

2.

DRIVING INSTRUCTIONS

The driver's compartment is situated in the right-hand side of the nose of the vehicle. Access to it is either by the door in the roof above the seat, or, should this be shut, through the fighting compartment roof and the hole in the forward compartment bulkhead.

The controls can be brought within easy reach of the driver by adjustment of the seat position. A general view of the compartment is given in Fig. 1X, which should be carefully studied.

TO START THE ENGINE.

If cold—

- (1) Switch ON battery cut-off switch (yellow warning light will glow).
- (2) Depress brake pedal and engage locking ratchet.
- (3) Make certain that gear lever is in neutral and steering levers fully forward.
- (4) Move carburettor strangler control lever *fully* back.
- (5) Switch ON ignition, depress clutch pedal and instruct member of crew in fighting compartment to turn on fuel tap and, if required, unscrew the Ki-gass knob and inject three pumpfuls of fuel into the induction system. Screw up the knob tightly after use. The use of this pump is only necessary under very cold conditions.
- (6) Press starter button (red warning light will glow, which indicates booster coil in operation). Release as soon as engine fires. If engine does not start, release starter button and try again. *When engine is running do not touch steering levers.*
- (7) As soon as engine will run without strangling, return carburettor strangler control lever to forward position. *Never use Ki-gass pump on a warm engine, but use of the strangler control lever is permissible provided care is taken to avoid excess rich mixture.*
- (8) Release clutch pedal, being prepared to switch OFF immediately should the vehicle start to "swing" in neutral.
- (9) Check all gauge readings. Engine oil pressure should rise immediately the engine starts.

If hot—

- (1) Press the starter button with the throttle closed. This should give an immediate start; but if it fails to do so the following method should then be used:—
- (2) (i)—Slowly depress the accelerator pedal to open the throttle to its fullest extent.
(ii)—Keep the foot still on the fully depressed pedal and press the starter button.

SPECIAL NOTE.—Rapid movement of the accelerator pedal whilst starting must be avoided to prevent pumping fuel into the inlet manifold, otherwise failure to start will result.

DRIVING THE VEHICLE.

- (1) See that the carburettor strangler control lever is in the forward position.
- (2) Release the parking brake by pressing fully on the brake pedal and pulling ratchet control knob.
- (3) Depress clutch pedal, and when this is right down, engage gear required. If any difficulty is experienced in engaging the gear, ease one of the steering levers just sufficiently to take up the free movement only. The gear can then be engaged easily.

Note.—First gear should always be used in confined spaces, on steep inclines, when sharp turns are required, or when heavy going is encountered. Otherwise second gear may be used.

- (4) Slowly accelerate the engine and, at the same time, release clutch pedal. The clutch should be engaged at low engine revolutions, whenever possible.

Gear-changing.—

Normal double-declutching methods must be used for all gear changing.

When the vehicle is moving, accelerate the engine until the vehicle speed is 5 m.p.h., and engage the next (third) gear. When driving on a

FRONT OF VEHICLE.

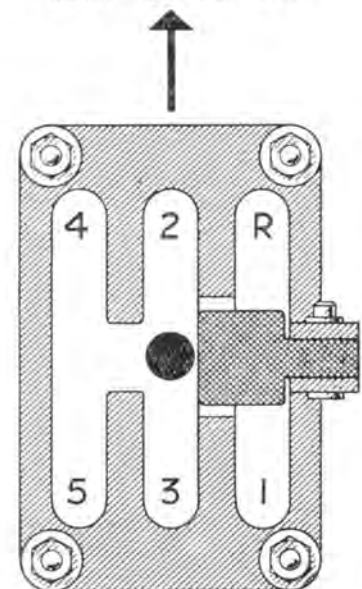


Fig. 2X.—Gear change gate.

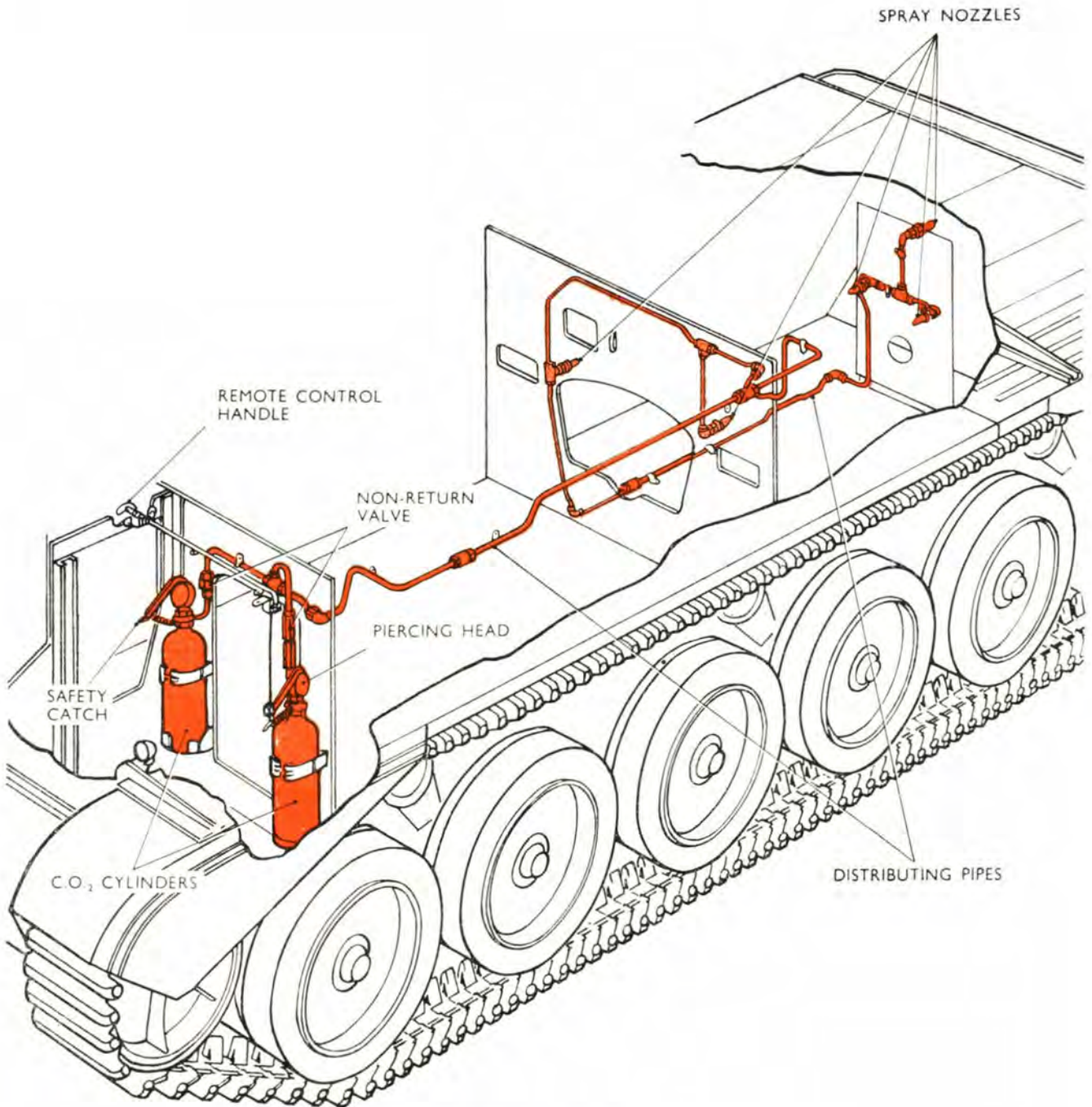


Fig. 5X.—Layout of CO₂ system.

If you find the shear-wire broken or detached, or find the spring safety catch off the striker lever, remove the piercing head by unscrewing the *top* union nut, *see* Fig. 4X (never attempt to unscrew the main hexagon just above the bottle).

Examine the sealing-disc with the aid of a torch or inspection lamp, and if the disc shows any sign at all of damage, the bottle must be removed and checked for weight. This is most important because a sealing-disc which has been accidentally punctured by the striker, or even slightly damaged, will allow a continuous leakage of gas.

The correct weight of each individual bottle is stamped on the bottle neck.

9. Withdraw the split pin and unscrew the nut (10) from the retaining bar (11). Draw off the thrust washer.

Note.—It may be found that the retaining bar (11) revolves in the case of the front four axle arms, in which case it will be necessary to hold the nut on the opposite end of the retaining bar after exposing the opposite axle arm.

10. Lift up the axle arm to disengage it from the spring cannister, and withdraw complete with the hull seal and thrust washer.

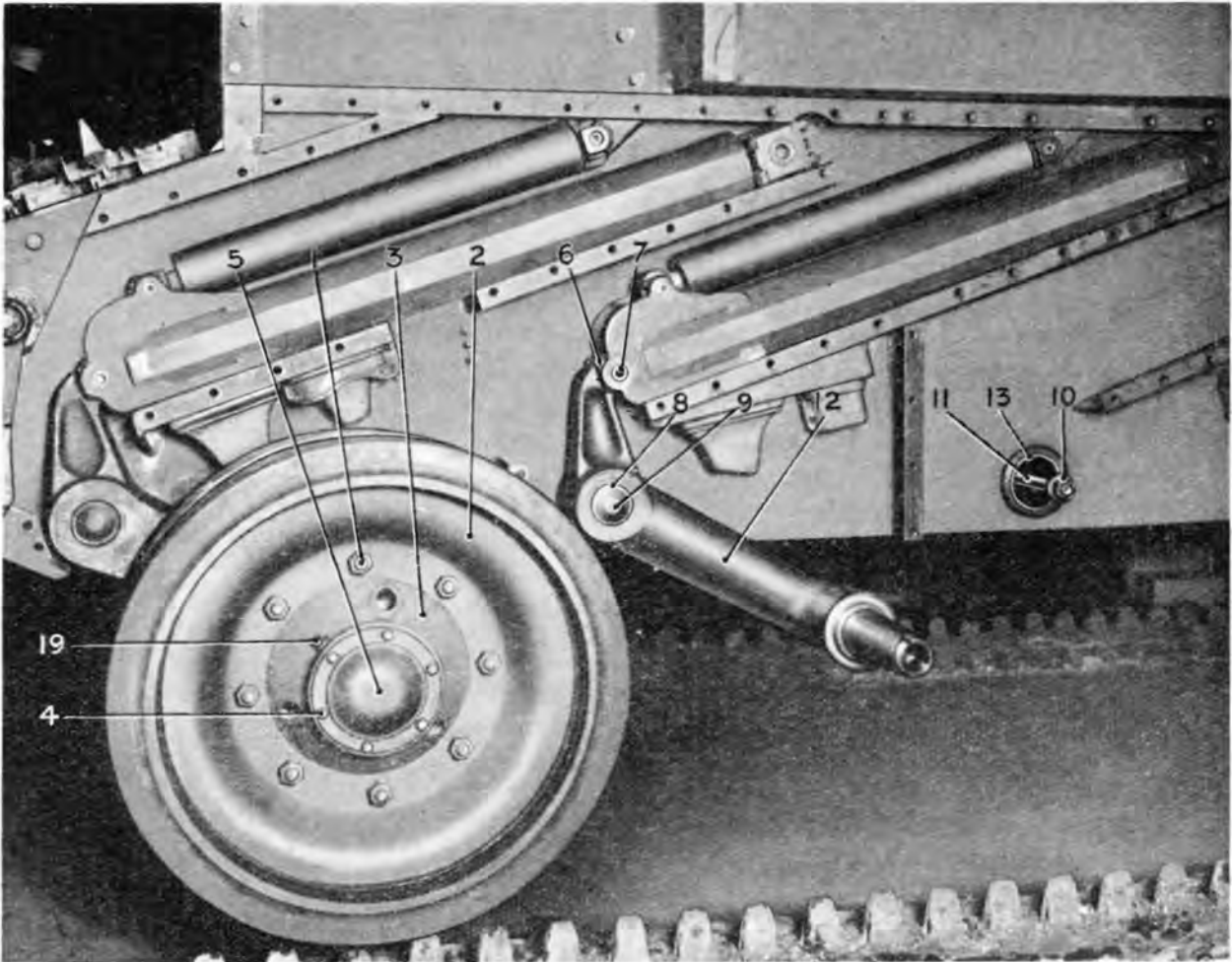


Fig. 27X.—Road wheels and pivoting axle arms.

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|------------------------------------|-----------------------------------|
| 1. Nut securing road wheel to hub. | 8. Circlip. |
| 2. Road wheel. | 9. Pivot axle end cover. |
| 3. Hub. | 10. Slotted nut. |
| 4. Bolt securing cover to hub. | 11. Retaining bar. |
| 5. Hub cover. | 12. Axle arm. |
| 6. Bolt securing axle arm pin. | 13. Cross tube. |
| 7. Axle arm pin. | 19. Road wheel grease lubricator. |

(b) **Replacement in Hull.**

1. Before replacing the axle arm, check that the oil feed is working correctly by depressing the clutch pedal several times to operate the pump.
2. Replace the axle arm (12) in the cross tube (13), not forgetting to fit the thrust washer and hull seal.
3. Replace the nut (10) on the retaining bar (11), tighten, and fit a new split pin.
4. Replace the dished cover (9) on the end of the axle arm (12), and retain with the circlip (8).
5. Replace the axle arm pin (7) and lock in position with the $\frac{3}{8}$ in. bolt (6).
6. Replace the side armour plating (see Chapter VI "X", Section 1, Page 91X).
7. Replace the road wheels (see Chapter III "X", Section 4, Pages 47X and 49X).
8. Jack up the vehicle, remove the wooden blocks and lower the vehicle on to the tracks.
9. Replace the tracks (see Chapter III "X", Section 5, Page 51X).
10. Replace the trackguards (see Chapter VI "X", Section 1, Page 91X).
11. Refill the axle arm pivots with oil after assembly (see Lubrication Chart on Page 259Y). Check that the hull seal retains the oil.

(1) PARTIAL STRIP AND OVERHAUL.

Note.—(1) The following instructions are applicable to both the single and two-piece block.

(2) Removal of cylinder liners, valve seat inserts, valve guides and sparking plug adaptors is specialised work (*see note under heading of Chapter I "Y", Section 1, Page 9Y*).

A.—Examining the Cylinder Block.**(i) Examining the Cylinder Liners.**

1. Examine the bore of the liner for wear or pitting and see that the internal plating is free from signs of cracking, peeling or corrosion.
2. Check the diameter of the liner bore in four positions around its circumference, taking two measurements at right angles to and two parallel to the crankshaft axis, at several points in the length.
3. Pay special attention to the region of the maximum upward travel of the top piston ring, this being the position of maximum wear.
4. A Mercer gauge or other suitable measuring instrument capable of reading to 0.0001 in. should be employed for checking the diameters.
5. Where readings are recorded outside the limits specified in the "Lists of Fits and Clearances", either for wear or ovality, the block and liners will be subjected to reclamation scheme action (*see note under heading of Chapter I "Y", Section 1, Page 9Y*).

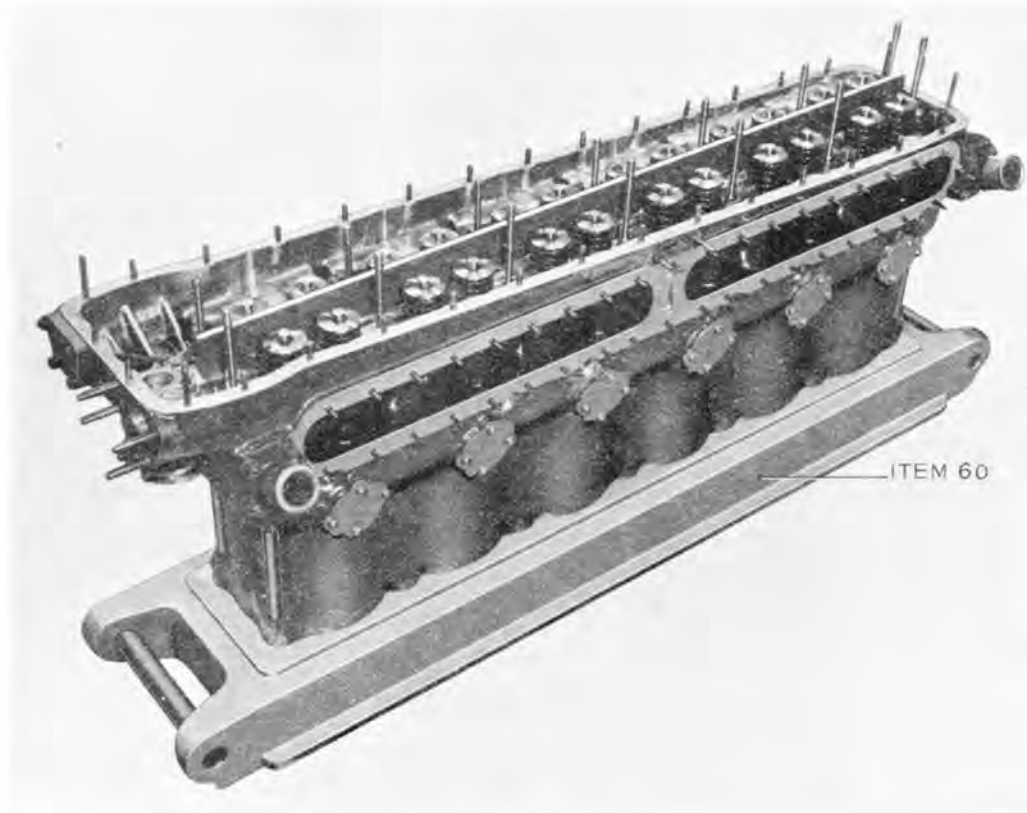


Fig. 24Y.—Cylinder block bowing test.

(ii) Preliminary Examination of the Combustion Chambers.

Before proceeding further with what may prove to be an unserviceable block, scrape away the carbon from the surface of the combustion chamber, between the valve seat inserts and, with the aid of a lamp, examine the block for cracks, particularly between the inserts for the inlet valve seats. If any cracks are visible from the ports, the cylinder block will become subject to reclamation scheme action and must be dealt with accordingly (*see note under Chapter I "Y", Section 1, page 9Y*).

(iii) Checking the Cylinder Block for Bowing.

The cylinder block should be tested for longitudinal bowing by one of the following methods. If the bowing exceeds the amount specified in the "Lists of Fits and Clearances" on page 238Y, the cylinder block should be reclaimed in accordance with the instructions contained in the Reclamation Data Book. The test consists