

FEATURES OF THE FERGUSON 40 TRACTORS

Product Information Manual



PREFACE

You will find in this booklet pictures with printed explanation of the features of the new Ferguson F-40 and Hi-40 tractors. They are the same views used in a strip film in color on the same subject.

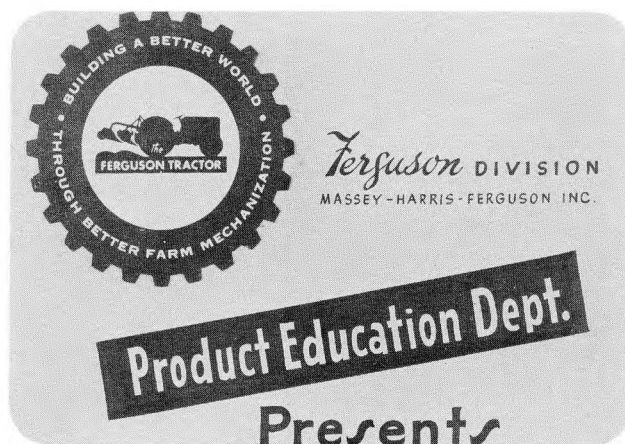
Most of these pictures are detailed, showing what is different about the "40" and how it compares with the famous Ferguson "35". If you are not familiar with the "35", it would be advantageous for you to see the film strip and book, "Features of the Ferguson 35". It shows many of the features that are common to all Ferguson tractors and which are not repeated in this booklet.

Keep this book for a convenient record of what you saw in the film strip, "Features of the Ferguson 40 Tractors".

PRODUCT EDUCATION DEPARTMENT
FERGUSON DIVISION
MASSEY-HARRIS-FERGUSON INC.

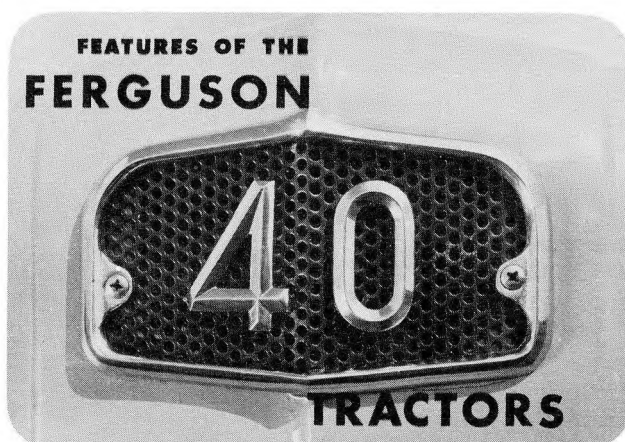
Copyright 1956 - Massey-Harris-Ferguson Inc.
Racine, Wisconsin

FERGUSON DIVISION, PRODUCT EDUCATION
DEPARTMENT PRESENTS --

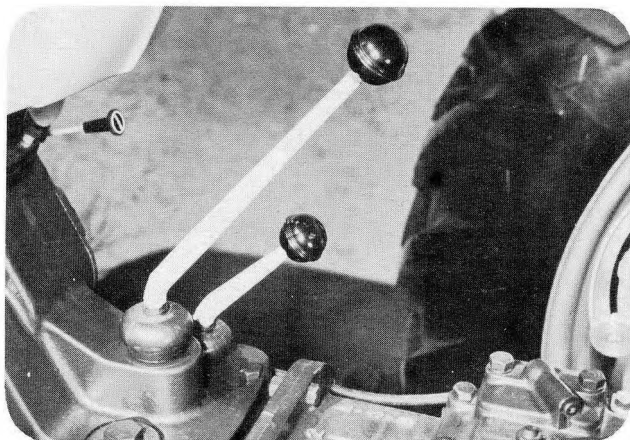
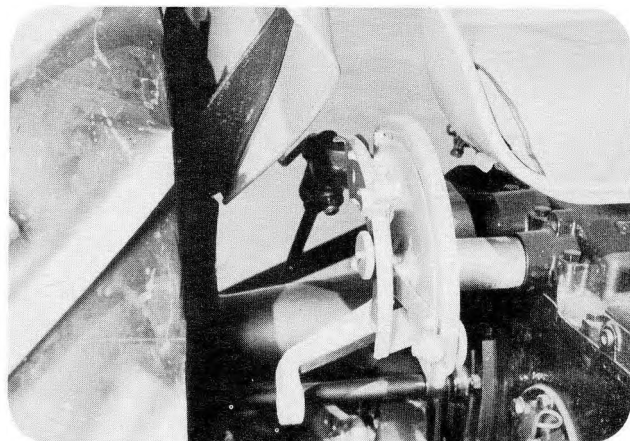


For the first time the ever popular and famous Ferguson tractor is available in more than one model. In addition to the Ferguson 35, a new model, the F-40 is added to the Ferguson line.

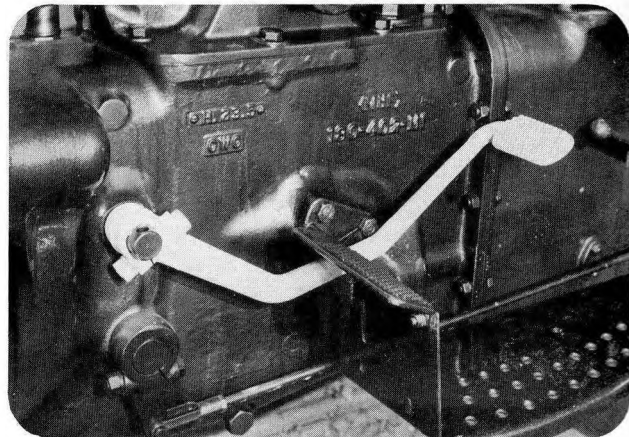
This new model has all the outstanding features of the "35" and is basically the same tractor. It has the exclusive Ferguson 4-way work control.



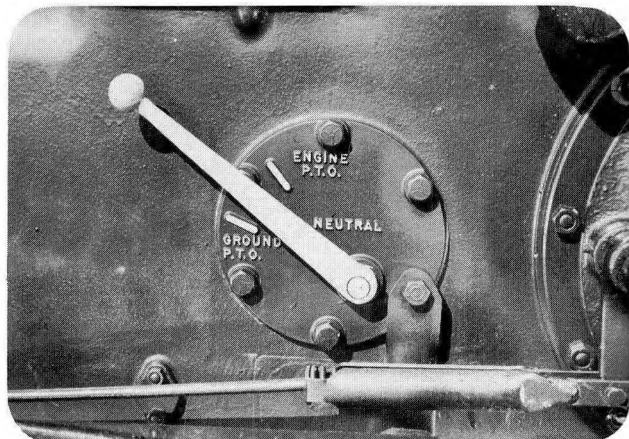
1. "Quadramatic Control" of the famous Ferguson hydraulic system lets you raise and lower implements, select draft and maintain uniform working depth, adjust the hydraulic system's speed of response, and gives you position control all with the same control quadrant.
2. "Dual Range" 6 speed transmission. With the 6 forward and 2 reverse speeds you can choose the gear and speed that fits your work and use engine power efficiently and economically.



3. "2-Stage" clutching gives live power take-off. Control of both the tractor transmission and the PTO are with the left foot and a single clutch pedal. The clutch pedal now has a non-slip surface.

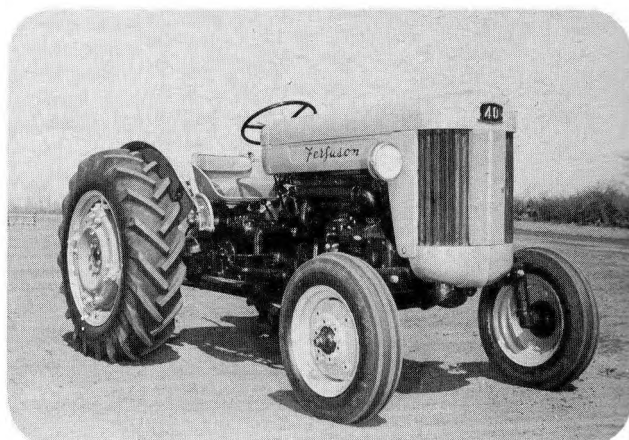
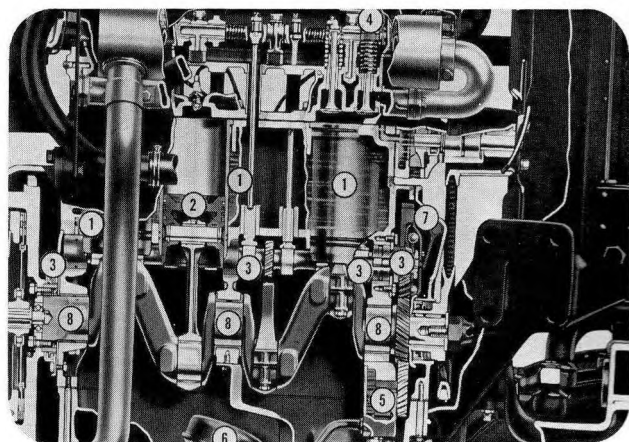


4. "Variable Drive" power take-off operates by a simple PTO shift. Select either the drive that's in ratio to the ground speed of the tractor or the drive that's in ratio to the engine speed.



The F-40 has the same powerful and economical engine as the Ferguson 35 and has the same outstanding features such as:

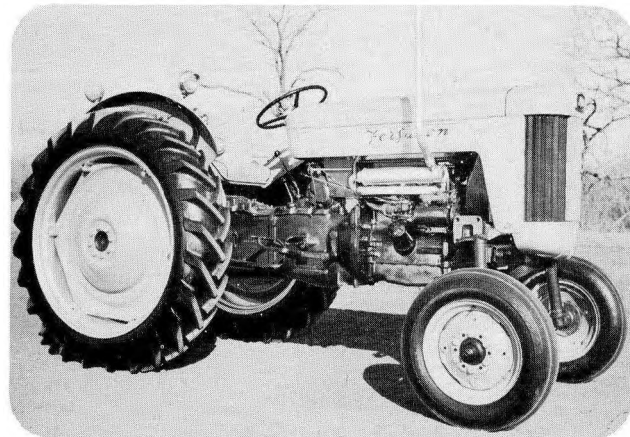
1. Replaceable type wet cylinder sleeves.
2. Anodized surface aluminum pistons with three compression rings, and one oil control ring. The top compression ring is chrome plated.
3. Camshaft is quietly driven from the crankshaft by means of helical cut gears and is carried by three bearings in the cylinder block.
4. Positively rotated exhaust valve. This extends valve life three to five times.
5. Full pressure lubrication.
6. Floating oil intake which draws the cleaner oil at the surface instead of the sediment laden oil from the bottom.
7. Sealed in centrifugal ball type governor.
8. Crankshaft is supported by 3 replaceable precision bearings. The end thrust is taken on the center main bearings and no adjustment is required.



With the addition of the F-40 model, Ferguson tractors have a full range of application. The F-40 tractors are available as a low profile F-40 tractor or as the Hi-40 which is available in three versions.

The tractor pictured here is the F-40.

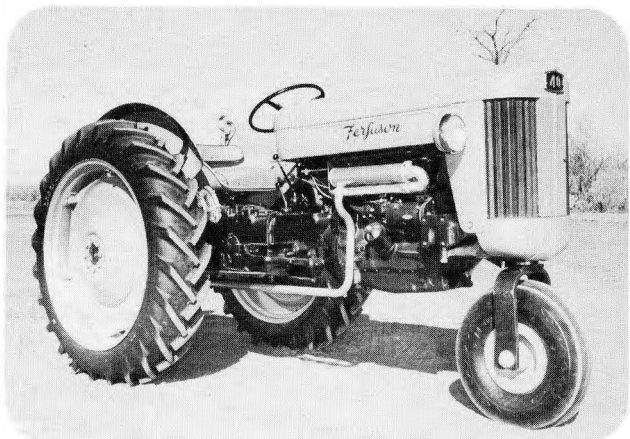
The Hi-40 four wheel tractor is available for the farmer desiring higher crop clearance.



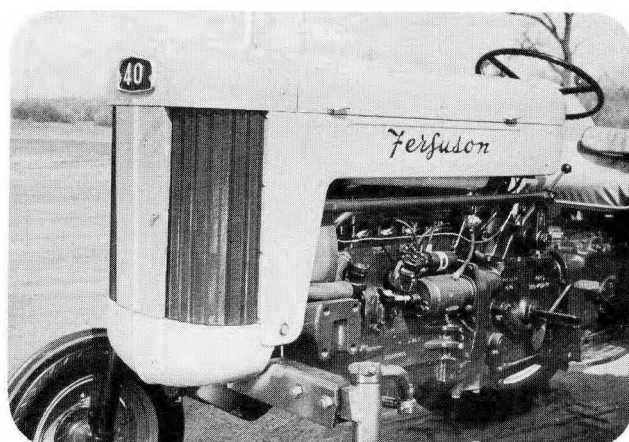
The Hi-40 dual front wheel tractor is available for the farmer wanting a tricycle type tractor.



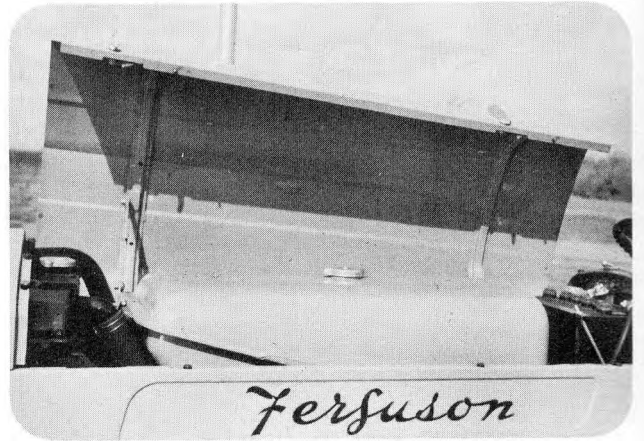
The Hi-40 single front wheel tractor is available and will meet the needs of the vegetable farmer or anyone doing row crop work with close rows.



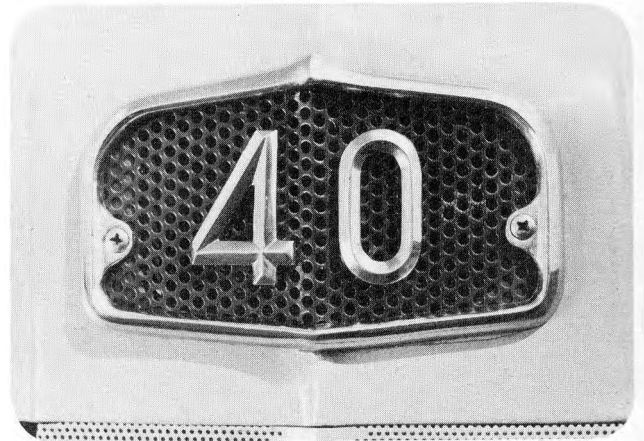
The hood and grill of the F-40 have been styled to achieve an attractive appearance and still afford a maximum of functional advantages. The hood is hinged from the right hand side and is secured by means of two cam lock latch handles on the left hand side of the tractor.



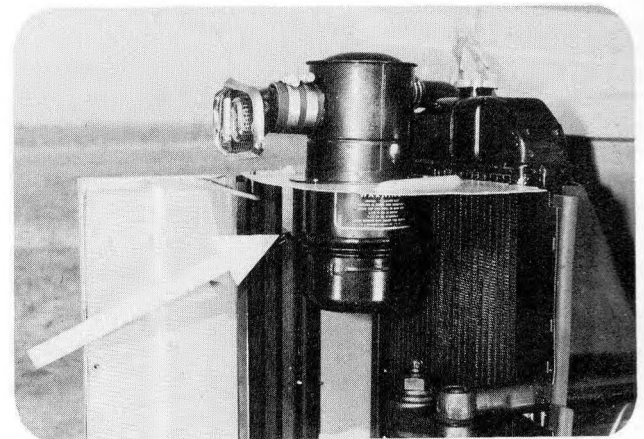
When open, the hood permits easy access to the radiator, the 17 gallon gas tank and the 12 volt battery. When the hood is closed it is locked securely and supported on rubber buttons to prevent vibration.



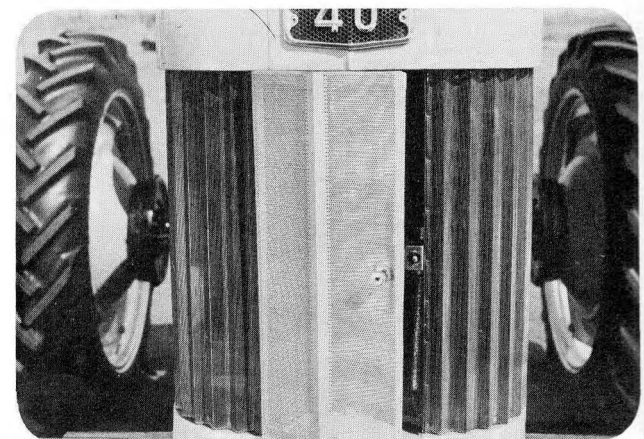
The front part of the hood incorporates an air cleaner intake in combination with the insignia. The screen type insignia prevents the entry of large particles of chaff, corn husk, etc.



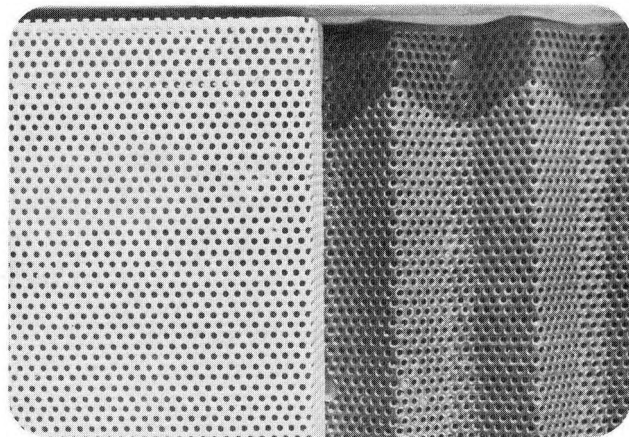
This air intake location provides a source of cool, clean air for the engine and reduces the amount of dust that must be removed by the oil bath air cleaner which is located behind the grill and in front of the radiator.



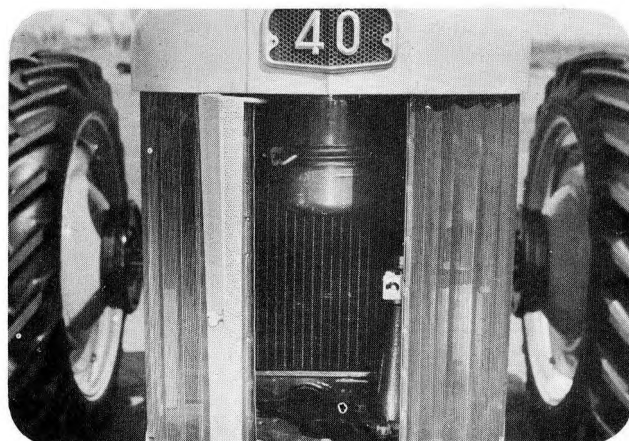
The grill consists of three formed panels of 21 gauge perforated steel with 1/16" diameter holes. The two outside panels are stationary or fixed while the center panel is hinged on one side and opens out. It is secured with a chrome plated thumb screw.



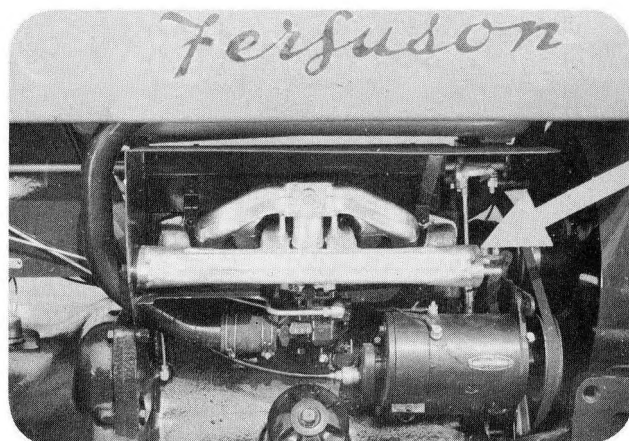
The perforated metal grill panels serve as an effective screen for the tractor radiator core. Chaff, insects, weed seed, etc., are collected on the face of the grill panels where they can be easily brushed away by hand. Since the diameter of the holes in the perforated material of which the grill is made is smaller than the minimum opening between the fins in the radiator core, any material which passes through the grill will pass through the radiator core without clogging.



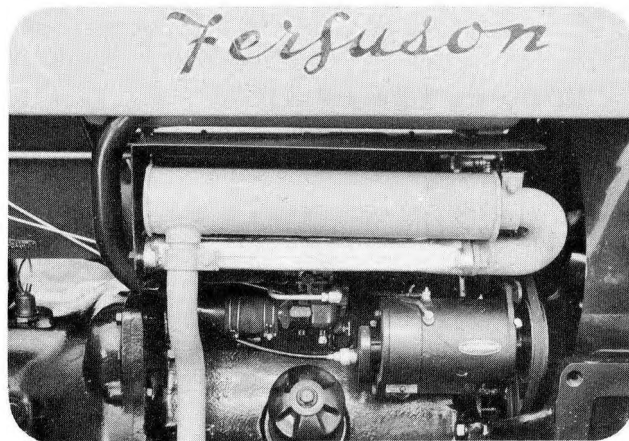
The center grill panel may be opened and provides a service door for the steering shaft and the oil cup on the air cleaner.



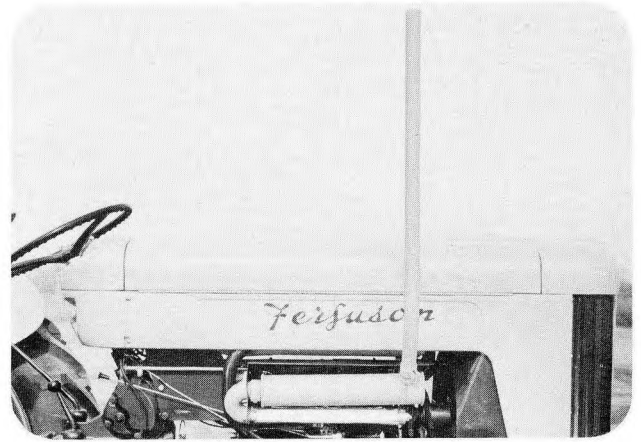
The high velocity manifold with completely independent ports and manifold branches from the riser to the valve, is located on the right side and provides equal distribution of a uniform mixture at all speeds and minimizes segregation of the air and fuel particles.



The manifold has a double end exhaust outlet designed to facilitate using either end for the muffler. When the downward exhaust is used the muffler is connected to the front of the manifold and the other opening is closed with a manifold end plate.

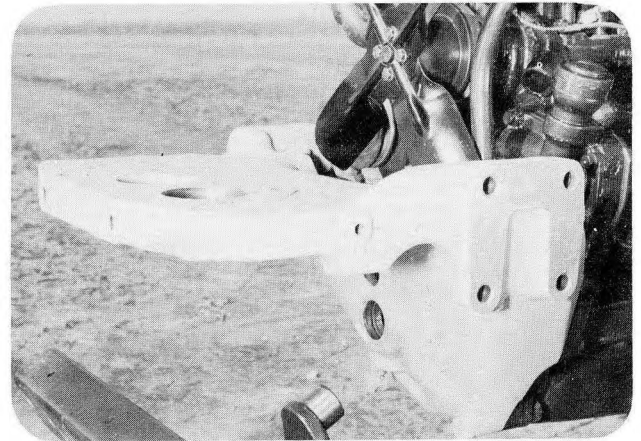


When the vertical overhead exhaust is used the muffler is connected to the rear manifold opening and the front opening is closed with the manifold end plate. The manifold outlet elbows which connect the muffler to the manifold are not interchangeable.

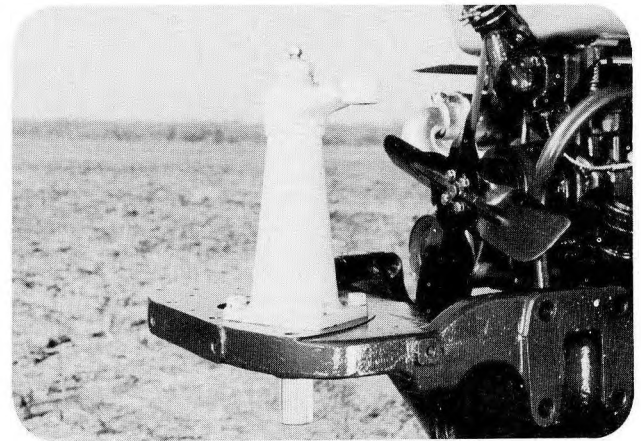


The F-40 has been designed to use mid-mounted cultivators. To accomplish this, the wheel base was lengthened and a different type steering and front axle is used.

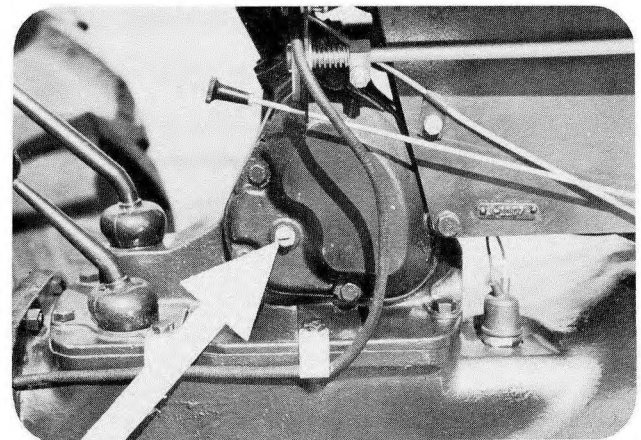
The F-40 and the Hi-40 in all versions have the same front support assembly. It is used to assemble the various front ends as well as provide mounting facilities for mid-mounted implements.



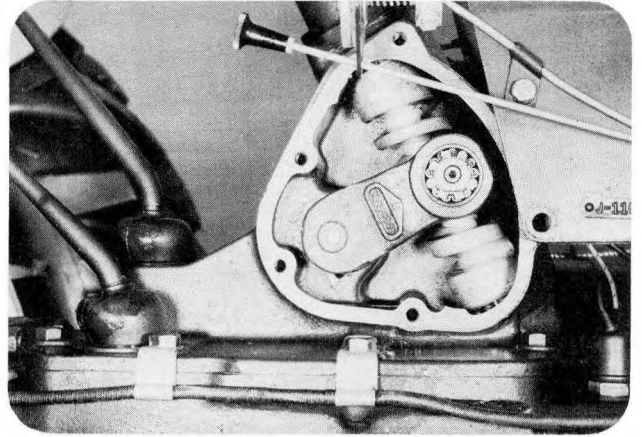
A pedestal post casting is mounted on the front support assembly and supports the pedestal shaft which turns in bronze bushings. This assembly is used with the F-40 and all versions of the Hi-40.



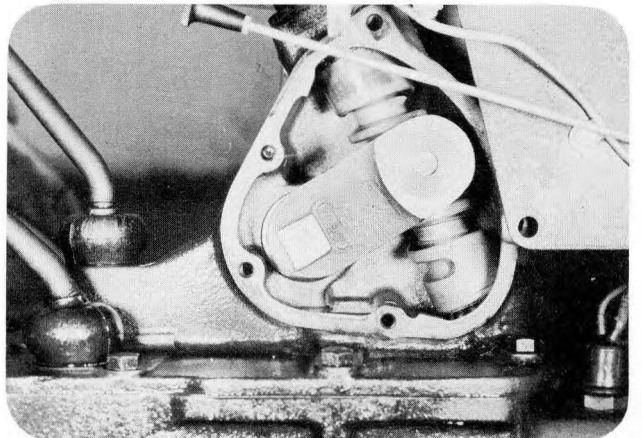
The steering gear is a specially designed cam and lever type with a single pitman arm. The over-size pitman shaft is supported in bronze bushings. Internal backlash in the steering gear is adjusted by means of an easily accessible screw on the right-hand side of the gear cover.



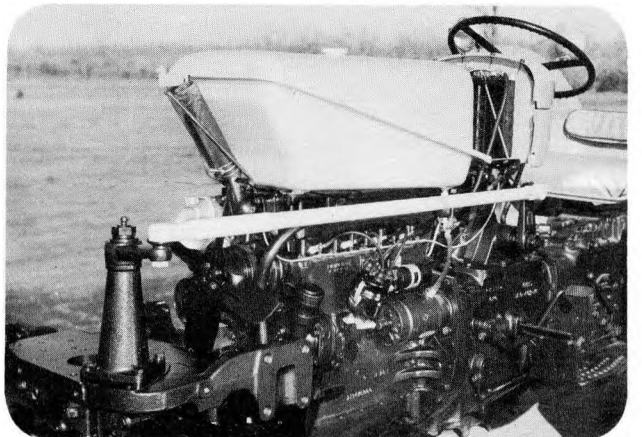
The steering gear for the F-40 and the 4 wheel Hi-40 tractors requires approximately three turns of the hand wheel from lock to lock and is equipped with a roller type stud or cam follower. This ratio permits fast steering and low wheel effort due to the high efficiency of the roller stud.



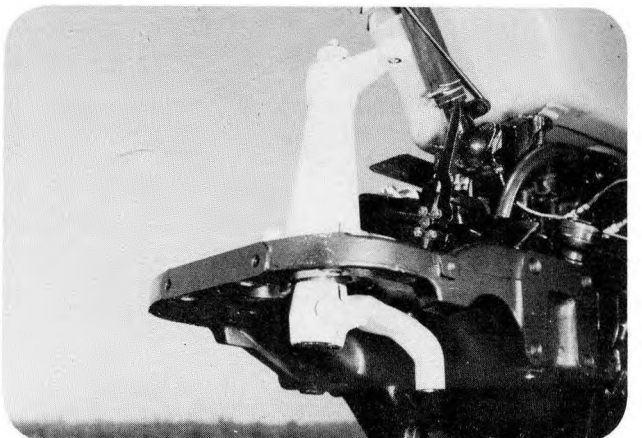
The steering gear for the dual and single wheel Hi-40 tractors requires 4 1/4 hand wheel turns from lock to lock and is equipped with a plain, fixed stud or cam follower. This ratio and stud construction were selected to minimize the front wheel "fight" which normally occurs with this type tractor.



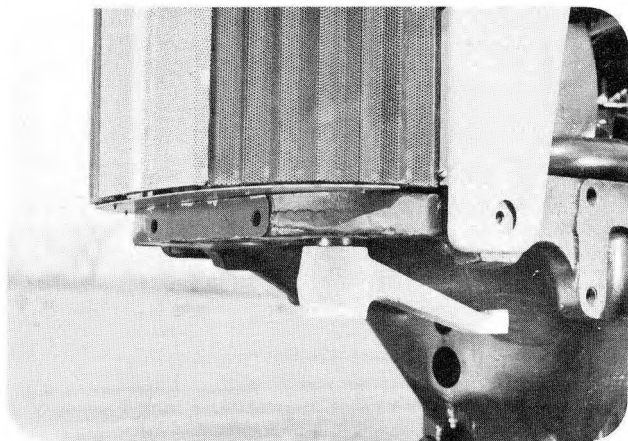
The single drag link fits snugly to the lefthand side of the tractor and is connected to the steering drag link arm of the steering gear assembly at the rear end, and to an arm at the top of pedestal shaft at the front of the tractor. Adjustment for the length of the drag link, is made at the rear end.



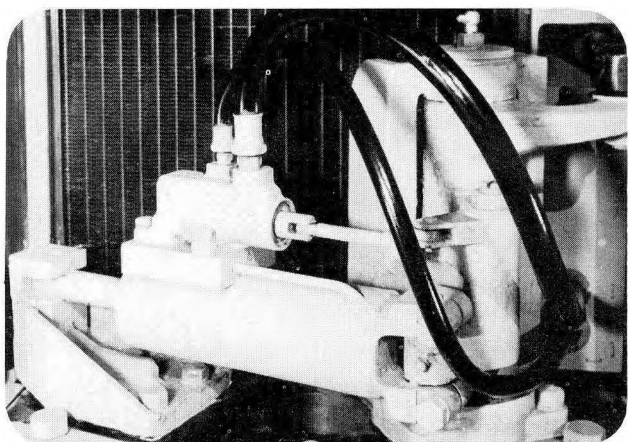
The lower end of the pedestal shaft is attached by an indexed splined connection to a steering arm as required by the type of front axle being used. The steering crank arm shown here is used with the F-40 and the four wheel version of the Hi-40.



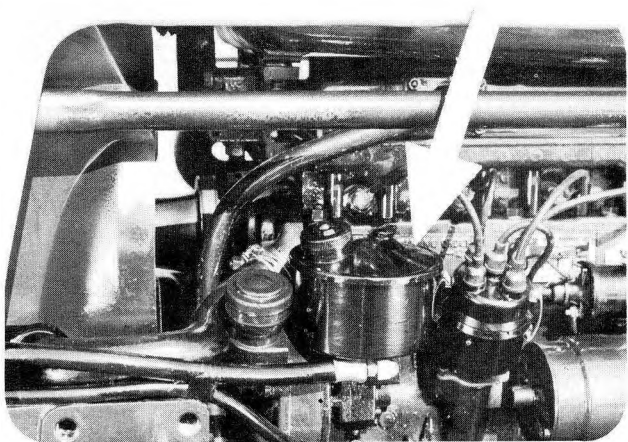
The main steering arm for the single and dual wheel version of the Hi-40 is different because the attachment to the steering linkage is higher.



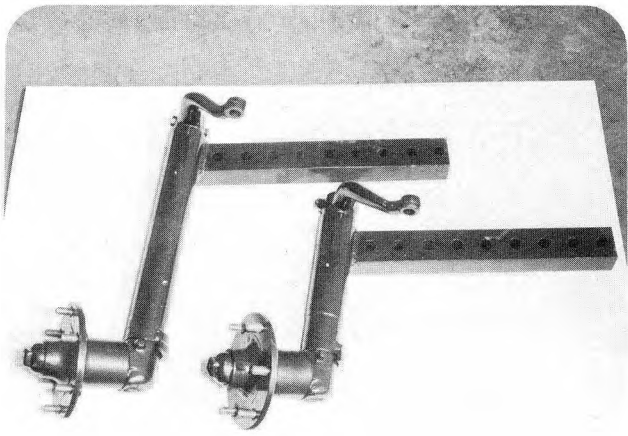
The steering gear linkage has been designed so that power steering can be added in the field to the basic manual steering gear. The standard pedestal post casting, the pedestal shaft, and upper arm at the front of the tractor are replaced by the new parts needed for power steering, and the cylinder and its mounting bracket attach to the bolt holes already provided in the front support assembly.



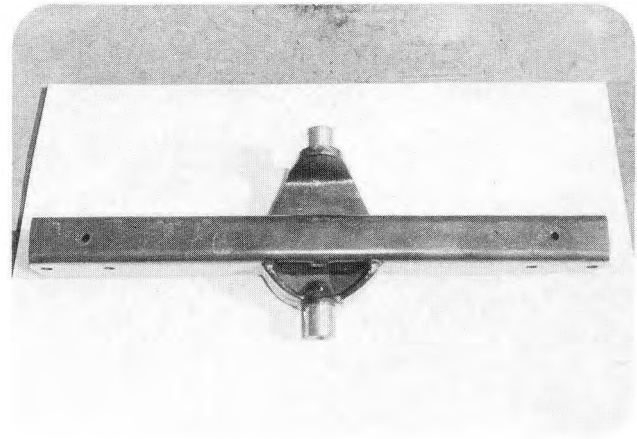
This plus the addition of a power steering pump bolted to the machined flange on the engine and hose connections from the pump to the control valve on top of the cylinder completes the conversion. It is more economical to have power steering factory installed since the manual steering parts are credited against the total cost. However, it is relatively easy to install power steering in the field.



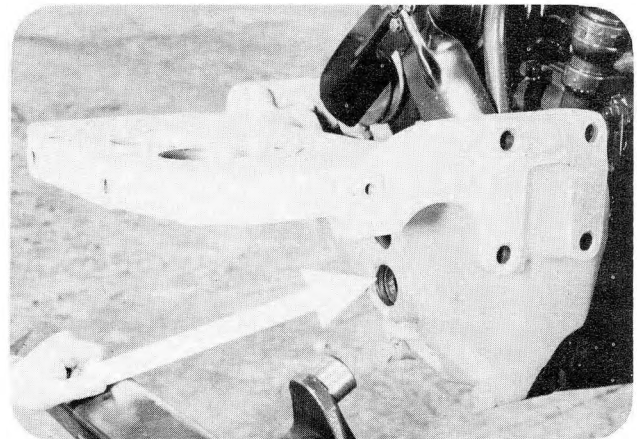
The front axle used with the F-40 and with the 4-wheel version of the Hi-40 are of the same type. The outer sections of the adjustable front axle are fabricated by welding and they are heat treated for strength.



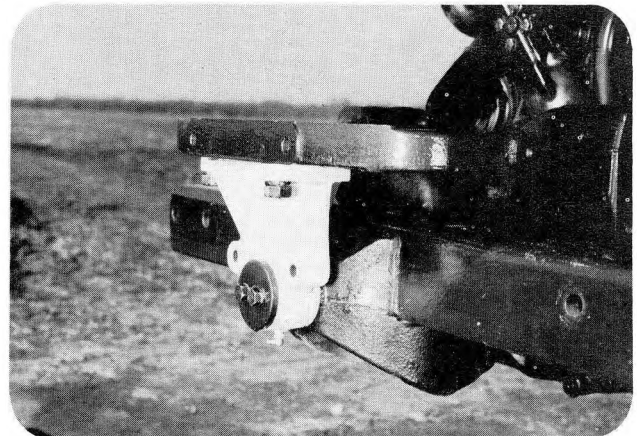
The center section is a formed box section welded to a steel casting which provides the pivot on which the entire axle rocks. The bearing surfaces of this steel casting are induction hardened to resist wear.



The adjustable front axle pivots at points in two separate castings. The back pivot is in the front support assembly which has a replaceable pressure lubricated bronze bushing.



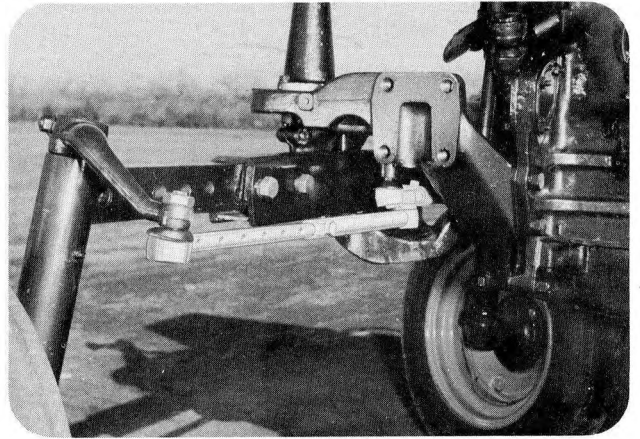
It pivots in front in the axle support bracket which also has a replaceable pressure lubricated bronze bushing.



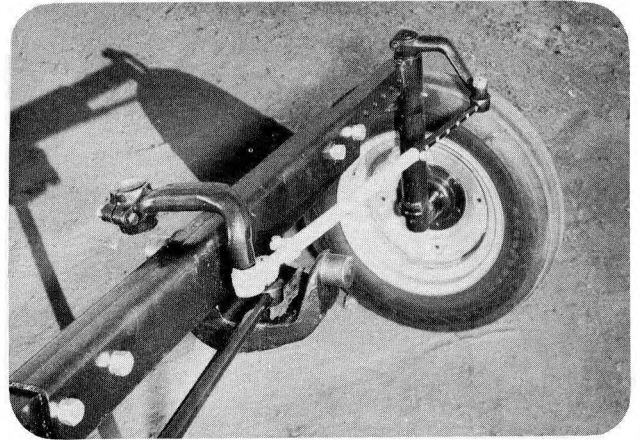
The steering motion for the adjustable front axle is carried from the main steering arm attached to the lower end of the pedestal shaft by a tie rod assembly.



The tie-rods are adjusted in 2" steps and correspond exactly to the adjustments of the front axle to assure proper alignment of the front wheels.

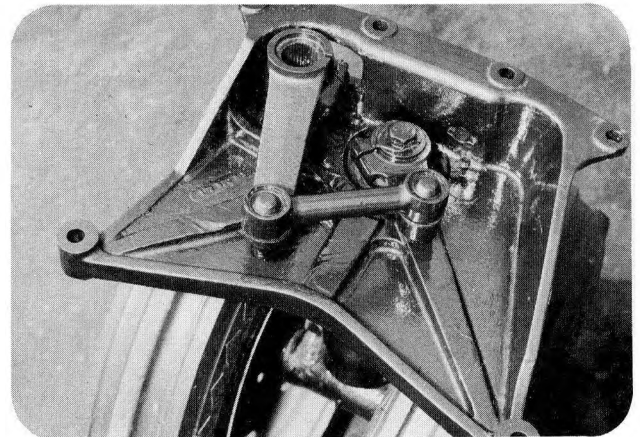


The adjustment for proper toe in is provided for in the right tie rod assembly.

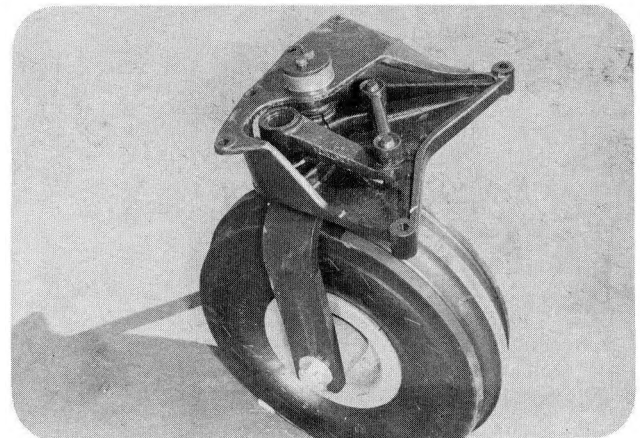


When the Hi-40 is set up either as a single or a dual front wheel tractor the support brackets are bolted directly to the front support assembly.

The intermediate support for the dual wheel is shown with the steering linkage. The splined steering arm goes on the lower end of the pedestal. The tires on the dual wheels are 5.50 X 16 and there is approximately 1 inch of caster to produce a self-centering effect.



The single wheel support assembly differs from the dual, however, the same steering linkage is used. The tire size is 7.50 X 10 and there is no caster since there is a satisfactory degree of stability without it.



The approximate wheel bases of the two models of Ferguson tractors in various versions are:

Ferguson 35	72 inches
Ferguson F-40	81 3/4 inches
4-Wheel Hi-40	81 3/4 inches
Dual Front Wheel Hi-40	84 1/2 inches
Single Front Wheel Hi-40	85 1/2 inches

The outside turning radius of all "40" tractors is approximately 8 ft. with the wheels set at 52" tread. The small turning radius and the relatively fast steering saves time and effort. It is an asset in turning at narrow headlands and for re-entry into the next row. The high efficiency of the steering gear and the absence of backlash provide accurate steering with minimum effort for precision planting and cultivation.

The approximate overall length of the tractors, except for lower links is:

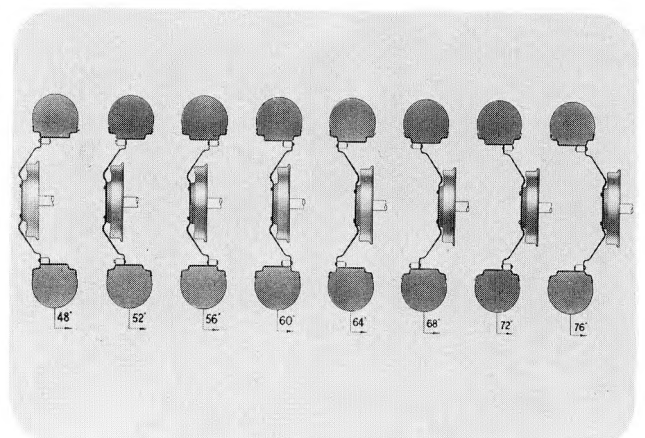
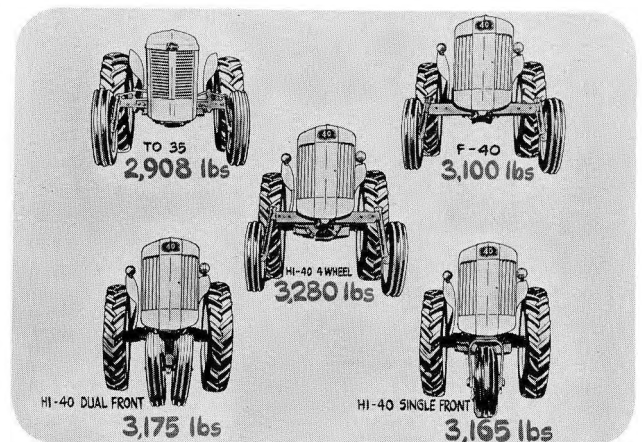
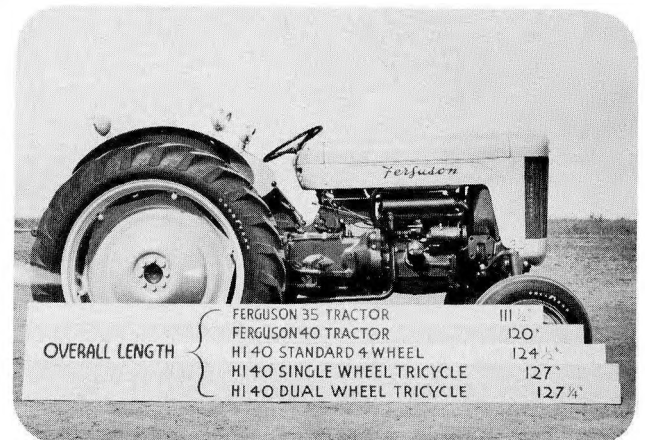
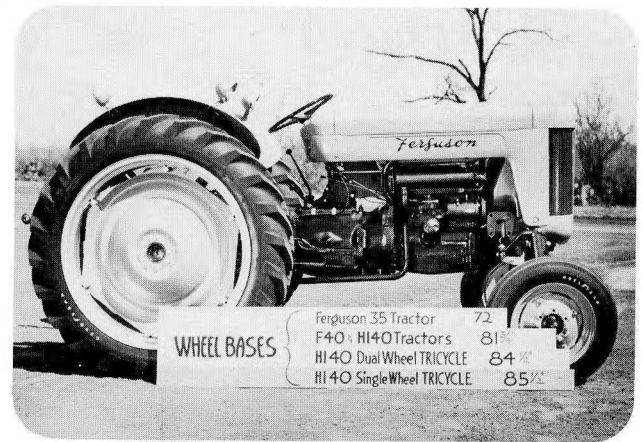
Ferguson 35	111 1/2 inches
Ferguson F-40	120 inches
4-Wheel Hi-40	124 1/2 inches
Dual Front Wheel Hi-40	127 1/4 inches
Single Front Wheel Hi-40	127 inches

Like the famous Ferguson 35, the "40" is engineered and designed to sell in the mass market. It is a "two-three" plow tractor with static weight distribution of approximately 60% on the rear wheels and 40% on the front.

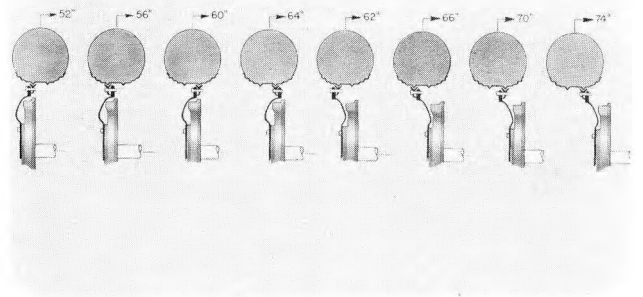
The approximate weights with fuel, oil, and water are:

Ferguson 35 (Deluxe)	2908 lbs.
Ferguson F-40	3100 lbs.
4-Wheel Hi-40	3280 lbs.
Dual Wheel Hi-40	3175 lbs.
Single Wheel Hi-40	3165 lbs.

The rear tires on the F-40 are 11 X 28 and on the Hi-40 are 11 X 38. The tread is adjustable in four inch increments from 48 to 76 inches by reversing the rims on the discs and the discs on the hubs. However, with the Hi-40 it is necessary to remove the left rear fender to use the 48" tread.



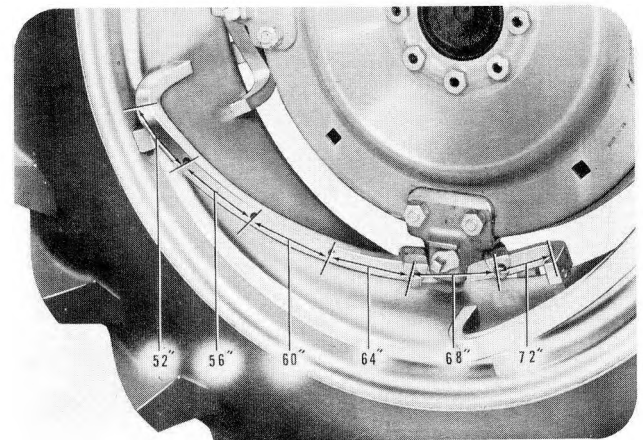
13 X 24 tires are also available for use with the F-40. Spacings of 52", 56", 60", 62", 64", 66", 70", and 74" are possible with these tires.



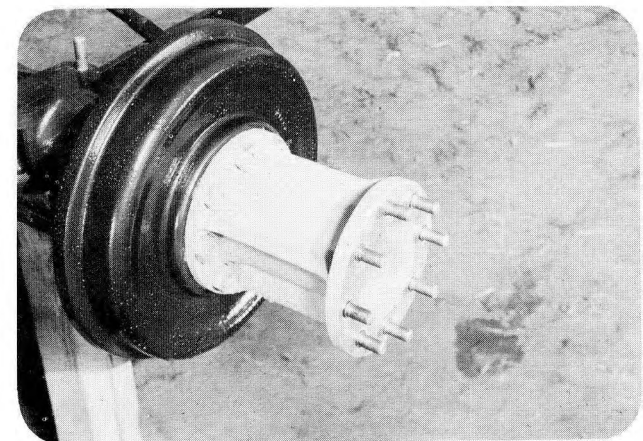
The same type power adjusted rear wheels used on the "35" are available as either factory installed or dealer installed accessory equipment with 11 X 28 or 11 X 38 tires.



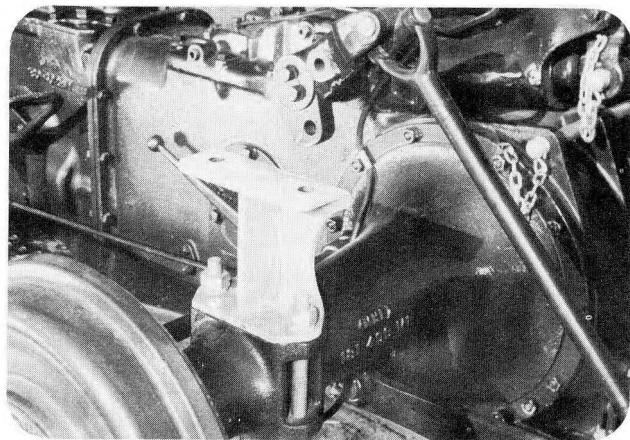
These wheels provide mechanical tread settings between 52 and 72 inches. Forward or rearward motion of the tractor is used to rotate the wheel disc in relation to the wheel rim. Special shoe-type clamps slide on curved rails in the rim to move the rims in or out. When the desired tread setting is reached, the clamps are tightened to hold the rims in place on the rails.



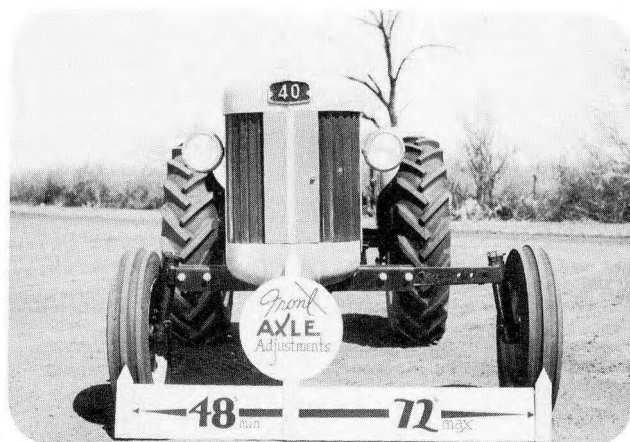
Spacers will be available as accessories to permit increasing the maximum rear wheel tread to 88 inches. Warranty of this accessory and warranty of tractors so equipped is limited to light cultivating work only and without added weight.



The same rear wheel fenders are used on all Ferguson tractors, however, a fender riser is used for the Hi-40 tractors.



The front wheels of the F-40 are adjustable in 4 inch increments from 48 to 72 inches by space setting the three members of the front axle and to a maximum of 80 inches by reversing the wheels on the hubs.

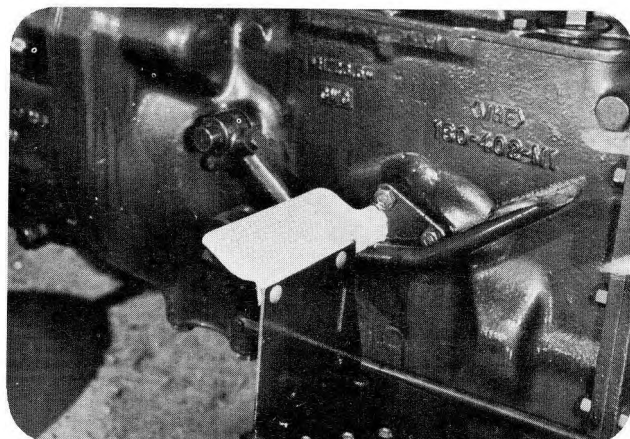


The front wheels of the Hi-40 tractors are adjustable in 4 inch increments from 50 to 74 inches by space setting the three members of the front axle and to a maximum of 82 inches by reversing the wheels on the hubs.

The differences in front axle spacings of the F-40 and Hi-40 are due to the differences in length of front wheel spindles.



The foot rest located at the front of the step plate on Ferguson 40 tractors is now a forging with a non-skid surface to which the step plate is bolted.



In order to maintain fairly close speeds between the F-40 and the Hi-40 the gear ratios were changed to compensate for differences in wheel size, as shown in the chart.

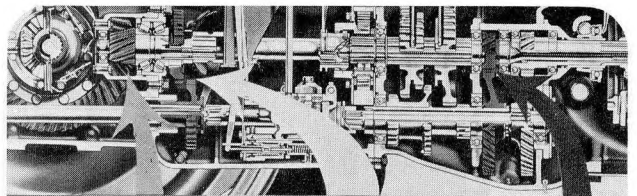
The ratio of the constant mesh gears is identified by the stamp mark on the transmission case near the starter switch. L. D. indicates low drive and H. D., high drive.

The ratio of the ground drive PTO is identified by the stamp mark on the left hand top of the center housing. H. C. indicates a high clearance and L. C. indicates low clearance.

A comparison of the speeds of travel for the Ferguson tractors shows a good selection for all types of work.

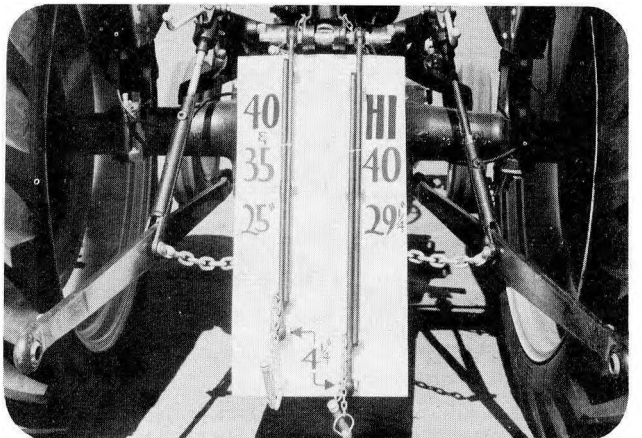
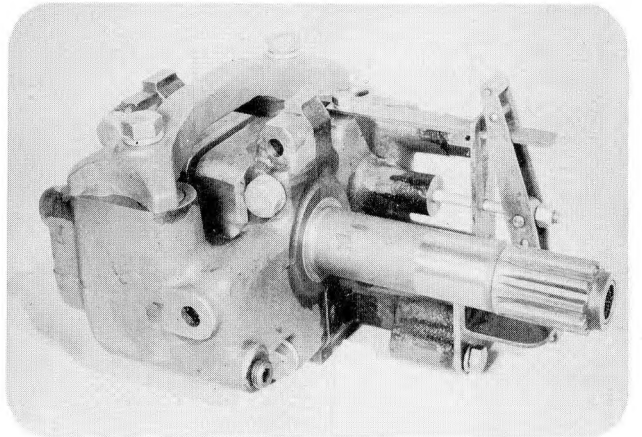
The pump that operates the hydraulic system is capable of delivering over 3 gallons per minute. Operating pressure which is determined by the load on the lift links is normally somewhat less than 1000 psi and is limited by a safety valve on the pump to a maximum of 2800 psi.

Because of the larger rear wheels on the Hi-40 the dimensions of the two lower links and the top link were lengthened. This was done in a relationship so as to maintain the same geometry at the working depth or operating points for the various implements. The length of the top link has been increased from 25" to 29 1/4".

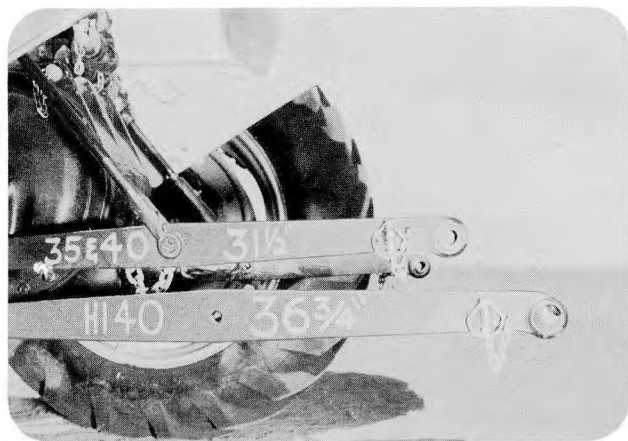


	FINAL DRIVE RATIO AT BEVEL GEAR AND PINION	GROUND DRIVE P.T.O. GEAR RATIO	CONSTANT MESH GEAR RATIO
TO-35	6/37	38/32 (1 R.P.M. P.T.O. TO 20.8 IN. TRAVEL)	18/50
F-40	6/37	38/32 (" " 20.8 " ")	18/50
HI-40	6/37	41/29 (" " 20.68 " ")	17/51

OPERATING GEAR		MILES PER HOUR TO-35-F-40: 11x28 TIRES		MILES PER HOUR HI-40-11x38 TIRES	
GEAR	RANGE	1500 R.P.M.	2000 R.P.M.	1500 R.P.M.	2000 R.P.M.
1	LOW	.99	1.33	1.12	1.5
2	LOW	1.49	1.99	1.68	2.25
3	LOW	2.74	3.65	3.10	4.12
1	HIGH	3.98	5.30	4.50	5.99
2	HIGH	5.97	7.96	6.75	9.00
3	HIGH	10.95	14.59	12.38	16.50
R	LOW	1.33	1.97	1.50	1.99
R	HIGH	5.21	7.09	6.00	8.01



The length of the lower links has been increased from 31 1/2" to 36 3/4".



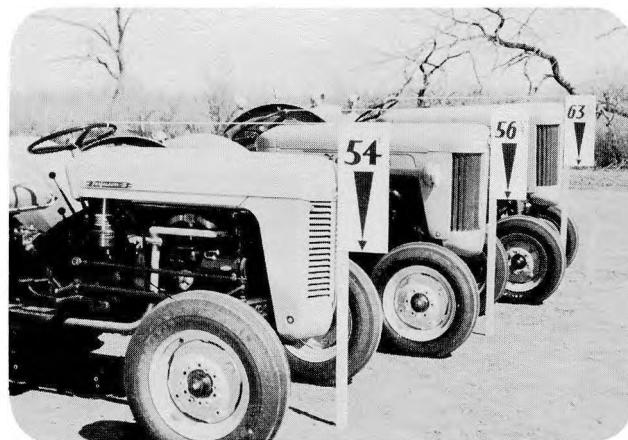
Implements attaching only to the 3-point hitch of the Ferguson 35 are usable with the F-40 with no changes. Implements involving the wheelbase require slight changes. Examples are braces for the spike tooth harrow and front end loaders. All implements fit the Hi-40 the same as the F-40 except all PTO connections are lengthened and the lengths of attachments to the stabilizer pins such as the FEO Mower are changed. Proper attachments are available for side-mounted implements.



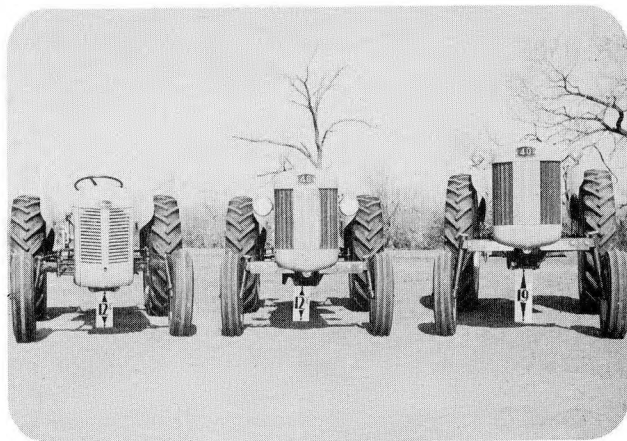
The approximate maximum overall height of the "35" is 54 inches while it is 56 3/4" for the F-40 and 63 1/4" for the Hi-40.



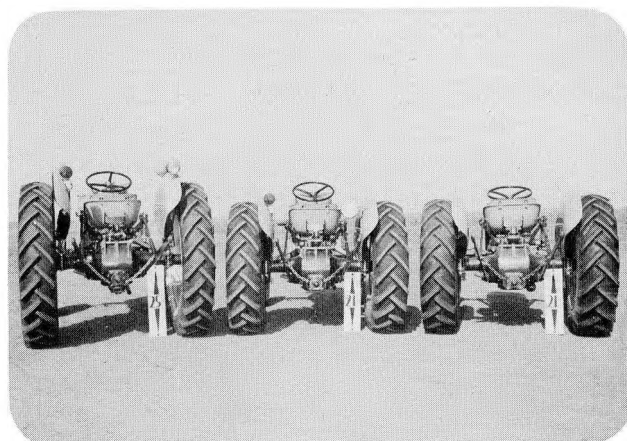
The approximate height of the front of the hood of the "35" is 47 3/4" while it is 53 1/4" for the F-40 and 60" for the Hi-40.



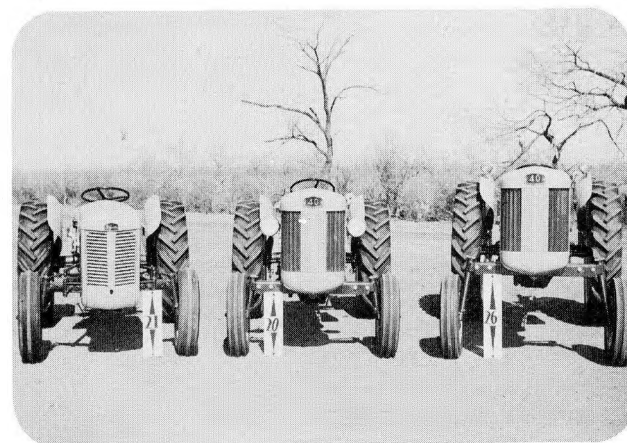
The approximate minimum clearance of the "35" and the F-40 is 12 3/4 inches while it is 19 inches for the Hi-40.



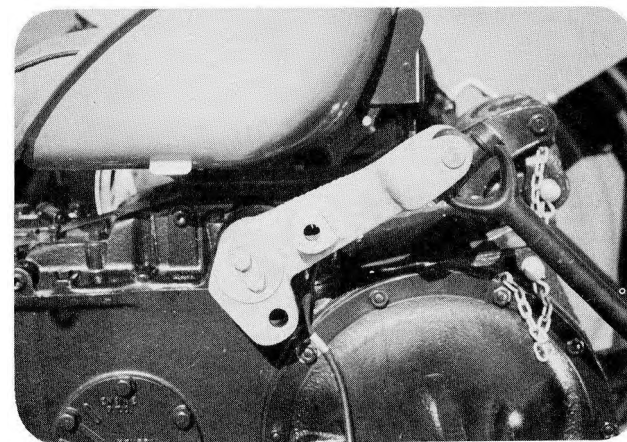
The approximate rear axle clearance of the "35" and the F-40 is 21 1/2 inches while it is 25 1/4 inches for the Hi-40.



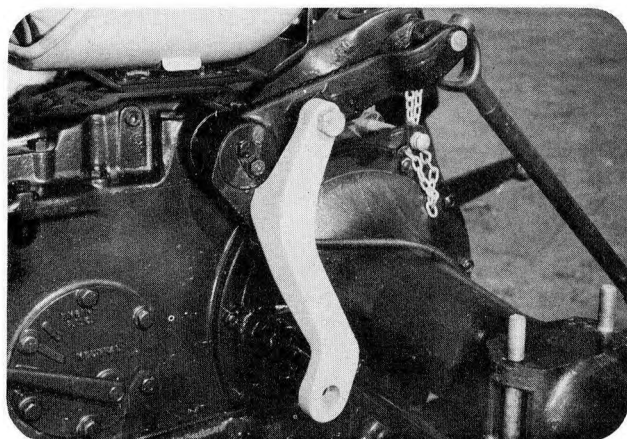
Approximate front axle clearance of the "35" is 21 inches while the F-40 is 20 1/4" and it is 26 1/2" for the Hi-40.



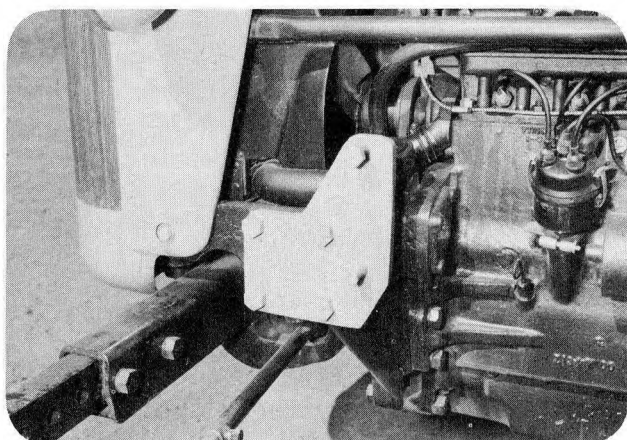
Since the front mounted implements are controlled with the Ferguson hydraulic system the hydraulic lift arm on all "40" tractors was designed so the controls for the front mounted implements could be attached to them as well as rear mounted implements.



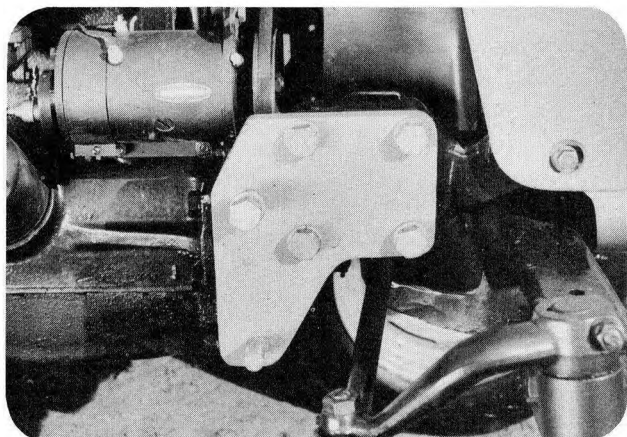
A cultivator lift arm fastens to the hydraulic lift arm with a bolt and cap screw and provides control for the front mounted cultivator.



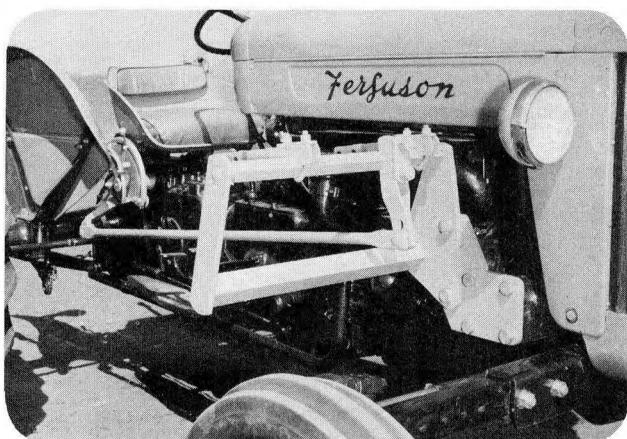
A front end implement adapter plate is bolted to the front support assembly. When used with the F-40 it is bolted in an "up" position.



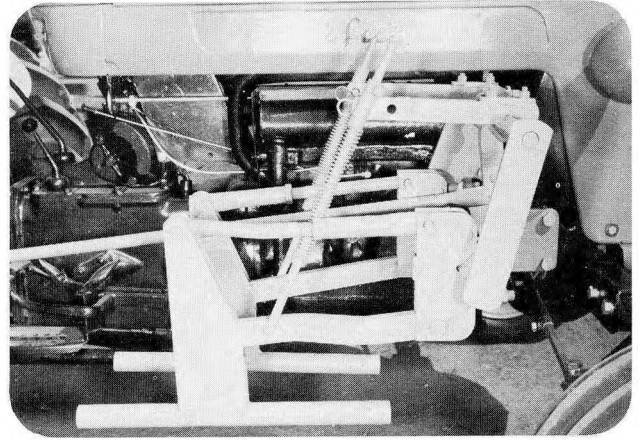
When the adapter plate is used with the Hi-40's the adapter plate is bolted in a "down" position. Regardless of whether the plate is positioned in the up or down position the "stud" must be in the lower hole and a "cap screw" bolt is used in the top hole. The lower attaching hole in the tool bar has a closer tolerance. Thus, when the cultivator tool bar is mounted it is put on the "stud" so by rocking ahead or back the "cap screw" is easily put in. Difficulty may be encountered if the "stud" is placed in the top hole.



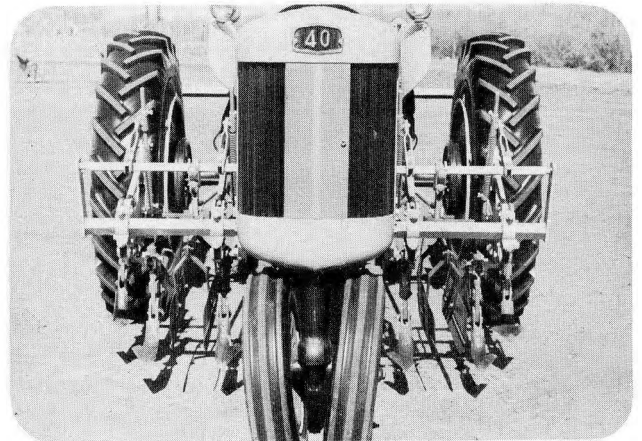
There are two models of mid-mounted cultivators available for all F-40 tractors. These models are designed as the F-132 Two-Row Cultivator and the F-130 Four and Six Row Beet and Bean Cultivator. With both of these cultivators the shovels closest to the row are close to the front wheels so they can be guided accurately. Shown here is the front tool bar and pipe connections for the F-132 Two-Row Cultivator. It is quickly attached with two bolts and two hairpins.



The front gangs are easily attached to the front tool bar. Parallellinks carry each gang and these gangs float over uneven ground under a slight spring-loaded downward pressure. Adjustments permit the setting for row spacings from 28" to 42".



The F-132 Two-Row Mid-Mounted Cultivator is available with either spring trip shanks with a variety of shovels or sweeps, or with spring teeth.



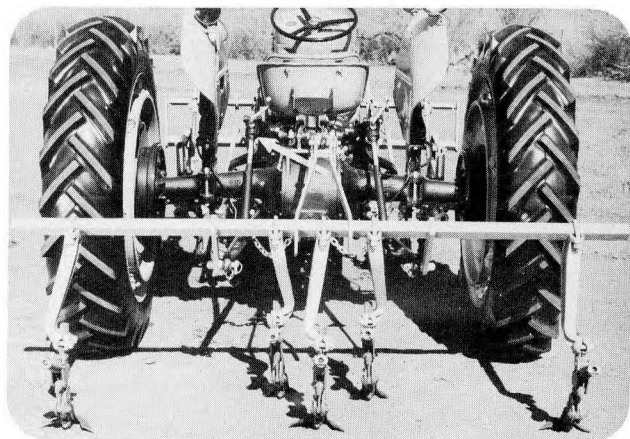
Six spring trip shanks or spring teeth are mid-mounted on four gangs individually supported by heavy 1 3/4 inch square bars. The adjustments provide for different row spacings and varying field conditions.



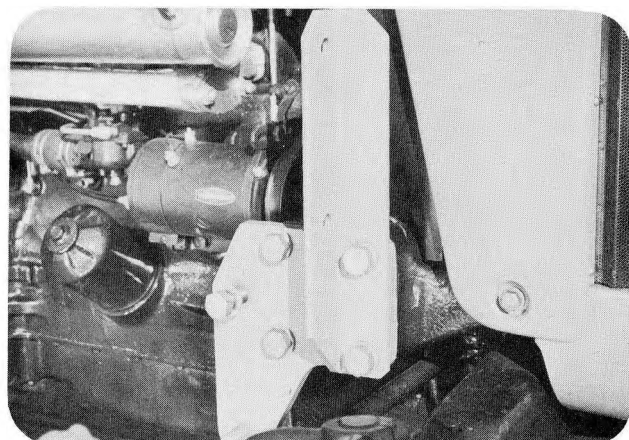
The shanks are located so that shovel action is visible from the seat. This permits close cultivation with ease.



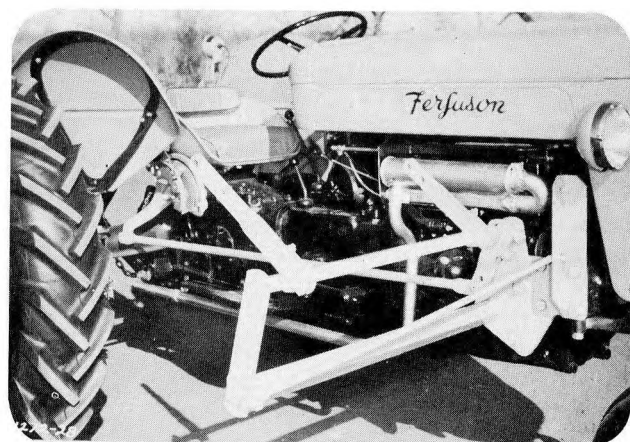
The rear gang tool bar is carried on the 3-point linkage and one stabilizer bar is used. Five spring trip shanks or seven spring teeth are mounted to the 1 3/4" square tool bar to complete the cultivator set up. An accessory leveling box is used on the left lift arm as well as the right so that the depth relationship between front and rear gangs can be made quickly and easily. Depth of operation is controlled by linkages connected to the hydraulic control system.



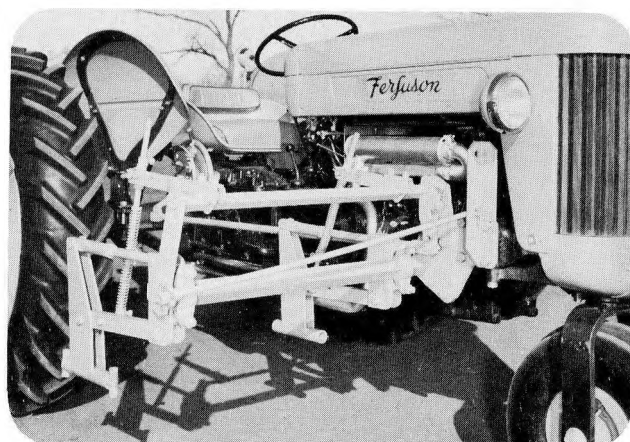
The F-130 Beet and Bean Cultivator is also mid-mounted. In addition to the adapter plate a rod brace support is also mounted to the same bolts holding the mounting pads.



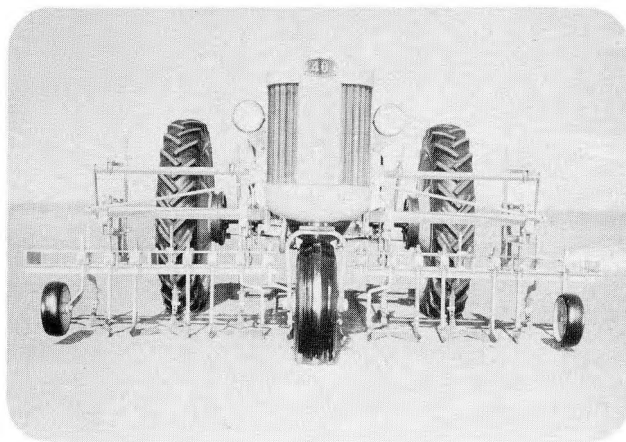
The tool bar for the F-130 Beet and Bean Cultivator is longer than for the F-132 Two Row Cultivator and requires a brace rod. The brace rod attaches to the lower hole when mounted to Hi-40 tractors and in the top hole with the F-40 tractor. The tool bar accommodates both 50 and 60 inch tool frames. It is also possible to mount the F-132 Two Row Cultivator gangs on the F-130 tool frame.



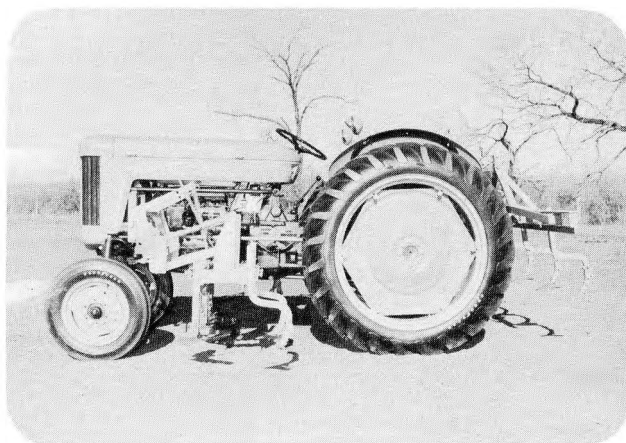
The gangs for the F-140 Beet and Bean Cultivator differ slightly from the gangs for the F-132 Two Row Cultivator, to provide for the tool frame attachment.



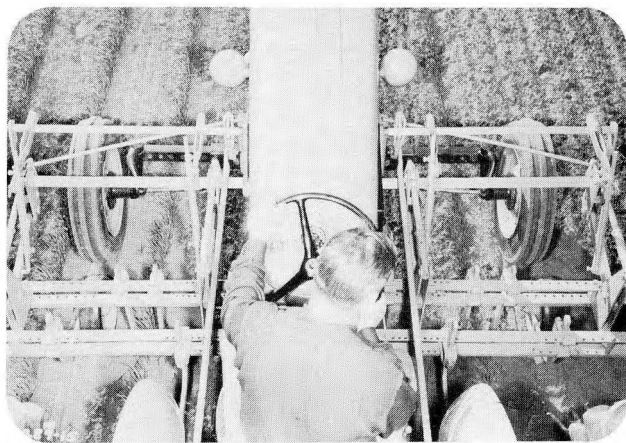
Cultivator shovels and steels can be set on the long 136" frames to cultivate 6 rows from a minimum of 18 inches apart to a maximum of 22 inches apart. Gauge wheels can be used to carry the outside ends of each of the individual gangs to maintain a uniform depth.



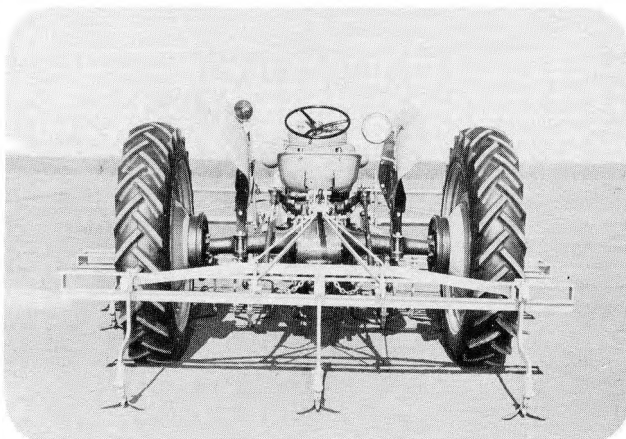
The cultivator shovels and steels can be set on the shorter 116 inch frame to cultivate 4 rows from a minimum of 18 inches to a maximum of 28 inches.



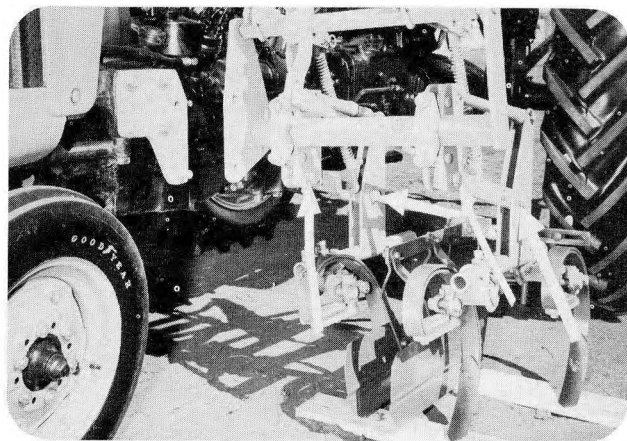
The cultivator shovels on the F-130 Cultivators are also located for good operator vision and close work.



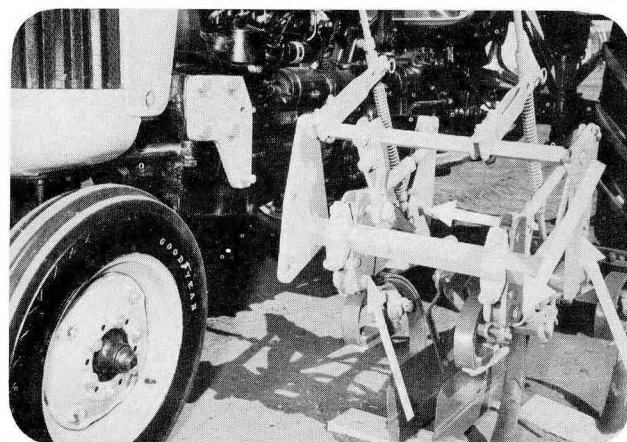
The rear tool frame for the F-130 Beet and Bean Cultivator is carried on the 3-point hitch and one stabilizer bar. The double-bar frame provides a wide range of adjustments for the shovels. The accessory leveling box is also used with the rear tool frame for the F-130 and the depth of cultivation is controlled by linkages connected to the hydraulic control system and gauge wheels.



Both the F-132 and the F-130 Cultivators are easily mounted on the tractor. The gangs are easily removed from the tool bar and the tool bar is easy to remove from the tractor. By lowering the gangs to a solid surface, and by loosening the lock nuts at the pivot points on the gang parallelogram indicated by the arrows, and tightening the bolts the gangs will stay rigid so removing and mounting to the tractor is extremely easy.



If this is not done the cultivator "folds up" and mounting is more difficult. Since these four points are pivot points care must be taken to readjust properly before using in the field.



Either the F-132 or the F-130 Cultivator will quickly and easily mount on the F-40 tractor and all versions of the Hi-40 tractor.



You have just viewed some of the features of the Ferguson 40 tractors which extend the range of application to meet an ever widening field of applications. These new tractors incorporate all the time tried Ferguson features, and for the first time offer high clearance and tricycle models.

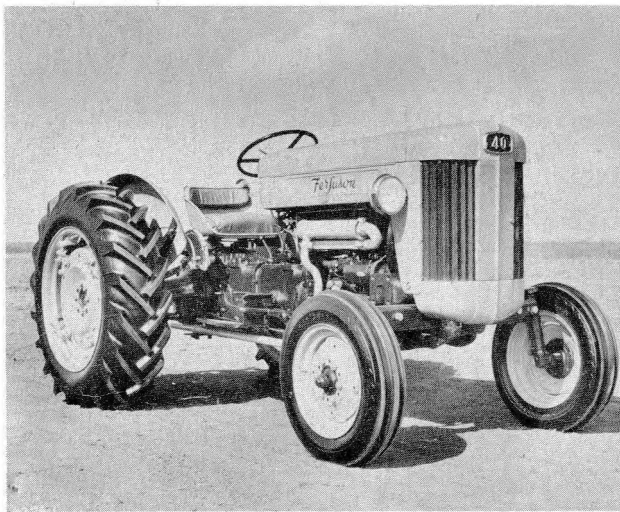


FERGUSON 40 TRACTORS

Widen the range of application



Disc harrowing with Hi-40 4-wheel



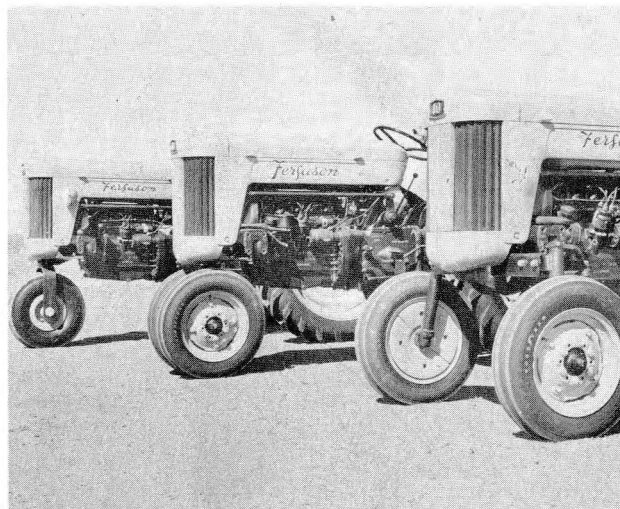
Ferguson F-40



Planting on the bed with the F-40



Plowing with Hi-40 dual-wheel



Ferguson Hi-40's



Cultivating with Hi-40 single-wheel