear center edge of the plate, so that it remains level as it is moved, and slowly force the mounting plate forward until the plow just starts to lower.

While raising and lowering the plow in

the above tests, you should watch for smooth operation of the hydraulic system and listen for any unusual pump noises.

BRAKES

Because Ferguson has "self-energizing" type brakes, they are sometimes sensitive to non-conformance of the lining to the contour of the drum. To make certain that every part of the shoe area makes contact with the braking surface of the drum, it is necessary that the brakes be "burnt in" and adjusted prior to delivery. With both tractor rear wheels raised, start the engine and run in second gear. Lock one wheel with its turning brake and apply easy turning brake pressure to the opposite revolving wheel until the brake drum becomes hot to the touch. Reverse this procedure to "burn in" the opposite brake. Allow the drums to cool and you are ready for adjustment.

Tighten the adjusting screws (Fig. 17) until wheel drags, then back off until the wheel revolves freely. You should complete the brake adjustment when you road test the tractor after tuning up.



Fig. 17

ENGINE

You can now check the heart of the tractor - the engine and its accessories. These checks and adjustments must be made on every tractor regardless of how well it seems to be running. Most of the tests are part of our standard tune-up procedure. It is important to stress the fact that the adjusting follows a definite pattern: 1. Spark Plugs. 2. Valves. 3. Battery. 4. Dwell. 5. Timing. 6. Carburetor. 7. Carburetor - governor linkage. 8. Governor. The order in which the adjustments are made cannot be changed without resulting in an unsatisfactory tune-up job.

First, remove the spark plugs so that you can check the gap. There is a right and a wrong way to remove spark plugs. The first few threads on the bottom of the plug extend into the combustion chamber. When the engine is run, hard carbon forms on these threads. As the plug is unscrewed this carbon flakes off and drops into the combustion chamber where it is possible for it to get under a valve and give you trouble in your future checking. For this reason you should first unscrew all the plugs three or four turns to free them of carbon and then use compressed air to blow any dirt or dust from the plug recesses and seats. Now retighten them and run the engine at a fast idle for a minute or two to blow out any loose carbon pieces. The plugs are then removed, cleaned if necessary and the gap checked to make sure it is twenty-five thousandths. The fact that the plugs are new is no assurance that the gap is correct. It is not generally recognized but the gap width can be changed by screwing the plug back in too tight. We recommend using the torque wrench to be safe.

Next, you come to the valves. You have already warmed up the engine to normal operating temperature in burning in the brakes so you need waste no time

waiting. Remove the head cover and check rocker arm to valve clearance. (Fig. 18)

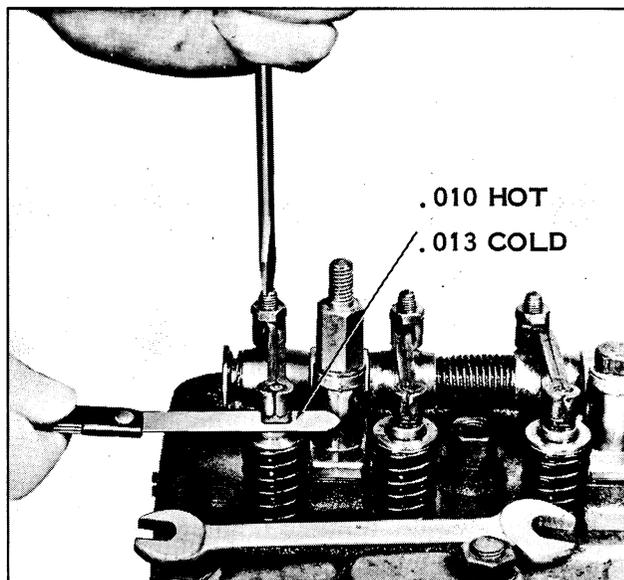


Fig. 18

We recommend that the clearance be 10 thousandths hot setting. Hot setting means that the engine should not be just warmed up, but should be run long enough, 15 minutes or more, so that every part of it is at operating temperature. If, for any reason, the rocker arms have been removed and replaced, making a rough setting necessary, the clearance should be set at 13 thousandths cold and then rechecked at 10 thousandths hot. Both intake and exhaust valves are set the same.

Usually, the carburetor bowl holds enough fuel to run the engine while the check is made. If adjustments are necessary, an auxiliary fuel can should be connected to the carburetor.

BATTERY

The only test necessary with a new battery is a hydrometer reading. (Fig. 19) Three factors effect the reading; temperature, addition of fresh water and recent high rate of discharge caused by prolonged engine cranking. You should not take your reading within four hours after adding

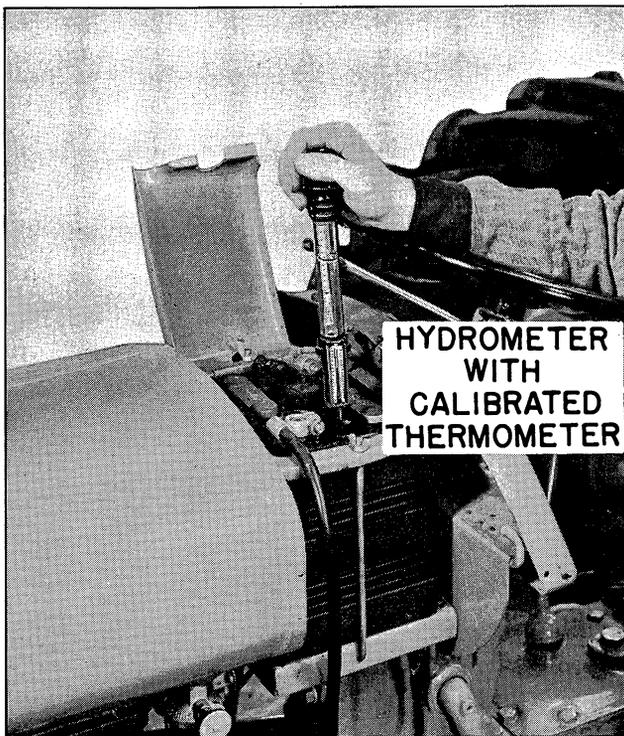


Fig. 19

water or after long use of the starter. Since standard readings are calibrated at eighty degrees temperature, you should use a hydrometer with a thermometer attached and correct your readings.

After correction, a reading of 1.250 to 1.290 indicates a three-quarter to fully charged battery. A lower reading means the battery needs charging.

Once the specific gravity has been checked, you can add any necessary water.

When a tractor is kept in stock for a prolonged period the battery should be removed and kept on a trickle charger. If a battery is left too long in a discharged condition it is damaged by chemical action and its life greatly shortened.

TUNE-UP

You can now proceed with those tests in which you use the "On-The-Farm Service Unit".

Before starting any tests, you should make a visual inspection of the high tension wiring. Particularly the "plug-in" connections on the distributor cap and coil. Frequently, quite a bit of pressure is required to properly seat the terminals. If left loose, they will ultimately carbonize or blacken resulting in a resistance that may be hard to discover.

DWELL

Your first test will be to connect the dwell-tachometer to the distributor, start the engine and take a reading. 32° should be indicated. A low or high reading should be corrected by loosening the moveable point arm in the distributor and adjusting the gap of the points (Fig. 20) until a correct reading is obtained. Engine speed may be disregarded as the dwell remains constant at all speeds.

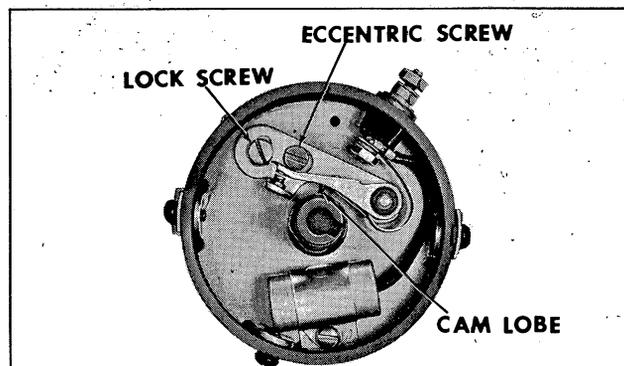


Fig. 20

TIMING

The distributor, by means of its flyweights, automatically advances the firing but cannot do so correctly unless it is properly timed to the engine. By using the stroboscopic timing light on the flywheel markings, you set an initial advance of 6° at 400 RPM. (Fig. 21) A three wire timing light powered by the tractor battery should be used as the two wire variety operating from current supplied by a spark plug does not give satisfactory results. An improper reading is corrected by loosening the dis-

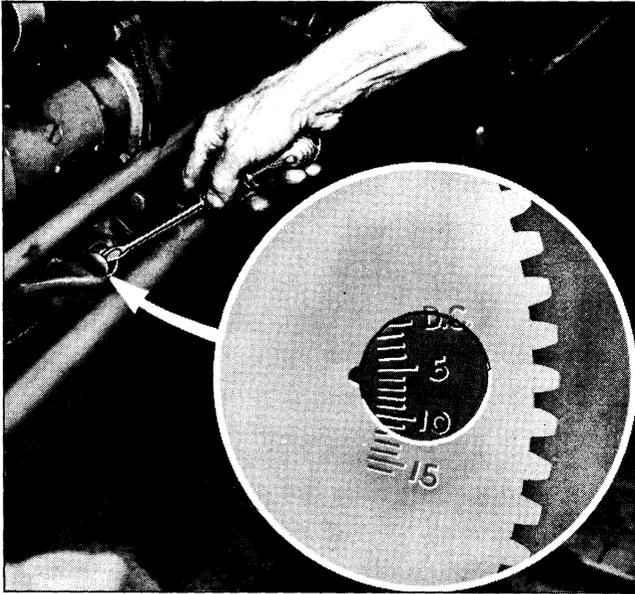


Fig. 21

tributor retaining bolt, at the point where the distributor shaft enters the block, and rotating the distributor until the correct degree of advance is indicated. Turning the distributor clockwise advances the timing — counterclockwise retards it.

The engine should be speeded up to 2,000 RPM when the advance should be 32° . This second reading checks the proper action of the flyweights.

CARBURETION

There is little you can do in checking a new carburetor outside of making the proper adjustments.

The idle screw is usually set at $7/8$ turn open. A more accurate method is to remove the pipe plug in the manifold riser and attach a vacuum gauge. With the engine idling at 400 RPM, adjust the idle screw until the highest reading is obtained. This should be in the 18-21 pound range - usually about 19 pounds.

The main adjusting screw is best regulated under load. An initial setting of $1-1/4$ turns open will usually give good engine operation. After the engine is hot,

gradually close the screw until the engine falters, then back off until it runs smoothly. Never run the engine with the screw less than one full turn open. Starting with the engine running at half throttle, preferably under load in the field, suddenly open to full throttle. Back off adjusting screw a little at a time until the engine takes full throttle without hesitating or coughing. It is better to keep the mixture on the rich side so that you obtain full power. Keep in mind that as you screw in the idle adjustment, you enrich the idle mixture by limiting the air. As you screw in the main adjusting screw, you lean the operating mixture by restricting gas flow.

CARBURETOR—GOVERNOR LINKAGE

Visual inspection of the linkage is usually all that is necessary. (Fig. 22)

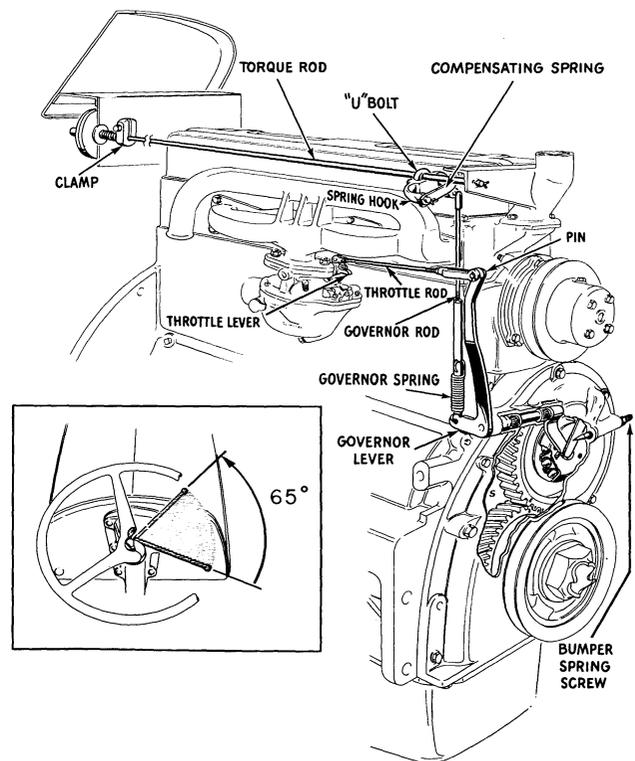


Fig. 22

First, with hand throttle lever at bottom of the quadrant, but engine not running, examine the clevis joining the carburetor control rod to the governor lever. The

clevis pin and the joint should float free and have no binding. Binding can be caused by excess enamel in the clevis holes or by the carburetor rod being too short. Scraping removes the enamel. It should be possible to flex the governor arm forward about 1/32" by finger pressure. If the arm is solid and immovable, it is a sure indication that the rod is too short. With the throttle still in full open position, remove the cotter key and clevis pin and adjust the clevis so that its hole overlaps that in the governor arm by 1/32". It should then be necessary to move the rod slightly toward the rear of the tractor in order to insert the clevis pin through it and the governor arm.

Check top engine speed with the tachometer to make sure it will turn up 2,200 RPM. If necessary to adjust, loosen U bolt on governor linkage rocker sufficient to allow it to be moved. Moving rocker arm upward decreases speed, moving it downward increases speed.

With tachometer still attached, start engine and set the hand throttle to maintain 1,000 RPM. Set brakes and lock them. Depress the clutch pedal and put gear shift into fourth gear. (Fig. 23) While leaning over to the right so that governor arm

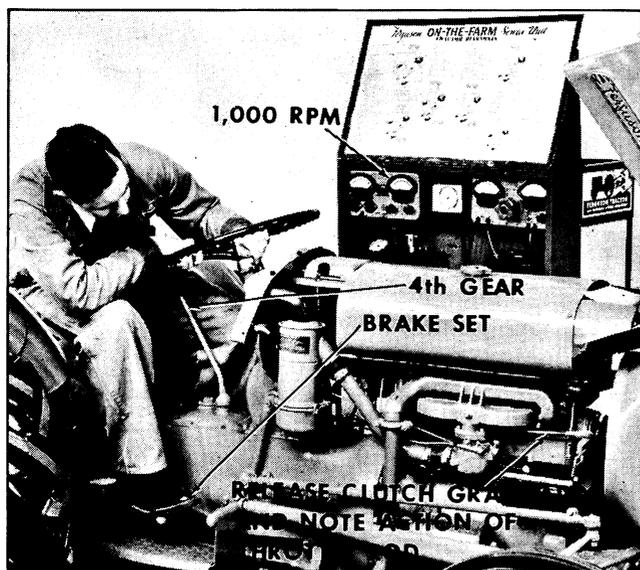


Fig. 23

movement can be watched, gently release the clutch. If the governor arm functions at this speed it is an indication that the governor is correctly adjusted and has no bind. No further checking is necessary.

The governor bumper screw should be left out of contact with the bumper spring unless engine surging occurs. In this event, the engine should be run at full throttle with the tachometer attached. Slowly screw in the bumper screw until the RPM's just start to increase. Tighten lock nut to hold this position.

CONCLUSION

The last operation of the Pre-delivery tune-up should be a road test to make sure everything is in top notch "running" condition. Before starting out you should determine the tire pressures and either inflate to the proper pressure as shown on Page 16 of the Owner's Manual or fill the tires if the customer desires it. When this is completed and you are actually on the road you should first complete the brake adjustment by using the master brake pedal to see that both brakes take hold at the same time. If the tractor pulls to the right side, the brake rod clevis on the left side should be shortened until the tractor stops in a straight line. If it pulls to the left, the right clevis should be shortened.

This completes your checking, and as usual, it has taken a lot longer to read about it than to do it. However, if it took twice as long to perform, it would still be the cheapest form of customer satisfaction insurance that you can get. You can't neglect this phase of your work just because its returns are intangible. Like all service, the poorer your work, the more returns you get - in the form of squawks. It's much better to keep your new owners happily busy on their farms instead of running in to remind you of what you neglected to do.

PROPER DELIVERY OF TRACTOR TO CUSTOMER

After you have assured yourself that the tractor is in perfect condition for delivery there is still one more important consideration. You must make sure your new owner is thoroughly familiar with his new machine. It is a good idea to briefly review the material covered in the first eighteen pages of the Owner's Manual if the customer is a former Ferguson System owner. He may have forgotten or neglected some of the points. If you have just converted the owner of a competitive make tractor to the "Ferguson Way" this delivery introduction becomes a matter of supreme importance.

An owner to whom the Ferguson System is new must necessarily make some major changes in his thinking and operating habits. If you have ever tried to break a habit that you have lived with most of your life you must realize what you are expecting from this man who is just getting his first taste of really modern farming methods. This Ferguson System is something radically new from his viewpoint. It's almost as confusing as attempting to learn a new language. He needs help and you are the man responsible and best equipped to give it. Remember how long it took you to learn about the tractor and don't expect the farmer to know all about it just because you have given him an owner's Manual. Even if he reads completely through the manual and studies it he still should have a lot of questions. The best time to form good operating and maintenance habits is when the machine is new and the owner is still enthused with it because he hasn't experienced any disappointments. If you start him out right he shouldn't have any disappointments.

Delivery should be made at a time when you know the farmer will have the free time to go over some of the necessary instruction with you. If he is worried because he will be late starting his milking or some other compulsory chore he won't get much good out of your information. If he has sufficient time and shows interest it will pay to read through and discuss the first eighteen pages of the Manual. If not, start your instruction on the tractor itself.

A picture of Ferguson Park on the inside front cover gives your an opening to say a few words about Mr. Ferguson's grass roots beginning and his philosophy. Knowing something about the background of the manufacturer lends a personal touch to the transaction that is appealing to most people.

The next page is a short sales message that can be run through quickly. The following page is quite important. It gives the warranty conditions and extent. There isn't much to discuss here as the terms are clear and explicit.

Skipping over a couple of pages you come to Periodic Maintenance. Lubrication should pose no problem other than an explanation of the chart numbers. Everyone should know by this time that systematic lubrication is the secret of long machine life and low operating cost.

The next subject on Page 3 is maintenance. Often the owner is negligent in taking care of certain critical parts of his equipment because he is not aware of the consequences of his neglect. In going through the various maintenance items it

would be a good idea to amplify them by giving examples of the evils which your experience has shown will follow their neglect. For example, explain the engine trouble that will follow use of dirty gasoline and oil, or use the voltmeter on the "On-The-Farm Service Unit" to convincingly show the steady current drain from a battery with a wet dirty top. Naturally the tractor battery is new and clean so you will have to demonstrate on some other battery: either on an older tractor or on an automobile.

It is also good policy to give the owner the benefit of your experience on any special local conditions you know he will run into. If you know the tractor is to be operated in very dusty or sandy conditions tell him he had better clean the air cleaner inlet screen and bowl twice a day or more as required to prevent over 1/2" accumulation of sludge in the bottom of the bowl.

Under Operating Instructions you familiarize the owner with the various instruments on the dash and the operating controls. The comments under each of the seventeen headings are self explanatory but in many cases can be elaborated on for the owner's benefit. Section B on page seven gives the points to be watched while breaking in the new tractor. Here again, long engine life and low operating cost depends largely upon how carefully these rules are followed.

Section C on page eight takes up operation of the tractor - starting the engine, use of the dash gauges, driving the tractor and use of the correct gear. When demonstrating these operations on the tractor, your presentation will be much more effective if you use your own words. The Owner's Manual should be referred to however as a check list to make sure none of the important points are overlooked.

Most farmers will be familiar with much of the material covered so far. When you get to section D on page nine, "Using

the Ferguson System", the chances are good that you will have some educational work to do. Start by showing how to attach an implement. There definitely is a right and a wrong way to do this. The right way is simple and easy - therefore you should always present the six steps involved in their proper order. You should practice these steps yourself until they become automatic. We lose one of our good selling points when the customer sees us wrestle an implement into place using brute force and a well placed kick or two on the lower links. Most of the trouble in this respect is caused by misalignment of the tractor with the implement. Usually this is the fault of the operator trying to back up to the implement too fast.

Always back up slowly to allow sufficient time for proper alignment. Time lost here will be more than made up in the attaching operation. A note at the bottom of page 10 mentions keeping the ball joint clean and free of grease and oil. This is because any greasiness will rapidly pick up and hold sharp sand particles and soon become an abrasive. If any of the ball and socket joints ever need lubrication use nothing but colloidal graphite which is a dry lubricant. This is also true of the trunnion pin in the front axle.

The paragraph regarding raising and transporting implements contains a bit of good advice on putting a plow or other heavy implement in transport position. If the leveling arm is cranked as short as possible when transporting over rough road or ground there will be fewer reports of broken anchor chains or eye bolts due to impact shock.

It is obvious that in the short space allotted to operating with soil engaging implements we can have nothing but a few short generalities. A whole book could be written on this subject alone. It is equally obvious that this is another of those places where your personal experience with special local conditions will be of inestimable value

to someone using the Ferguson System for the first time. A really top notch Dealer who is on his toes will not be satisfied with reading the manual and then going through a dry run on the tractor. He will see that the first time owner receives help and advice his first day in the field.

The CAUTION paragraph relating to tractor ground speed in relation to the implement being used should be emphasized with particular stress placed on those implements the Farmer already owns, has just purchased or can reasonably be expected to use in the immediate future. Many of our field complaints are due to excessive field speed sometimes caused by the failure of the Dealer to analyze conditions under which the various implements will be used and sell the proper equipment or accessories to meet these conditions.

"Detaching Implements" is of course a simplified reversal of the attaching process. Emphasis is placed on selecting a level spot primarily because the implement will be much easier to reattach next time it is used. Mention is also made of the two external hydraulic outlets. Any implement that requires the use of these outlets has specific instructions for their use.

On page twelve you should take up drawbar installation and power take-off operation. Attaching the drawbar is another operation that can become unnecessarily complicated if the correct procedure is not followed. Have the owner repeat the process until he is thoroughly familiar with it. Call particular attention to the little WARNING. Even an expert operator is taking a risk in pulling a heavy load without the stays attached. An improper level of the drawbar can take enough weight off the front end of the tractor to allow it to rise completely off the ground.

Since all owners will probably be using the power take-off at some time during the growing year the details of hooking up to it and its controls should be carefully explained. A discussion of the various accessories is not only beneficial to the owner but will probably lead to the sale of more extra equipment.

The last few pages that we want to cover deal with the various wheel widths obtainable, tire care and tractor storage. The pictures and diagrams on wheel spacing are very clear and easily understood so it will be sufficient to point out the method used to obtain the desired widths, stressing the importance of bolt spacing in the front axle to maintain rigidity. Also emphasize the advisability of sparing use of the extreme spacing of the front wheels.

Tire care and inflation is one section that can be gone through rapidly if time is short. The same applies to loaded tires. Most farmers have their own ideas about the desirability of added weight. With the larger and heavier implements that can be handled by the TO-30 it is often advantageous to install added front wheel weights in addition to loading the tires in order to maintain proper weight distribution.

Some Dealers fail to give the foregoing operating information to their customers and suffer because of this neglect. Smart Dealers give special attention to proper delivery and enjoy the resulting customer good will. Countless complaints can be eliminated when the customer has the correct operation of his new tractor or implement explained to him. Satisfied customers pay off amazingly in increased sales volume and repeat business. We must strive for 100% customer satisfaction.

