

# CARRIER SUPPLEMENTAL INSTALLATION MANUAL

# ***JERR-DAN***<sup>®</sup>

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## PREFACE

### General Information

This manual covers the following Jerr-Dan Model:

- New Universal Subframe
- New Adjustable Deck Roll Cylinder Mounting Bracket
- New Modular Headboard
- New PRIZM LED Lightbar and Work Lights on the New Modular Headboard

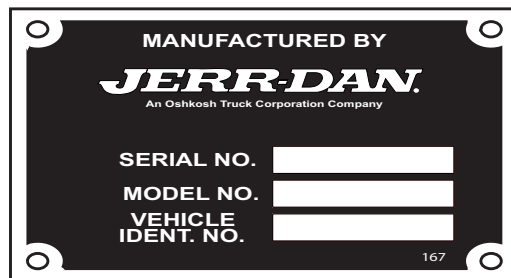
Jerr-Dan Corporation strives to provide information that is accurate, complete and useful. Descriptions and illustrative material contained within this manual are as accurate as known at the time of publication and are subject to change, without notice, as a result of continuous product improvements. Jerr-Dan Corporation reserves the right to amend the information in this document at any time without prior notice.

Information contained in this manual reflects how this vehicle was built at the factory. Modifications or additions by the distributor or owner are not reflected in this manual.

This installation manual does not include service parts information for the commercial chassis (IHC, Ford, GM, etc.).

That information is provided by the chassis manufacturer.

When ordering parts, please refer to your unit's Sales Order Number, Serial Number and Model Number. This information is found on the aluminum tag riveted to the inside of the driver's side tool compartment of the main body.



Additional or replacement manuals can be ordered by calling Jerr-Dan Parts at 717-597-7111. Price and availability will be quoted at time of the request.

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To alert personnel to hazardous operating practices, safety messages are used throughout the manual. Each safety message contains a safety alert symbol and a signal word to identify the hazard's degree of seriousness.

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 **CAUTION**

Identifies when a potentially hazardous situation exists and may result in a minor or moderate injury or property damage.

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 **WARNING**

Identifies when a potentially hazardous situation exists and could result in death or serious injury.

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 **DANGER**

Identifies when an imminently hazardous situation exists and can result in death or serious injury.

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This manual provides supplemental installation instructions for the Carrier products. Read the instructions thoroughly prior to starting installation. Sketches are provided to give visual aid and may not look the same as what you are working with because of make of chassis and model year. All work performed in relation to the mounting of Jerr-Dan bodies should be performed by qualified and experienced personnel.

These instructions are intended to be a guide. Procedures may vary from individual to individual and from shop to shop based on the tools and equipment available and the experience of the mechanics doing the installation. There are, however, certain areas where any deviation from the recommended procedure will cause unsatisfactory operation and reduced life of the unit. Any deviation from these mounting instructions should be done with thought and planning. Jerr-Dan will not accept responsibility for poor workmanship and improper installations.

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## CHASSIS PREPARATION

### Preparation Notes

Chassis preparation involves rear frame cutoff and relocating and modifying components for installation of your Jerr-Dan unit. Different factory options and chassis modifications will warrant the modification of these instructions. All chassis modifications should be done by qualified and experienced personnel and according to guidelines found in chassis manufacturer's body builder books.

*Jerr-Dan will not accept responsibility for poor workmanship and improper installations. We recommend that you do not attempt to modify any chassis until you obtain expert guidance from the chassis manufacturer. Always follow the recommendations of the chassis manufacturer.*

#### CAUTION

When modifying the chassis, become familiar with the location of the brake lines, fuel lines, wiring harnesses, and fuel tanks so as not to cause damage to these components.

#### CAUTION

Always disconnect the positive wire from the battery before welding any components on the chassis or body. Damage to batteries and/or electrical components can result from welding.

#### CAUTION

Always disconnect the positive wire from the battery before working on the electrical system. Damage to batteries and/or electrical components can result from electrical shorts.

#### NOTE

To protect the rear window and paint from damage, cover the cab with a protective blanket before starting work.

## Rear Frame Cutoff

1. Disconnect the wiring harness from the tail lights and remove and discard the tail lights.
2. Pull the wiring harness from the tail lights back to the rear axle and temporarily secure.  
*The wiring harness will get reconnected after the body is installed.*
3. Cut the chassis frame behind the center line of the rear axle as shown using the dimension from the chart in Figure 1. Discard the extra chassis frame.
4. Cut a 1/2" x 45° chamfer on the along the top chassis frame rails.
5. Grind the area around the cut-off edge to remove paint from the chassis frame in the area to be welded.

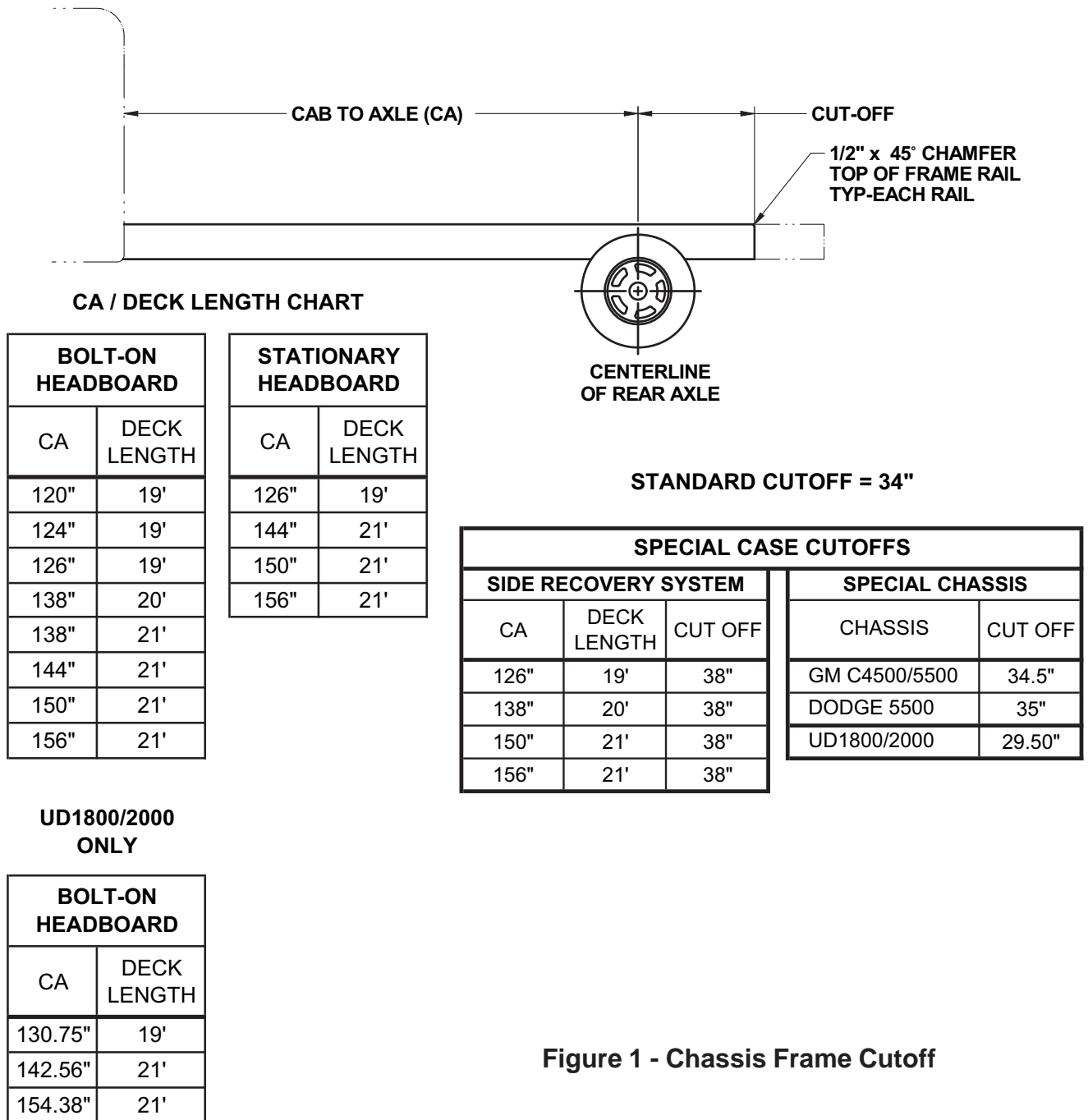


Figure 1 - Chassis Frame Cutoff

## Universal Subframe Installation

1. Set the subframe on the chassis frame as shown in Figure 2.
2. For Dodge and UD chassis, spacers are required to raise the subframe above obstructions on the top of the chassis frame. Place two spacers under the trunnion and two spacers under the front cross-tube of the subframe and weld as shown in Figure 3
3. Square the subframe to the chassis frame and tightly clamp the two together.  
NOTE: Subframe is to be centered on and parallel with chassis frame to within 1/16" maximum.
4. Weld the trunnion to the chassis frame rails as shown in Figure 4. Do not weld across the front of the trunnion angle and the top of the chassis frame rails.
5. Set one gusset with the end of the chassis frame below the trunnion lug and offset 1/4" from the side of the chassis frame as shown in Figure 5. Repeat for the opposite side.

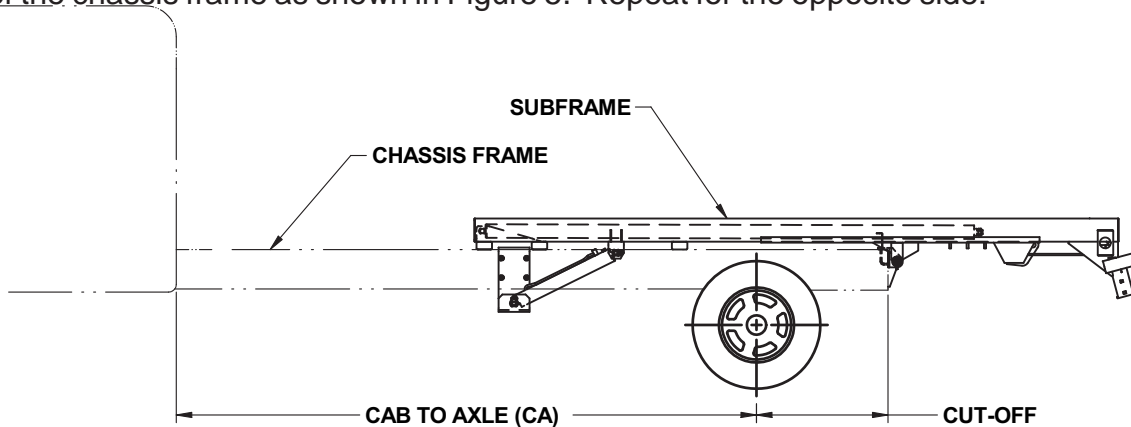


Figure 2 - Subframe Installation

### NOTE

Make sure that the subframe is square and properly positioned before welding the trunnion bracket to the frame.

### WARNING

Arc welding can be injurious to operator and persons in the work area. Consult instruction manual before operation of arc welder. Arc rays can burn eyes and skin. Noise can damage ears. Wear proper eye, ear and body protection. Fumes and gas can seriously harm your health. Use adequate ventilation.

## Universal Subframe Installation

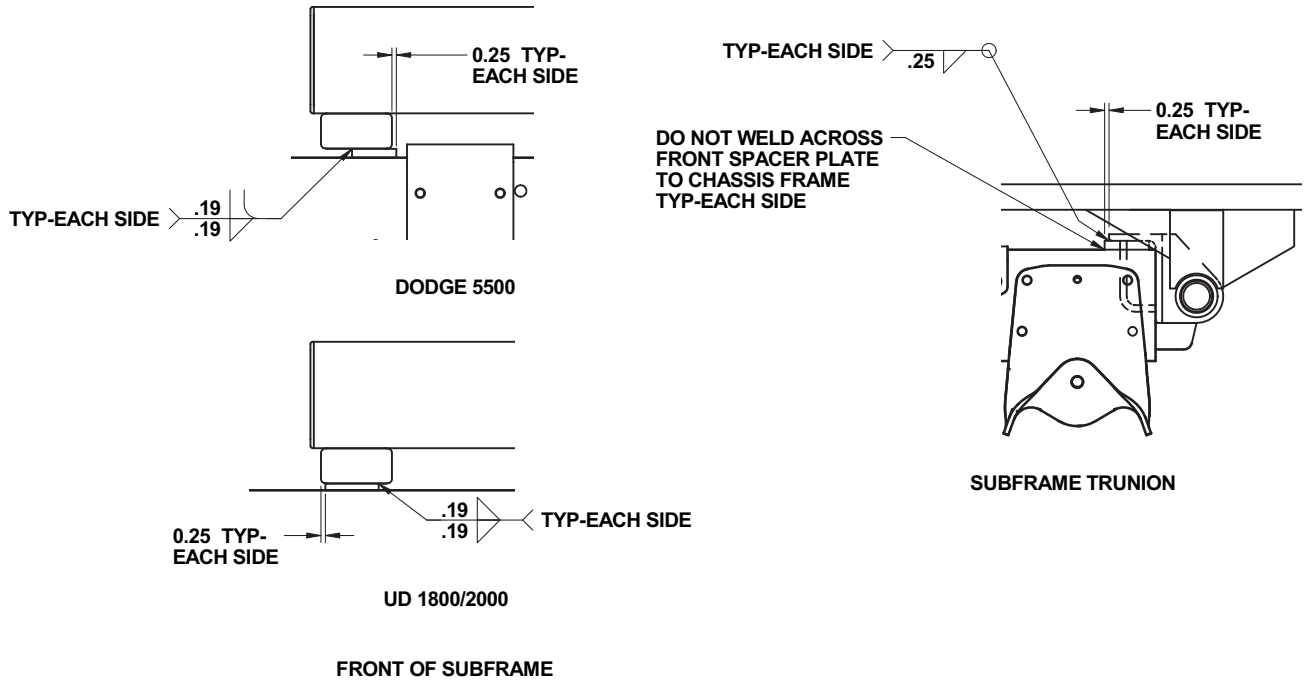


Figure 3 - Spacer Installation

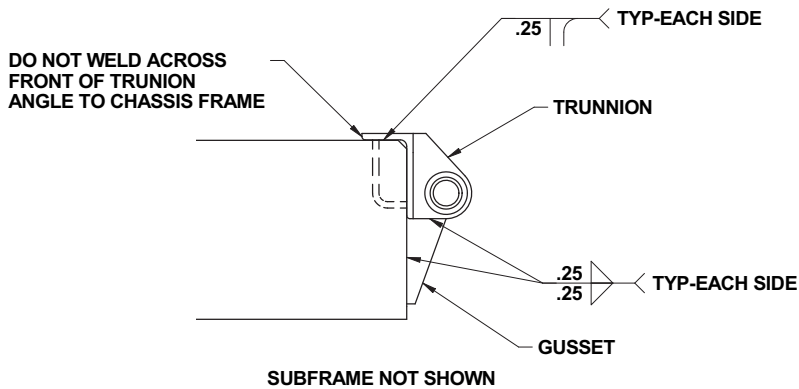


Figure 4 - Trunnion Installation

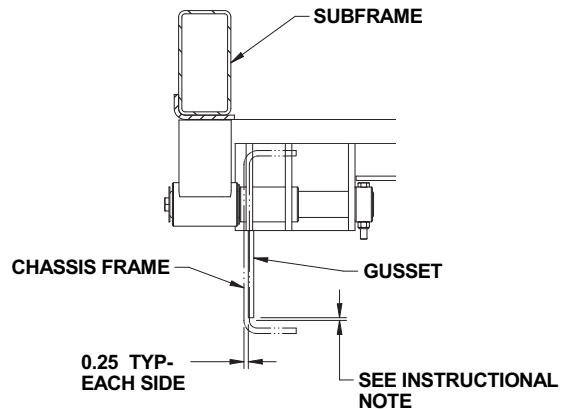


Figure 5 - Trunnion Gusset Installation

## Universal Subframe Installation (Outboard Tilt Cylinders)

1. Remove the shipping hardware securing the saddle to the subframe. Reference Figure 6.
2. Make sure the tilt cylinders are completely retracted by loosening the extend and retract ports on the tilt cylinders and tapping the rod end of the cylinder with a rubber mallet until complete retracted.
3. Mark the rod position in relationship to the cylinder head with paint, grease pencil or permanent marker as shown in Figure 7.
4. Using a rubber mallet, tap the saddle to extend the tilt cylinder rod  $3/16'' \pm 1/16''$  using the mark made in step 3 as a guide. Repeat steps 3 and 4 for the opposite side tilt cylinder.
5. Square the saddles to the chassis frame and tightly clamp in position.
6. Using the saddles as a template, drill eight holes (four each side) through the chassis frame as follows, see Figure 8:
  - 5 ton units -  $33/64''$  dia holes
  - 6 ton units -  $41/64''$  dia holes
7. Secure the saddles to the chassis frame using the following hardware per side and torque to 100 ft-lbs:
  - 5 ton units -  $1/2''$  dia x 2" long capscrews  
 $1/2''$  dia hardened washers  
 $1/2''$  dia flanged locknuts
  - 6 ton units -  $5/8''$  dia x 2- $3/4''$  long capscrews  
 $5/8''$  dia hardened washers  
 $5/8''$  dia flanged locknuts
8. Position the hold down as shown in Figure 9 based on the deck length.
9. Remove any clamps used to secure the subframe or saddles to the chassis frame.

 **CAUTION**

**When drilling through the chassis frame, be careful not to damage any fuel lines, brake lines or electrical lines.**

 **CAUTION**

**When relocating chassis components on the chassis frame, use the same size or larger hardware in the same or greater quantity and at the original component mounting points .**

## Universal Subframe Installation (Outboard Tilt Cylinders)



Figure 6 - Saddle Shipping Hardware

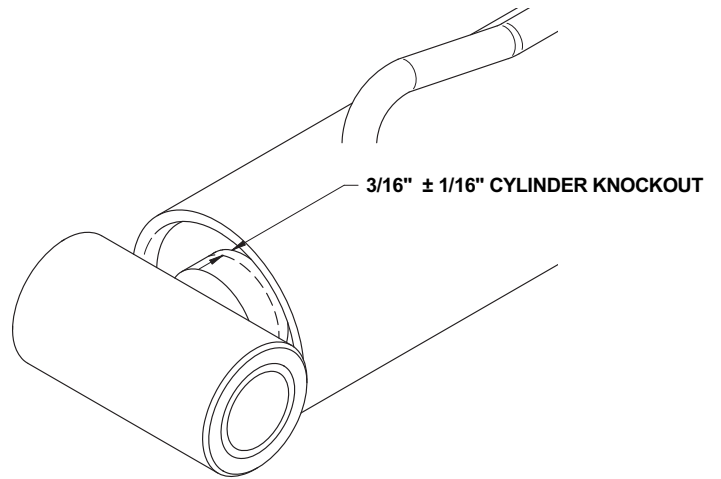


Figure 7 - Tilt Cylinder Knockout

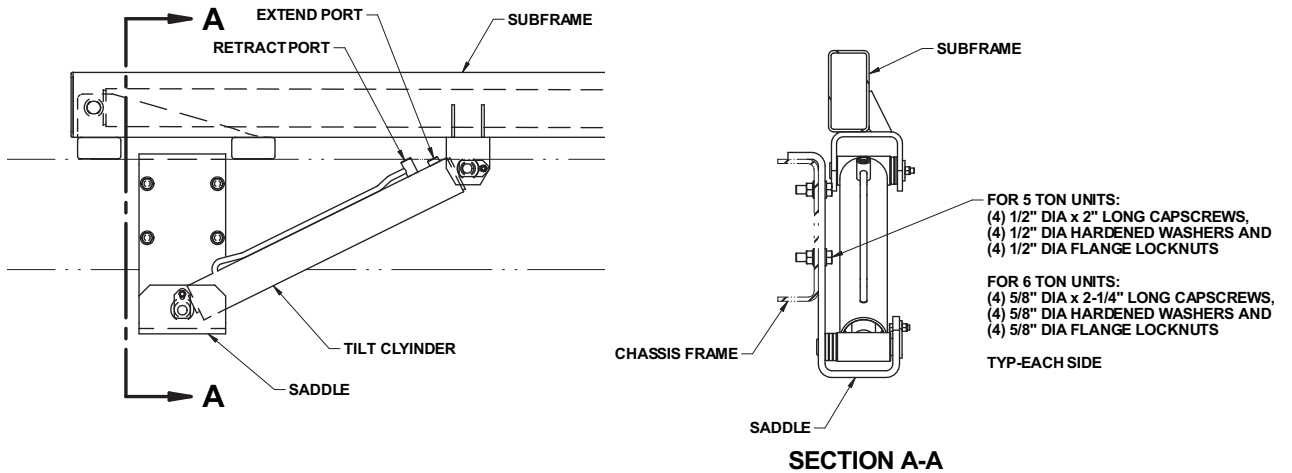


Figure 8 - Saddle Installation

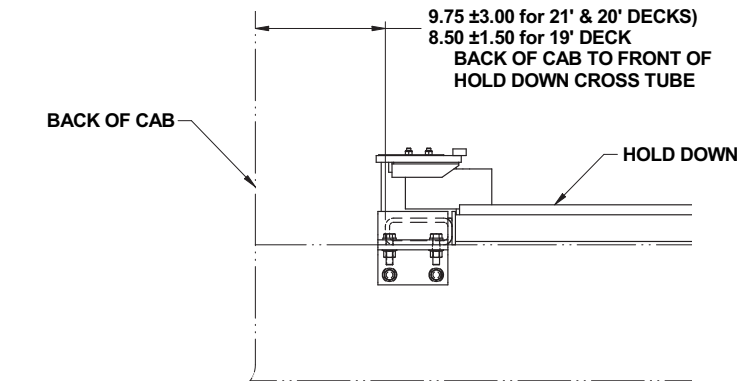


Figure 9 - Hold Down Installation

## Deck Roll Cylinder Adjustment

1. The adjustment for the roll cylinder is located on the deck where the roll cylinder attaches to the deck.
2. After sliding the deck on the subframe, align the roll cylinder rod with the bracket on the deck and extend the cylinder rod through the hole in the bracket. Secure the roll cylinder rod end to the bracket with the 1" dia locknut.
3. Finish installing all hydraulic hoses and wiring harnesses as described in the standard installation manual.
4. Roll the deck forward until the roll cylinder is completely retracted. Measure the distance between the back of the cab and the front of the main deck beam, see Figure 10. If the gap is greater than 3-3/4", the roll cylinder mounting bracket should be adjusted.
5. To adjust the roll cylinder bracket, first determine the amount the bracket is required to be moved. Take the measurement from step 4 and subtract 2-1/2". This is how much the bracket needs to be moved rearward. To relate this dimensional value to the number of holes, divide the distance to be moved by 1.34 and round down to the nearest whole number

$$(\text{Measured Gap} - 2\text{-}1/2") / 1.34 = \text{number of holes to move bracket}$$

Example: measured gap is 11-1/4";  $11\text{-}1/4" - 2\text{-}1/2" = 8\text{-}3/4"$ ;  $8\text{-}3/4" / 1.34 = 6.53$ ; rounded down = 6; therefore move the bracket rearward 6 holes.

See Figure 11 for example

5. Adjust the roll cylinder mounting bracket by removing the 3/4" dia hardware, extending the deck rearward using the roll cylinder to position the roll cylinder mounting bracket. See Figure 12.
6. If more adjustment is needed, the roll cylinder mounting bracket can be reversed and adjusted accordingly, see Figure 13.

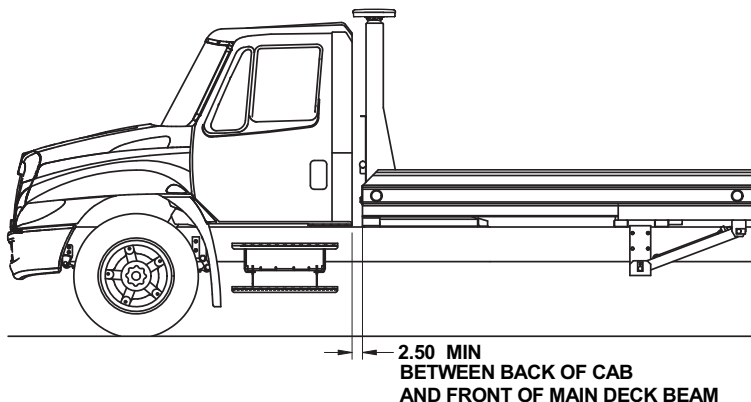
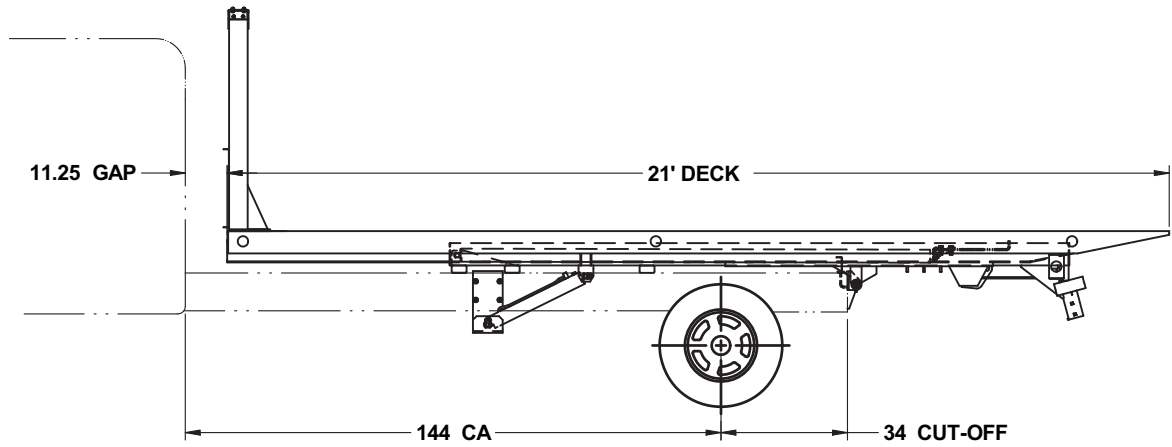
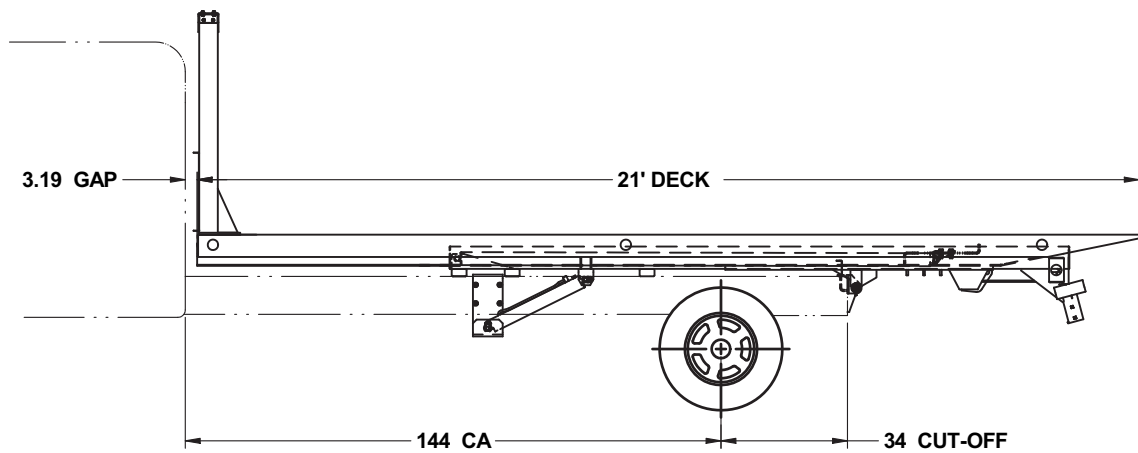


Figure 10 - Cab to Deck Gap



DECK WITH ROLL CYLINDER BRACKET IN FORWARD MOST (SHIPPED) POSITION



DECK WITH ROLL CYLINDER BRACKET IN RELOCATED (MOVE 8 HOLES POSITION

Figure 11 - Deck Roll Cylinder Adjustment Example

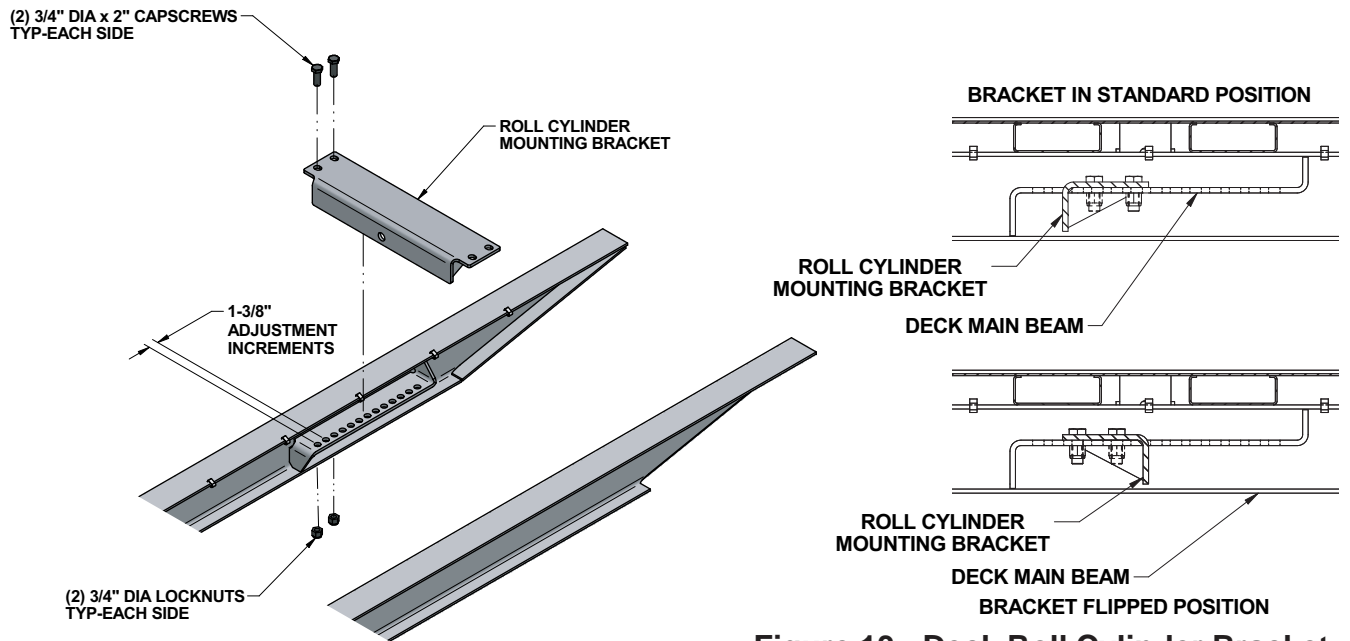


Figure 12 - Deck Roll Cylinder Adjustment

Figure 13 - Deck Roll Cylinder Bracket Alternate Position

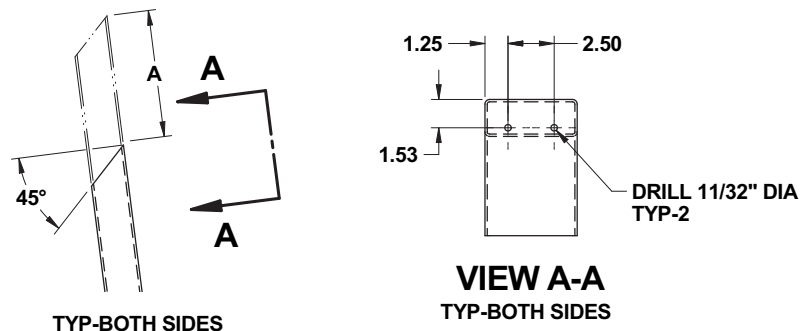
## Modular Headboard Installation

1. The modular headboard on ship-out kits will be one of two heights; 57.5" nominal (59.5" actual) or 45.5" nominal (47.5" actual).
2. First, determine if the headboard is required to be reworked to make it a lower height to fit the chassis cab. Refer to the headboard height matrix, Table B, to determine the headboard height recommended. If the headboard does not require rework proceed to step 4.
3. Cut both upright diagonal support tubes at a 45° angle based on the dimension from the matrix and drill two 11/32" dia through the outside wall of each tube as shown in Figure 14.
4. Attach one angle to the side of the support tube using two 3/8" dia x 3/4" long self-tapping screws and hand tighten. Repeat for the opposite side.
5. Position the headboard top channel over the angles and tubes. Secure the channel to the angles using two 3/8" dia x 1" long capscrews, 3/8" dia flatwashers and 3/8" dia lock nuts for each end as shown in Figure 15. Only hand tighten hardware at this time.
6. Center the headboard top channel with the side tubes and tighten all mounting hardware.

	Frame to Top of Cab Height	Bolt-On Modular Headboard (Ship-Out Height)	Bolt-On Modular Headboard Height (Installed Height)	Bolt-On Modular Headboard 'A' Dim	Bolt-On Headboard Height Ref
Steel & Aluminum Decks	Up to 49.50"	47.50"	38.50"	9.12"	36.50"
	50.00" - 53.50"		42.50"	5.06"	40.50"
	54.00" - 58.50"		47.50"	0"	45.50"
	59.00" - 63.50"	59.50"	52.50"	7.06"	50.50"
	64.00" - 70.50"		59.50"	0"	57.50"
Wood Decks	Up to 50.50"	47.50"	38.50"	9.12"	36.50"
	51.00" - 54.50"		42.50"	5.06"	40.50"
	55.00" - 59.50"		47.50"	0"	45.50"
	60.00" - 64.50"	59.50"	52.50"	7.06"	50.50"
	65.00" - 71.50"		59.50"	0"	57.50"

 - rework not required

**Table B - Modular Headboard Installation Height Matrix**



**Figure 14 - Modular Headboard Installation Rework**

## Modular Headboard Installation

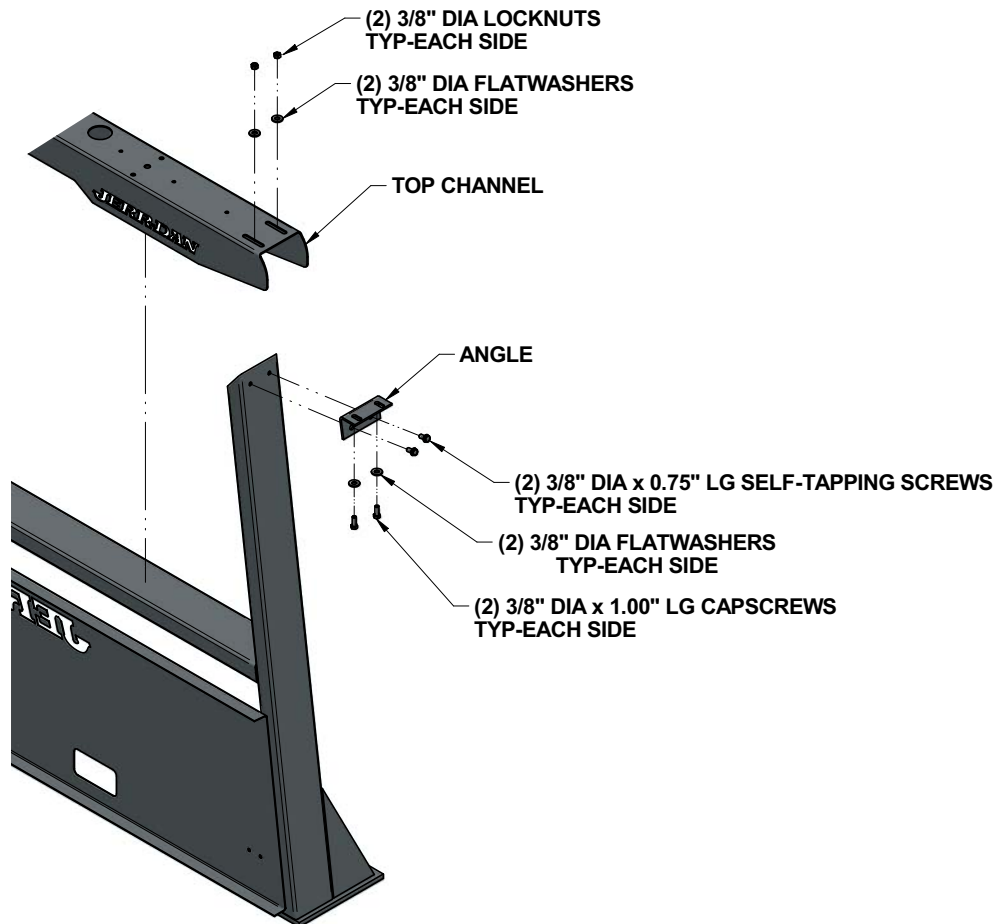
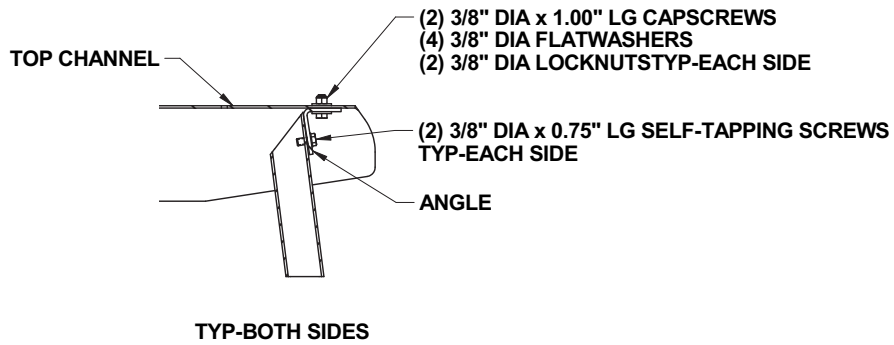
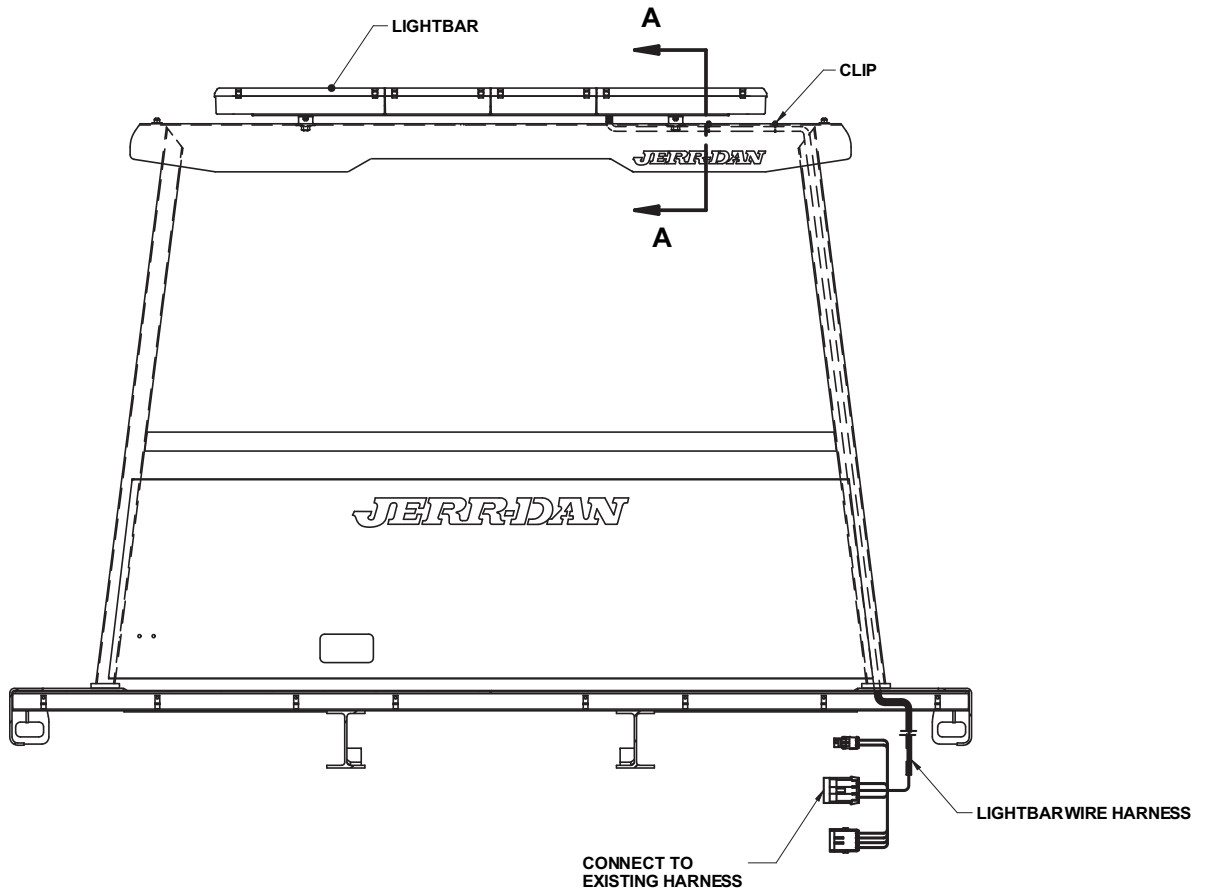


Figure 15 - Modular Headboard Installation

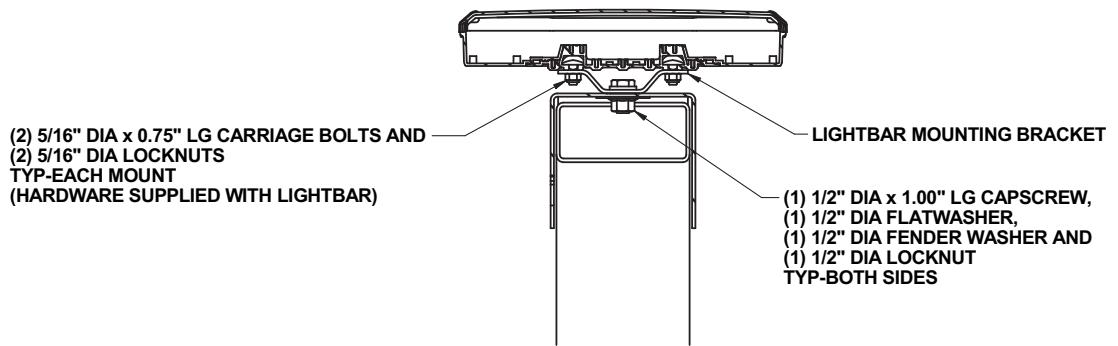
## Lightbar Installation - Figure 16

1. Slide the four 5/16" dia x 3/4" long carriage bolts into the slotted rails on the bottom of the lightbar.
2. Place one lightbar mounting bracket over two of the carriage bolts and install a 5/16" dia locknut. Position the bracket approximately 8 1/2" from the end of the lightbar and hand tighten the locknut to keep the bracket from sliding. Repeat for the opposite end.
3. Insert one 1/2" dia x 1" long capscrew through the center hole in one of the mounting bracket and one of the 9/16" dia holes in the headboard top channel. Secure the lightbar to the headboard using a 1/2" dia flatwasher and 1/2" dia locknut. Repeat for the opposite end.
4. Center the lightbar with the headboard and tighten all mounting hardware.
5. Route the lightbar harness down the passenger side headboard support tube and through the headboard mounting plate on the deck.
4. Connect the three connectors on the lightbar harness to the corresponding connectors on the cab to sub harness.
5. Secure the harness to the bottom side of the headboard channel using the two plastic clips.
6. Secure the harness on the bottom passenger side of the deck using the welded on clamps and tie straps keeping all parts of the harness from movement and contact from sharp edges.

**Lightbar Installation - Figure 16**



**VIEW LOOKING FROM REAR**



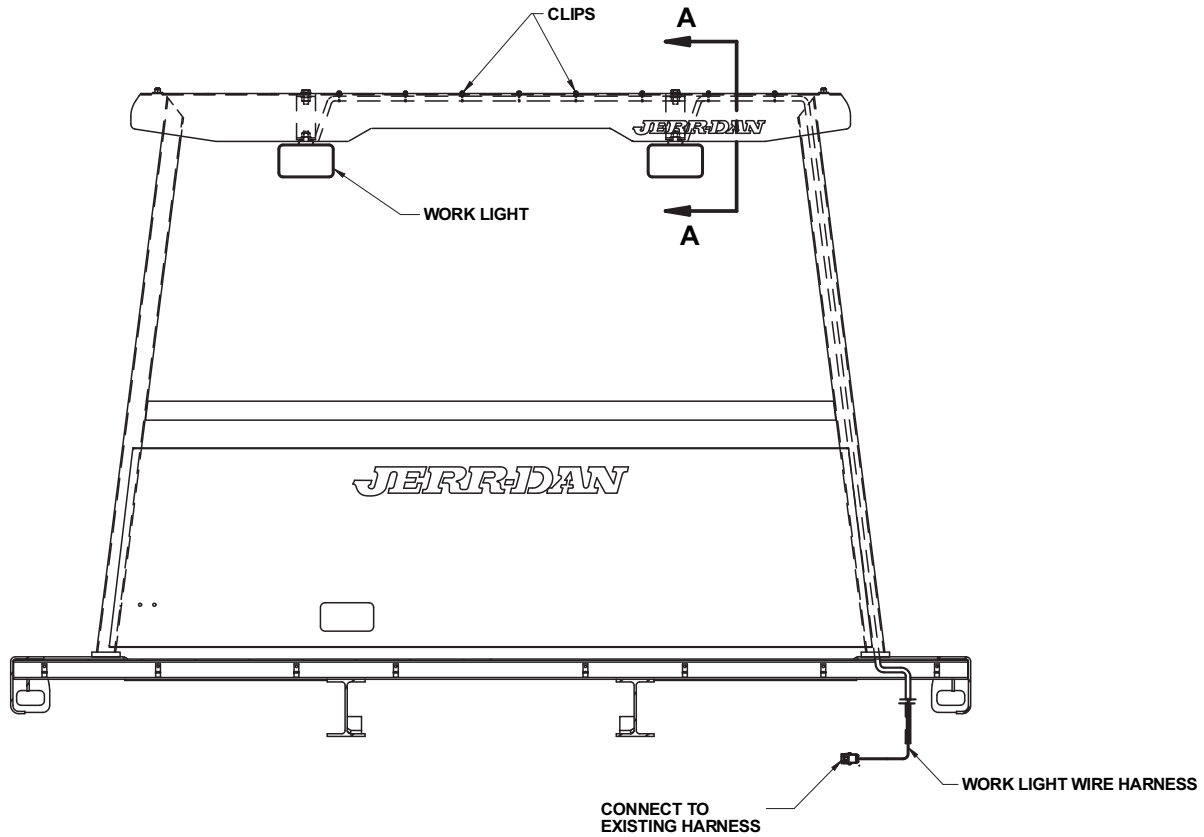
**VIEW A-A**

**Figure 16 - Lightbar Installation**

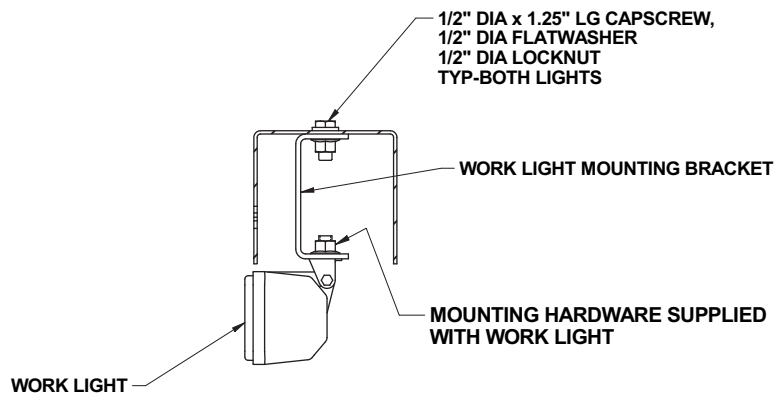
## Headboard Work Light Installation - Figure 17

1. Secure one work light mounting bracket to the bottom side of the headboard channel using a 1/2" dia x 1-1/2" long capscrew, 1/2" dia flatwasher and 1/2" dia locknut. Repeat for the opposite end.
2. Secure one work light to the opposite end of the work light mounting bracket using the hardware supplied with the light. Repeat for opposite end.
3. Connect the two connectors on the work light harness to the connector of each work light.
4. Route the work light harness down the passenger side headboard support tube and through the headboard mounting plate on the deck.
5. Connect the connector on the work light harness to the corresponding connector on the cab to sub harness.
6. Secure the harness to the bottom side of the headboard using the eight plastic clips.
7. Secure the harness on the bottom passenger side of the deck using the welded on clamps and tie straps keeping all parts of the harness from movement and contact from sharp edges.

# Headboard Work Light Installation - Figure 17



VIEW LOOKING FROM REAR



VIEW A-A

Figure 17 - Headboard Work Light Installation




**NOTES:**

## APPENDIX

### DECIMAL EQUIVALENTS

FRACTION	3 PLACES	2 PLACES	MM	FRACTION	3 PLACES	2 PLACES	MM
1/64	.016	.02	0.397	33/64	.516	.52	13.097
1/32	.031	.03	0.794	17/32	.531	.53	13.494
3/64	.047	.05	1.191	35/64	.547	.55	13.891
1/16	.062	.06	1.588	9/16	.562	.56	14.288
5/64	.078	.08	1.984	37/64	.578	.58	14.684
3/32	.094	.09	2.381	19/32	.594	.59	15.081
7/64	.109	.11	2.778	39/64	.609	.61	15.478
1/8	.125	.13	3.175	5/8	.625	.63	15.875
9/64	.141	.14	3.572	41/64	.641	.64	16.272
5/32	.156	.16	3.969	21/32	.656	.66	16.669
11/64	.172	.17	4.366	43/64	.672	.67	17.066
3/16	.188	.19	4.762	11/16	.688	.69	17.462
13/64	.203	.20	5.159	45/64	.703	.70	17.859
7/32	.219	.22	5.556	23/32	.719	.72	18.256
15/64	.234	.23	5.953	47/64	.734	.73	18.653
1/4	.250	.25	6.350	3/4	.750	.75	19.050
17/64	.266	.27	6.747	49/64	.766	.77	19.447
9/32	.281	.28	7.144	25/32	.781	.78	19.844
19/64	.297	.30	7.541	51/64	.797	.80	20.241
5/16	.312	.31	7.938	13/16	.812	.81	20.638
21/64	.328	.33	8.334	53/64	.828	.83	21.034
11/32	.344	.34	8.731	27/32	.844	.84	21.431
23/64	.359	.36	9.128	55/64	.859	.86	21.828
3/8	.375	.38	9.525	7/8	.875	.88	22.225
25/64	.391	.39	9.922	57/64	.891	.89	22.622
13/32	.406	.41	10.319	29/32	.906	.91	23.019
27/64	.422	.42	10.716	59/64	.922	.92	23.416
7/16	.438	.44	11.112	15/16	.938	.94	23.812
29/64	.453	.45	11.509	61/64	.953	.95	24.209
15/32	.469	.47	11.906	31/32	.969	.97	24.606
31/64	.484	.48	12.303	63/64	.984	.98	25.003
1/2	.500	.50	12.700	1	1.000	1.00	25.400

## FASTENER TORQUE SPECIFICATIONS

TIGHTENING TORQUES (FOOT - POUNDS) FOR SCREWS AND NUTS			
SIZE INCHES (MM)	 GRADE 2	 GRADE 5	 GRADE 8
1/4 (6.350)	6	8	10
5/16 (7.938)	10	14	19
3/8 (9.525)	17	27	33
7/16 (11.112)	28	45	60
1/2 (12.700)	45	68	90
9/16 (14.288)	63	100	120
5/8 (15.875)	90	135	180
3/4 (19.050)	145	230	310
7/8 (22.225)	145	380	500
1 (25.400)	220	570	760

- All torque values shown are for bolts (cap screws) and nuts that are either zinc-plated or lubricated.
- Torques shown above apply only to screws and nuts used for assembly and installation of all components, not to the chassis.
- Different torque values may be given in instructions for certain components due to short thread engagement or low-strength internal threads.
- When nuts are used, tighten nuts to torques shown (screws or bolts should be held but not turned). **Always use a calibrated torque wrench.**
- Retighten nuts of all mounting screws that secure the carrier and carrier-body within 30 days after putting the vehicle into service. Thereafter, inspect and retorque such screws and nuts every 90 days and after each job that imposes extremely heavy loads on the equipment.
- Convert ft/lbs to Nm (Newton metres) by using the following formula:

$$\begin{array}{l} \text{Multiply:} \qquad \qquad \text{by:} \qquad \qquad \text{to get:} \\ \text{ft/lbs} \quad \times \quad 1.3558 \quad = \quad \text{Nm (Newton metres)} \end{array}$$



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