

GROUP 12

FRONT END SHEET METAL & BUMPERS

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12-1 DESCRIPTION OF FRONT END SHEET METAL

a. Front End Sheet Metal Assembly

The front end sheet metal assembly is attached to the frame and body at adjustment points. See Figures 12-1 and 12-2. The front of the assembly is supported by two mounts located at the frame side rails. Shims at these locations allow up and down movement of the front of the sheet metal assembly. Fore and aft and side adjustment is allowed by oversize holes in the inner skirt assembly. Special washers at the upper rear locations allow adjustment of the rear assembly. The lower rear edge of the assembly is attached to the body at the rocker panel by bolts on each side. Shims are used at this location to provide up and down adjustment at the rear of the fender.

IMPORTANT: The bolts that retain the sheet metal braces must be torqued to the required torques. If these bolts are loose, the braces will not provide additional support for the sheet metal assembly.

b. Hood, Hinges and Latch Mechanism

The hood panel is of one piece

construction, strengthened and held to shape by a reinforcement of stamped sheet metal.

The rear of the hood assembly is attached to the body cowl and fender on each side by hinge assemblies which permit the front of the hood to be raised. A heavy coil spring connected between each hinge assembly assists in raising the hood and holds it in the open position. See Figures 12-3 and 12-4.

The front of the hood is held down by a ratchet type hood latch located on the upper tie bar. See Figures 12-9 and 10.

The hood is unlocked by lifting the latch handle located beneath the front center of the grille.

c. Radiator Mounting and Adjustment

The radiator is mounted in rubber, using a three-point mounting system of rubber-faced "U"-shaped brackets.

Two of the brackets are included in the lower support bracket assembly which attaches at each end of the frame. The third is located at the top center in the guard and bracket assembly which attaches to the upper tie bar. Fore and aft adjustment is provided by slotted holes in the bracket assembly.

Non air conditioning radiators are to be located 1-3/16" plus or minus 1/8" ahead of cooling fan

and parallel within 1/4". The air conditioning radiator is to be located parallel to the fan, with the shroud parallel to the radiator core and the fan projecting out of shroud 3/4 of an inch.

12-2 FENDER, BUMPER AND HOOD ALIGNMENT INSPECTION

The hood, front fenders and bumpers must be aligned with each other on every car to take care of slight variations in form and dimensions of the individual parts. Sheet metal parts stamped in a given set of dies will vary somewhat in form and dimensions due to variations in the hardness of different batches of sheet metal, which cause the stampings to spring in varying amounts when released from the form dies.

The hood and front fenders are properly aligned during the installation at the factory; however, some readjustments may be required after a car has been shipped or has been in service for some time. This is because sheet metal parts may take a different "set" as a result of vibration and shock incident to shipping or operation during the break-in period. In judging the need for readjustment it must be understood that exactly uniform fit and spacing cannot be obtained on all cars of a given model.

a. Hood Noises or Panel Flutter

Squeaks or grunting noises in the hood when driving over rough roads do not necessarily indicate misalignment of hood and fenders. These noises may be caused by metal contact at some point where clearance should exist or when head bumpers are worn or dry.

If the hood squeaks, check with 1/16" thick feeler all around the hood for clearance at the fenders and cowl. If an edge of metal is making contact at any point where clearance should exist a bright metal spot will usually be found. Such spots can be depressed by spring hammering to provide clearance.

A grunting noise in the hood is usually caused by dry rubber bumpers or cowl ledge lacing. Lubricate all rubber bumpers on rails and cowl with silicone rubber lubricant. To correct a persistent case of squeaking or grunting where hood top panel contacts ledge lacing, even when lubricated, cement a 1/16" thick strip of felt to panel where the lacing makes contact.

To prevent hood panel flutter, the rear end of hood panel must have firm contact with the lacing attached to cowl ledge. The hood may be raised or lowered by adjustment at hinges. See Figure 12-6.

b. Preliminary Tightening

Before deciding upon any adjustment to correct hood or fender misalignment it is advisable to check tightness of all attaching screws, and bolts, since a true picture of the correction requirements cannot be obtained when the sheet metal is loose and free to shift.

After all parts are properly tightened inspect fender and hood alignment (subpar. c) and hood alignment (subpar. d). Make all inspections before performing any adjustments because an adjustment at one point will usually alter alignment at other points. The preliminary inspection should determine the adjustments that will produce the best overall alignment of hood and fenders at all points.

c. Fender and Hood Alignment at Front Doors

With front doors closed there should be no metal-to-metal contact between doors and rear ends of front fenders. Check for clearance at frequent points, using a strip of fibre or other soft material 1/32" thick. The spacing between the rear end of front fenders and the shoulder on front edge of doors should be approximately 1/8", and fairly uniform from top to bottom.

Before making any adjustment of sheet metal to provide necessary clearance at points mentioned, first make sure that front doors are properly aligned in the body openings. If fenders and door panel surfaces are not reasonably flush correction may be made by adding or removing shims between the fender and the cowl. See Figure 12-1.

Where spacing between the rear edge of front fender and door is objectionably uneven from top to bottom, it may be necessary to adjust the shims between fender inner skirt and frame, to adjust shims between fender and rocker panel, or to loosen fender attaching bolts and pry between fender and rocker panel. Further adjustment may be made by drawing fender into position and retightening bolts.

d. Hood Alignment Inspection

When the hood is closed and latched, it should bear firmly against the front rubber bumpers on upper tie bar. Height of hood and width of space between hood and fenders should be reasonably even from front to rear. See paragraph 12-3 (a) for fender adjustment and paragraph 12-3 (e) for hood adjustment.

12-3 FENDER, BUMPER AND HOOD ADJUSTMENT

a. Front Fender

If the front end of the sheet metal assembly is too high or too low, resulting in objectionably uneven vertical spacing between the front fenders and doors, it will be necessary to add or remove shims at front support locations. Whenever shims are to be added or removed at the front support locations, it will be necessary to loosen the lower rear attaching bolts at the inner skirt to body. See Figures 12-1 and 12-2. Adjustment of rear edge of the front fender is accomplished by shimming at the fender-to-body attaching points. The fender line should be flush with the rocker panel.

b. Bumper Adjustment

The bumper attaching bolt holes in frame cross member, back bars and bumper face plate are slotted to permit movement of the bumper and permit proper alignment with adjacent parts. See Figures 12-7 and 8. Step assembly on rear bumper of estate wagons should be installed per instruction in Figure 12-17.

c. Removal and Installation of Hood Hinge Springs

1. Support hood in extreme "up" position preferably by chain fall if available.

2. To remove hood spring insert Remover and Installer J-9214 through loop in forward end of spring. Push tool toward rear of car using hinge as a pivot and carefully remove spring from notch. See Figure 12-5.

CAUTION: Care must be used when releasing spring.

3. Push tool forward, causing hood spring to slide clear of hinge.

4. To replace hood spring, insert Remover and Installer J-9314 through loop in forward end of spring. Push tool upward, using hinge as a pivot, and seat spring into notch. See Figure 12-5.

d. Removal and Installation of Hood Assembly

1. Support hood in extreme "up" position.

2. Place folded rags under rear corners of hood to prevent possible damage to fenders.

3. Scribe a reference line along edge of each hinge flange so hood can be replaced in same position.

4. Remove six hood hinge to hood bolts.

5. Lift hood from car.

6. To install, reverse above procedure.

e. Hood Adjustments

1. **Rear Height.** Rear hood height is determined by special washers between hinge and hood. Removing or adding washers will shift rear of hood up or down with respect to hinge. See Figure 12-6.

2. **Rear Tension.** Too little tension is indicated if the rear hood area flutters. To increase tension, add special washers between the hood and the hinges

at the front bolts. See Figure 12-6

Too much tension is indicated if the rear area of the hood bends as it is closed. To decrease tension, add special washers between the hood and the hinges at the rear bolts. See Figure 12-6.

3. **Front Height.** This is determined by two adjustable bumpers. See Figure 12-12 and 13. However, the front of the hood may not contact these bumpers unless the hood latch is correctly adjusted as described in Step 4.

4. **Hood Latch.** Loosen four bolts attaching latch to upper tie bar. Close hood. Hood will align itself in hood lock catch. Raise hood carefully and tighten all four bolts on the panel assembly. Close hood to see if alignment is still all right.

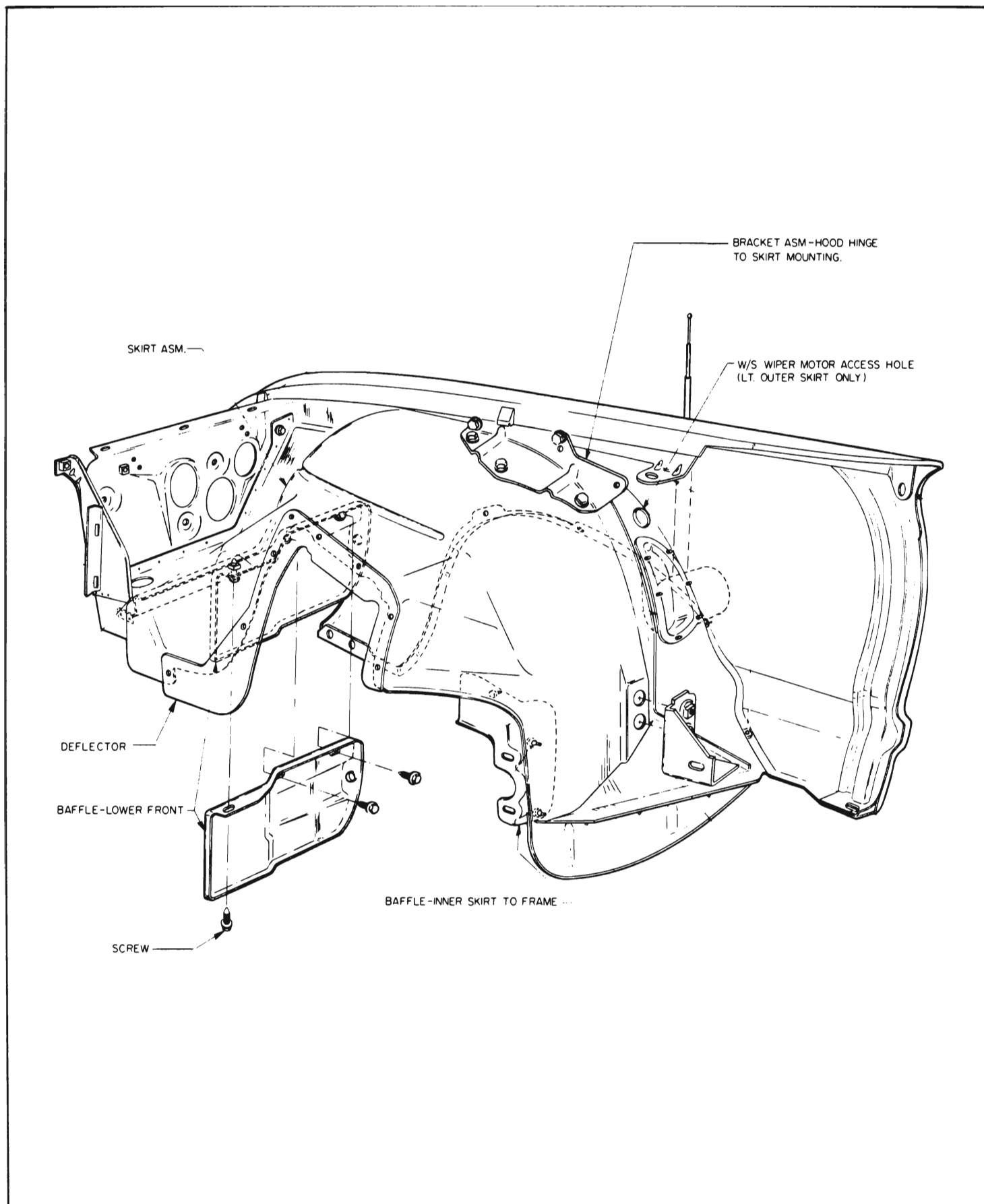


Figure 12-2—Front Fender & Skirt Installation—4700 Series

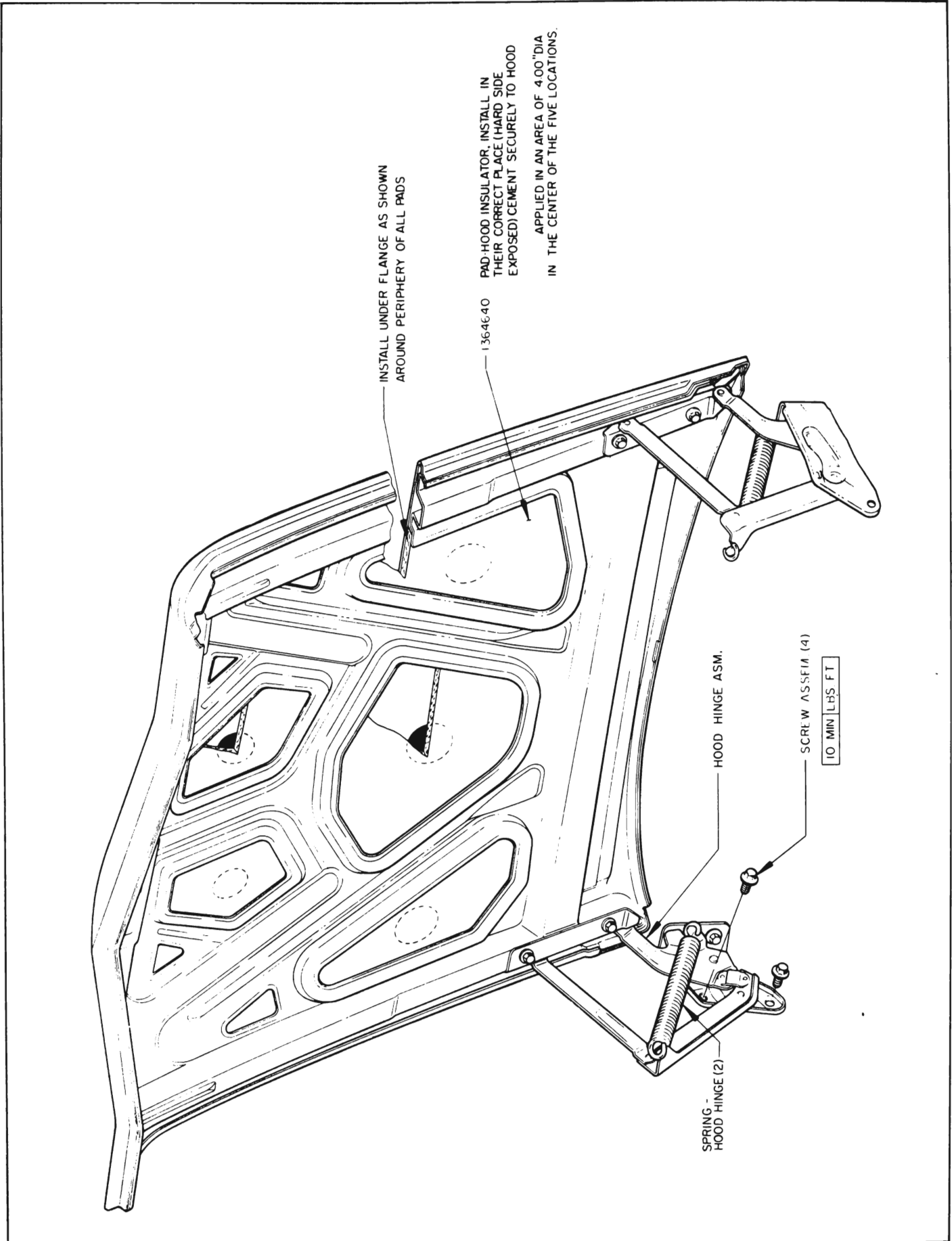


Figure 12-3—Hood Installation—44-46-4800 Series

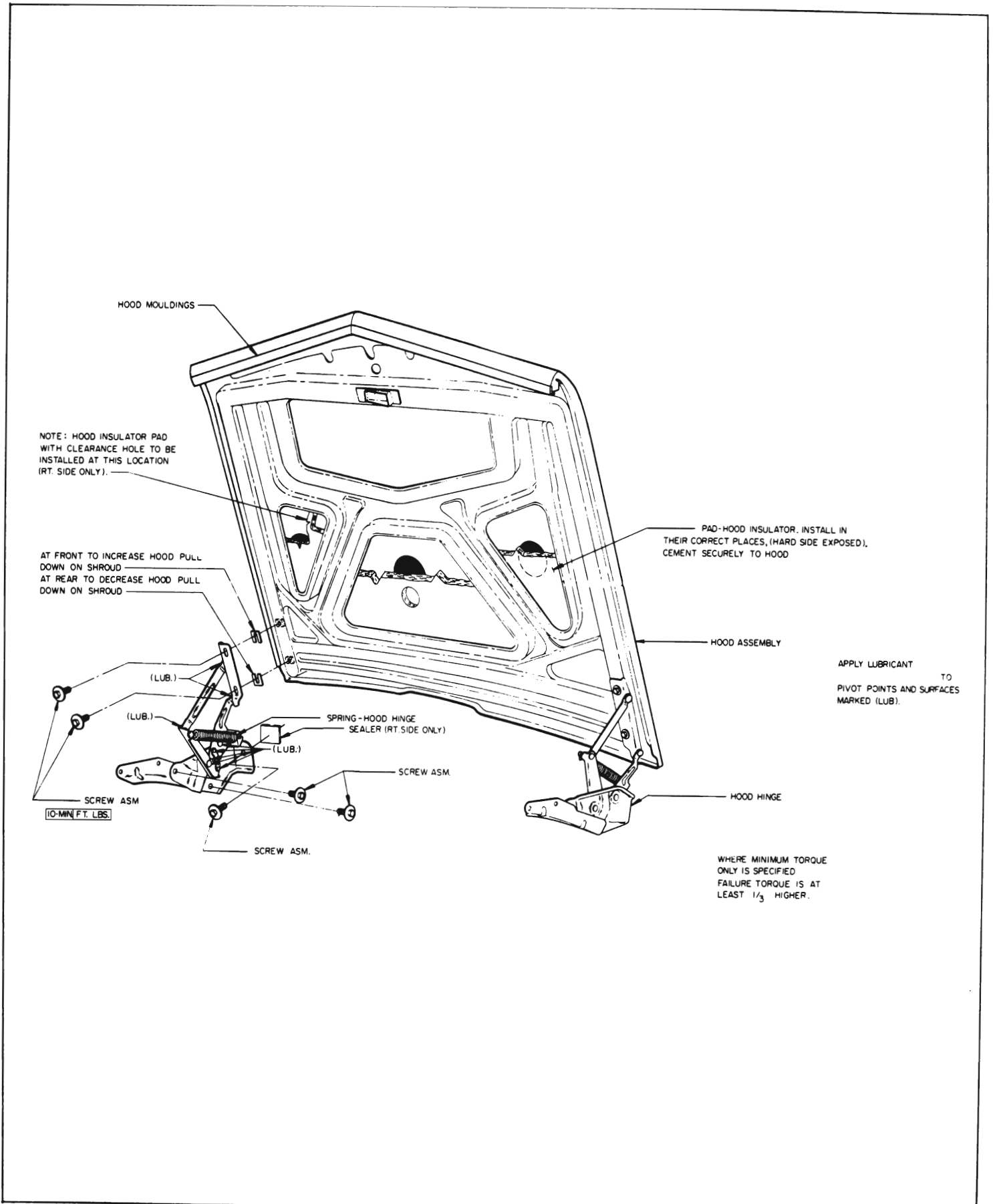


Figure 12-4—Hood & Hood Hinge Assembly—4700 Series

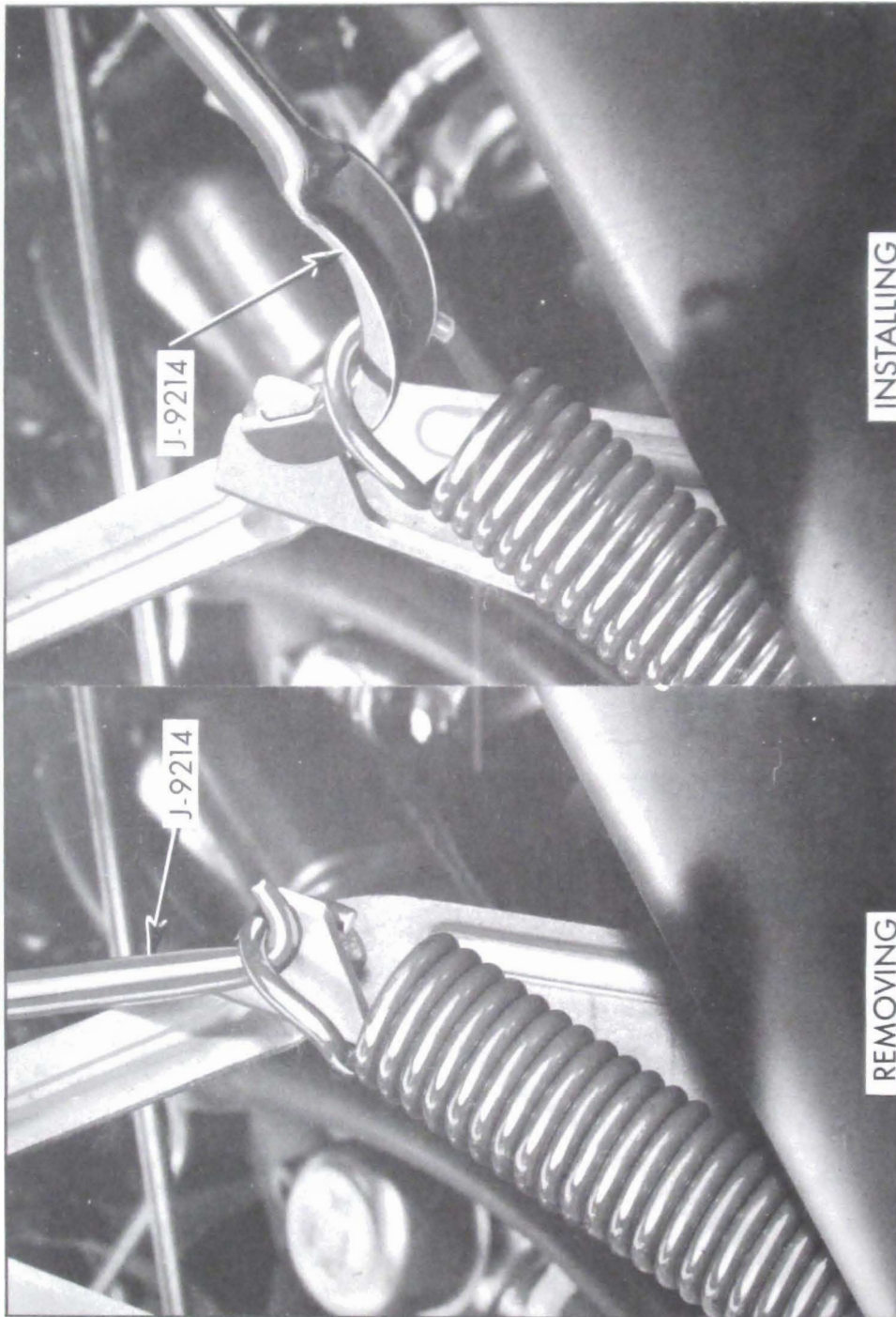


Figure 12-5—Removing and Installing Hood Hinge Spring

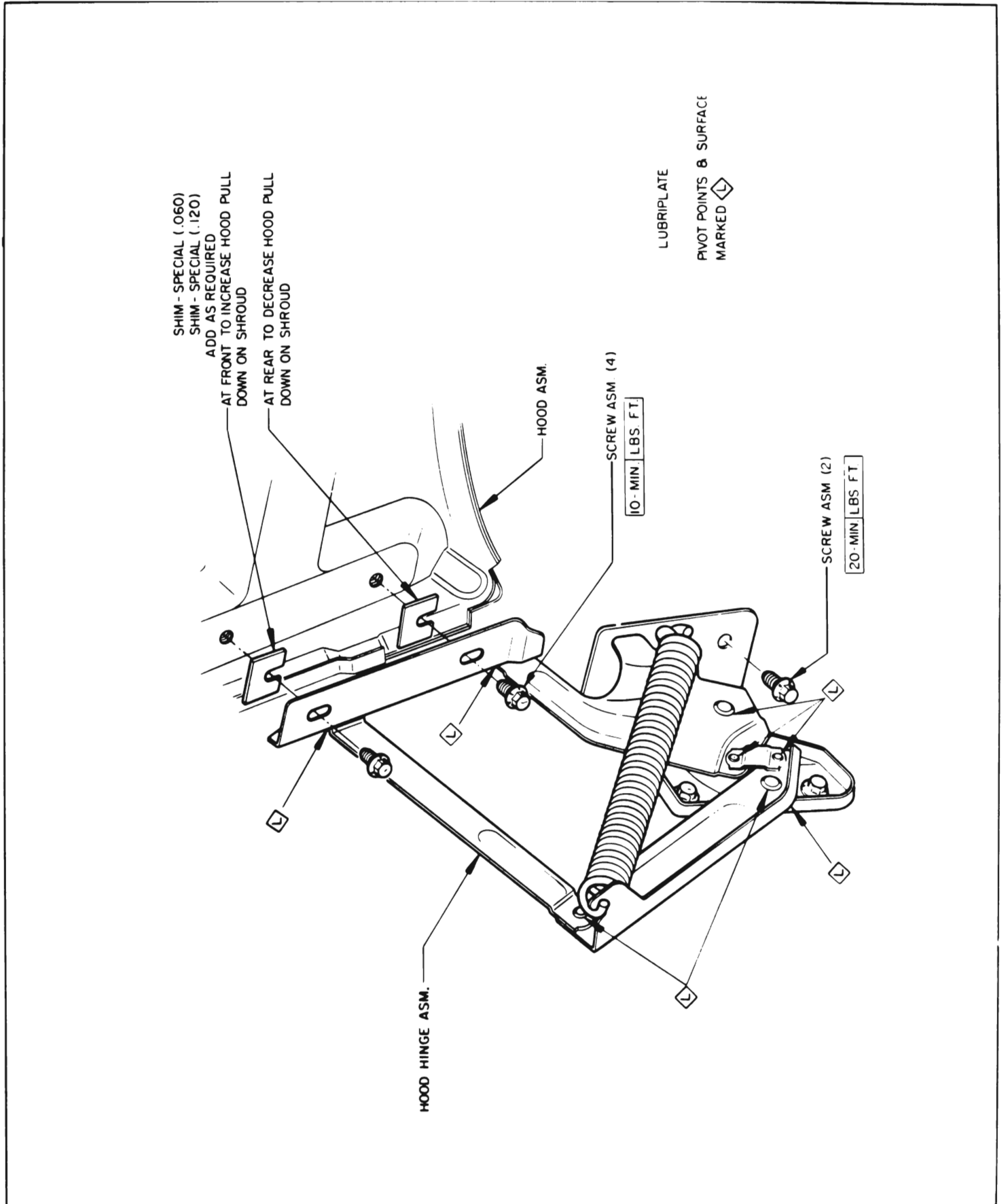


Figure 12-6—Hood Hinge Assembly—44-46-4800 Series

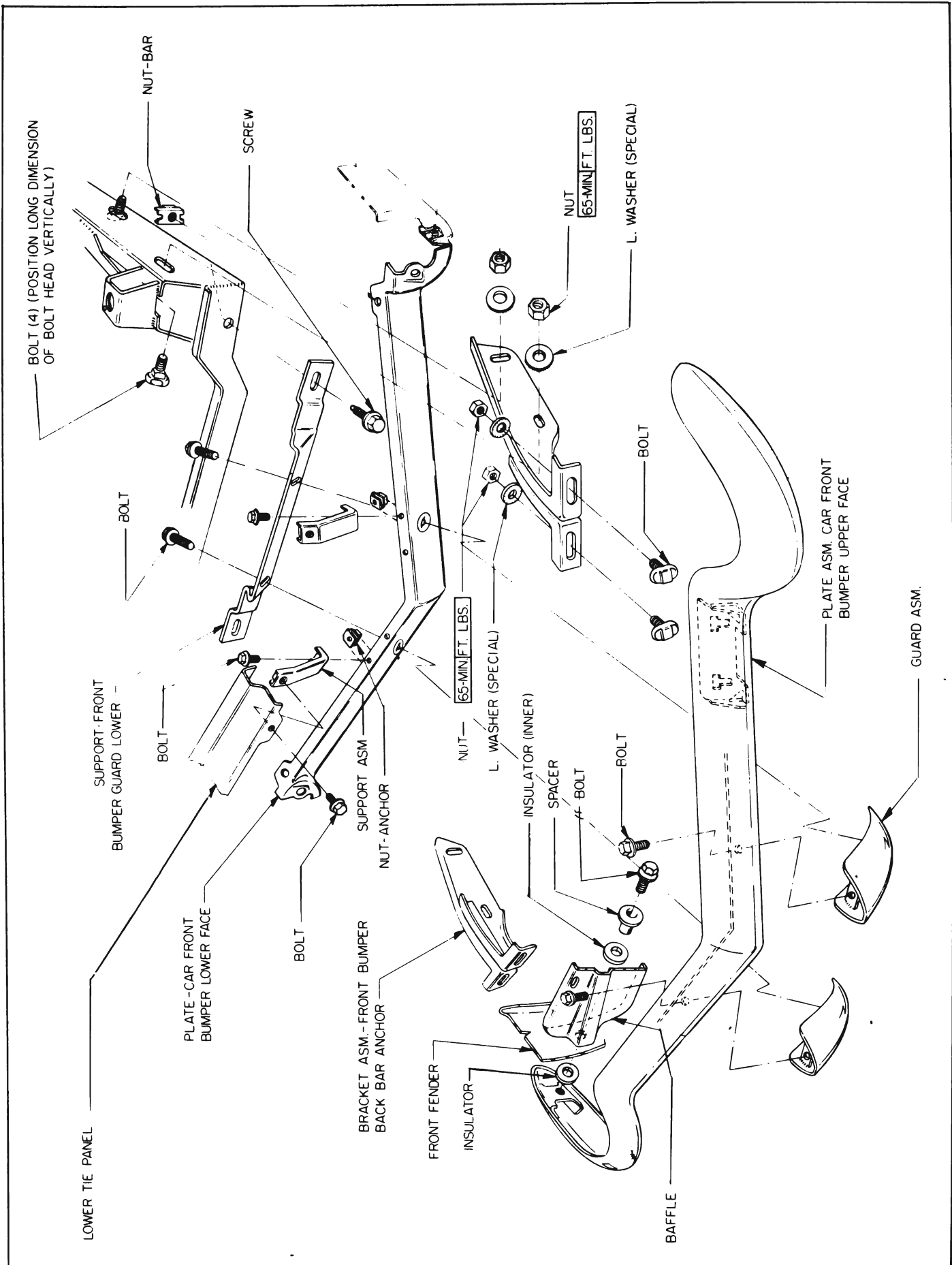


Figure 12-7—Front Bumper Assembly—4700 Series

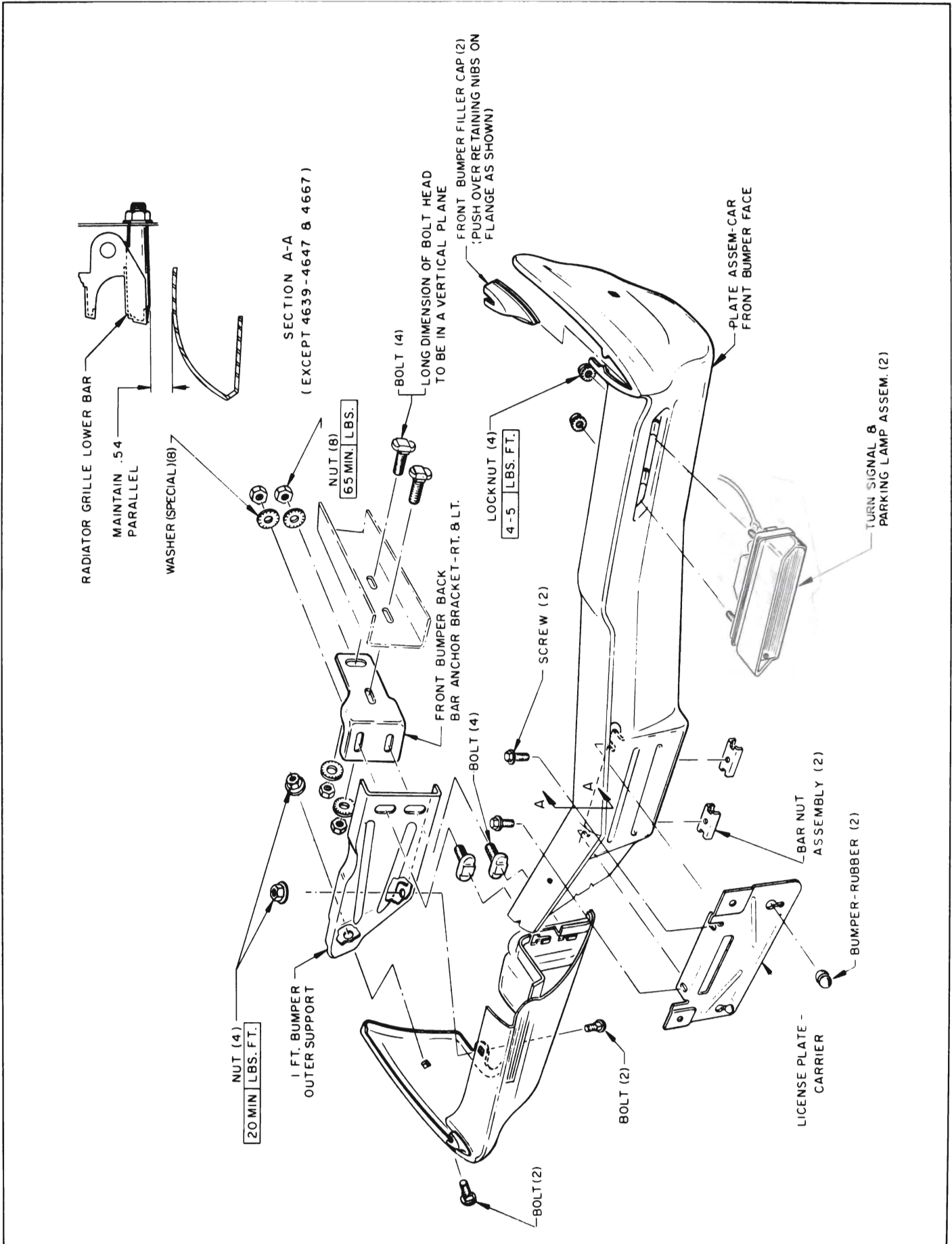


Figure 12-8—Front Bumper Installation—44-46-4800 Series

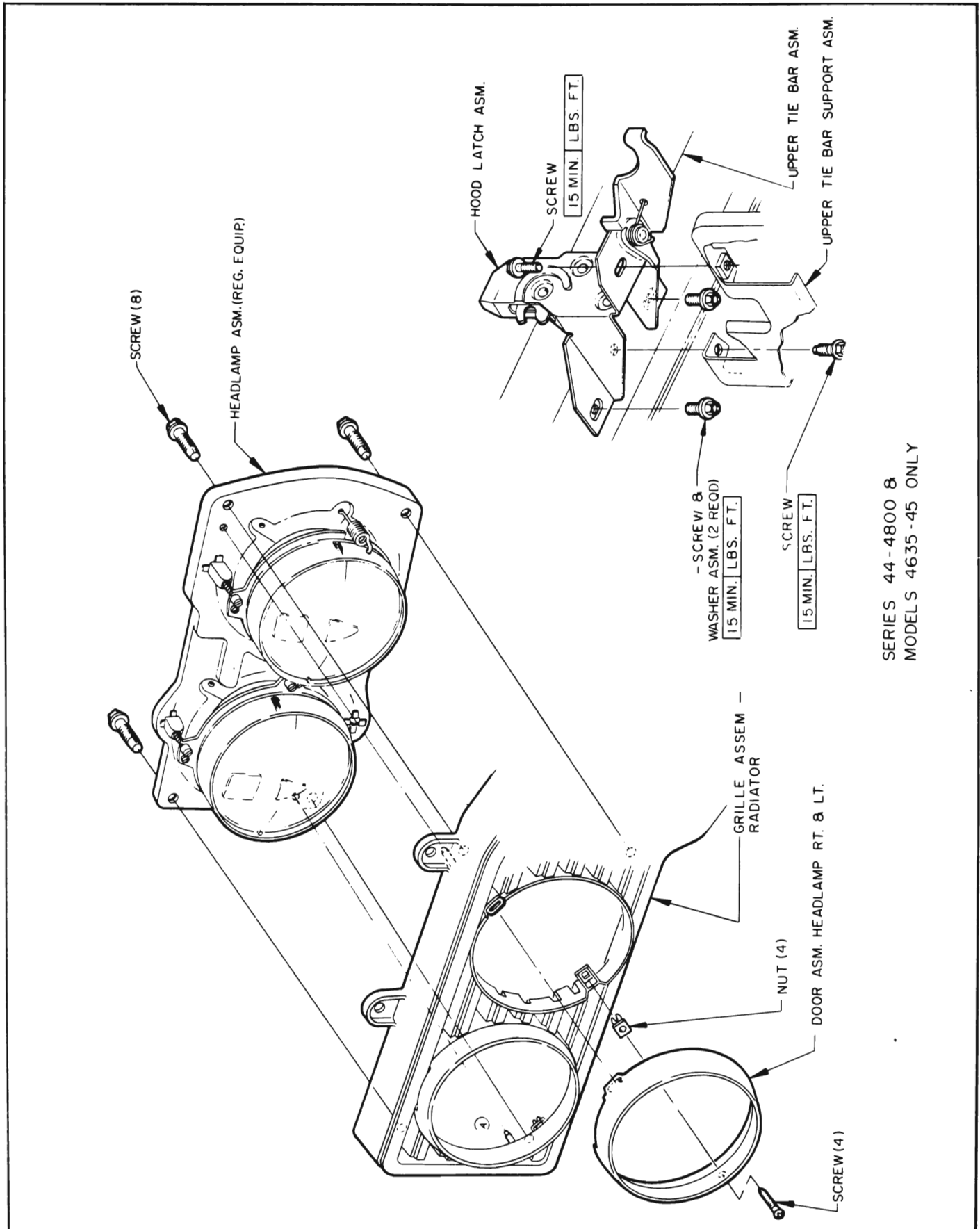


Figure 12-9—Radiator Grille, Headlamp, & Hood Latch Installation—44-4800 & 4635-45 Series

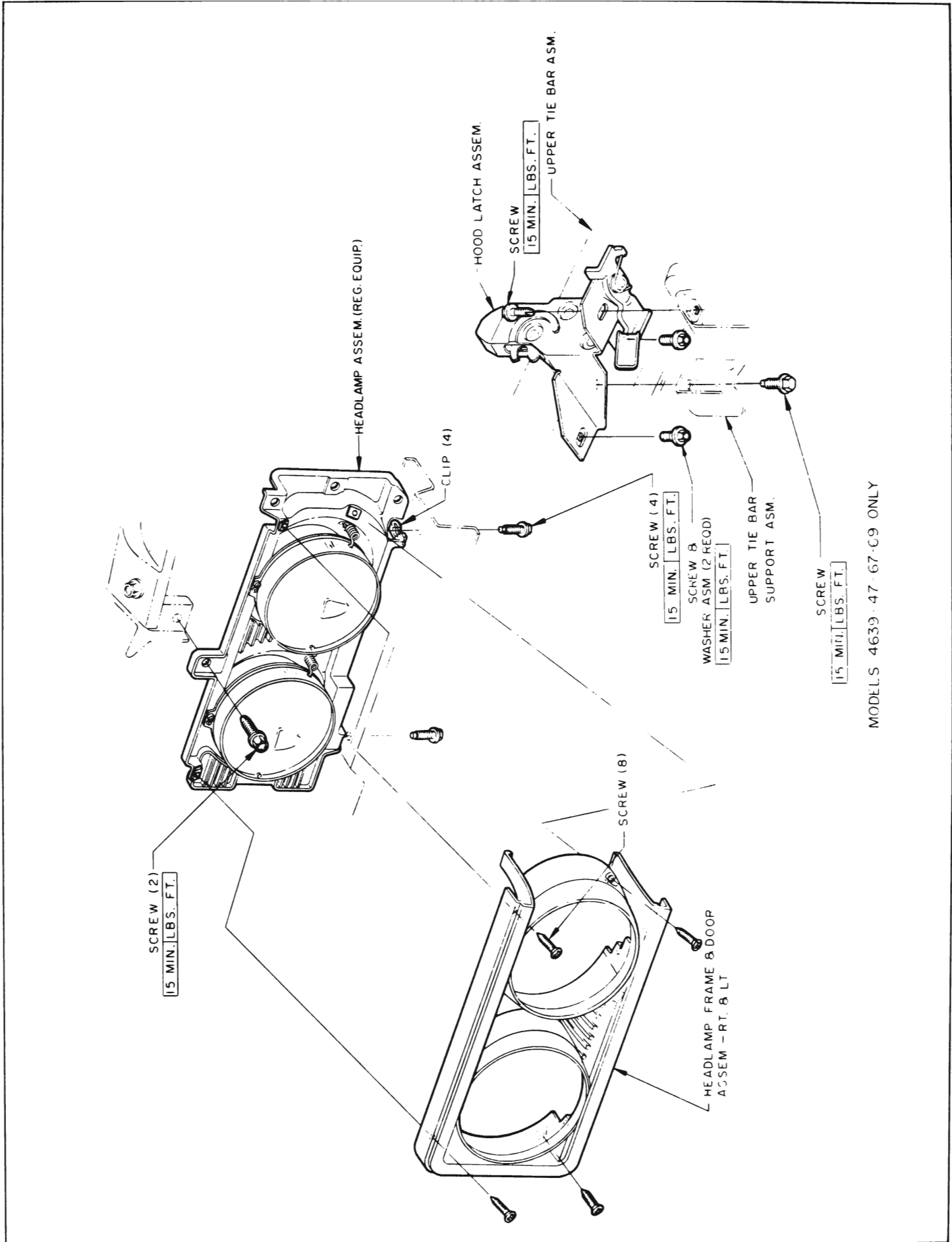


Figure 12-10—Radiator Grille, Headlamps, and Hood Latch Installation—4639-47-67-69 Series

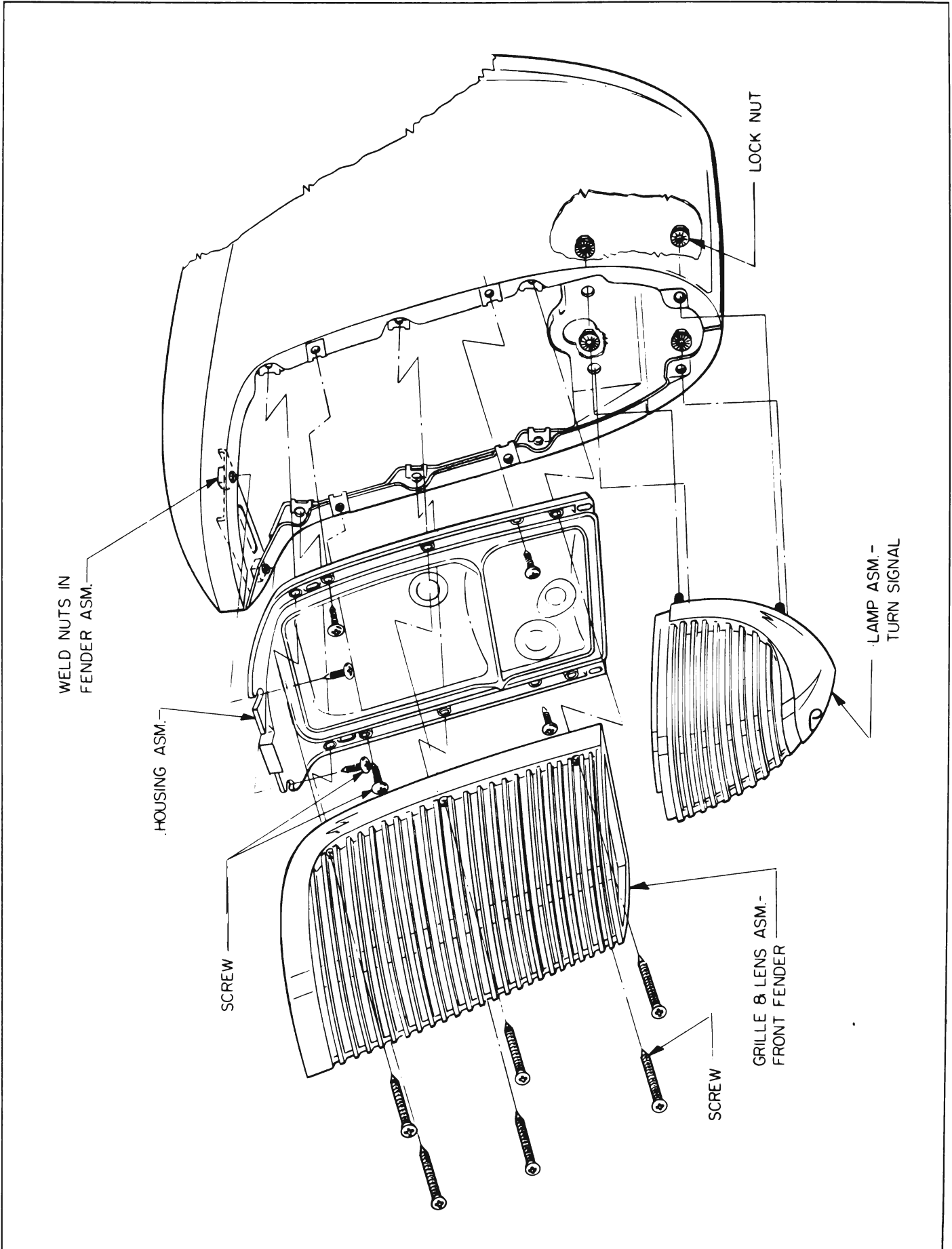


Figure 12-11—Parking Lamp, Cornering Lamp, Directional Signal & Grille Assembly—4700 Series

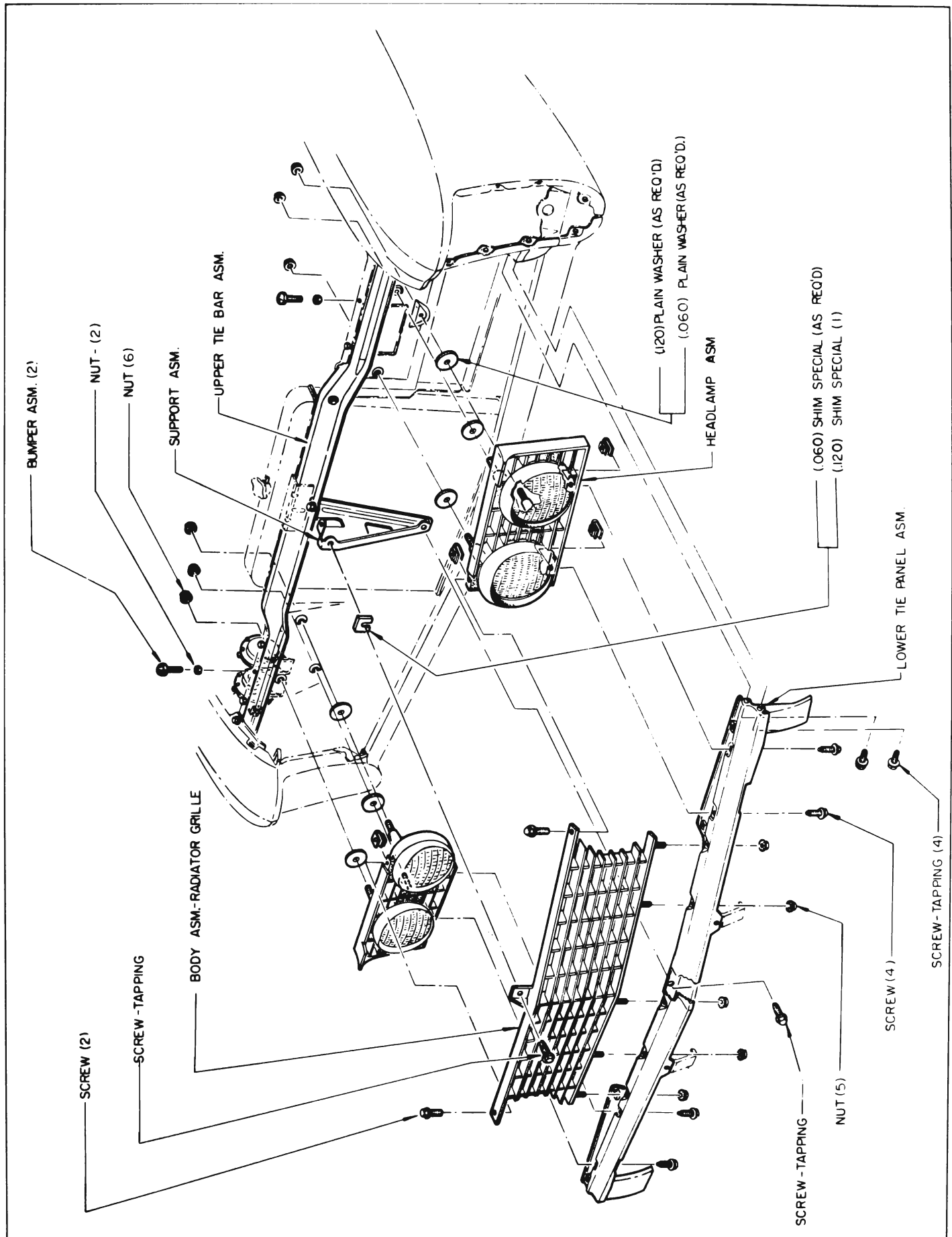


Figure 12-12—Radiator Grille, Headlamps & Front End Installation—4700 Series

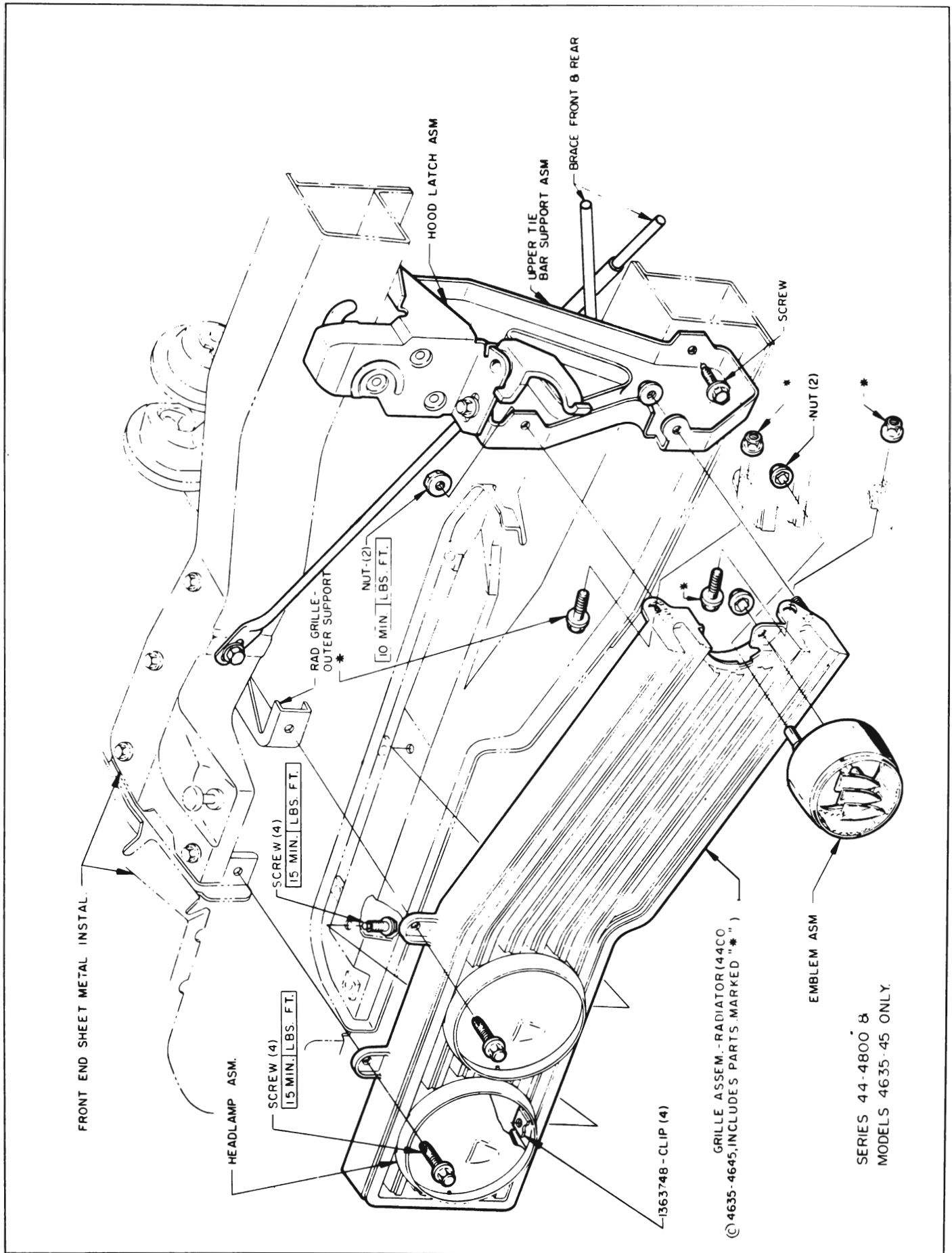


Figure 12-13—Radiator Grille, Headlamps, & Front End Installation—44-4635-4645-4800 Series

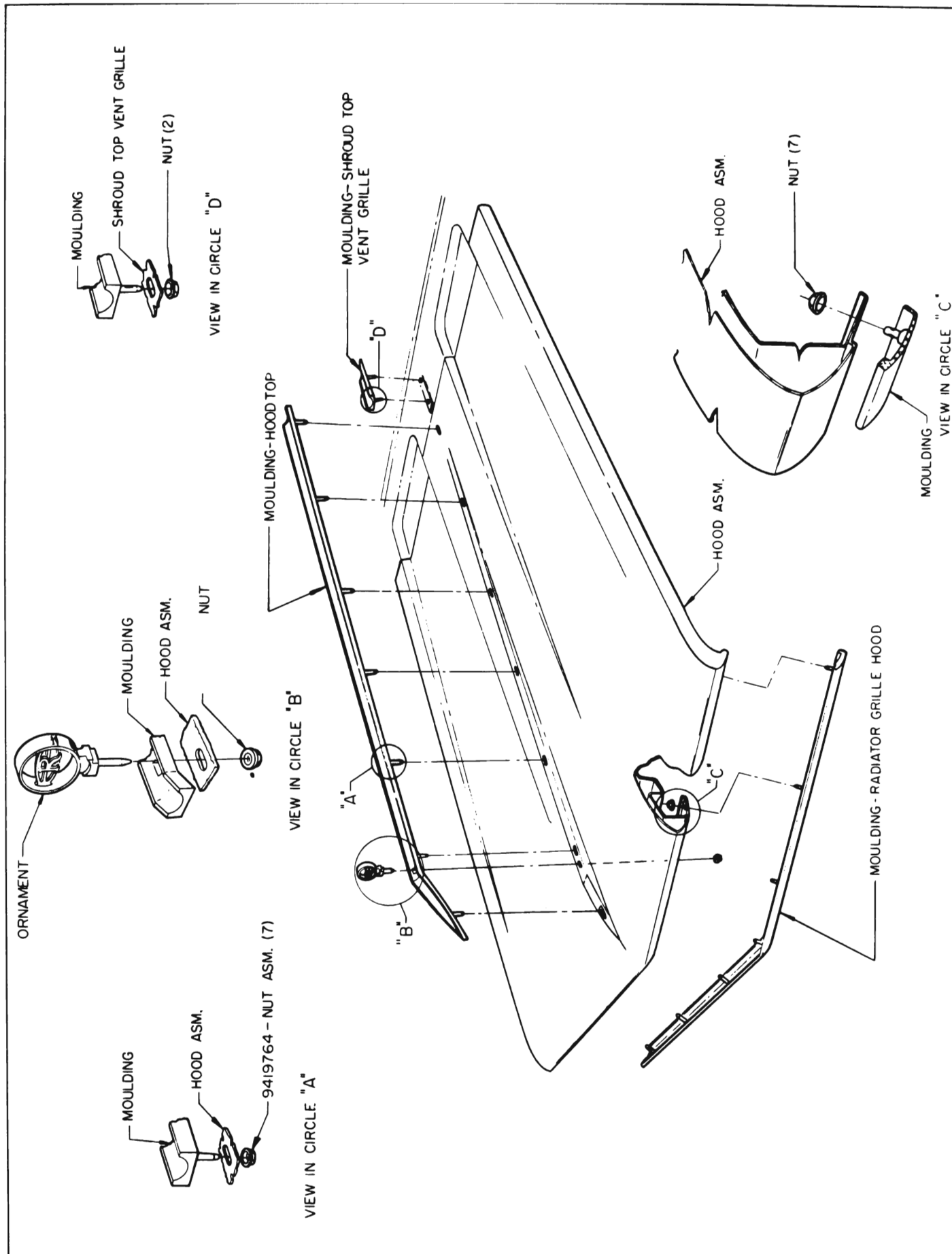


Figure 12-14—Hood Installation—4700 Series

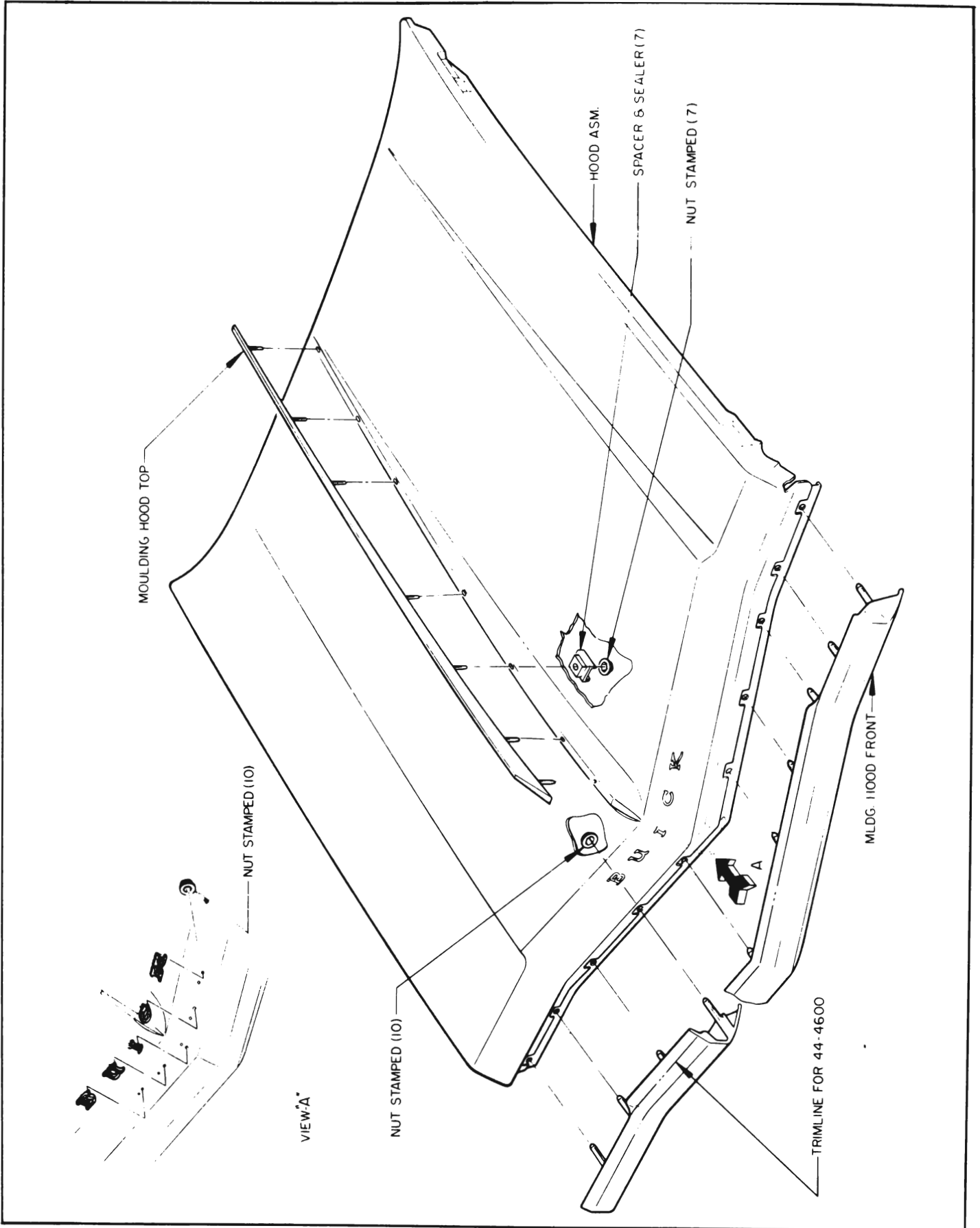


Figure 12-15—Hood Installation—44-46-4800 Series

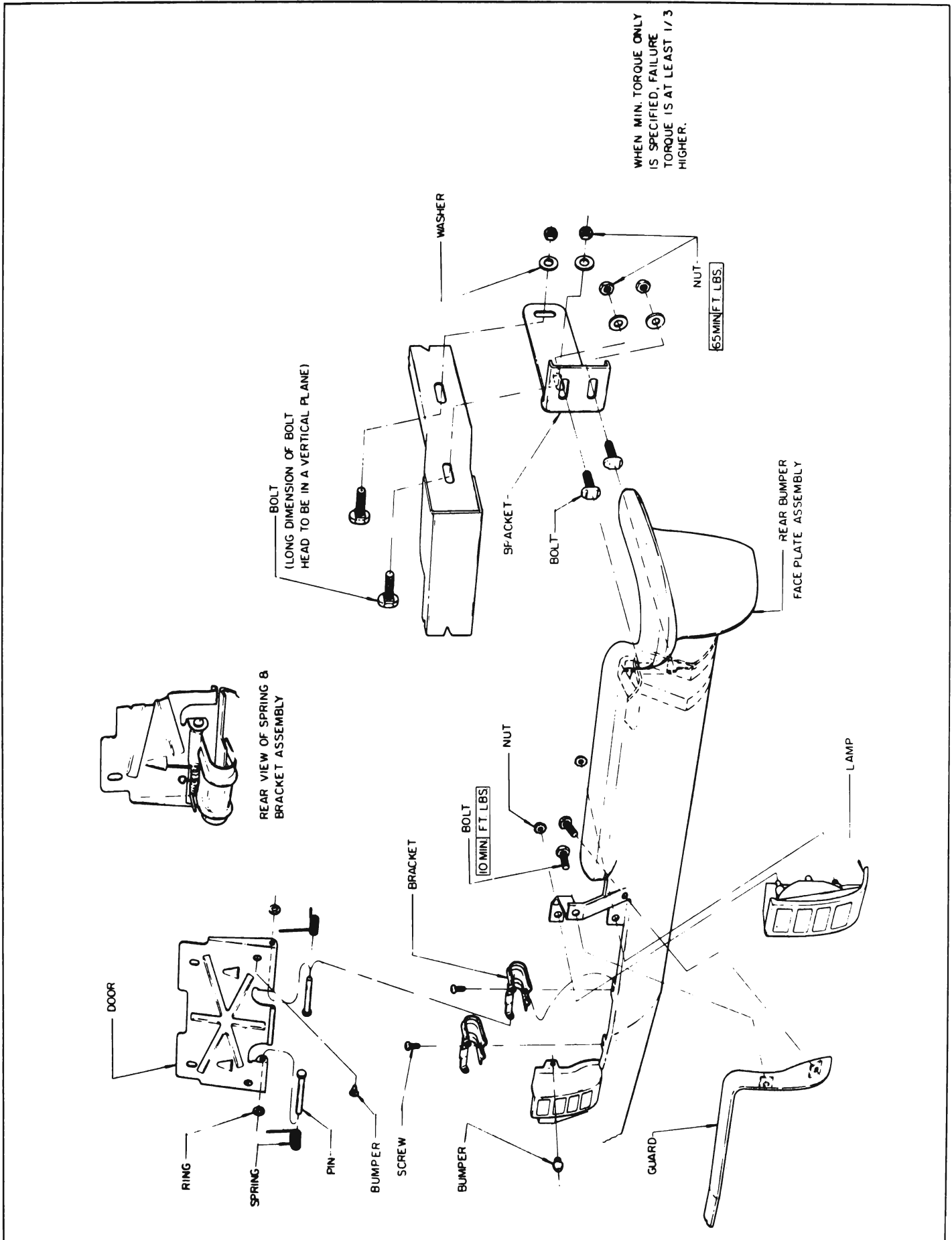


Figure 12-16—Rear Bumper Installation—4700 Series

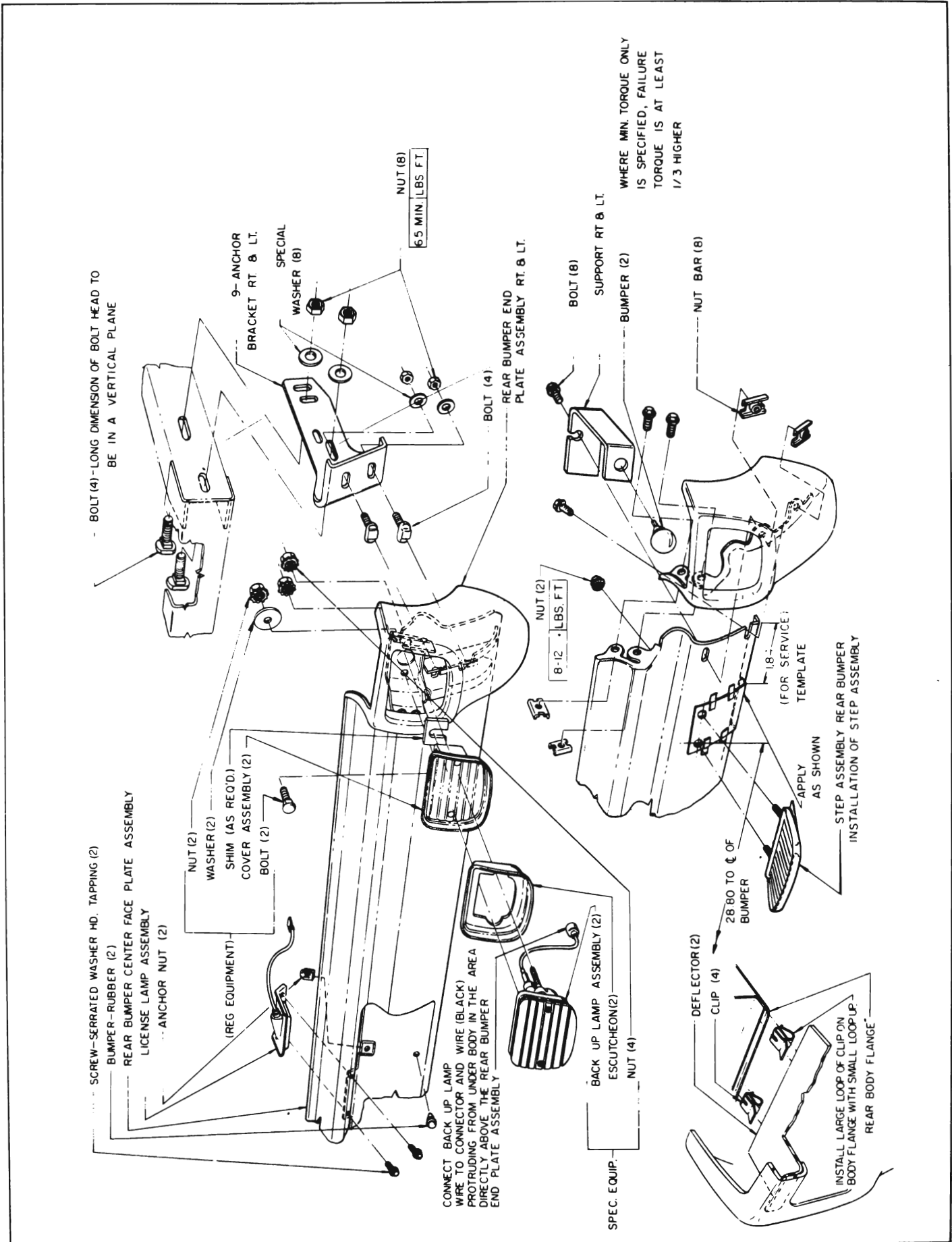
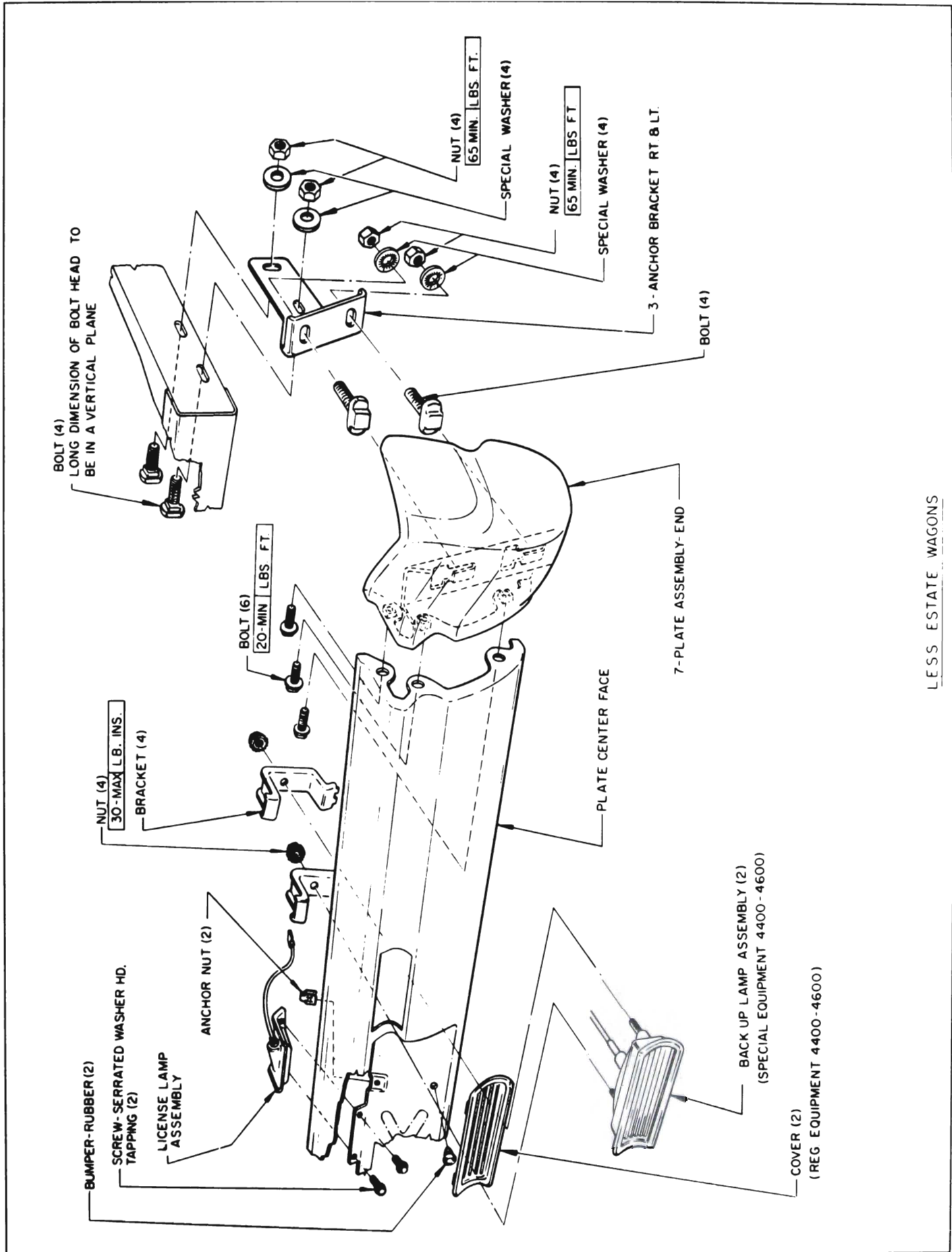


Figure 12-17—Rear Bumper & Back Up Light Installation—4635-45 Series



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Figure 12-18—Rear Bumper & Back Up Light Installation—44-4600 Series

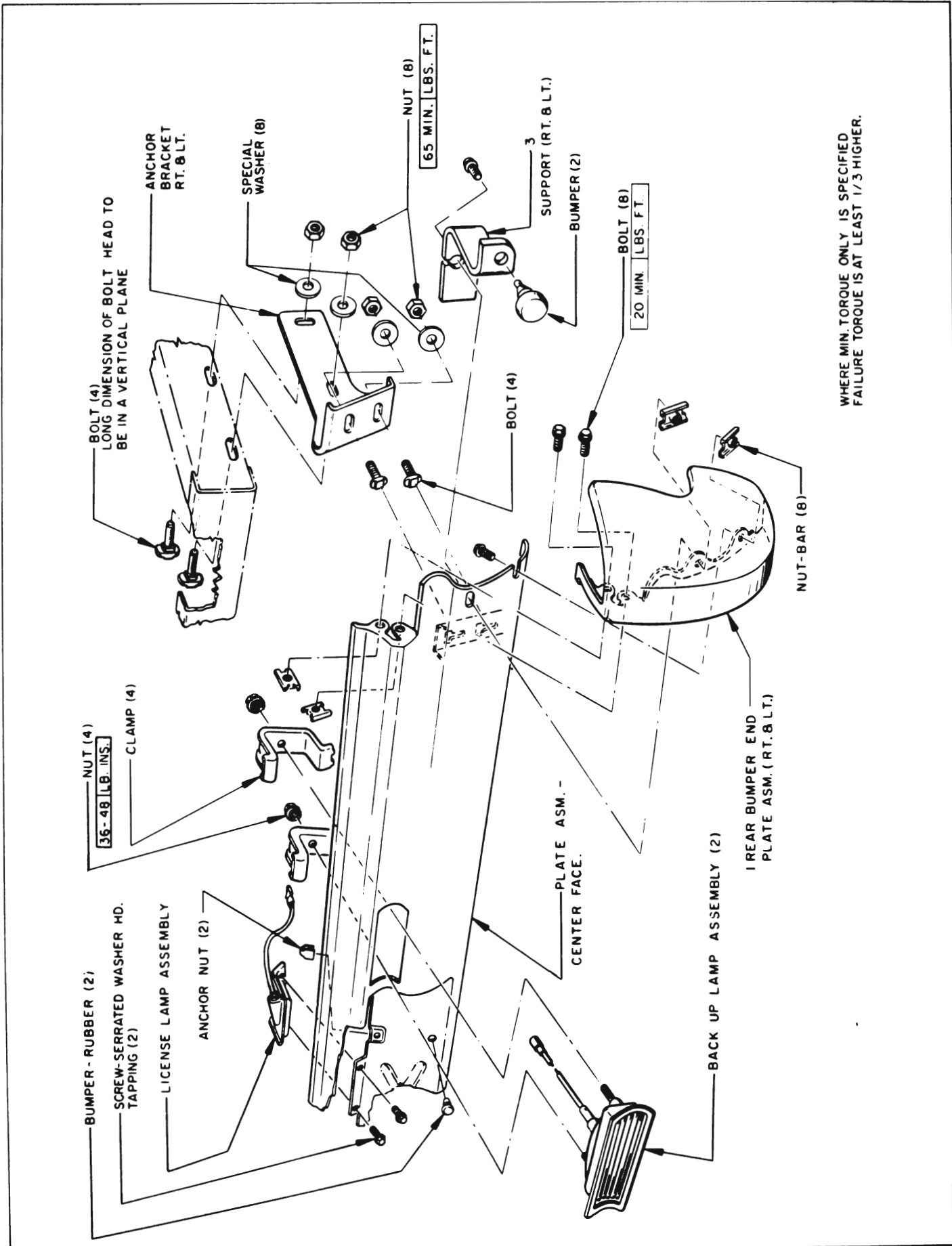


Figure 12-19—Rear Bumper & Back Up Light Installation—4800 Series