ACCIDENTAL DAMAGE

The repair of integral construction bodies varies in some degree, depending on the extent of the damage, to that of separate body and chassis construction.

Superficial damage can be effected in a similar manner to that employed on " all steel " bodies which is familiar to all body repairers.

Repairs to rectify extensive damage affecting the main members of the underframe must be carried out so that when the repair is completed the main mounting points for the engine, front and rear suspensions, etc., are in correct relation to each other.

When checking for or rectifying distortion in the main underframe members, reference should be made to the diagrams in the section headed " Checking Body Underframe Alignment " which gives the important dimensions to be observed.

Replacement Body Panels

Where the existing panels or members are badly damaged and it is not possible to effect a satisfactory repair in position, the affected panels will have to be cut out and replacement panels welded in their place.

It will frequently be found advantageous to use only a part of a given panel so that the welded joint can be made in a more accessible position. Great care must, of course, be taken when cutting the mating portions of the panel to ensure that perfect matching is obtained.

For example, if damage to a front wing is confined to the forward end a simpler and quicker repair can be effected by cutting the front wing off between the wheel aperture and the wing valance. If the replacement front wing is then cut to match, a simple butt weld can be made and after cleaning down with a sanding disc and filling with plumber's lead the joint should be invisible.

Any unused portions of replacement panels should be retained as it will often be found that they can be used for some future repair job.

Where a replacement panel to be fitted forms part of an aperture such as for a door or the luggage boot lid, an undamaged door or lid should be temporarily hinged in position and used as a template to assist location while the replacement panel is clamped and welded in position.

Similarly, an undamaged radiator grille can be used as a template to accurately form the aperture when fitting a replacement front wing or wings.

Before any dismantling takes place after accidental damage a check of the underframe alignment should be carried out.

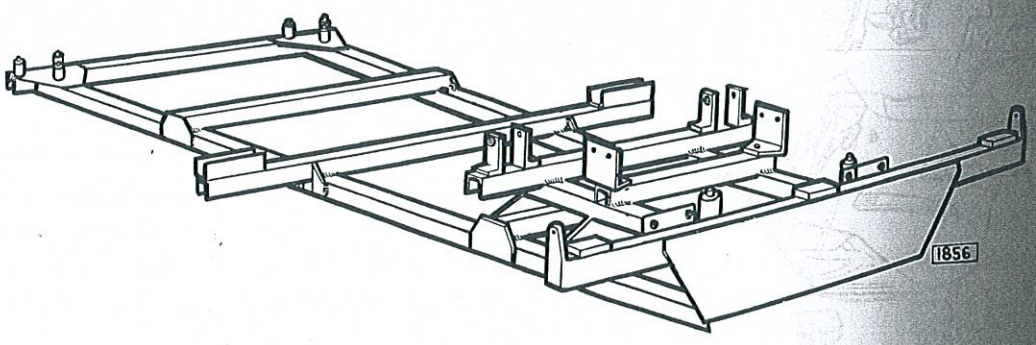

Fig. 45. Body underframe jig TFA.1329.

CHECKING BODY UNDERFRAME ALIGNMENT

Checking for Distortion in the Horizontal Plane

The plan view of the body on page N.30 provides the important dimensions for checking for distortion in the underframe. These dimensions can be measured actually on the underside of the body or by dropping perpendiculars from the points indicated by means of a plumb-bob on to a clean and level floor. If the latter method is adopted the area directly below each point should be chalked over and the position at which the plumb-bob touches the floor marked with a pencilled cross.

Checking for Distortion in the Vertical Plane

For checking the underframe for distortion in the vertical plane the side elevation gives the details of the important dimensions from a datum line.

If the relative distance between two points **above** the datum line is required one dimension should be subtracted from the other.

If the relative distance between a point above the datum line and the straight section of the chassis side member is required, add the dimension "D" —$3\frac{13}{16}$" (9.7 cm.)—to the dimension above the datum line.

If it is required to check the dimensions from ground level raise up the car at the front and rear and insert four blocks or stands of exactly equal height between the ground and the straight section of the chassis side members.

The blocks should be positioned at the front end to the rear of the jacking tube and at the rear end immediately in front of the rear spring front mounting bracket—**do not allow the weight of the car to rest on the blocks, use them only as test pieces.**

The distance from the ground to any given check point will be: height of blocks + "D" ($3\frac{13}{16}$"—9.7 cm.) + distance from datum line to check point.

KEY TO ALIGNMENT DIAGRAM

Symbol	Measurement taken from	Dimension
A	Forward face of front cross-member to centre of front wheel	$22\frac{1}{2}$" (57.15 cm.)
B	Centre of front wheel to centre of rear wheel (wheelbase)	$107\frac{3}{8}$" (272.75 cm.)
C	Centre of rear wheel to rear panel of luggage compartment	$36\frac{21}{32}$" (93.05 cm.)
D	Datum line to straight section of chassis side member	$3\frac{13}{16}$" (9.70 cm.)
E	Datum line to underside of front cross member	1" (2.55 cm.)
F	Datum line to centre of tube in chassis side member for front suspension cross-member mounting	$2\frac{3}{16}$" (5.55 cm.)

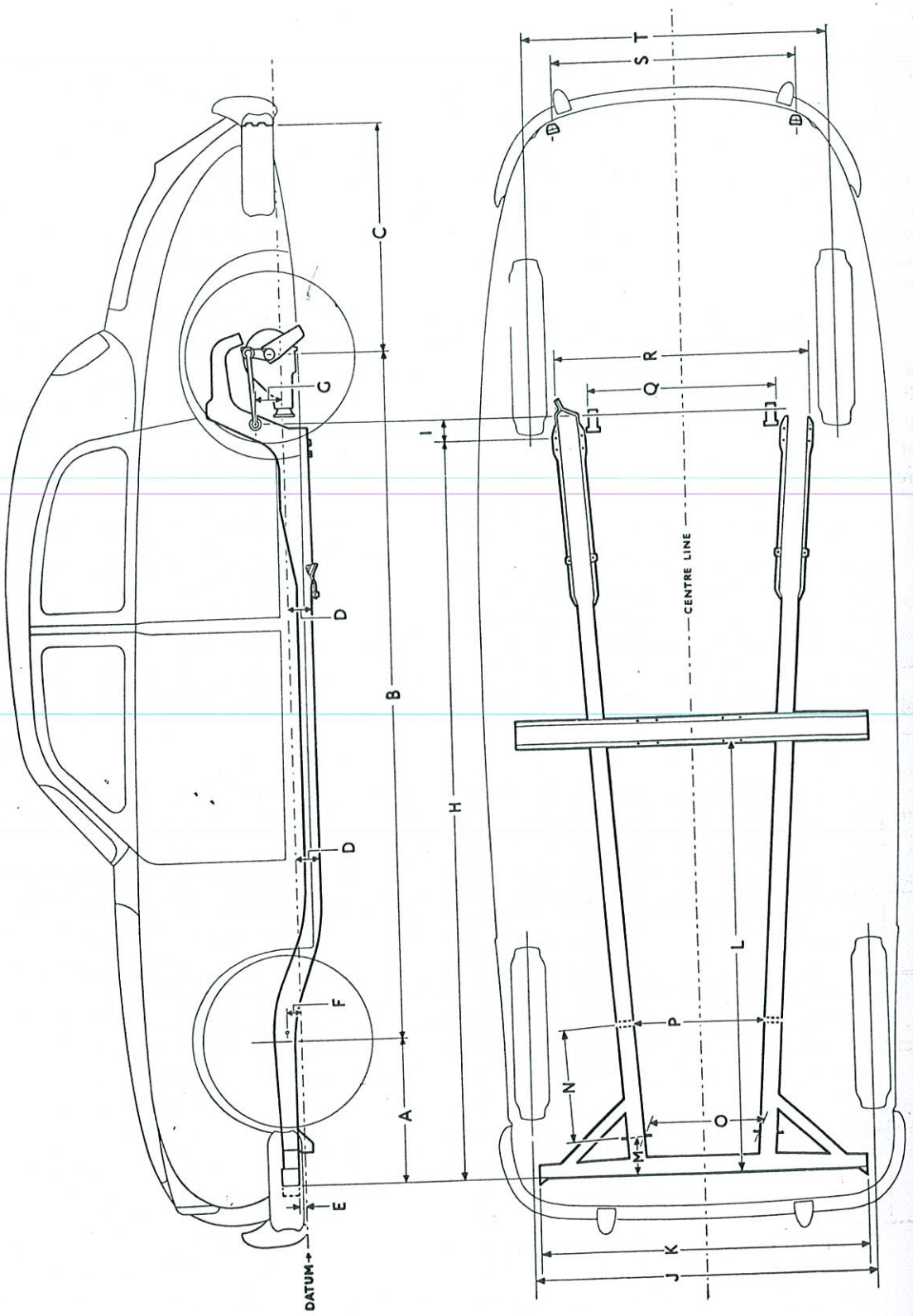

Fig. 46. Underframe alignment diagram.

KEY TO ALIGNMENT DIAGRAM (continued)

Symbol	Measurement taken from	Dimension
G	Datum line to centre of hole in rear torque arm bracket	$3\frac{7}{8}$″ (9.85 cm.)
H	Forward face of front cross-member to centre of outside rear hole of rear spring centre mounting (measured parallel to centre line of car)	$114\frac{13}{16}$″ (291.60 cm.)
I	Centre of outside rear hole of rear spring centre mounting to centre of hole in rear torque arm bracket (measured parallel to centre line of car)	$3\frac{7}{16}$″ (8.75 cm.)
J	Front Track—Disc wheels Wire wheels	4′ 7″ (1.397 m.) 4′ $7\frac{1}{2}$″ (1.410 m.)
K	Outer ends of front cross-member	50″ (127.00 cm.)
L	Forward face of front cross-member to centre line of front holes for the rear engine mounting support channel (measured parallel to centre line of car)	$67\frac{31}{32}$″ (172.65 cm.
M	Forward face of front cross-member to forward face of front suspension cross-member mounting bracket (measured along chassis side member)	$5\frac{25}{32}$″ (14.70 cm.)
N	Forward face of front suspension cross-member mounting bracket to tube in chassis side member for front suspension cross-member mounting	$17\frac{27}{32}$″ (45.30 cm.)
O	Inner faces of chassis side members at joints with front suspension cross-member mounting brackets	$18\frac{23}{32}$″ (47.55 cm.)
P	Inner faces of chassis side members at front suspension cross-member mounting tubes	$21\frac{1}{32}$″ (53.40 cm.)
Q	Outer faces of rear torque arm brackets	$29\frac{9}{64}$″ (74.00 cm.)
R	Outer rear holes of rear spring centre mounting brackets	$40\frac{1}{16}$″ (101.75 cm.)
S	Centres of rear bumper mountings	$40\frac{1}{32}$″ (101.65 cm.)
T	Rear Track—Disc wheels Wire wheels	4′ $5\frac{3}{8}$″ (1.356 m.) 4′ $6\frac{1}{8}$″ (1.375 m.)