SECTION O

BODYWORK

Section No. O.1.	Maintenance and adjustments
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Section No. O.3.	Repair procedure
Section No. O.4.	Welding methods
Section No. O.5.	Welding technique
Section No. O.6.	Torch-soldering
End of section	Body Illustrations

Section O.1

MAINTENANCE AND ADJUSTMENTS

Synthetic Enamel

A synthetic enamel requires frequent washing to retain the high degree of finish and a good emulsion polish, occasionally applied, is sufficient to preserve the paintwork. Never use a liquid wax polish on synthetic enamel.

Chromium

Plated parts should be cleaned with a damp leather. If very dirty wash the chrome with warm soapy water, but on no account use metal polish.

Door Locks and Hinges

Occasionally apply a few drops of oil on the moving parts of all door locks and hinges. A light touch of grease should be smeared on the lock stricker plates to ensure free movement and reduce wear of the locks.

In addition, the security of door hinges, locks, dovetails and striker plate should be checked periodically with a screwdriver.

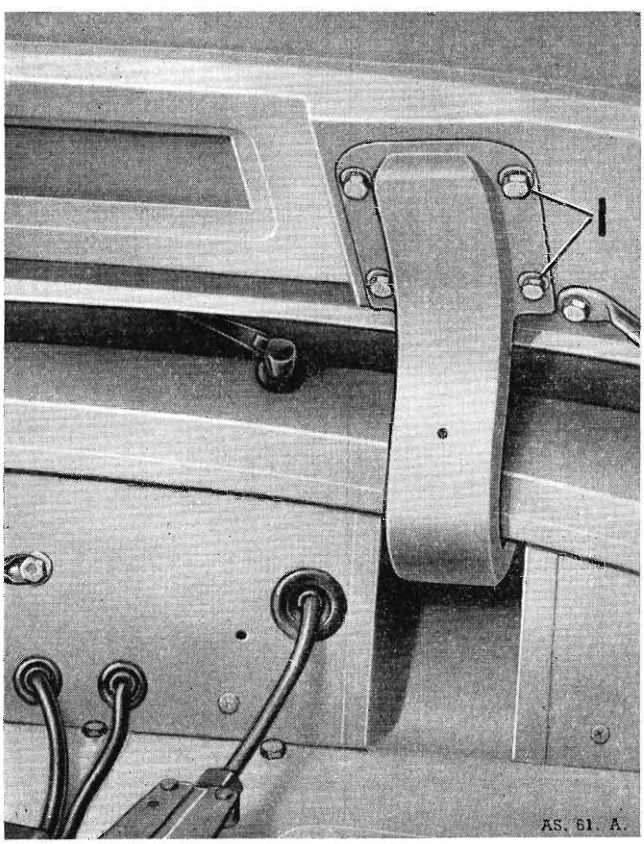


Fig. O.1. The bonnet to hinge setpins are shown at (1).

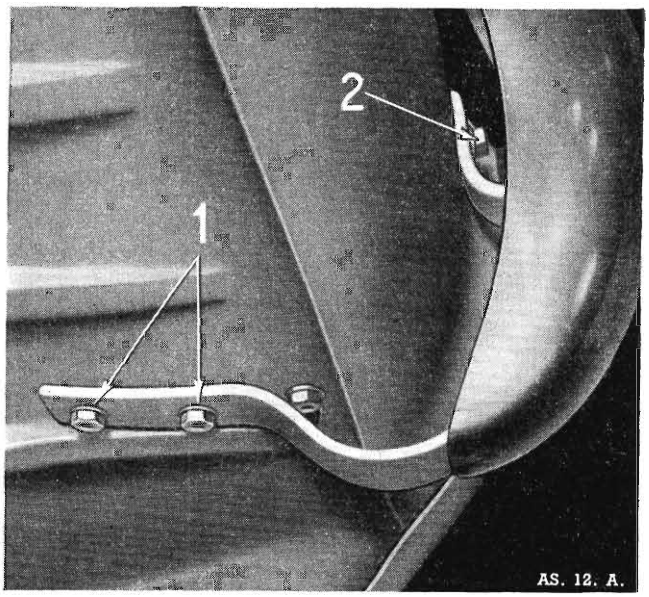


Fig. O.2. Rear bumper securing points (1 *and* 2).

Windows

Windscreen, sidescreens, rear window and driving mirror should be cleaned with a damp leather.

Section O.2

DISMANTLING

Bonnet Top

Removal of the bonnet top necessitates the disconnection of the wiring harness which feeds the headlamps, side lamps and flashing indicators, all mounted on the bonnet.

Remove the earth terminal of the battery and disconnect the harness at the snap connectors (four double and two single) situated alongside the right-hand bonnet hinge.

The harness should also be released at its connection with the hinge itself. Unscrew the setpin at the top of each telescopic stay.

Withdraw the four setpins securing each hinge to the undersite of the bonnet (Fig. O.1) when the bonnet can be lifted clear of the car.

Note: The two inside setpins on each bonnet hinge are longer than the outside pair.

Grille

The grille is secured by thirteen spring clips each easily accessible when the bonnet is raised.

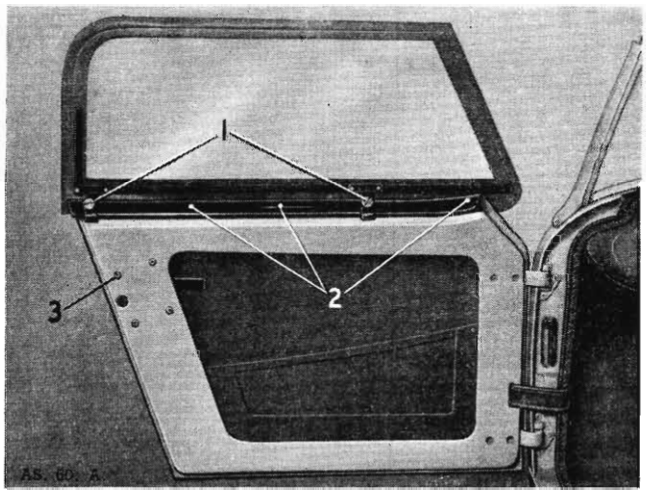


Fig. O.3. The sidescreen, top moulding and door lock fixings are shown at 1, 2, and 3 respectively.

Bonnet Lock

Raise the bonnet and detach the lock handle by unscrewing its securing pin situated on the opposite side of the lock.

Withdraw the four lock mounting setscrews and remove the lock together with its two locking rods.

Bumpers

Rear: Each rear bumper is secured at the points 1 and 2 shown in Fig. O.2.

Front: The front bumper is released by unscrewing the two setpins mounted on each box section end of the body reinforcement.

Sidescreens

Each sidescreen has two clamping brackets at its base which are held by two large headed screws (1, Fig. O.3) at the door top moulding.

Doors

Hinges and Door Removal: Both the upper and lower hinge of each door is secured to the door pillar by three cross-head screws. At the door frame each hinge is fixed by two cross-head screws (Fig. O.4).

There is a check strap fitted to each door which must be released when dismantling a door from the bodywork. This check strap can be released by withdrawing the two setpins from the coupling bracket in the inside of the door pillar. Thus with the door wide open, the hinges can readily be uncoupled from the door pillar and the door and hinges removed.

Door Top Moulding: The aluminium moulding at each top edge is held in place by three cross-head screws, Fig. O.3.

Door Catch: The catch and operating handle complete may be withdrawn by unscrewing the four setscrews positioned inside the door, Fig. O.3.

Windscreen

The windscreen is secured at each side pillar by three cross-head screws (Fig. O.5). The pillars themselves are attached to the scuttle by one cross-head setpin and one bolt, the nut for which is accessible when the door is open.

Cockpit Mouldings

The front and rear cockpit mouldings are secured by nine and eleven cross-head screws respectively.

Facia Panel

Remove the steering wheel as described in Section J. Along the top edge of the facia are three securing

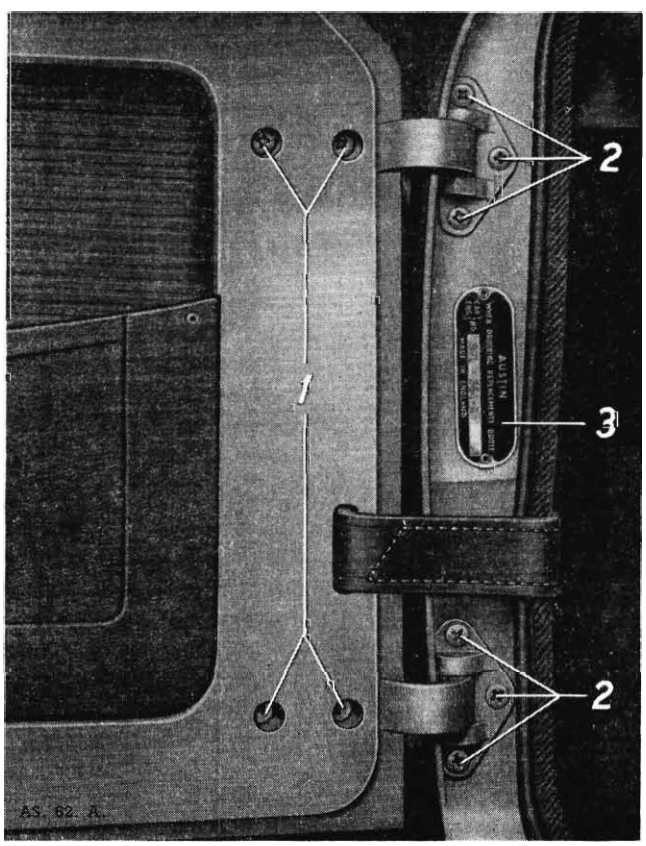


Fig. O.4. Door hinges.

1. *Door to hinge screws.* 2. *Hinge to pillar screws.*
3. *Car/engine serial number.*

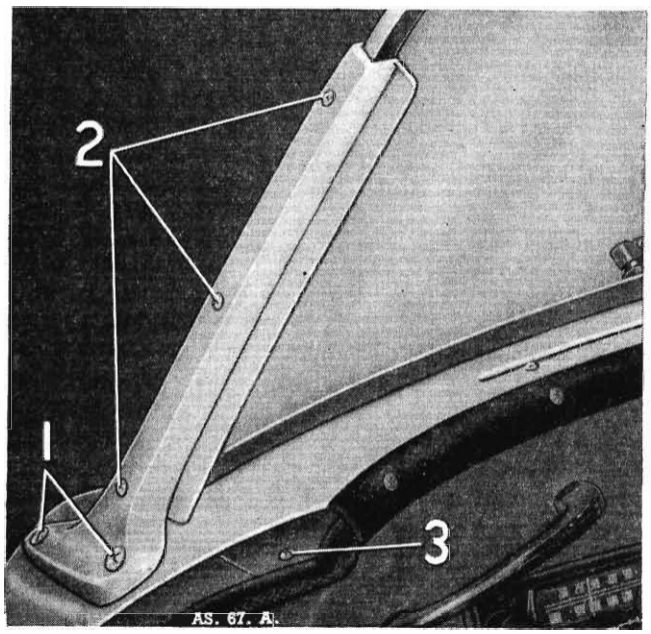


Fig. O.5. Windscreen pillar and fascia.
1. *Pillar to body screws.* 2. *Windscreen to pillar screws.*
3. *Fascia screw.*

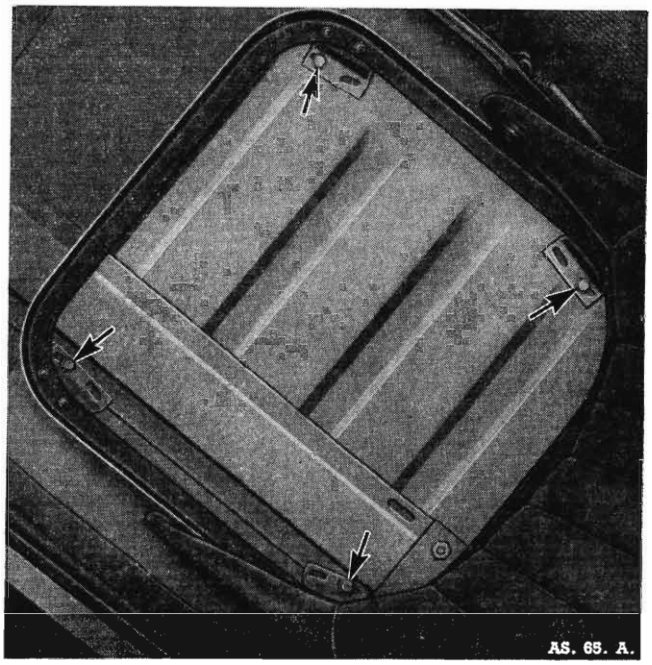


Fig. O.6. Seat frame securing points.

points, one nut and bolt in each corner and one nut at the centre.

Two cross-head screws secure the fascia at its bottom edge together with the three setscrews behind the steering column surround.

Unscrew the speedometer and tachometer drives at their instrument unions and disconnect the oil pressure pipe from behind the combined oil pressure and water temperature gauge. It is advisable to withdraw the water thermal element at its connection with the radiator.

Release the starter and choke cables when the fascia can be brought forward into the cockpit thus giving access to the rear of each instrument.

Grab Handle

The passenger grab handle is fixed to the fascia panel by two studs. The securing nuts being situated behind the panel.

Seats

To remove the passenger's seat the cushion must be lifted whereupon eight nuts are accessible. These nuts must be unscrewed to release the seat frame, Fig. O.6.

The adjustment of the seat can be carried out after slackening the four floor setpins.

For the driver an adjustable driving seat is provided for forward or rearward positioning by pushing the lever beneath the seat, toward the runner then moving the seat to the required setting and releasing the lever.

Lift out the seat cushion to gain access to the four nuts securing the seat to the runners.

The seat runners, with their packing pieces, are bolted to the floor, each runner having two bolts with nuts accessible beneath the floor.

Section O.3

REPAIR PROCEDURE

Body jack

The specially designed body jack, obtainable under 18G 308, is an absolutely essential item when rectifying any misalignment of the body construction. The jack is provided with a ratchet turnscrew, and the pitch of the centre spindle thread is such that considerable force (either pulling or pushing) can be exerted. The extension pieces are made from solid drawn steel tubes and their lengths are such that the effective length of the jack can be made to vary between 21 and 94 in. (533 and 2388 mm.).

Considerable thought has been given to their construction and design, and careful study of the equipment will be amply repaid.

The body jack is supplied by the B.M.C. Service Department at current prices. A metal box in which the jack and its components can be neatly stored is supplied with the jack.

With the addition of a suitable oxy-acetylene outfit (Section O.5) any type of mono-construction repair can be effected. The initial outlay need only be small, and, considering the wide range of operations covered, there should be no hesitation in deciding that the kit must figure as part of the equipment of your repair shop.

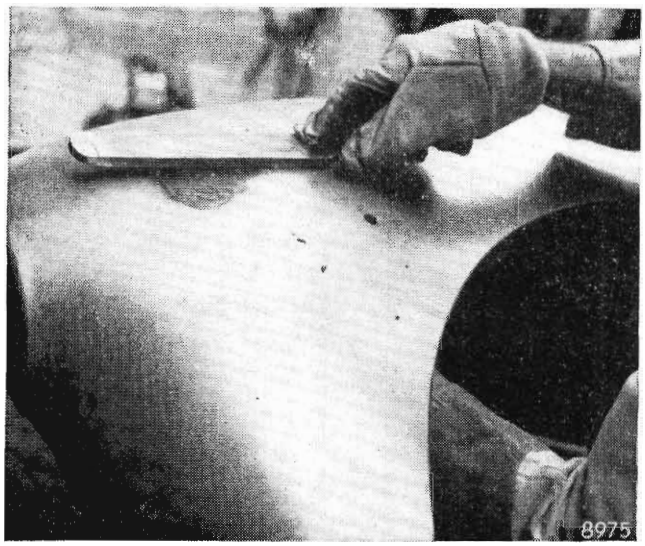


Fig. O.7. Removing a dent by tapping with a spoon; a dolly is held below the dent.

Rectification of buckled panels or underframe

Experience will prove that parts of the body which at first sight would be considered beyond repair can be rectified easily by straightening.

It is of paramount importance to return the damaged portion of the body to its original position before deciding whether replacement panels are necessary or not.

With the use of the special jack this method enables a buckled or damaged structure to be returned to its original relative position without straining the surrounding metal, which would be the inevitable result if the damaged portion were pounded by means of a hammer. At this stage a decision can be reached as to whether any damaged panel is to be repaired or renewed.

Spoon for removal of small dents

To remove small dents a spoon which is made from a coarse-cut file, specially shaped and having the teeth

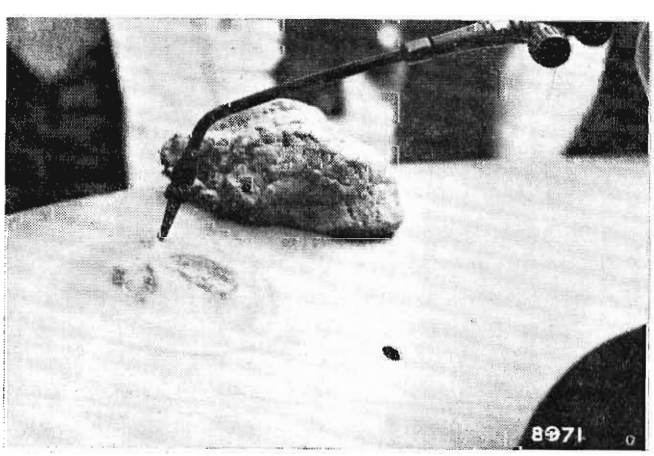


Fig. O.8. Application of heat prior to tapping with a mallet; a dolly is held below the dent while tapping.

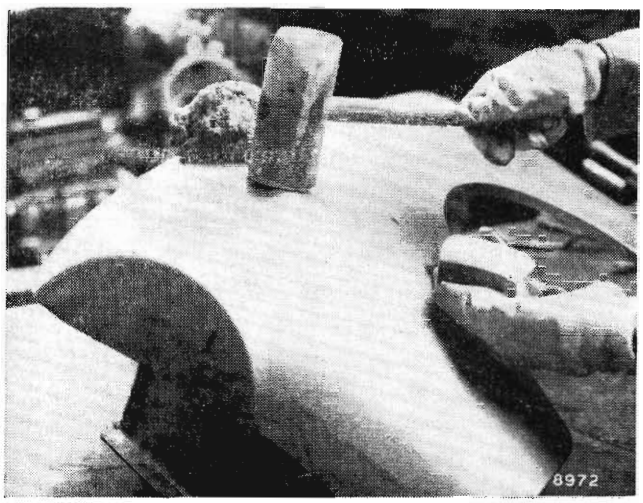


Fig. O.9. A dolly block and mallet.

intact, is used in conjunction with a suitably shaped dolly block (Fig. O.7).

The use of a hammer to remove small dents is to be deprecated, as hammer blows tend to stretch the surrounding metal, giving rise to further complications. It is for this reason that the spoon is recommended, as by its use a depression can be raised to its original level without stretching.

On panel work such as doors, or where inside reinforcements prevent the use of a dolly block, a hole can be punched or drilled through the inside panel and a suitable drift pin, about $\frac{1}{2}$ in. (13 mm.) in diameter, used in conjunction with the spoon in place of the dolly block.

Sharper dents or a dent or collection of dents covering a large area will require the use of heat, a dolly, and a spoon in the following manner (Fig. O.8).

With the welding torch heat a small area at the outside of the collection of dents, then, holding the dolly below, hammer the raised portion with a wooden

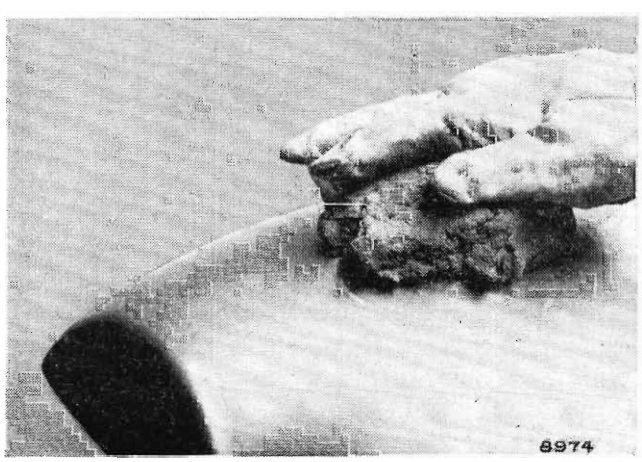


Fig. O.10. Cooling the damaged area with wet asbestos.

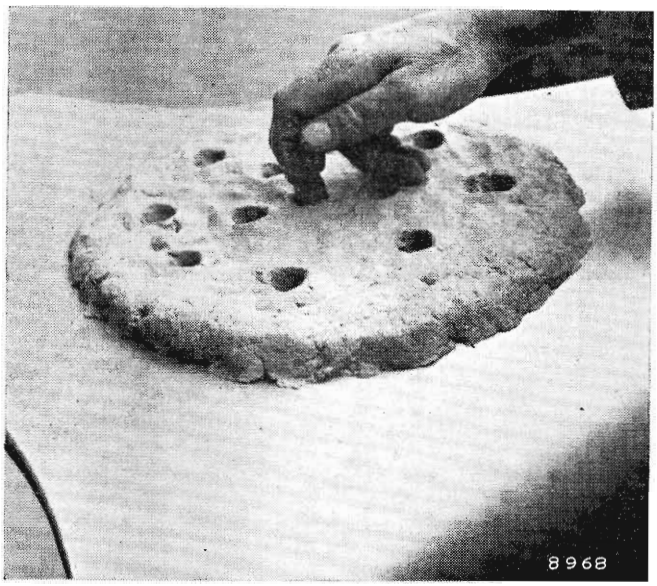


Fig. O.11. Piercing a series of holes in wet asbestos prior to the application of heat.

mallet (Fig. O.9). When the metal cools remove the dolly and place a large handful of wet asbestos over the heated area to prevent the heat spreading (Fig. O.10). Continue to heat and tap, working from the outside of the damaged area, until something like the original contour and level is attained.

Lightly file the surface to show up the high-spots and remove these with the dolly and spoon without further heating.

Take care when using the file not to thin the metal more than is necessary to show up the high-spots.

Alternative checking by filing and raising with the dolly block and spoon will eventually produce a flat and clean surface without weakening the metal unduly, provided excessive filing is avoided. Care should be exercised to reduce filing to a minimum as otherwise the thickness of the panel will be seriously reduced.

On completion, the surface may be tinned and any small indentations filled with plumber's solder.

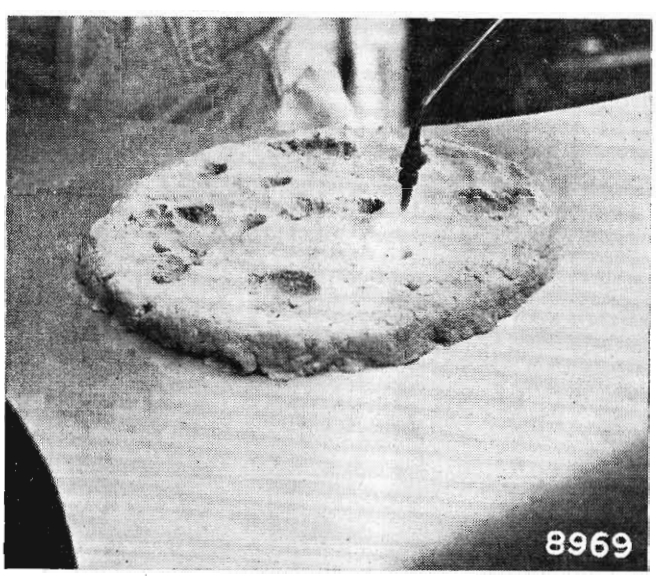


Fig. O.12. Heating the stretched panel through holes in the asbestos.

Preservation of paintwork

A special spoon, having the teeth removed and its surface planished and polished, is required to enable small dents to be removed without damage to paintwork. Where it is possible to preserve paintwork when rectifying comparatively large dents a sandbag should be placed against the painted surface of the panel and the dent removed from the underside by the use of a wooden mallet. A suitable sandbag for this operation may be made from a leather oval bag 8 in. (203 mm.) long, 6 in. (152 mm.) wide, and 4 in. (102 mm.) thick which is packed tightly with sand.

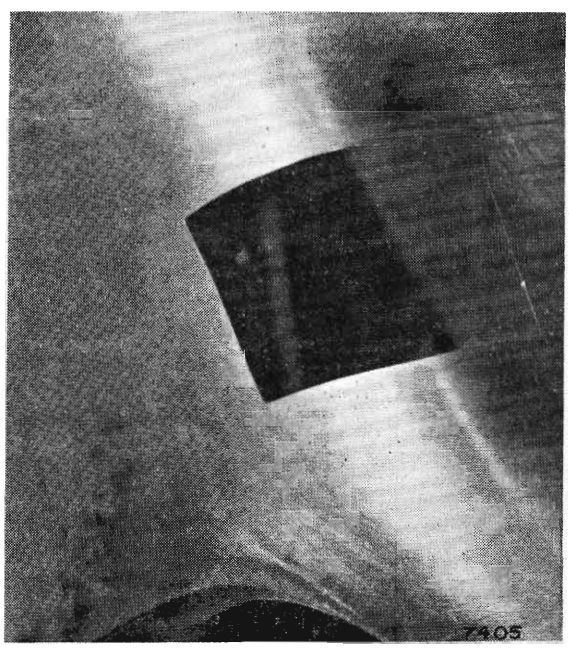


Fig. O.13. A damaged piece removed for patching.

Stretched panels

Stretched panels which are liable to cause drumming can be rectified by local shrinking. A liberal heap of wet asbestos is placed over the stretched panel at the point of greatest resiliency, and a hole just large enough to apply the flame of the oxy-acetylene torch is made with a finger through the centre of the asbestos. The portion of the panel which is visible is heated to a cherry-red colour and is afterwards cooled off by the wet asbestos which surrounds it. For large panels it may be necessary to repeat this operation several times at different locations over the area.

Where a panel is stretched over a fairly extensive area and produces what is known as an 'oilcan' effect the following shrinking method should be used to restore the original contour.

Mix a quantity of wet asbestos sufficient to cover the damaged area with a thickness as shown in Fig. O.11. Press the asbestos down firmly to ensure that no air is trapped below, as it is important to confine the applied heat to the points of application.

With a finger pierce a series of holes in the asbestos extending to the surface of the metal. Direct the flame of the welding torch to one of the holes near the perimeter of the asbestos and heat the metal to cherry red, remove the torch, and immediately press the surrounding asbestos into the hole (Fig. O.12).

Carry out the same procedure with the remaining holes, working around the asbestos and inwards towards the centre. When the asbestos is removed the surface is cleaned up in the usual manner.

Patching

An extensively damaged panel can frequently be repaired quite satisfactorily and more economically by patching rather than by renewing the entire assembly. This type of repair does not in the least weaken the surrounding structure, as a patch which is correctly gas-welded in position is equal in strength to the original structure. A patch can be introduced so efficiently that it is impossible to trace its presence.

The damaged portion of the panel should be cut out with a cold chisel or, if possible, by means of a hack-saw. The edges of the opening should then be filed until an even contour is obtained (Fig. O.13).

The patch to be fitted should preferably be cut from sheet metal of similar gauge and specification to that being repaired. First, it is rough-shaped to the contour

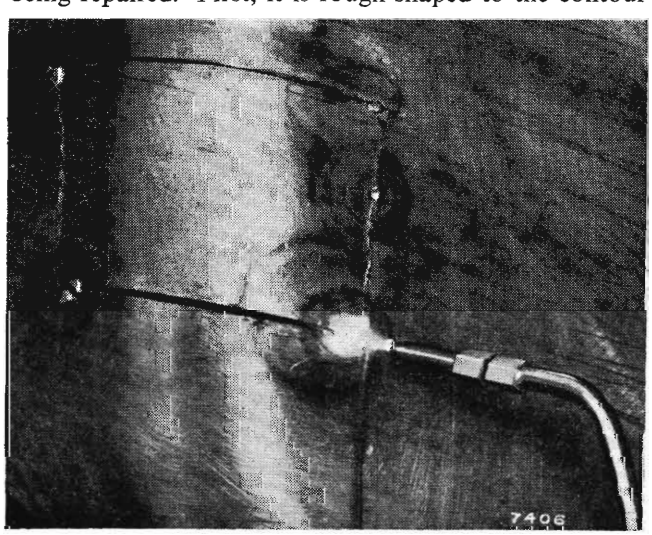


Fig. O.14. After the patch is formed it is held in position by gas-weld tacks.

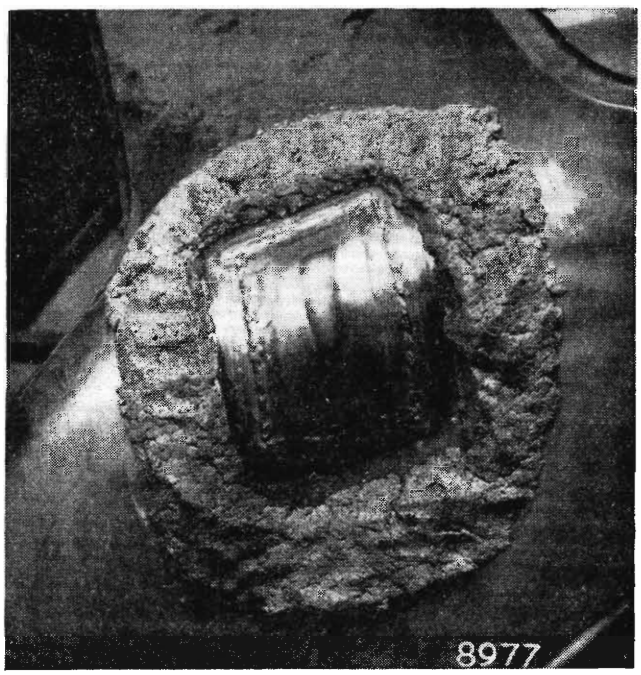


Fig. O.15. To prevent buckling of the surrounding metal during welding surround the joint with wet asbestos.

of the panel, after which it is fitted to the opening to allow a clearance on all sides equal to the gauge of the metal.

In all probability, particularly during welding operations, difficulty will be experienced in holding the patch in place. This can be overcome satisfactorily by welding one or two short pieces of welding wire to act as convenient handles.

The patch is now fastened at intervals of 2 to 3 in. (51 to 76 mm.) to the panel by means of gas-weld tacks (Fig. O.14). During the tacking operation it should be reshaped to the panel to ensure that the contour is correct.

To prevent expansion and possible buckling of the surrounding panel during the welding operation a liberal quantity of wet asbestos must be placed on the panel round the patch, approximately $\frac{1}{4}$ in. (6 mm.) away from the joint (Fig. O.15). The joint is now gas-welded between the tacks, whilst precautions are taken to keep the patch to the correct contour by using a suitable dolly block and bumping hammer. On completion, any excrescences in the welding are removed by filing and, after straightening with the dolly block and bumping hammer, the patching is finally finished by tinning and solder-filling as described in Section O.6.

Patch forming

Where it is necessary to 'form' a patch from the flat sheet to any particular contour a wooden or lead raising block is generally employed. The raising block

should have several elliptical depressions of varying depths and diameters.

The patch is placed over the selected depression and is raised by hammering with the ball-pane end of a hammer, starting from the outer edges and gradually working towards the centre. A mistake freqently made is to strike too hard whilst raising the centre, with the result that the curve is of greater depth than that required.

Repair of beadings and mouldings

Where difficulty is experienced in straightening or renewing a beading, moulding, or corner the original contour may be obtained by careful tinning and filling with plumber's solder. The finished work will be equal in appearance and equal in strength, whilst the substitution of soldering for straightening, or renewing, will save the necessity for removing inside trimmings, etc.

Filing

It should be clearly understood that in every case filing must be reduced to a minimum owing to the thinness of the material. Wrinkles or ridges should be removed by the spoon or dolly block, as explained on page O.4, and finished finally by tinning and solder-filling.

Replacing panels

In cases of extreme damage it will be found more economical to remove the damaged portions and replace them with new panels, which are obtainable from B.M.C. Service Ltd. The panels and assemblies which are available are illustrated on pages O.12, O.14 and O.16 and the part numbers are given in the current Service Parts List.

The illustrations show clearly the location and types of joints used in the construction of the body, and, following the instructions already given and the instructions to follow on welding, any portion of the body can be removed, either by a hacksaw or cold chisel, and a suitable replacement fitted in position.

Owing to the fact that damage is usually localized, it will only infrequently be found necessary to remove a complete panel or unit. In the great majority of cases the damaged portion can be removed and a corresponding part cut from a replacement unit and located in position by gas-welding.

Section O.4

WELDING METHODS

Spot-welds

This form of welding is used extensively throughout the assembly of the mono-construction body.

The units to be joined are pressed together between two copper electrodes through which an electric current of low voltage and high amperage is passed. The resistance of the steel to the electric current raises the metal to welding temperature and the pressure between the electrodes produces complete fusion. The resulting joint is as strong as the surrounding structure, and a correctly made spot-weld will not break or become loose by vibration.

Spot-welds cannot be broken satisfactorily by inserting a cold chisel or lever between the two panels. Each weld must be carefully drilled in the centre, using a drill approximately $\frac{3}{16}$ in. in diameter. There is no necessity to drill through both panels as it is sufficient if the point of the drill merely penetrates the second panel. The weld is finally broken by inserting a thin, sharp, cold chisel between the joint and tapping it lightly with a hammer.

On panels where the spot-welds are covered by paint it is necessary to use a suitable paint remover to clean the paint from the joints. The spot-welds will easily be located by the discolouration of the metal. Reference to the body build-up illustrations will facilitate tracing the various joints.

Gas-welds

A gas-weld may be broken either by cutting with a hacksaw or, alternatively, with a sharp cold chisel. Place a suitable support at the back of the panel to act as an anvil whenever possible.

Lap-welds

Most lap-welds used in the mono-construction body are hidden from view by solder-filling. Reference should be made to the illustrations showing the build-up of the body in order to obtain the location of the various lap joints. This will enable the operator to direct the flame of the oxy-acetylene blowpipe onto the joint so that the solder filling can be melted and removed by the use of a duster. A lap-weld is broken by drilling out the spot-welds as previously explained.

Butt-welds

A butt-weld can be broken by the use of a hammer and chisel, the blows being directed against the panel which is to be renewed. If this method does not quickly break the weld heat applied from the oxy-acetylene torch will soften the fused edges, thus assisting the operation. Alternatively, the joint may be cut by a hacksaw.

Remaking welds

The special section of this Manual devoted to welding should be studied carefully before any attempt is made to reweld a joint on the body by an operator

who has not had the necessary experience in this class of work.

When a joint is remade it is necessary, prior to painting, to clean the surface of the weld. During this operation, as previously mentioned, care should be taken to see that the structure is not unnecessarily weakened by excessive grinding or filing. It is preferable to hammer the joint so that it lies slightly lower than the surrounding metal and to flow solder into the depression. No amount of filing on the surface of the solder can reduce the strength of the joint below (See Section O.6).

When placing a new panel in position it should be joined where possible by gas-welding through the holes drilled in breaking the original spot-welds. During the welding operations a liberal heap of wet asbestos should be placed over the surrounding panels to prevent buckling and distortion due to heat.

Section O.5

WELDING TECHNIQUE

The following applies to equipment supplied by the British Oxygen Co. Ltd., although it also applies, in the main, to other similar equipment.

Welding equipment

High-pressure oxy-acetylene welding equipment using dissolved acetylene is recommended. This consists of:

(1) Supply of acetylene in cylinders.
(2) Supply of oxygen in cylinders.

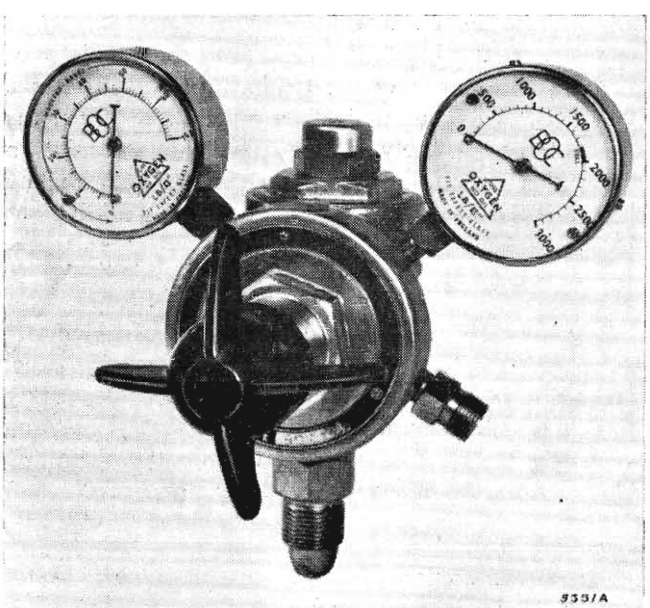


Fig. O.16. Type B.O.R.12A two-stage oxygen regulator.

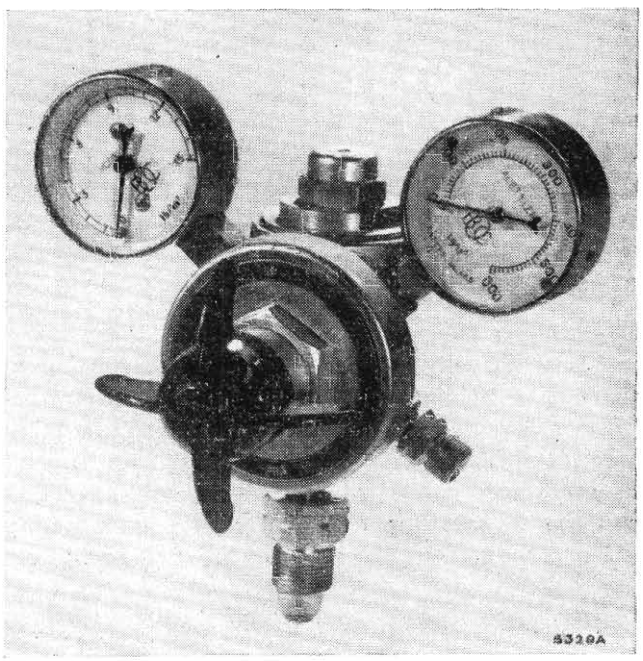


Fig. O.17. Type B.A.R.9 two-stage acetylene regulator.

(3) Blowpipe with necessary nozzles.
(4) Acetylene pressure regulator.
(5) Oxygen pressure regulator.
(6) Two lengths of rubber-canvas hose.
(7) Set of spanners and spindle key.
(8) Welding goggles and spark lighter.
(9) Welding rods.
(10) Welding fluxes.
(11) Trolley for accommodating complete equipment and cylinders.

Assembly

(1) Stand both cylinders vertically on the ground or on a trolley. Oxygen cylinders are painted BLACK. Acetylene cylinders are painted MAROON. **Never** attempt to interfere with the colour of cylinders or to repaint them.
(2) See that jointing surfaces in cylinder valves and regulators are free from oil and grease.
(3) Open the valve on the oxygen cylinder momentarily in order to dislodge dirt or other obstruction in the cylinder valve, then close.
(4) Screw the oxygen regulator (painted BLACK) (Fig. O.16) into the oxygen cylinder valve. The oxygen cylinder valve outlet and oxygen regulator connection have **right-hand** screw threads.
(5) Screw the acetylene regulator (painted MAROON) (Fig. O.17) into the acetylene cylinder valve. The acetylene cylinder valve outlet and acetylene regulator connection have **left-hand** screw threads.

(6) Tighten the regulator in the cylinder valve. Do not use excessive force, but make certain that the joints are gastight.

(7) Connect the hose (acetylene RED, oxygen BLACK) to the screwed outlets of the regulators by means of the screwed connections secured in the ends of the hose. Blow the hose through before attaching to the regulator or blowpipe in order to remove dust and dirt and to remove chalk when the hose is new.

(8) Connect the other end of the hose, that fitted with a hose protector, to the blowpipe—the acetylene hose to the connection marked 'A', the oxygen to the connection marked 'O'. Keep the blowpipe control valves closed. (A high- or low-pressure blowpipe can be used with the dissolved acetylene. If a low-pressure blowpipe is used the acetylene pressure should never exceed 2 lb./sq. in. [·14 kg./cm.^{2}].)

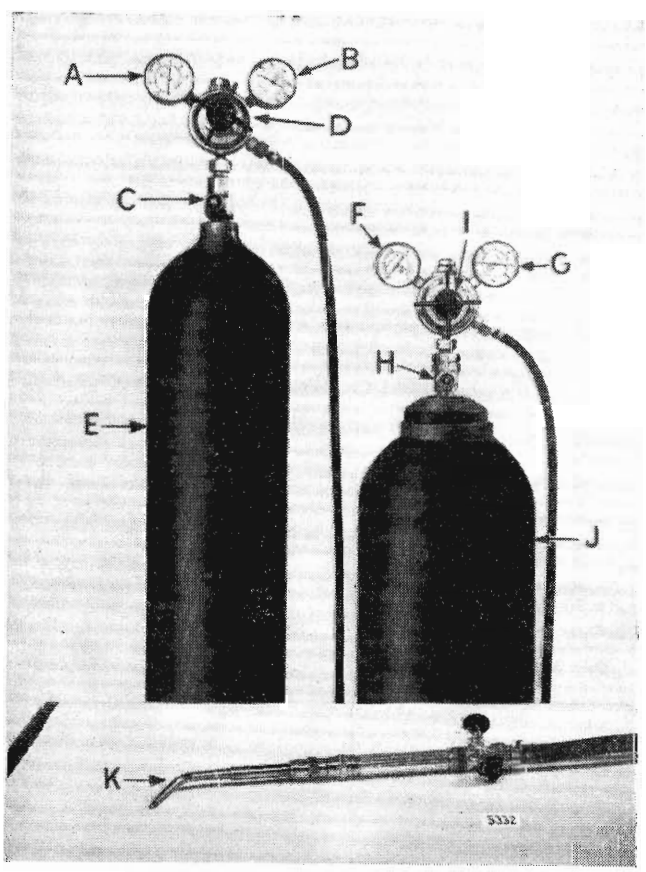


Fig. O.18. High-pressure oxy-acetylene welding outfit.

A. Outlet pressure gauge (O).
B. Cylinder contents gauge (O).
C. Valve.
D. Pressure regulating screw.
E. Oxygen cylinder (BLACK).
F. Outlet pressure gauge (A).
G. Cylinder contents gauge (A).
H. Valve.
I. Pressure regulating screw.
J. Acetylene cylinder (MAROON).
K. Blowpipe (interchangeable nozzles).



Fig. O.19. The welding blowpipe.

(9) Fix the appropriate nozzle to the blowpipe. (See the table, page O.10.)

(10) Open the cylinder valves very slowly by means of the cylinder key. Do not open suddenly, or there may be serious damage to the regulator and the possibility of an accident. Open the cylinder valve spindle one turn only.

(11) Set the regulators at the correct working pressures. (See the table, page O.10.)

(12) Open the acetylene control valve on the blowpipe, wait a few seconds until air is blown out and pure acetylene is coming from the blowpipe nozzle, then light, preferably by means of a spark lighter, type S.L.I.

(13) Reduce or increase the acetylene supply by the blowpipe valve until the flame just ceases to smoke.

(14) Turn on the oxygen by the blowpipe control valve until the white inner cone in the flame is sharply defined, with the merest trace of an acetylene haze.

The blowpipe is now adjusted for welding steel, and work may be commenced.

The size of nozzle given for a particular thickness of steel is for general guidance only and will vary according to the skill of the welder, mass of metal, etc. The capacity of each nozzle overlaps the capacities of those next in size to it. The values given are for down-hand butt-welds in mild steel. For other techniques nozzle size and pressure may have to be varied slightly, e.g. for copper select a larger nozzle, for aluminium a smaller nozzle.

On thin-gauge steel up to and including $\frac{1}{16}$ in. thickness tacks should be slightly closer together—say, 1 to $1\frac{1}{2}$ in. (25 to 38 mm.) apart—to keep the edges in alignment and minimize distortion.

For the same reason patches should, wherever possible, be oval or circular. Before welding, these should be slightly 'dished' below the level of the surface to be patched, since welding—even by the correct 'sequence'—will cause them to expand and rise.

WELDING
HIGH-PRESSURE BLOWPIPES
Nozzle Sizes, Working Pressures, and Gas Consumptions for Various Metal Thicknesses

M.S. plate thickness		*Nozzle size*	*Regulator pressures, oxygen and acetylene Saffire equipment*		*Approximate consumption of each gas*	
in.	*mm.*		*lb./sq. in.*	*kg./cm.²*	*cu. ft./hr.*	*m.³/hr.*
1/32	·79	1	2	·141	1	·028
3/64	1·19	2	2	·141	2	·056
1/16	1·58	3	2	·141	3	·084
3/32	2·38	5	2	·141	5	·140
1/8	3·17	7	2	·141	7	·196
5/32	3·96	10	3	·211	10	·283
3/16	4·76	13	3	·211	13	·367
1/4	6·35	18	3	·211	18	·504
5/16	7·93	25	4	·281	25	·700

Do not light the blowpipe until everything else has been prepared for welding in accordance with the instructions given above. On completion of the job proceed as follows:

(1) Turn off the **acetylene** first by the blowpipe control valve, and then the oxygen.
(2) Close the cylinder valves.
(3) Open the blowpipe valves one at a time to release the pressure in the hose—open the oxygen valve and shut it open the acetylene valve and shut it.
(4) Unscrew the pressure regulating screws on the oxygen and acetylene regulators.
(5) In the case of **backfire** turn of the **oxygen** first.

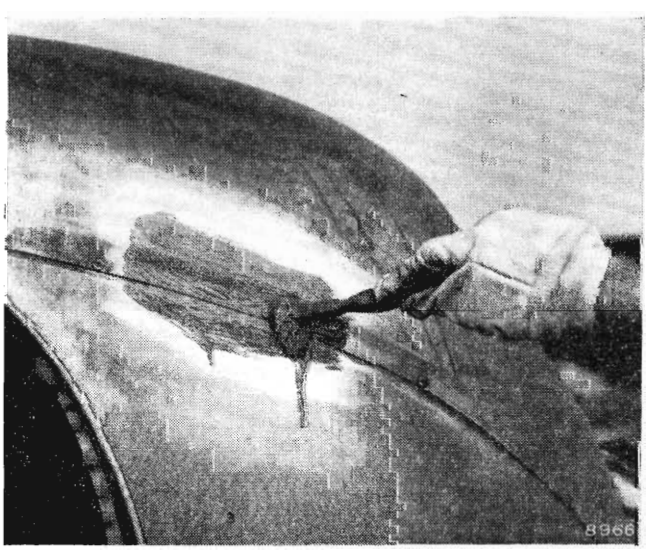


Fig. O.20. Painting the hollow area with flux.

Section O.6

TORCH-SOLDERING

Torch-soldering is the method employed to obtain the desired contour of a panel without weakening the structure and with the minimum amount of straightening, filing, and polishing.

The solder used is an alloy of lead and tin. Lead melts at a temperature of 621° F. (327° C.) and tin at 450° F. (232° C.). Alloys of the two metals change from a solid to a liquid state over this range of temperature within which they are in a plastic condition. The alloys used for torch-soldering are known as tinman's solder (which contains 60 per cent. lead and 40 per cent. tin) and plumber's solder (which contains 70 per cent. lead and 30 per cent. tin). Tinman's solder, as a result of its

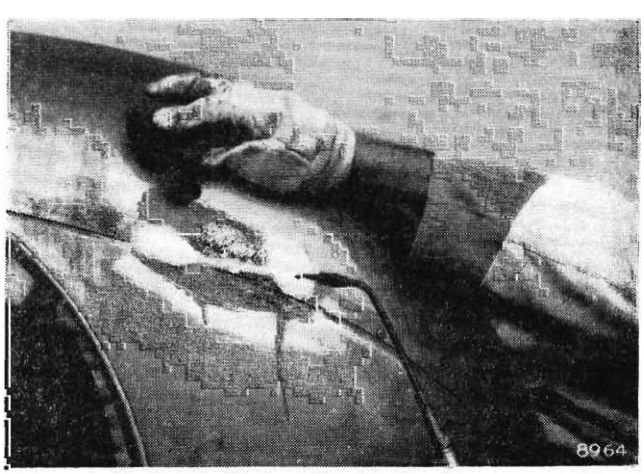


Fig. O.21. Tinning by heating the flux-painted area.

higher tin content, alloys more readily with the surface of the sheet steel and is applied as a 'base' to which the plumber's solder adheres firmly. Plumber's solder remains plastic over a wide range of temperature (from 509 to 358° F. [265 to 181° C.]), and within this range can be moulded to any desired shape. For this reason it is used to obtain the required contours.

Where it is desired to build up a contour with solder the surface of the steel must first of all be cleaned thoroughly. Rust, scale, welding oxide, or any other impurity must be removed by means of a wire brush, file, and emery-cloth. A polishing wheel, if available, is useful for this operation.

The surface of the metal is heated gently with a blowlamp or gas-torch, and soldering flux applied with a brush. (See Fig. O.20.)

The flux will melt and act upon the heated surface so that when tinman's solder is applied and rubbed with a wad of hemp the metal will become evenly coated with a thin layer of solder, or 'tinned' (Fig. O.21). The secret of successful torch-soldering lies in the thoroughness with which the tinning operation is carried out as it is the foundation on which the plumber's solder is to be built up.

A second application of flux should be made and gently heated by means of the torch. When wiped by the wad of hemp the entire surface of the metal should have a spotlessly clean and bright appearance.

Plumber's solder is now melted onto the surface (Fig. O.22) and maintained by careful use of the torch in the plastic condition whilst it is moulded to the desired contour with a hardwood paddle coated with palm oil (Fig. O.23). During the moulding operation frequent immersion of the paddle in palm oil assists in the manipulation of the solder. If palm oil is not available boiled linseed, lard, or machine oil will be found satisfactory.

The final contour is obtained by filing or, if available, by the use of a polishing wheel, If the work is carefully carried out it should be impossible to trace the presence of the filling.

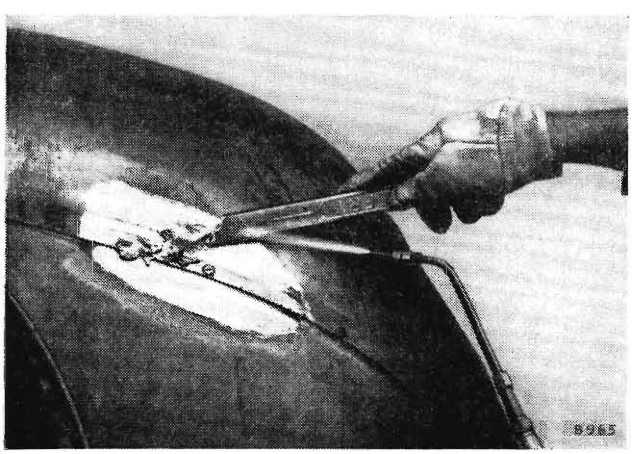
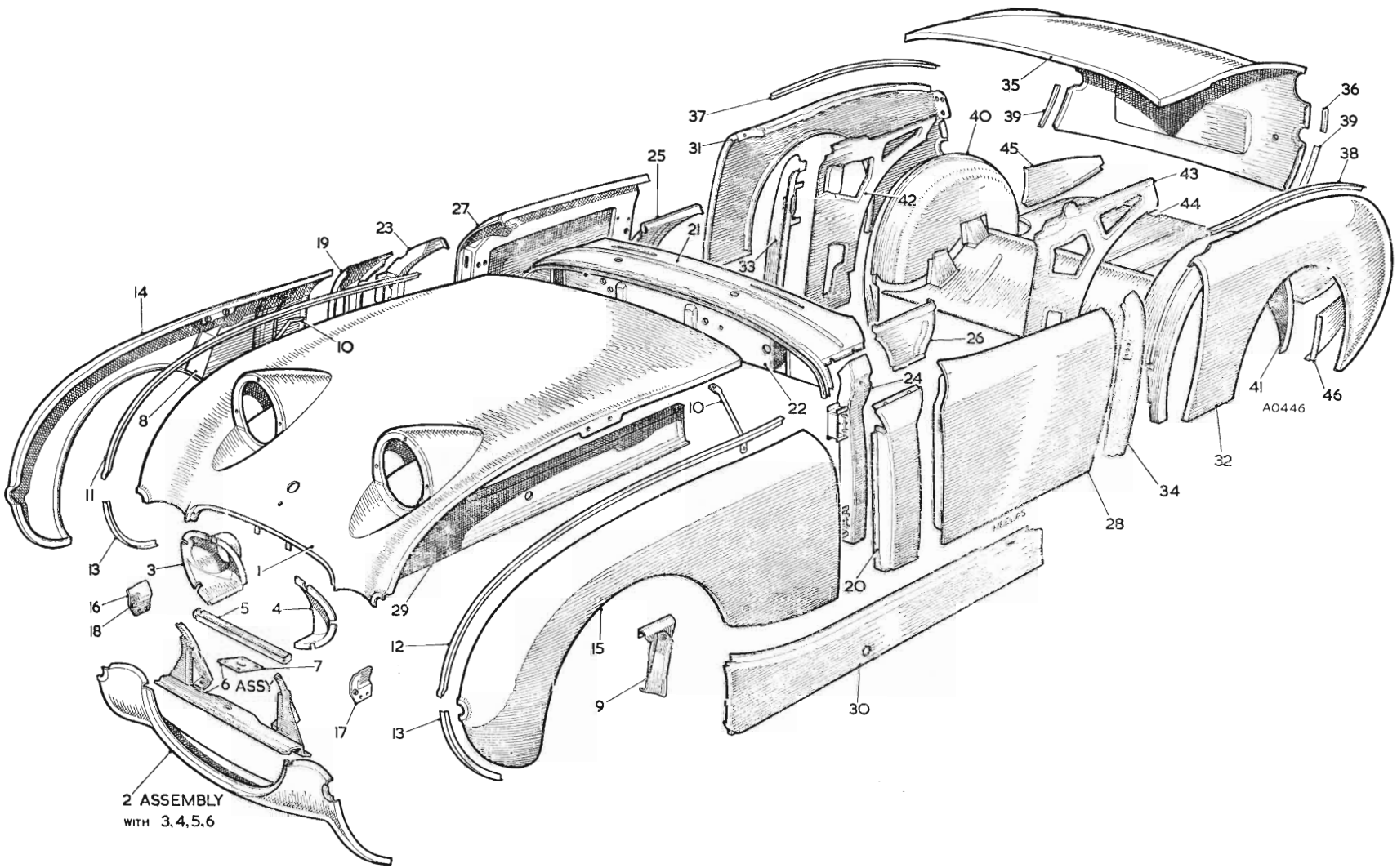


Fig. O.22. Applying the solder.



Fig. O.23. Spreading the solder.

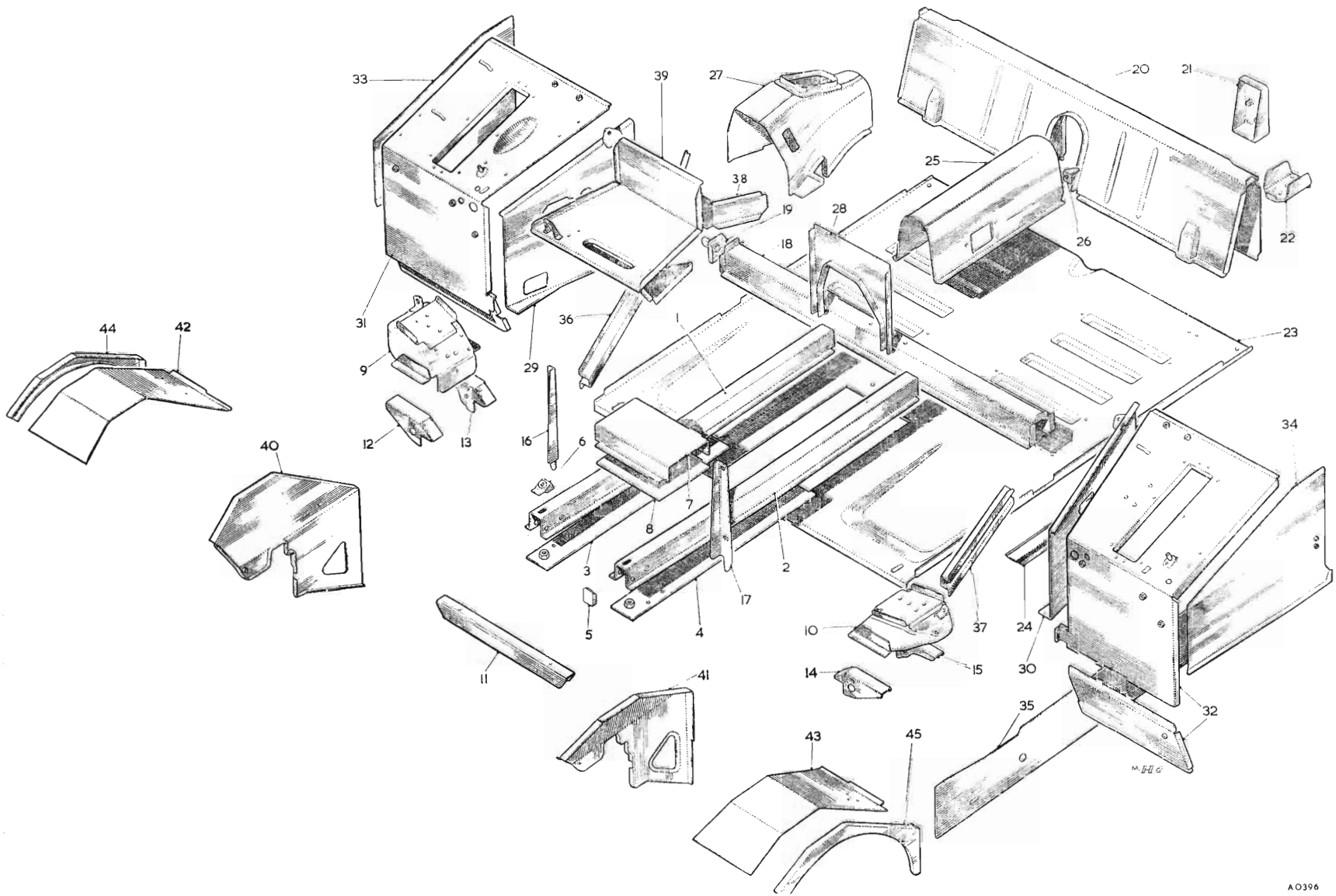
THE BODY SHELL



KEY TO THE BODY SHELL

No.	Description
1.	*Panel assembly—bonnet top.*
2.	*Panel assembly—bonnet front (bottom).*
3.	*Baffle assembly—grille (R/H).*
4.	*Baffle—grille (L/H).*
5.	*Channel—support—grille baffle.*
6.	*Reinforcement assembly—bonnet front (bottom).*
7.	*Plate assembly—bonnet lock.*
8.	*Bracket assembly—bonnet stay (R/H).*
9.	*Bracket assembly—bonnet stay (L/H).*
10.	*Strut—bonnet.*
11.	*Moulding—bonnet top (R/H).*
12.	*Moulding—bonnet top (L/H).*
13.	*Moulding—bonnet—lower.*
14.	*Wing assembly—front (R/H).*
15.	*Wing assembly—front (L/H).*
16.	*Bracket assembly—bonnet lock striker (R/H).*
17.	*Bracket assembly—bonnet lock striker (L/H).*
18.	*Bush—striker plate.*
19.	*Panel assembly—shroud side (R/H).*
20.	*Panel assembly—shroud side (L/H).*
21.	*Panel assembly—shroud and dash top.*
22.	*Panel assembly—dash front top.*
23.	*'A' post assembly (R/H).*
24.	*'A' post assembly (L/H).*
25.	*Extension—'A' post to scuttle (R/H).*
26.	*Extension—'A' post to scuttle (L/H).*
27.	*Door assembly—less lock (R/H).*
28.	*Door assembly—less lock (L/H).*
29.	*Panel—sill outer (R/H).*
30.	*Panel—sill outer (L/H).*
31.	*Wing assembly—rear (R/H).*
32.	*Wing assembly—rear (L/H).*
33.	*'B' post assembly (R/H).*
34.	*'B' post assembly (L/H).*
35.	*Panel—body rear.*
36.	*Moulding—rear wing to panel (intermediate).*
37.	*Moulding—rear wing to panel—top (R/H).*
38.	*Moulding—rear wing to panel—top (L/H).*
39.	*Moulding—lower (rear).*
40.	*Panel assembly—rear wheel arch (R/H).*
41.	*Panel assembly—rear wheel arch (L/H).*
42.	*Reinforcement assembly—'B' post to wheel arch (R/H).*
43.	*Reinforcement assembly—'B' post to wheel arch (L/H).*
44.	*Panel assembly—luggage floor.*
45.	*Panel assembly—luggage floor to wing. (R/H).*
46.	*Panel assembly—luggage floor to wing (L/H).*

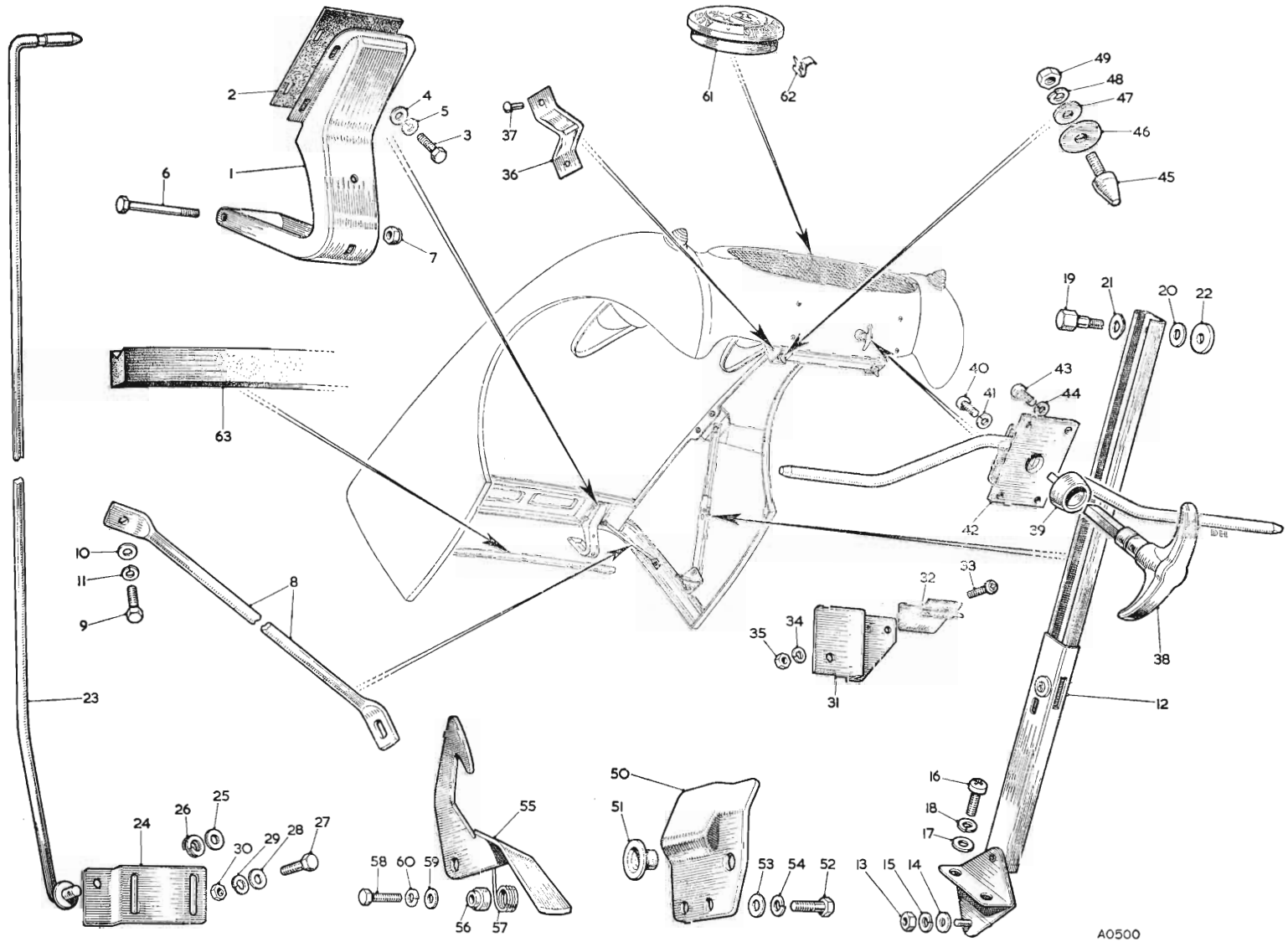
THE UNDERFRAME



KEY TO THE UNDERFRAME

No.	Description
1.	*Member assembly—frame side (R/H).*
2.	*Member assembly—frame side (L/H).*
3.	*Plate assembly—closing—side member (R/H).*
4.	*Plate assembly—closing—side member (L/H).*
5.	*Plate—end closing—side member.*
6.	*Bracket—bonnet locating.*
7.	*Cross member—front.*
8.	*Plate—closing—front cross member.*
9.	*Spring bracket assembly—front suspension (R/H).*
10.	*Spring bracket assembly—front suspension (L/H).*
11.	*Support assembly—suspension housing.*
12.	*Bracket—front—front suspension link (R/H).*
13.	*Bracket—rear—front suspension link (R/H).*
14.	*Bracket—front—front suspension link (L/H).*
15.	*Bracket—rear—front suspension link (L/H).*
16.	*Bracket assembly—radiator mounting (R/H).*
17.	*Bracket assembly—radiator mounting (L/H).*
18.	*Cross member assembly—centre.*
19.	*Support assembly—jack tube.*
20.	*Cross member assembly—rear.*
21.	*Bracket assembly—shock absorber mounting (L/H).*
22.	*Plate—spring mounting.*
23.	*Floor assembly—main.*
24.	*Channel assembly—stiffening—main floor.*
25.	*Tunnel assembly.*
26.	*Bracket—hand brake abutment.*
27.	*Cover assembly—gearbox.*
28.	*Panel—tunnel front.*
29.	*Panel assembly—inner side—foot well (R/H).*
30.	*Panel assembly—inner side—foot well (L/H).*
31.	*Panel assembly—foot well front and roof (R/H).*
32.	*Panel assembly—foot well front and roof (L/H).*
33.	*Panel assembly—outer—foot well (R/H).*
34.	*Panel assembly—outer—foot well (L/H).*
35.	*Plate—side—sill (L/H).*
36.	*Strut—front suspension (R/H).*
37.	*Strut—front suspension (L/H).*
38.	*Support—heater platform.*
39.	*Platform assembly—heater.*
40.	*Wheel arch assembly—inner (front R/H).*
41.	*Wheel arch assembly—inner (front L/H).*
42.	*Wheel arch assembly—top (front R/H).*
43.	*Wheel arch assembly—top (front L/H).*
44.	*Wheel arch—outer (front R/H).*
45.	*Wheel arch—outer (front L/H).*

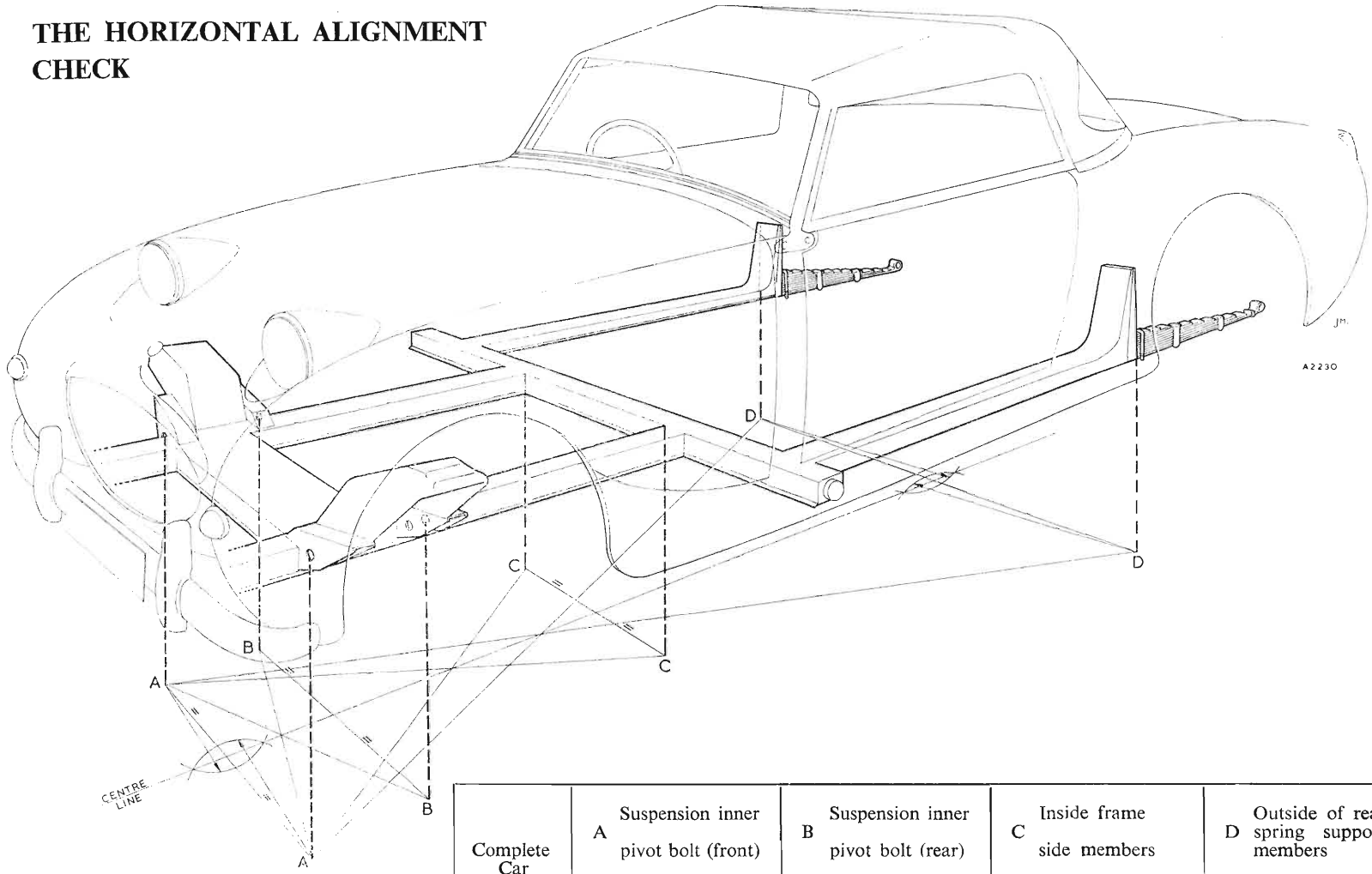
THE BONNET FITTINGS



KEY TO THE BONNET FITTINGS

No.	Description
1.	*Hinge assembly—bonnet.*
2.	*Packing—bonnet hinge.*
3.	*Screw hinge to bonnet.*
4.	*Washer—plain.*
5.	*Washer—spring.*
6.	*Bolt—hinge to bulkhead.*
7.	*Nut for bolt.*
8.	*Strut—bonnet.*
9.	*Screw—strut to bonnet.*
10.	*Washer—plain.*
11.	*Washer—spring.*
12.	*Stap assembly—telescopic—bonnet.*
13.	*Nut—pivot bracket to pedal box side.*
14.	*Washer—plain.*
15.	*Washer—spring.*
16.	*Screw—pivot bracket to pedal box side.*
17.	*Washer—plain.*
18.	*Washer—spring.*
19.	*Bolt for bonnet stay—special.*
20.	*Washer—plain.*
21.	*Washer—curved.*
22.	*Washer—brass—plain.*
23.	*Stay—bonnet—auxiliary.*
24.	*Bracket—pivot—bonnet stay.*
25.	*Washer—plain.*
26.	*Washer—spring.*
27.	*Screw—bracket to radiator support (R|H).*
28.	*Washer—plain.*
29.	*Washer—spring.*
30.	*Nut for screw.*
31.	*Bracket—clip—bonnet stay.*
32.	*Clip—bonnet stay.*
33.	*Screw—clip to bracket.*
34.	*Washer—spring.*
35.	*Nut for screw.*
36.	*Clip—spring.*
37.	*Rivet—clip to bonnet reinforcement.*

THE HORIZONTAL ALIGNMENT CHECK



A preliminary check of the alignment can best be carried out by the system of diagonal and measurement checks from points projected on to a level floor by means of a plumb-bob.

A centre-line can then be established by means of a large pair of compasses, and any deviation from correct alignment will be made evident by the failure of the diagonals to intersect on the centre-line or by considerable deviations in the measurements.

	A Suspension inner pivot bolt (front)	B Suspension inner pivot bolt (rear)	C Inside frame side members	D Outside of rear spring support members
Complete Car	18⅜ in. (46·52 cm.)	18⅜ in. (46·52 cm.)	11 in. (27·94 cm.)	37½ in. (95·21 cm.)
Stripped Body	18⅜ in. (46·52 cm.)	18⅜ in. (46·52 cm.)	11 in. (27·94 cm.)	37½ in. (95·21 cm.)