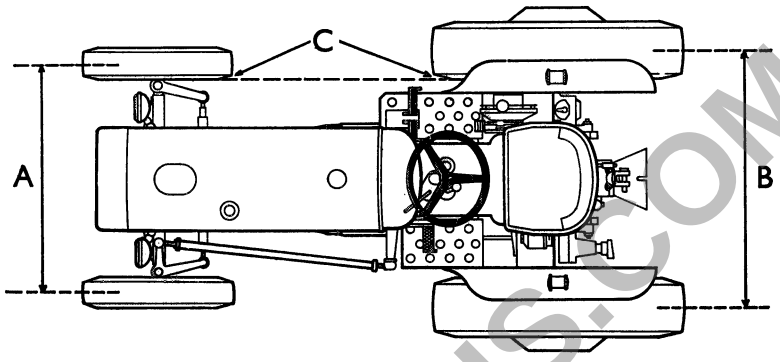


FIGURE 1/14. WHEEL SETTINGS FOR PLOUGHING

A. Front setting 4 in. (10 cm) less than rear setting B
C. Tyre walls in-line

REAR TRACK ADJUSTMENT

The rear track width can be varied by 4 in. (10 cm) steps. The wheel centres are dished so that they can be fitted to the hub either way around. The lugs on the wheel rim are off-centre so that by fitting the wheel either way round, a variation is obtained. A further variation is obtained by fitting the wheel rim lugs either side of the dished centre. The full range of settings is shown in Fig. 1/15.

Note. When fitting rear wheels observe the correct direction of rotation of pneumatic tyres. The tread pattern must be such that when looking down on top of the tyre, the Vee of the tread points forward.

Important. Take care to place the jack on firm ground under a solid part of the tractor. Before removing a wheel, place some pieces of stout wood under the tractor frame to support it should the jack become dislodged.

FRONT TRACK ADJUSTMENT

The axle extension is secured by two bolts A Fig. 1/16. The position B is only used for the 72 in. (183 cm) setting. These are screwed into threaded holes in the axle and do not require the use of nuts. To adjust the track width, jack up the axle, remove the adjustment nut and bolt C from the track rod, remove completely the two bolts A and slide the axle

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SECTION 1. OPERATION

STARTING THE DIESEL ENGINE

1. With fuel in the tank and the tap turned on, pull the fuel cut-off rearward to the running position, and drop into the retaining slot.
2. Open the throttle wide (towards the driver).
3. **Put the gear (shift) lever in neutral** (the right-hand lever).
4. Depress the clutch pedal fully. In certain markets an isolating switch is fitted so that the starter cannot be energised until the clutch is pushed down.
5. Switch on and operate the starter switch (turn the key to the right against the spring).

Release the starter switch immediately the engine runs and close the throttle to give about 1000 rev/min to warm up. Check that the oil warning light goes out.

STARTING IN COLD WEATHER

The wing nut on the side of the Injection Pump should be screwed in **before** trying to start the engine. As soon as the engine is running, the screw must be unscrewed otherwise erratic running with black exhaust will occur. In conditions when starting is difficult the use of ether or a proprietary starting fluid is recommended. This should be used on the felt attached to the plastic plug in the top of the manifold. Replace and start immediately. When starting is difficult, short presses on the starter will be of no avail. The engine should be kept turning by the starter until the engine runs unaided. However, if it fails to run, release the starter switch after 25 seconds and wait 20 seconds before trying again, otherwise the battery will be overheated and damaged.

Use of the starter places a heavy drain on the battery and adequate running time should be allowed to enable the dynamo to replace the charge. Use of the correct grade of oil in the engine and pressing the clutch whilst starting will help to reduce the load on the starter.

STOPPING THE ENGINE

Reduce engine speed, lift the fuel cut-off and allow it to move forward to the stop position. Switch off and remove the key.

STOPPING THE TRACTOR

Reduce travel speed by closing the throttle and apply the foot brakes. Just before the tractor comes to a halt, disengage the clutch and stop the engine. Apply the handbrake securely and park the tractor in a low gear ratio. To prevent accidental starting, ensure that the isolating key is removed and the fuel cut-off in the 'stop' position.

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TABLE OF SERVICE TASKS

In addition to the Daily Inspection and greasing, carry out the tasks marked X at the times shown.

Note. Recommended times are for normal conditions. In very wet and muddy conditions—grease more often. In dry dusty conditions (i.e. stationary work or hot climates)—clean the air filter, oil and fuel filters and carry out oil changes more frequently.

Hour Meter Reading	Task A	Task B	Task C	Task D	Task E
60	X	†			† (1 to 4)
125	X	X			
185	X				
250	X	X	X		
315	X				
375	X	X			
440	X				
500	X	X	X	X	
560	X				
625	X	X			
685	X				
750	X	X	X		
815	X				
875	X	X			
940	X				
1000	X	X	X	X	X

† New and Reconditioned Tractor only.

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CONTROLS

The engine and tractor controls are shown in Fig. 1/1 and 1/2.

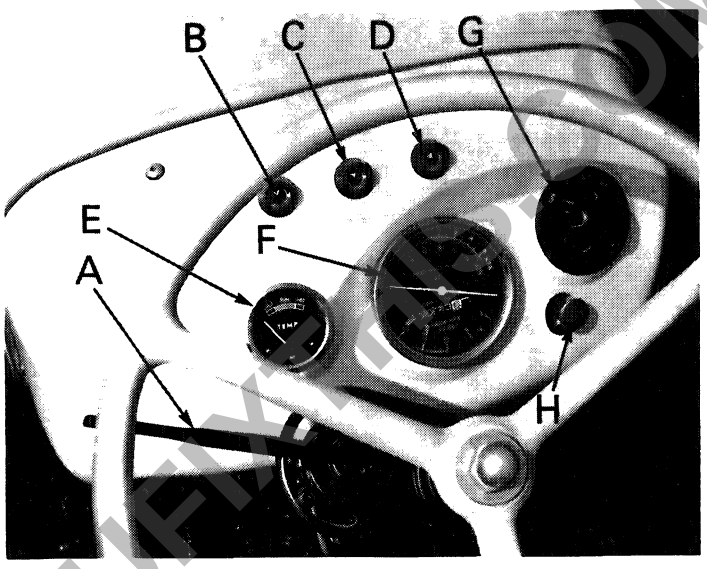


FIGURE 1/1. INSTRUMENTS AND CONTROLS

A. Throttle lever
B. Charge warning light (Red)
C. Filter warning light (Yellow)
D. Oil pressure warning light (Green)
E. Water temperature
F. Tractormeter
G. Light switch
H. Engine stop control

NO CHARGE WARNING LIGHT

The red light is illuminated when the isolating switch is turned on but should extinguish as soon as the dynamo commences to charge.

TRANSMISSION FILTER WARNING LAMP

When the fall in pressure across the full flow filter element in the hydraulic system is high enough to open the valve and allow oil to by-pass the filter element, the yellow warning lamp illuminates. This may occur (*a*) when the filter element is blocked with dirt and requires changing for a new one or (*b*) when the oil is cold and engine speed is high.

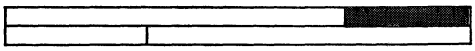
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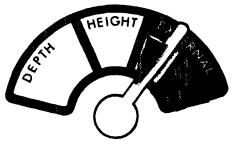
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OPERATION OF SERVICE 1

Implements with depth wheel (gauge wheel) and use of TCU

SETTINGS

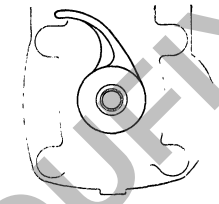




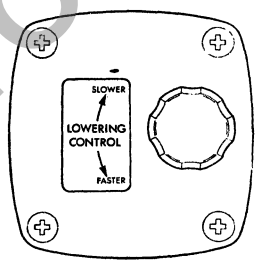
Red band — Select

1. Pull the hand lever fully rearwards in the red band to "select" and while holding there against the spring, turn the selector dial pointer to "TCU".

2. With the engine running, pull the hand lever fully rearwards against the spring and pull the lift latch upwards to disengage it.



3. Set the lowering adjustment temporarily to mid-position and adjust later by trial to give the required rate of lowering for the work in hand.



4. Set the first finger guide to the lower position. *

5. Set the second finger guide approximately 1 inch in front of the first guide.

* Lowering will occur over a range of movement of the hand lever but only one position will give maximum rate of drop with completely free evacuation to the sump. This is most easily found without anything attached to the linkages and is correct when they will fall under their own weight after having been raised hydraulically. Once found in this way, the position should be noted for future reference.

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SECTION 4.
SPECIFICATION AND DATA

DIESEL ENGINE

Type 355011 (Livedrive)

The engine is a compact and robust power unit applying the cross flow head technique for economy coupled with high performance. The three throw crankshaft is supported in 4 main bearings ensuring rugged dependability and is fully balanced giving very smooth running.

Displacement—3 cylinders	164·4 in³ (2695 cm³)
Bore	$3\frac{15}{16}$ in (100 mm)
Stroke	$4\frac{1}{2}$ in (114·3 mm)
Rated speed	1800 rev/min
Maximum full load speed	2200 rev/min
Maximum no load speed	2350 rev/min
Gross maximum power . .	46 b.h.p. at 2200 rev/min
Compression Ratio . .	17 : 1
Firing order	1, 2, 3

Valve clearances — SET COLD

—inlet	0·010 in. (0·25 mm)
—exhaust	0·007 in. (0·18 mm) up to engine No. 6038
	0·010 in. (0·25 mm) from engine No. 6039

Cooling system — The thermostat is set to commence opening at 82°C (180°F) and to be fully open at 94°C (200°F). It controls the flow of coolant through the cylinder head from the water pump. Circulation through the block is by thermo-syphon. A 7-blade fan is fitted to the water pump drive pulley. The radiator coolant is pressurised by means of a relief valve fitted in the radiator cap.

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LIFT RODS

For ploughing the lift rod and levelling lever should be set initially to 15$\frac{3}{8}$ in. (39 cm) measured between the pivot centres.

N.B. The lift rod must not be extended to more than 17$\frac{5}{8}$ in. (44·8 cm) between pivot centres, otherwise there will be excessive strain on the remaining thread. Similarly the levelling lever must not be extended beyond 17$\frac{7}{8}$ in. (45·4 cm).

When not attached to the lower links *i.e.* when the drawbar is used and the lower links removed, the check chain pins should be inserted to prevent the lift rods unscrewing and falling off.

DRAWBAR

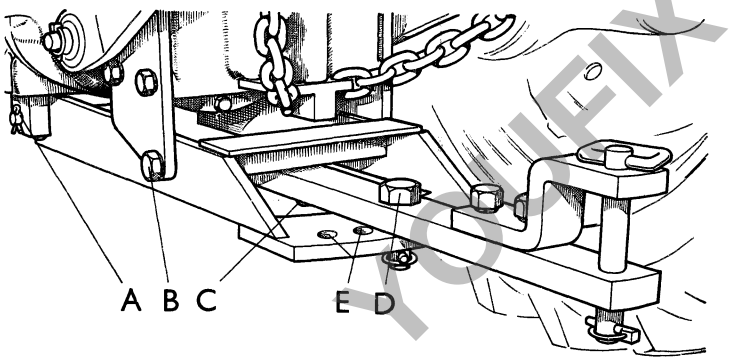


FIGURE 1/20. DRAWBAR—EXTENDED POSITION

A. Hinge bar
B. Rear support bolt
C. Centre fixing pin
D. Short securing pin
E. Off-set holes

This consists of a hinge bar assembly—U635 which is bolted under the rear axle casing. The front of the drawbar frame is supported by the hinge bar A Fig. 1/20 and the rear is bolted to the hitch bracket by bolt B. The drawbar may then be fitted in the forward position by sliding the front between the two pegs in the frame and securing by the drawpin through the centre hole as shown in Fig. 1/21. This position may be used for drawing trailers which impose a load on the tractor in excess of 1200 lb (545 kg). Maximum permitted load is 2000 lb (907 kg).

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INTRODUCTION

The 780 Selectamatic tractor with 3-cylinder diesel engine incorporates the latest refinements of technical design and is the culmination of many years of development and rigorous field testing. In fact, it is a tractor which does a wide range of farming jobs well, reliably and efficiently.

Good design is backed up by skilled manufacture on some of the most modern machines currently available in Europe. The potential life and efficiency which is built into the tractor by careful choice of materials, close manufacturing limits and expert assembly, requires the co-operation of the user whose responsibility it is to carry out the *regular* lubrication and maintenance outlined in this book.

Almost any but the complete novice will be able to carry out the various work which a tractor driver is required to do. But to do this in the easiest, quickest and most efficient way, not to mention the *safest* way because a tractor can be a dangerous machine if handled carelessly and without thought, requires knowledge and skills which have to be acquired. This book gives the necessary information, armed with which the user will quickly gain skill after a little practice.

It is suggested that time spent in reading the Operation and Regular Maintenance sections of this book *before* the new tractor is put into use, will be amply repaid. It is appreciated that the tractor will only be used occasionally for some tasks and the book should be kept readily available at all times so that one's memory may be refreshed. For ease of use the book is divided into 4 sections as indicated in the contents list opposite.

In case of difficulty of any kind, the person most fitted to assist you is your David Brown dealer. Besides having specialist knowledge of the product, he has a great experience of local conditions which will be especially useful to you. In any query always quote the full *prefix* and *serial number* of the tractor and also the *engine type* and *number*.

Note: A List of Abbreviations used in this book is given on page 88.

First Edition July 1967
Second Edition January 1971

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