

(R) Vehicle Lift Points for Service Garage Lifting

Foreword—This Document has also changed to comply with the new SAE Technical Standards Board Format. Definitions changed to Section 3. All other section numbers have changed accordingly.

TABLE OF CONTENTS

1.	Scope	2
1.1	Purpose	2
2.	References	2
2.1	Applicable Publications	2
3.	Definitions.....	2
4.	Vehicle Lift Points Label	3
4.1	Purpose of the Label	3
4.2	Standard Format	3
4.3	Location on Vehicle	4
4.4	Dimensions.....	4
4.5	Durability	4
5.	Body/Frame Marking	4
5.1	Purpose of the Body/Frame Marking.....	4
5.2	Vehicle Lift Points Designation	4
5.3	Vehicle Lift Point Pads	4
5.4	Lift Point Symbol	4
6.	Vehicle Manufacturer Lift Point Location	5
6.1	Lift Point Location	5
6.2	Vehicle Center of Gravity.....	5
6.3	Lift Adapter Accommodation	5
6.4	Sill Clearance	5
7.	Vehicle Manufacturer Information Manuals	6
7.1	Owner's Manual	6
7.2	Service Manual.....	6

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8.	Vehicle Manufacturer Format for Reporting Vehicle Data for Frame Contact Lifts.....	6
8.1	Vehicle Manufacturer	6
8.2.	Copies.....	6
8.3	Submission	6
9.	Notes	7
9.1	Marginal Indicia.....	7
Appendix A Vehicle Data for Frame Contact Lifts.....		8

1. Scope—This SAE Standard is directed at the proper communication of the lift points on the vehicle frame or underbody to commercial service personnel for the purpose of raising passenger vehicles, light trucks, and vans completely off the shop floor. To this end, vehicle manufacturers are guided in the proper design of a lift point label and lift points located on the body/frame for use by service garages.

1.1 Purpose—The purpose of this document is to provide a uniform method to convey identification of proper service vehicle lift points to enhance safety of service garage personnel and to minimize vehicle damage caused by improper lifting.

2. References

2.1 Applicable Publications—The following publications form a part of the specification to the extent specified herein. Unless otherwise indicated, the latest revision of all publications shall apply.

2.1.1 SAE PUBLICATION—Available from SAE, 400 Commonwealth Drive, Warrendale, PA 15096-0001.

SAE J1877—Recommended Practice for Bar-Coded Vehicle Identification Number Label

2.1.2 ALI PUBLICATIONS—Available from Automotive Lift Institute, P.O. Box 33116, Indialantic, FL 32903-3116.

ALI/LP—Guide, Quick Reference Guide, Vehicle Lifting Points for Frame Engaging Lifts, (Domestic and Imported Cars and Light Trucks)

3. Definitions

3.1 Service Garage Lifting—Raising and stably supporting an automotive vehicle free of the ground, for the purpose of performing automotive vehicle service, by engaging structural elements of the vehicle such as wheels, body and frame members, axle housings and wheel suspension components.

3.2 Automotive Lift—The term “automotive lift” means “automotive vehicle service lift,” and is a lifting device specifically designed to raise and stably support an automotive vehicle free of the ground by engaging structural elements of the vehicle such as wheels, body and frame members, axle housings, and wheel suspension components.

3.3 Depression—An indentation recognizable even after normal use.

3.4 Boss—A projection recognizable even after normal use.

3.5 Lift Point Symbol—An equilateral triangle which identifies the lift point.

3.6 Vehicle Lift Pads—A supplemental part of the vehicle located at the designated lift points in the shape of or identified with the lift point symbol. The symbol shall be recognizable even after normal use.

4. Vehicle Lift Points Label

4.1 Purpose of the Label—This label shall indicate the location of vehicle lift points as designated by the vehicle manufacturer for service garage lifting. (See Figure 1.)

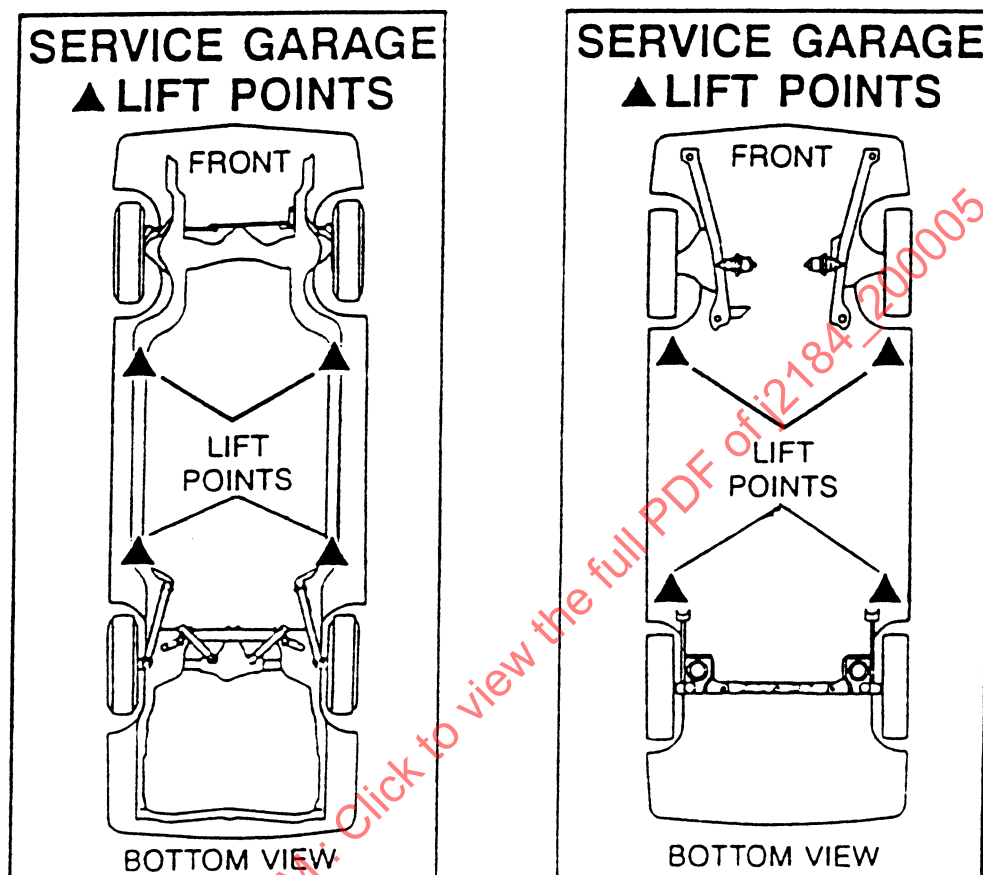


FIGURE 1—TYPICAL LABEL DRAWING

4.2 Standard Format—The label is to follow the current practice of the vehicle manufacturer or use ANSI or SAE Standards for informational labels. The following requirements shall be mandatory.

4.2.1 TITLE OF LABEL—The words—"SERVICE GARAGE LIFT POINTS," shall be in block capital letters.

4.2.2 TITLE TYPE SIZE—Lettering (font) shall be no smaller than 12 point.

4.2.3 MESSAGE—Graphics shall be used with a minimum number of additional words.

4.2.3.1 To orient the viewer, the message shall show the perimeter of the vehicle in a bottom view. The label shall contain the words "BOTTOM VIEW" located at the bottom of the label as shown, and the front of the vehicle shall be marked "FRONT" as shown.

4.2.3.2 The lift points shall be shown on the label by solid, equilateral triangles of contrasting color with a minimum of 3 mm (0.120 in) on a side. The lift points shall be marked "LIFT POINTS" as shown.

4.2.3.3 The label is to be vehicle specific.

4.2.3.4 Other text, such as a cautionary information, shall be in upper and lower case letters (font) no smaller than 10 point.

4.2.4 COLOR—The color scheme of the label shall follow current practice of the vehicle manufacturer.

4.3 **Location on Vehicle**—The label shall be affixed to the vehicle in a prominent location under the hood or in the glove box.

4.4 **Dimensions**—The label shall be no smaller than 40 mm (1.6 in) x 60 mm (2.4 in).

4.5 **Durability**—The label shall comply with SAE J1877, 7.3 to 7.9, except 7.9.2.

5. **Body/Frame Marking—Holes, Bosses, Depressions, and Lift Pads**

5.1 **Purpose of the Body/Frame Marking**—This marking shall indicate the location of the lift points on the vehicle as designated by the vehicle manufacturer for service garage lifting.

5.2 **Vehicle Lift Points Designation**—The vehicle lift points are to be designated by holes, bosses, and/or depressions in the shape of the lift point symbol. Lift point pads are to be in the shape of or marked with the vehicle lift point symbol. (See Figures 2 and 3.)

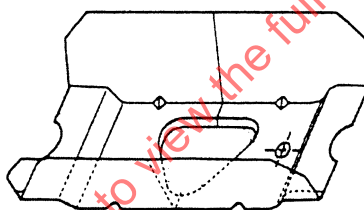


FIGURE 2—TYPICAL LIFT POINT WITH TRIANGULAR HOLE

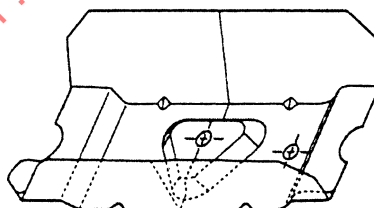


FIGURE 3—TYPICAL LIFT POINT WITH TRIANGULAR BOSS/DEPRESSION

5.3 **Vehicle Lift Point Pads**—For serviceability, the vehicle lift point pads (if used) shall be replaceable.

5.4 **Lift Point Symbol**—The lift point symbol shall be used to identify the vehicle lift points. The symbols shall be easily reached, felt or seen, and free of sharp edges. (See Figure 4.)



FIGURE 4—LIFT POINT SYMBOL

- 5.4.1 **SIZE**—Each side of the equilateral triangle shall not be less than 12 mm (1/2 in) nor greater than 19 mm (3/4 in). Corners may have a slight radius.
- 5.4.2 **RECOGNITION**—The symbol is to remain recognizable by sight or detectable by feel for the life of the vehicle in normal field operating and environmental conditions, such as mud, undercoating, OEM NVH treatment applications, etc.
- 5.4.3 **ALL LIFT POINTS**—The lift point symbol shall be used to designate both front and both rear lift points.

6. Vehicle Manufacturer Lift Point Location

- 6.1 **Lift Point Location**—The vehicle manufacturer shall locate the vehicle lift points within the appropriate area(s) described in Figure 5. Accommodation by the greatest variety of lifts can be achieved by locating the vehicle lift points near the envelope center lines.

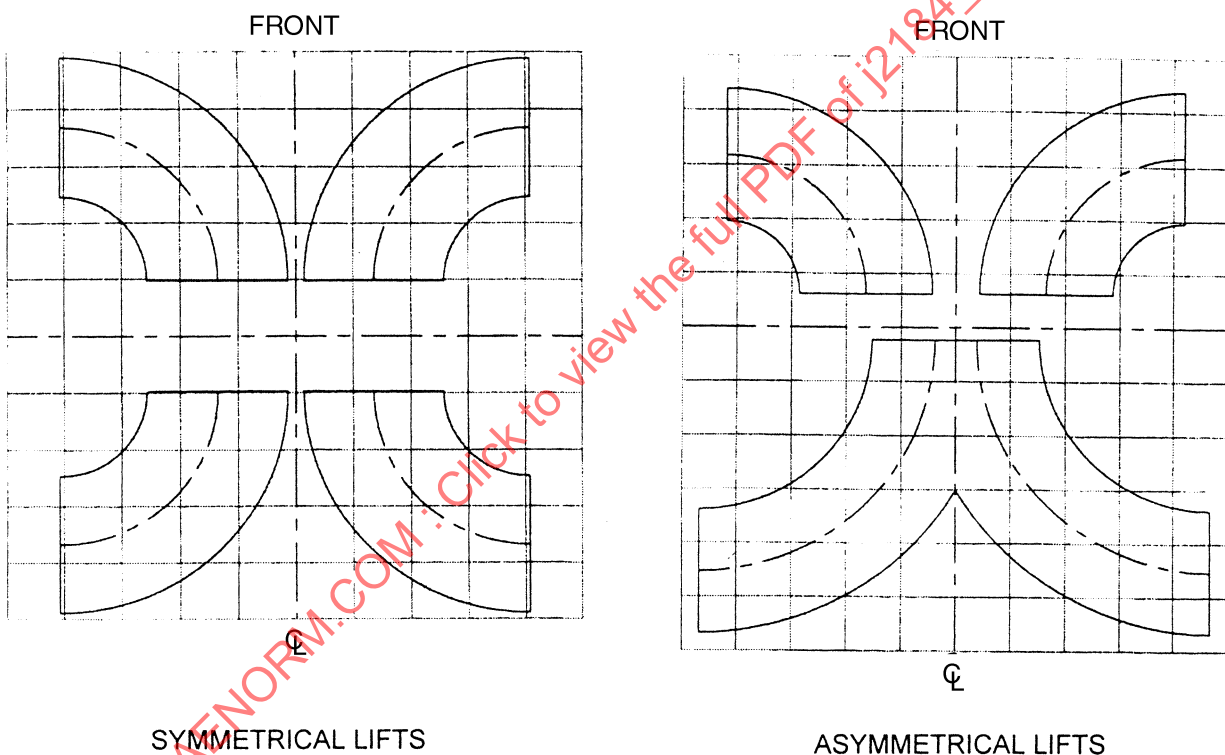


FIGURE 5—ADAPTER ENVELOPE, SWING-ARM LIFTS
GRID LINE SPACING IS 305 MM (12 IN)

- 6.2 **Vehicle Center of Gravity**—The vehicle manufacturer shall locate the vehicle center of gravity within the perimeter described by the lift points.
- 6.3 **Lift Adapter Accommodation**—The vehicle manufacturer shall provide individual vehicle lift points that will accommodate the lift adapter footprint shown in Figure 6.
- 6.4 **Sill Clearance**—The vehicle manufacturer shall limit the individual vehicle lift point sill clearance to the dimension shown in Figure 7.

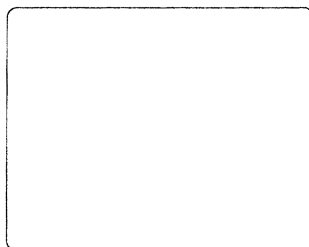


FIGURE 6—MINIMUM ADAPTER FOOTPRINT
203 mm (8 in) BY 254 mm (10 in)

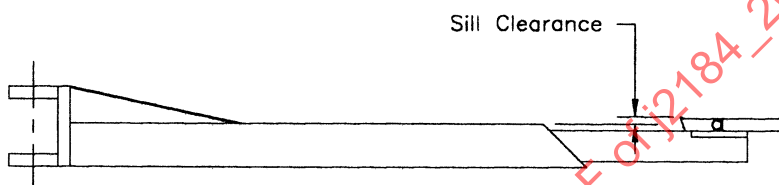


FIGURE 7—MINIMUM SILL CLEARANCE
12 mm (1/2 in)

7. **Vehicle Manufacturer' Information Manuals**

- 7.1 Owner's Manual**—This booklet shall illustrate the lift point label, state the location and purpose of the vehicle lift point label and indicate that the lift points for service garage lifting may be different than those specified for the jack supplied with the vehicle (for emergency tire changing). It shall also illustrate the label and identify its location. This information shall appear in the section covering jacking and lifting instructions.
- 7.2 Service Manual**—This booklet shall illustrate the location and purpose of the vehicle lift point body/frame markings for service garage lifting and indicate that the lift points for service garage lifting may be different than those specified for the jack supplied with the vehicle (for emergency tire changing). It shall also illustrate the label and identify its location. This information shall appear in the section covering jacking and lifting instructions.

8. **Vehicle Manufacturer Format for Reporting Vehicle Data for Frame Contact Lifts**

- 8.1 Vehicle Manufacturer**—For vehicles judged by the manufacturer to require lifting point locations, center of gravity location, lift adapter accommodation or sill clearances not described in this document then the vehicle manufacturer shall provide specific vehicle lift information for publication by the Automotive Lift Institute, Inc., on the form titled "Vehicle Data for Frame Contact Lifts" (see Appendix A.)
- 8.2 Copies**—The form may be obtained from:
- Automotive Lift Institute, Inc.
P.O. Box 33116
Indialantic, FL 32903-3116
- 8.3 Submission**—The completed form shall be submitted to the Automotive Lift Institute, Inc., not later than six months prior to new model introduction.

9. **Notes**

- 9.1 **Marginal Indicia**—The change bar (I) located in the left margin is for the convenience of the user in locating areas where technical revisions have been made to the previous issue of the report. An (R) symbol to the left of the document title indicates a complete revision of the report.

PREPARED BY THE SAE VEHICLE LIFT POINTS COMMITTEE

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