

SERVICE BULLETIN

CAB SERVICE & PARTS CORPORATION

SUBSIDIARY OF
CHECKER MOTORS
CORPORATION

NEW YORK * BROOKLINE
CHICAGO * DETROIT

#93

May 22, 1959

(continued) FRAME ALIGNMENT

Subject: CHASSIS

Description: FRAME ALIGNMENT

The frame assembly furnished in the Checker Model A-9 car utilizes the crossmember type of construction, with three tubular crossmembers joining the box section side rails at intermediate front and rear positions in the frame. Additional channel type crossmembers are used to connect the front and rear ends of the side rails. All frame members are joined by arc welding.

In addition to carrying the load, the frame assembly provides a means for mounting other units, whereby the relationship and alignment of these units are properly maintained. Consequently, correct frame alignment is necessary to assure efficient operation of these units.

FRAME ALIGNMENT

1. Frames that have been subject to severe impact or twist can be checked for proper alignment by making various diagonal measurements, as shown in the attached illustration.
2. These diagonal measurements will indicate which section of the frame is distorted and must be straightened or repaired to insure correct frame alignment.
3. In the event the body and engine have been removed from the frame assembly, the diagonal measurements shown in the attached illustration can easily be taken with tram gauges or a steel tape. Be sure the tires are inflated to proper pressure and car is positioned on a level floor before any measurements are taken.

The lengths of these diagonal measurements connecting corresponding check points must not vary more than $\frac{1}{4}$ ".

continued....

May 22, 1959

FRAME ASSEMBLY - CHASSIS (continued). . . . Page 2

FRAME ALIGNMENT (continued)

4. These same frame diagonal measurements can also be obtained while the body and engine are still mounted to the frame through the use of a plumb bob and chalk line. The check points shown in the reference illustration are transferred from the same points on the frame being checked to the floor, facilitating diagonal measurements between the corresponding check points that have been transferred to the floor.
5. To check frame alignment by this method, proceed as follows:
 - A. Inflate tires to proper pressure. Then position car on a clean level floor and set brakes.
 - B. Attach the plumb bob to a check point on one side of the frame. Mark this check point on the floor under the point of the plumb bob. The corresponding check point on the opposite side of the frame, and all other check points appearing in the attached illustration, are transferred to the floor in the same manner.
 - C. The degree of accuracy realized by this check will depend upon how accurately the check points are transferred from corresponding check points on the frame to the floor.
 - D. After all check points on the frame have been transferred to the floor, release the brakes and move the car away.
 - E. Connect the check points marked on the floor with diagonal chalk lines as shown in the reference illustration.
 - F. The length of diagonal lines connecting corresponding check points must not vary more than $\frac{1}{4}$ ".
 - G. Measure the distance between points on the floor that are connected by diagonal lines marked "J" and "K". A variance greater than $\frac{1}{4}$ " between the lengths of these two diagonal lines indicates part of frame is misaligned. Frame must be straightened to correct unequal lengths of diagonal lines to within a $\frac{1}{4}$ " tolerance.

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May 22, 1959

FRAME ALIGNMENT (continued)

H. The center and rear sections of the frame are checked in the same manner. Frame straightening is required when corresponding diagonals "L" and "M", or "N" and "O" are found to be unequal.

I. Dimensions shown at check points A, B, C, D, E and F, in the reference illustration, are not comparable to any other location in the frame. However, the dimensions taken from corresponding locations on the frame being checked for correct alignment should not vary more than 1/4" from the dimensions shown.

J. Dimensions shown at check points G, H, I, P, Q and R in the reference illustration, taken from corresponding check points on the frame being checked, should not vary more than 1/4" from the dimensions shown.

K. A final check as to correct frame alignment, after frame has been straightened and a new set of check points have been transferred to the floor and connected with diagonal lines, is obtained by drawing a center line through the intersecting points of any two pairs of equal length diagonal lines. This center line should fall within 1/2" of the intersecting point of the remaining diagonal lines, and points representing the center of the front and rear crossmembers.

FRAME STRAIGHTENING

In most cases, minor frame damage can be corrected with ordinary straightening methods. The application of heat during this process should be watched closely since heat weakens the structural characteristic of the metal.

When severe frame damage is experienced, the replacement of damaged frame members is usually more practical than attempting to repair the damaged parts.

Final frame alignment should be checked on all cars that have been subject to frame straightening or repairs before car is released for operation.

continued....

May 22, 1959

FRAME ASSEMBLY - CHASSIS (continued) Page 4

FRAME MEMBER REPLACEMENT

Extreme care must be used when removing damaged frame members, since excessive heat or careless cutting will weaken and damage the original mounting surface of the remaining frame structure beyond practical re-use. All replacement members should be positioned and mounted in the frame by the same method of attachment as used in the original frame assembly.

Dimensions shown at check points G, H, I, P, Q and R in the reference illustration, taken from corresponding check points on the frame being checked, should not vary more than 1/8" from the dimensions shown.

A final check as to correct frame alignment, after frame has been straightened and a new set of check points have been transferred to the floor and connected with diagonal lines, is obtained by drawing a center line through the intersecting points of any two pairs of equal length diagonal lines. This center line should fall within 1/8" of the intersecting point of the remaining diagonal lines, and points representing the center of the front and rear crossmembers.

In most cases, minor frame damage can be corrected with ordinary straightening methods. The application of heat during this process should be watched closely since heat weakens the structural characteristics of the metal.

FRAME STRAIGHTENING

When severe frame damage is experienced, the replacement of damaged frame members is usually more practical than attempting to repair the damaged parts.

Final frame alignment should be checked on all cars that have been subject to frame straightening or replacement of frame members.

BY: NEW YORK SERVICE DEPARTMENT

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CAB SERVICE & PARTS CORPORATION

NEW YORK * BROOKLINE
CHICAGO * DETROIT

May 22, 1959

Subject: Chassis
Description: Frame Alignment

Refer to Instructions
Bulletins 93 to 93C
Inclusive

MODEL A9
CHASSIS FRAME
MEASUREMENTS



