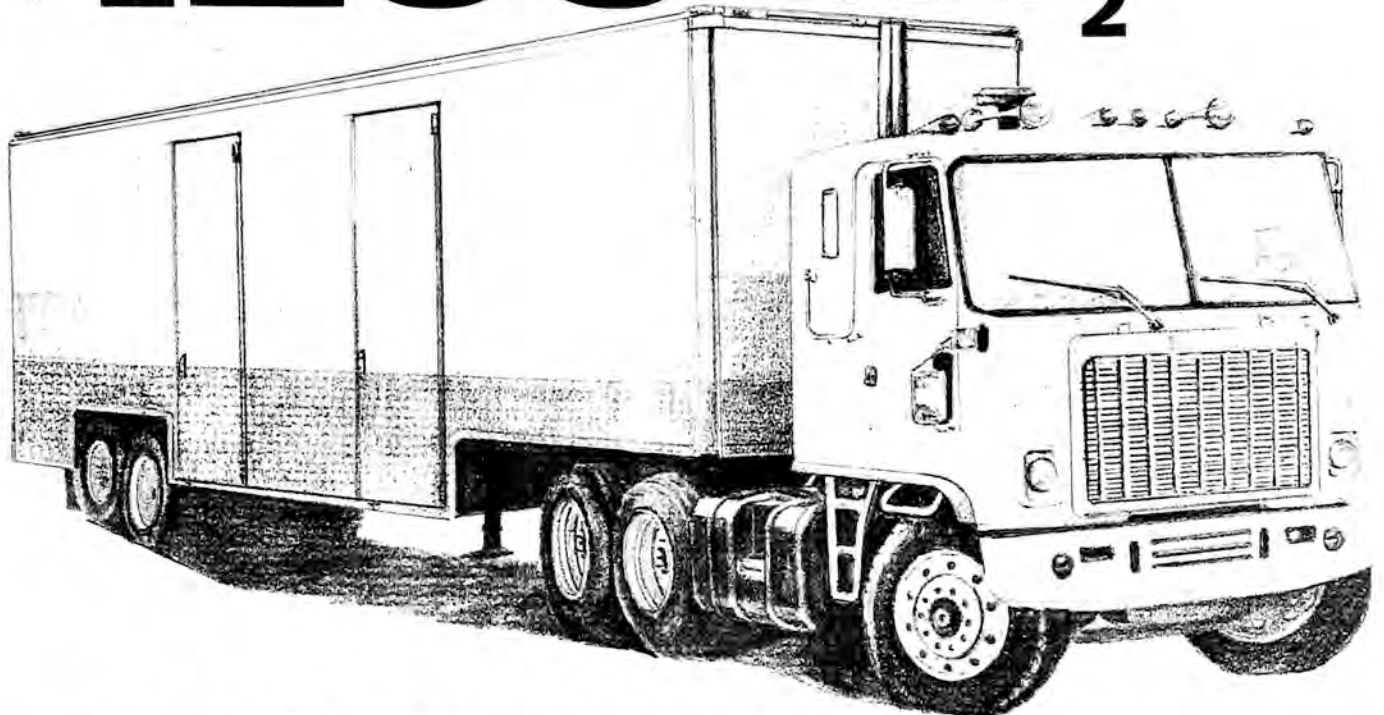


HUTCH AIR SUSPENSION  
**AIRBORNE**



# 1200-MK<sub>2</sub>



## Specifications and Installation Instructions

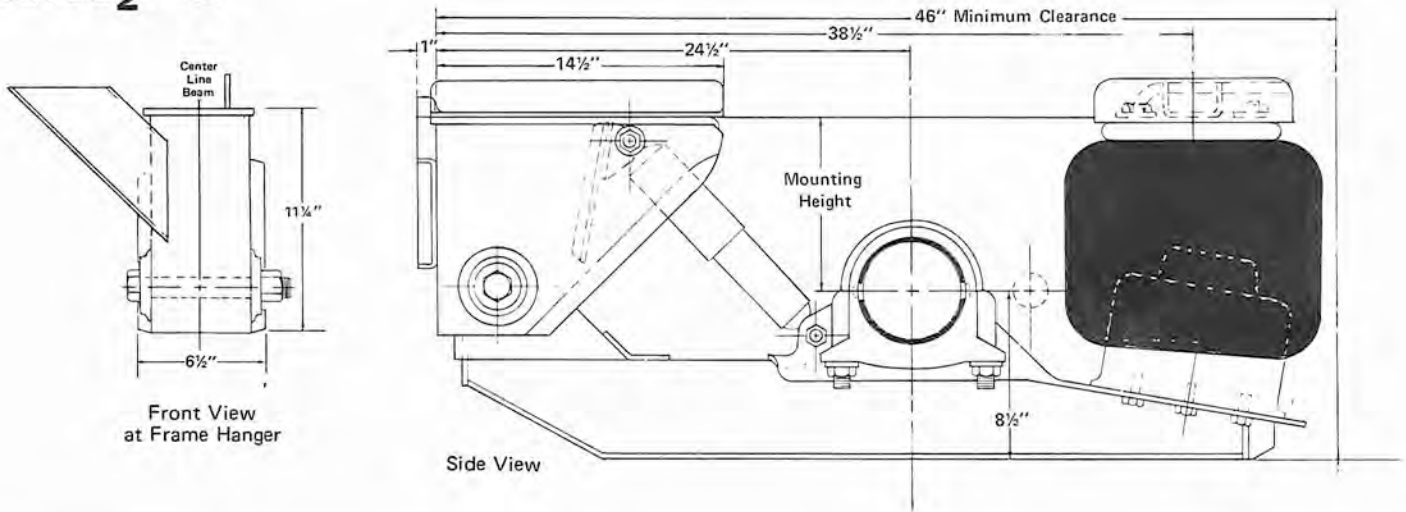


# 1200-Mk<sub>2</sub>

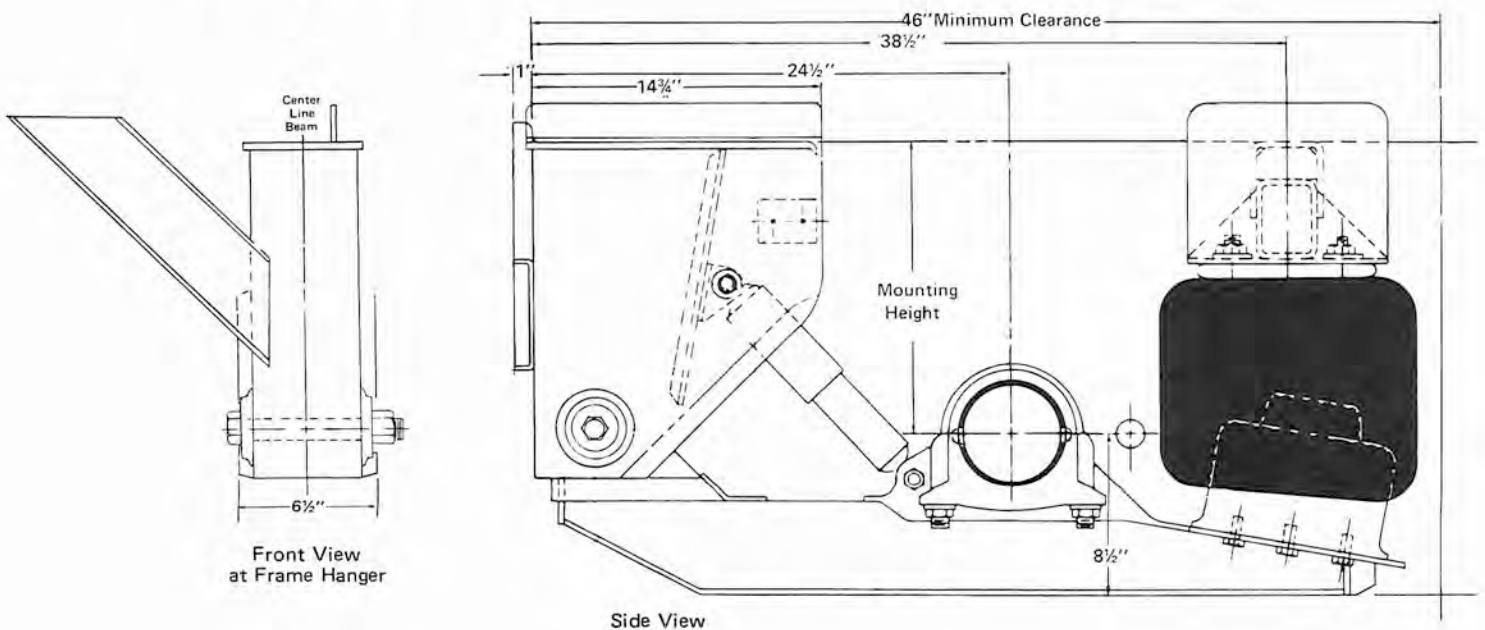
HUTCH AIR SUSPENSION  
**AIRBORNE**

## Specifications

### Mk<sub>2</sub>-9



### Mk<sub>2</sub>-13-17



The Mk<sub>2</sub> series is available in the following mounting heights: 9, 13, 14, 15, 16 and 17 inches.

1200 Mk<sub>2</sub> Air Suspension capacity: Gross Axle Weight Rating (GAWR) is 22,400 pounds.

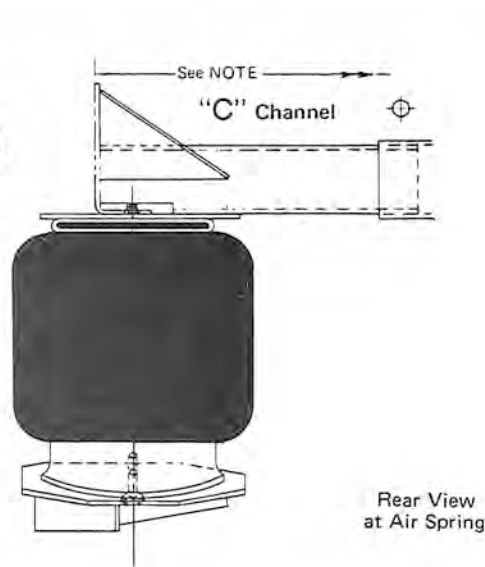
The unit may be adapted to single, tandem or multi-axle applications.

Available for 5" round axles with undermount style hangers.

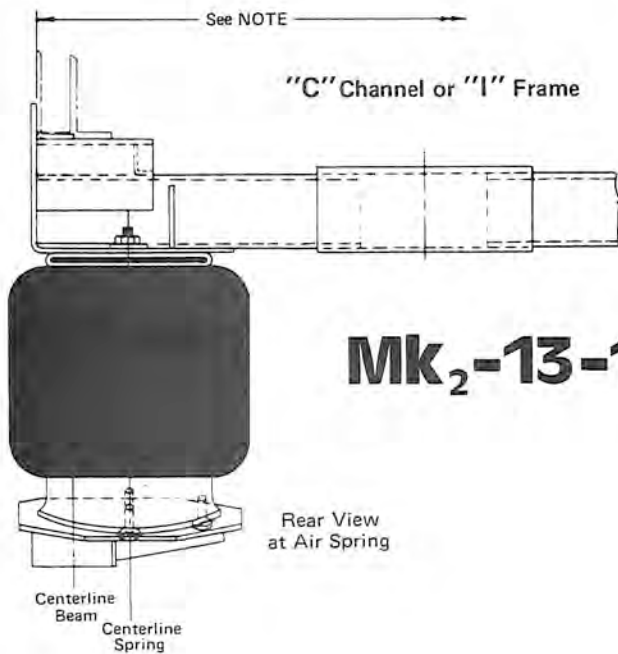
For unit with axle lift, see front lift or center lift unit.

Refer to the Airborne Mk<sub>2</sub> Installation Instructions section for information on installing this unit. Any questions concerning adaptability or special requirements should be directed to Hutchens Industries, Inc. Air Products Manager.

## Mk<sub>2</sub>-9



Rear View at Air Spring



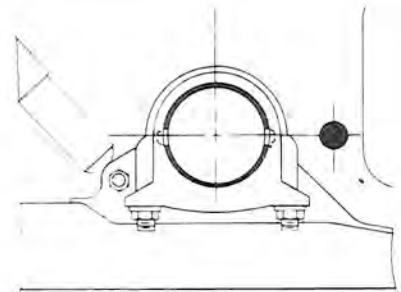
## Mk<sub>2</sub>-13-17

Rear View at Air Spring

Centerline Beam  
Centerline Spring

### Note

Maximum allowable frame width (including projections) MUST NOT EXCEED 4.5" less than the inside dimensions between tires (with growth allowance).



Locate brake camshaft at or above rear horizontal axle centerline with either 12¼ or 16½ diameter brakes.

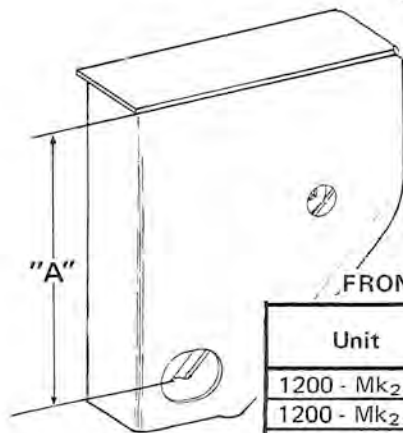
# Parts List 1200 Mk<sub>2</sub>

Item	Description	Part Number	Required Per Axle
1	Front Bracket Assembly L.H.	See Chart	1
2	Front Bracket Assembly R.H.	See Chart	1
3	Beam Assembly L.H.	10534-03	1
4	Beam Assembly R.H.	10534-04	1
5	Channel - Front Bracket Support	9412-01	2
6	Bearing Plate	11158-00	2
7	Cap - Axle Clamp	10338-00	2
8	Reaction Bar - Axle Clamp	10340-00	4
9	Rubber Pad - Axle Clamp	10341-00	4
10	U-Bolt - Axle Clamp	10339-00	4
11	Air Spring - 15-15½, Design Height *1	9630-01/02	2
12	Plate 13/16 Hole	10547-03	2
13	Plate 9/16 Hole	10547-05	2
14	Shock Absorber	9423-01/02	2
15	Gusset *2	10881-03	2
16	Gusset - Flanged L.H. (for 1200 Mk <sub>2</sub> 9)	10546-03	1
17	Gusset - Flanged R.H. (for 1200 Mk <sub>2</sub> 9)	10546-04	1
18	Hex Head Bolt - 1 1/8 X 8" Lg.	11155-00	2
19	Hex Head Cap Screw - ¾ - 16 X 3¼" Lg.	9422-01	4
20	Hex Head Cap Screw - ½ - 13 X 1" Lg.	9664-00	6
21	Flange Lock Nut 7/8 - 14	10880-03	8
22	Locknut ¾ - 16	841-00	6
23	Nut ½ - 13	845-00	2
24	Lockwasher ½	32-00	8
25	Locknut - 1 1/8	11154-00	2
26	Thrust Washer 4" OD X 2¾ ID	11153-00	4
27	Crossmember - Adjustable (See Chart)	See Chart	1
28	Channel - Front Bracket Support (for 1200 Mk <sub>2</sub> 9)	9412-00	2
29	Bushing *3		

**\*NOTES:**

1. Either 9630-01 (Firestone) or 9630-02 (Goodyear) air spring may be used interchangeably in pairs on same axle.
2. Gusset used with channel type frame only.

3. Item 29, Bushing 11157-00, shown for parts identification only. The bushing is included in the beam assemblies.

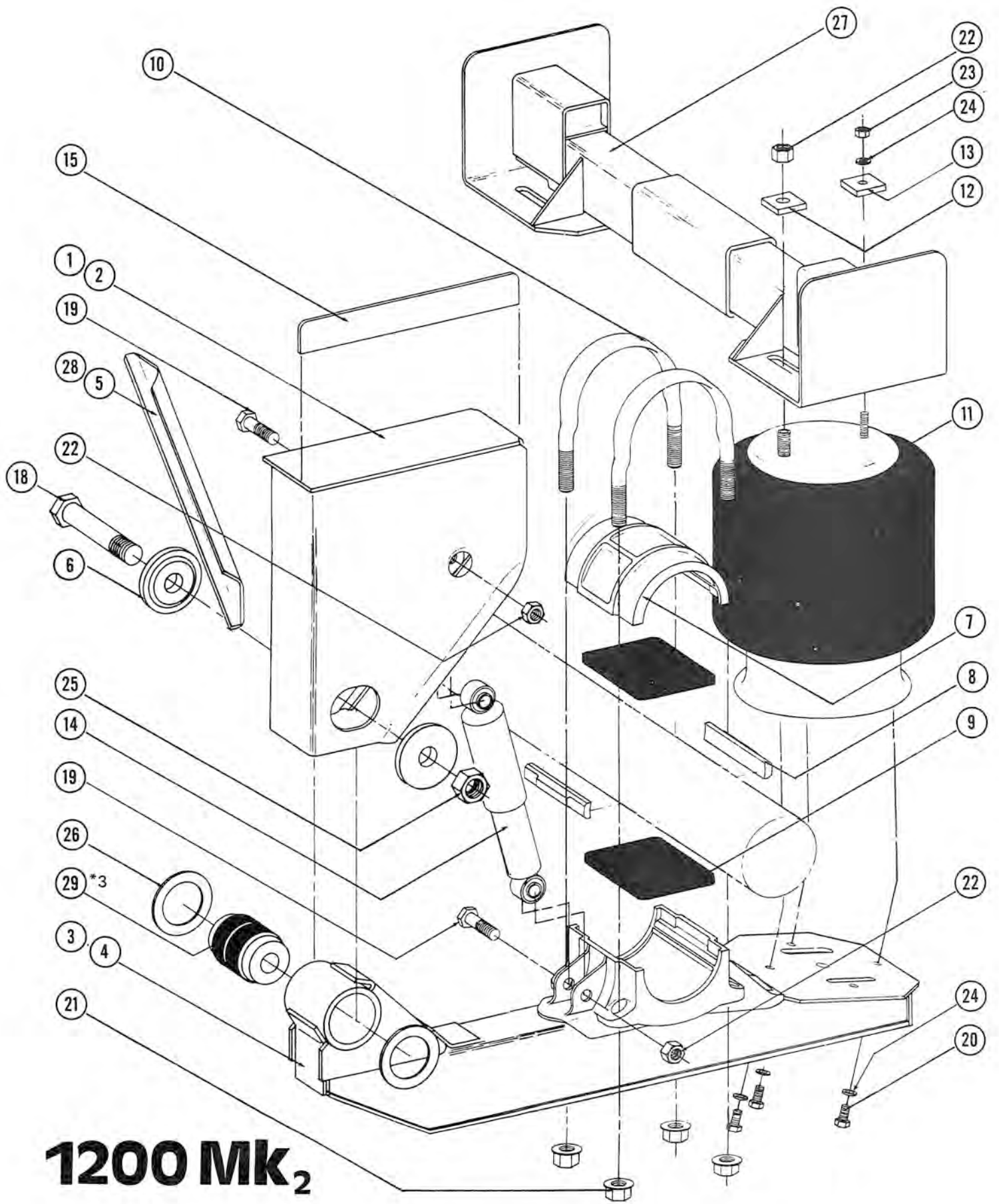


**FRONT BRACKET ASSEMBLY CHART**

Unit	"A" (Inches)	Part Number	
		Item 1	Item 2
1200 - Mk <sub>2</sub> 9	11.25	10886-01	10887-01
1200 - Mk <sub>2</sub> 13	15.25	10886-03	10887-03
1200 - Mk <sub>2</sub> 14	16.25	10886-05	10887-05
1200 - Mk <sub>2</sub> 15	17.25	10886-07	10887-07
1200 - Mk <sub>2</sub> 16	18.25	10886-09	10887-09
1200 - Mk <sub>2</sub> 17	19.25	10886-11	10887-11

**ADJUSTABLE CROSSMEMBER CHART (ITEM 27)**

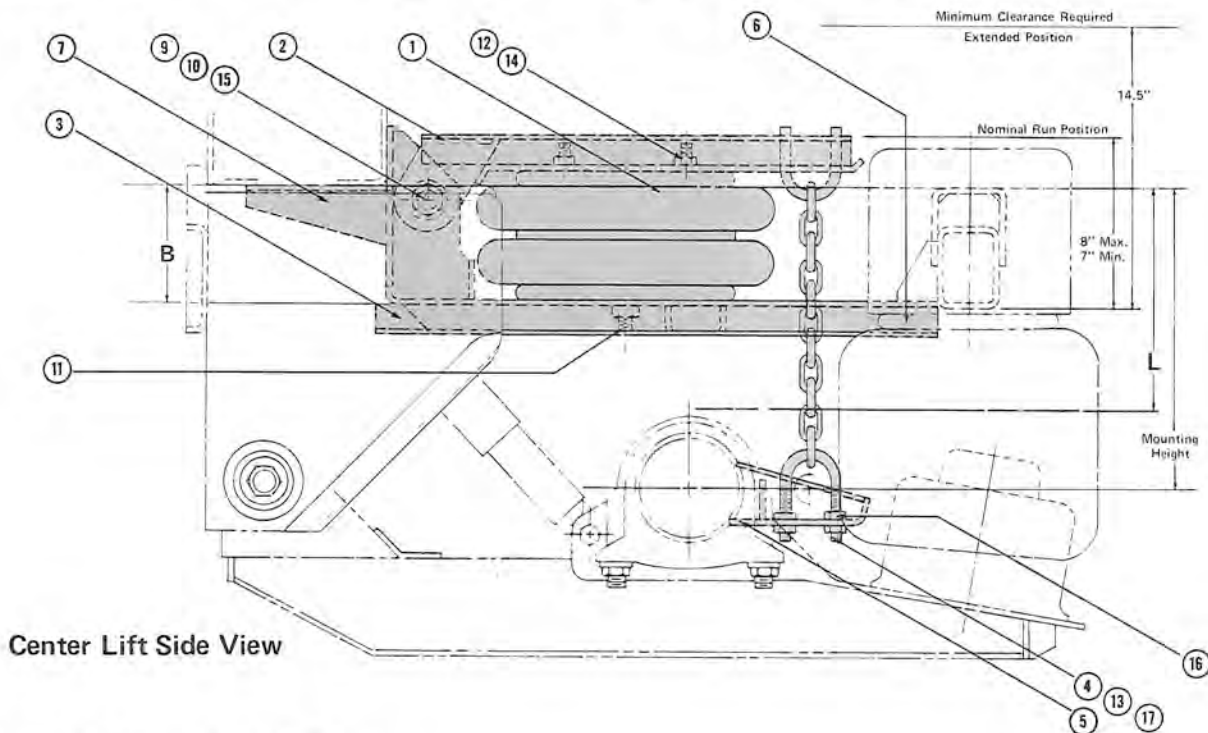
Unit	Part Number	Frame Section
1200 - Mk <sub>2</sub> 9	10539-01	"C" Channel
1200 - Mk <sub>2</sub> 9	10539-03	"I" Beam
1200 - Mk <sub>2</sub> 13	10803-11	"C" or "I"
1200 - Mk <sub>2</sub> 14	10803-13	"C" or "I"
1200 - Mk <sub>2</sub> 15	10803-15	"C" or "I"
1200 - Mk <sub>2</sub> 16	10803-17	"C" or "I"
1200 - Mk <sub>2</sub> 17	10803-19	"C" or "I"



# 1200 Mk<sub>2</sub>

# 1200-Mk<sub>2</sub> Axle Lifts

## 1200 CL Specifications



## Parts List

Item	Description	Part Number	Required Per Axle
1	Air Spring Assembly	10577-01	1
2	Upper Lever Assembly	10578-01	1
3	Lower Bracket Assembly	10579-01	1
4	U-Bolt ½ X 2"	10582-03	2
5	Axle Attach Bracket	10583-01	1
6	Gusset (Rear)	10879-03	1
7	Gusset (Front)	10877-03	1
8	Angle Support (for 9") *	10878-03	1
9	Hex Head Bolt 1" - 14 X 5" Lg.	719-02	2
10	Hex Lock Nut 1" - 14	736-01	2
11	Hex Lock Nut ¾" - 16	841-00	1
12	Hex Nut ½" - 13	845-00	3
13	Hex Lock Nut ½" - 20	33-03	4
14	Lock Washer ½" I.D.	32-00	3
15	Flat Washer 1" I.D.	774-01	2
16	Hex Nut ½" 20	33-01	4
17	Flat Washer ½" I.D.	38-00	4

\*Angle Support is necessary for the 9" only.

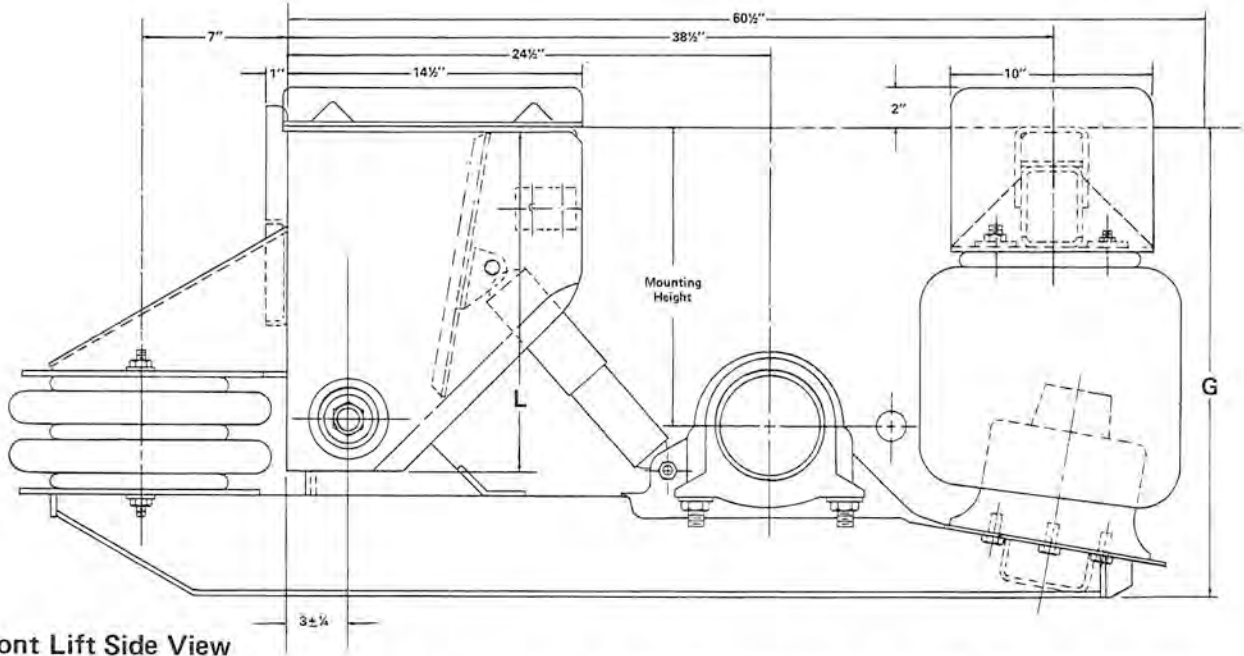
### DIMENSIONS CHART

Mtg. Ht.	"L" Lifted Axle Height	Rebound Height	"B" Bracket Lock Below Frame
9"	5"	14"	0
13"	9"	18"	4"
14"	10"	19"	5"
15"	11"	20"	6"
16"	12"	21"	7"
17"	13"	22"	8"

See installation instructions for center lift unit on page 21 & 22 or drawing 10618.

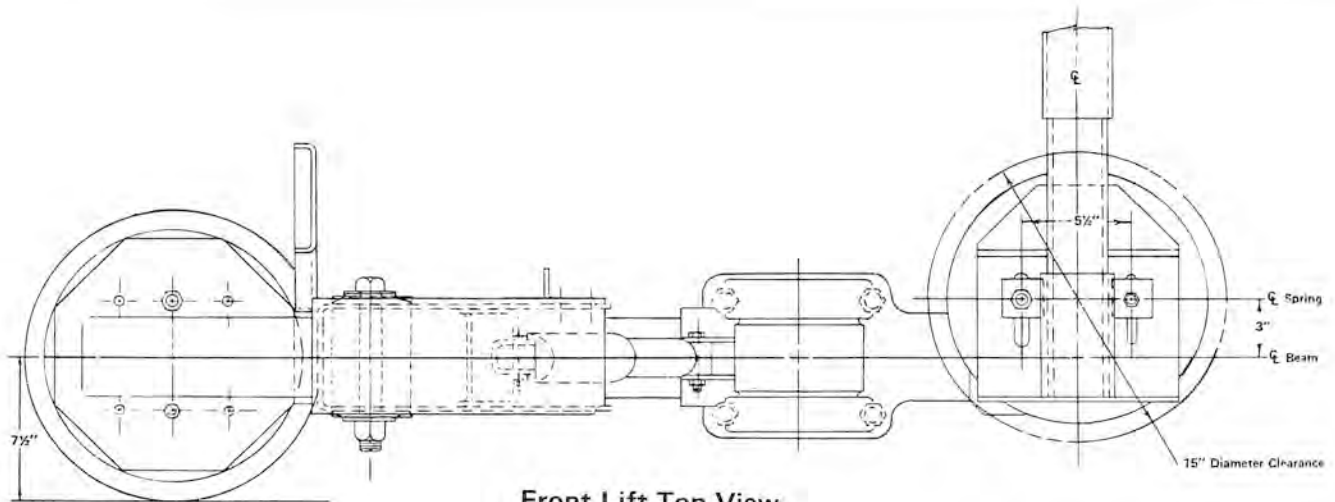
# LMk<sub>2</sub> 9-17

## Specifications



Front Lift Side View

Mounting Height	9"	13"	14"	15"	16"	17"
L	11 1/4"	15 1/4"	16 1/4"	17 1/4"	18 1/4"	19 1/4"
G	17 1/2"	21 1/2"	22 1/2"	23 1/2"	24 1/2"	25 1/2"



Front Lift Top View

Parts are shown on next page.

# Parts List LMK<sub>2</sub>

Item	Description	Part Number	Required Per Axle
1	Front Bracket Assembly L.H.	See Chart	1
2	Front Bracket Assembly R.H.	See Chart	1
3	Beam Assembly L.H.	10537-03	1
4	Beam Assembly R.H.	10537-04	1
5	Channel-Front Bracket Support (for 9")	9412-00	2
6	Channel-Front Bracket Support	9412-01	2
7	Bearing Plate	11158-00	2
8	Cap - Axle Clamp	10338-00	2
9	Reaction Bar - Axle Clamp	10340-00	4
10	Rubber Pad - Axle Clamp	10341-00	4
11	U-Bolt - Axle Clamp	10339-00	4
12	Air Spring 15-15½ Design Ht. *	9630-01/02	2
13	Plate 13/16 Hole	10547-03	2
14	Plate 9/16 Hole	10547-05	2
15	Shock Absorber	9423-01/02	2
16	Gusset *	10881-03	2
17	Gusset Flanged - L.H. (for 9")	10546-03	1
18	Gusset Flanged - R.H. (for 9")	10546-04	1
19	Hex Head Bolt - 1.1/8 X 8" Lg.	11155-00	2
20	Hex Head Cap Screw ¾ - 16 X 3¼" Lg.	9422-01	4
21	Hex Head Cap Screw ½ - 13 X 1" Lg.	9664-00	6
22	Flange Locknut	10880-03	8
23	Flange Locknut 1 1/8	11154-00	2
24	Nut ½ - 13	845-00	8
25	Lockwasher ½	32-00	14
26	Air Spring	10384-01	2
27	Crossmember - Adjustable (9")	See Chart	1
28	Crossmember - Adjustable	See Chart	1
29	Thrust Washer - 4" O.D. X 2¾" I.D.	11153-00	4
30	Locknut - ¾ - 16	841-00	8
31	Bushing *5		

## ADJUSTABLE CROSSMEMBER CHART (ITEM 28)

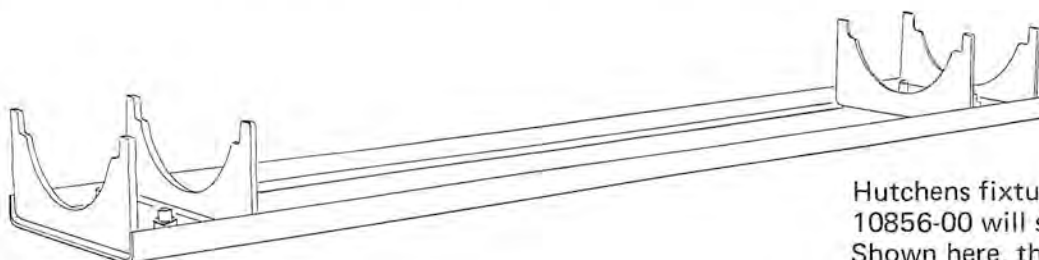
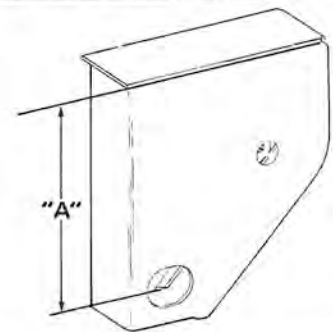
Unit 1200 Mk <sub>2</sub>	Part Number	Frame Section
9	10539-01	"C" Channel
9	10539-03	"I" Beam
13	10803-11	"C" or "I"
14	10803-13	"C" or "I"
15	10803-15	"C" or "I"
16	10803-17	"C" or "I"
17	10803-19	"C" or "I"

## FRONT BRACKET ASSEMBLY CHART

Unit 1200 Mk <sub>2</sub>	"A" (Inches)	Part Number	
		Item 1 10886-	Item 2 10887-
9	11.25	-01	-01
13	15.25	-03	-03
14	16.25	-05	-05
15	17.25	-07	-07
16	18.25	-09	-09
17	19.25	-11	-11

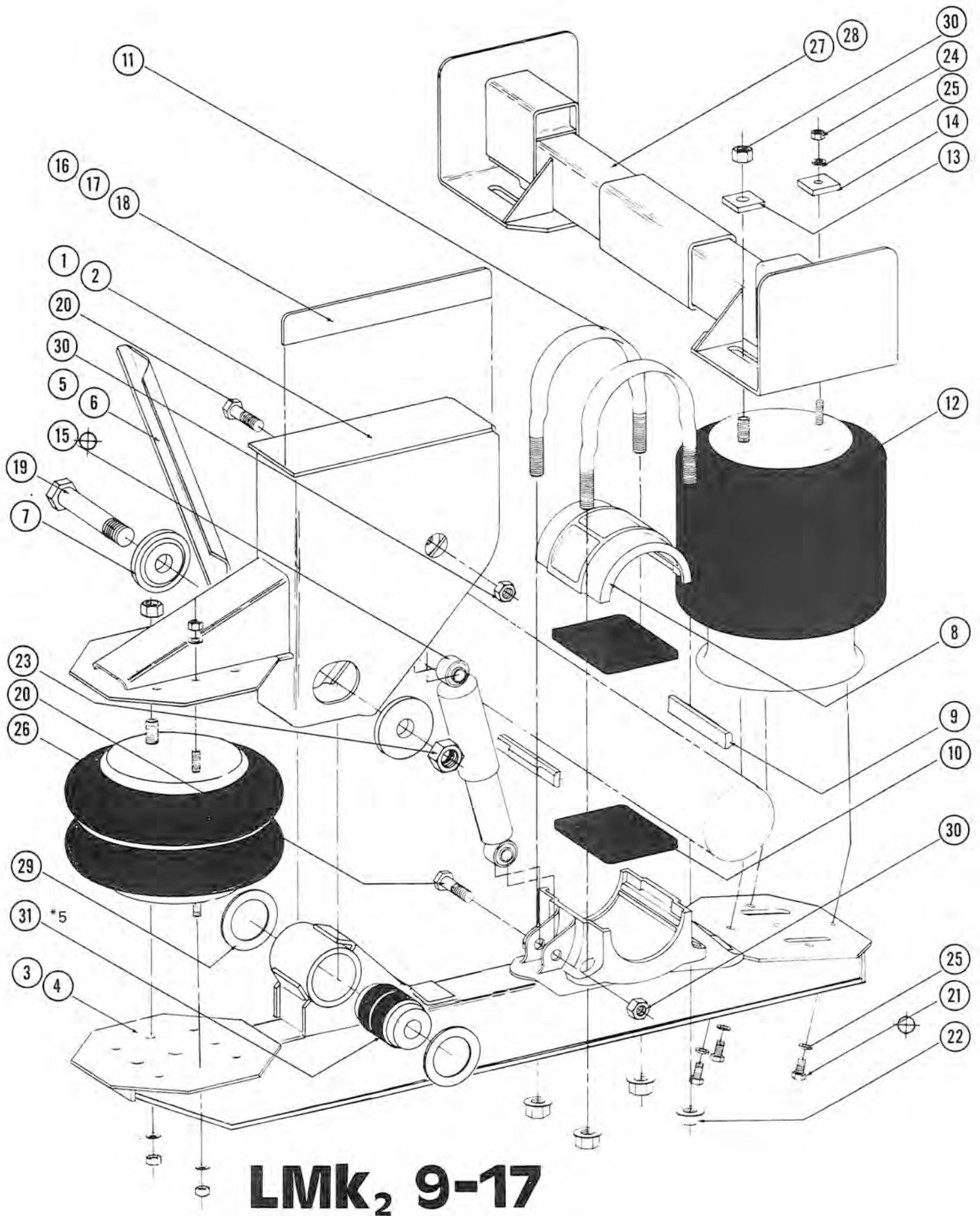
### \*NOTES:

1. Either 9630-01 (Firestone) or 9630-02 (Goodyear) air spring may be used interchangeable in pairs on same axle.
2. Gusset used with channel type frame only.
3. Air control system for this unit must be ordered separately. See price list for available options.
4. See Installation Instructions or drawing D-9625 for correct mounting and installation.
5. Item 31 bushing 11157-00 shown for reference only and is included in the beam assembly.



Hutchens fixture assembly number 10856-00 will simplify installation. Shown here, this part is not included and must be ordered separately.





# LMK<sub>2</sub> 9-17

# AIR BORNE 1200 Mk<sub>2</sub> Series

## INSTALLATION INSTRUCTIONS

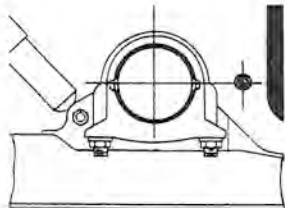
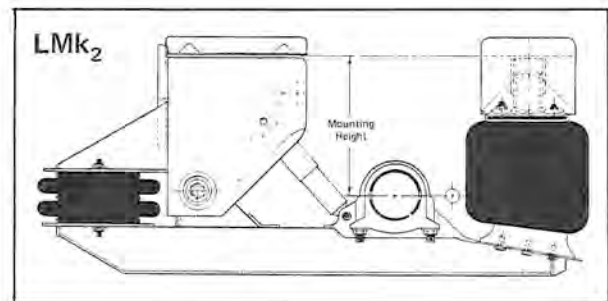
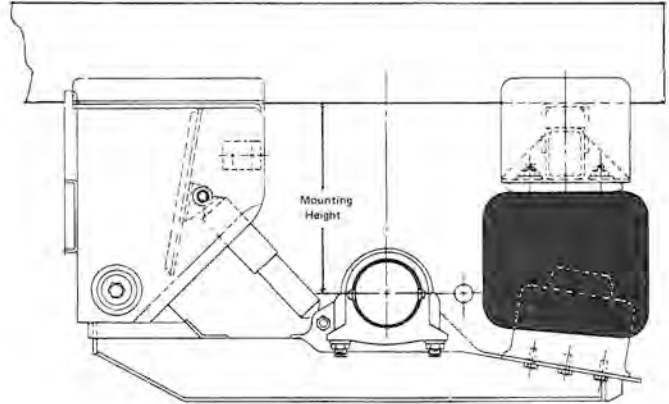
### 1. PRIOR TO INSTALLATION

**a.** Check to assure that the suspension you are about to install is of the proper mounting height. Determine the distance from the ground to the underside of the frame of the trailer. The loaded radius of the tire being used should then be subtracted to arrive at the proper mounting height needed.

**b.** If the mounting height for the suspension you have chosen does not match the mounting height you have determined, some modification of the trailer frame (addition of a subframe, frame cutouts, etc.) will be necessary.

**c.** Confirm that these instructions are for the specific suspension you are planning to install.

**d.** The axle should be examined to determine it's suitability for use with this suspension. Proper brake location is important.



**S Cam Brakes** - The 1200 Mk<sub>2</sub> suspensions will accept placement of the camshaft (for both 12 $\frac{1}{4}$ " and 16 $\frac{1}{2}$ " brakes) on or above the rear horizontal centerline of the axle. Extra long camshafts may be required for some installations.

**e.** Examine frame or subframe of trailer to be sure it is dimensionally suitable for the suspension to be installed. The width of the frame or subframe can vary (see frame mounting illustration and frame width note); but should be consistent with, and somewhat dependent on, the beam centers of the suspension. The beam center dimension of the 1200 Mk<sub>2</sub> may be varied from 36" within certain limits. See below.

### Beam Centers

The maximum allowable suspension beam centers must be 10.5" less than the inside dimension between tires (with growth allowance).

Beam centers cannot exceed 9 $\frac{1}{2}$ " less than the inside dimension between drums, brake shield, shoes or spider.

USE WHICHEVER DIMENSION IS LEAST

## Frame Width

The maximum allowable frame width (including projections) **MUST NOT EXCEED 4.5"** less than the inside dimension between tires (with growth allowance).

The frame width should not be less than the beam centers.

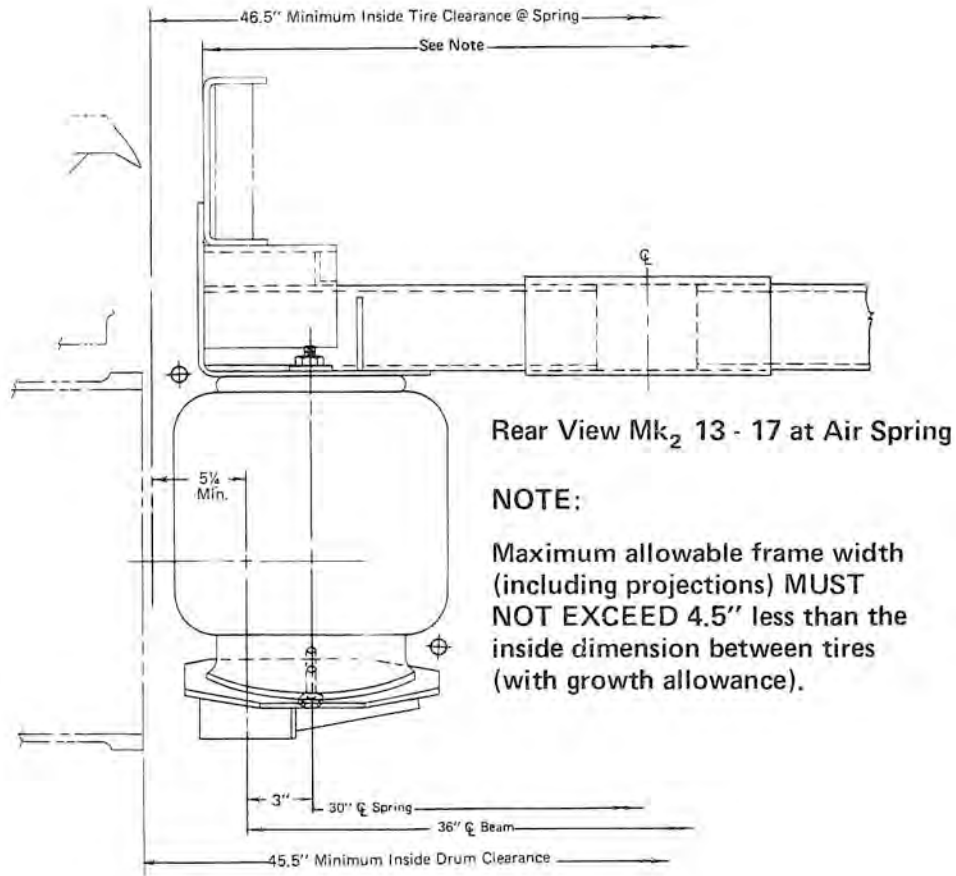
## Frame Size Recommendations

### "I" Frame

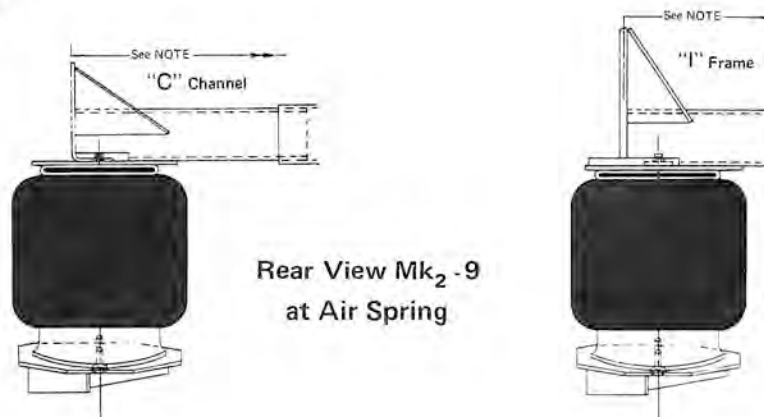
Depth – 8" minimum  
 Web thickness – 3/16" to 1/2"  
 Flange width – 4" to 6"  
 Flange thickness – 1/2" to 5/8"

### "C" Channel

Depth – 8" minimum  
 Thickness – 1/4" to 5/16"  
 Flange Width – 4" to 6"

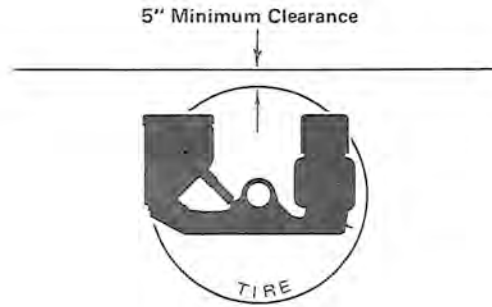


## 1200-Mk<sub>2</sub>-9



## 2. TIRE CLEARANCE

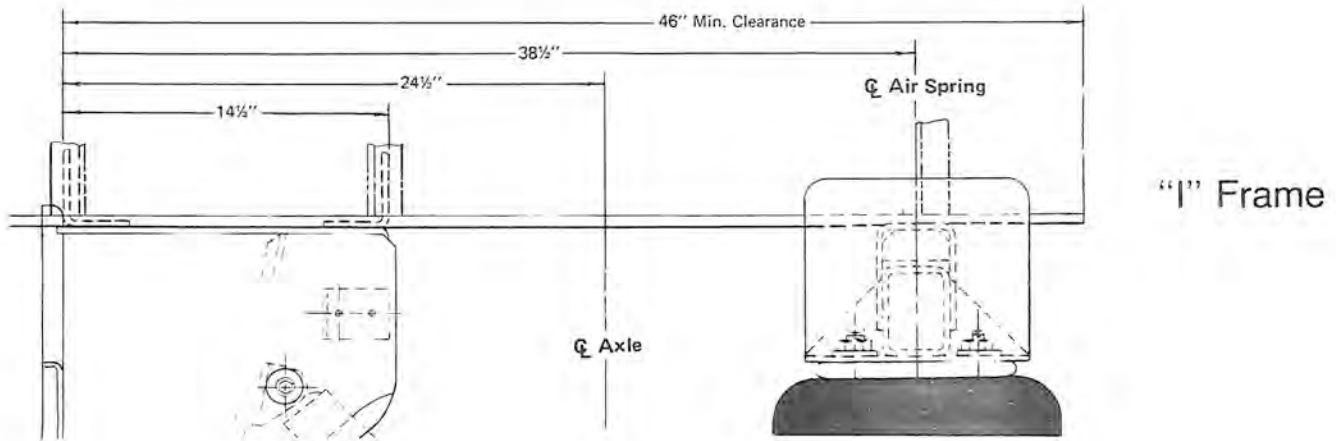
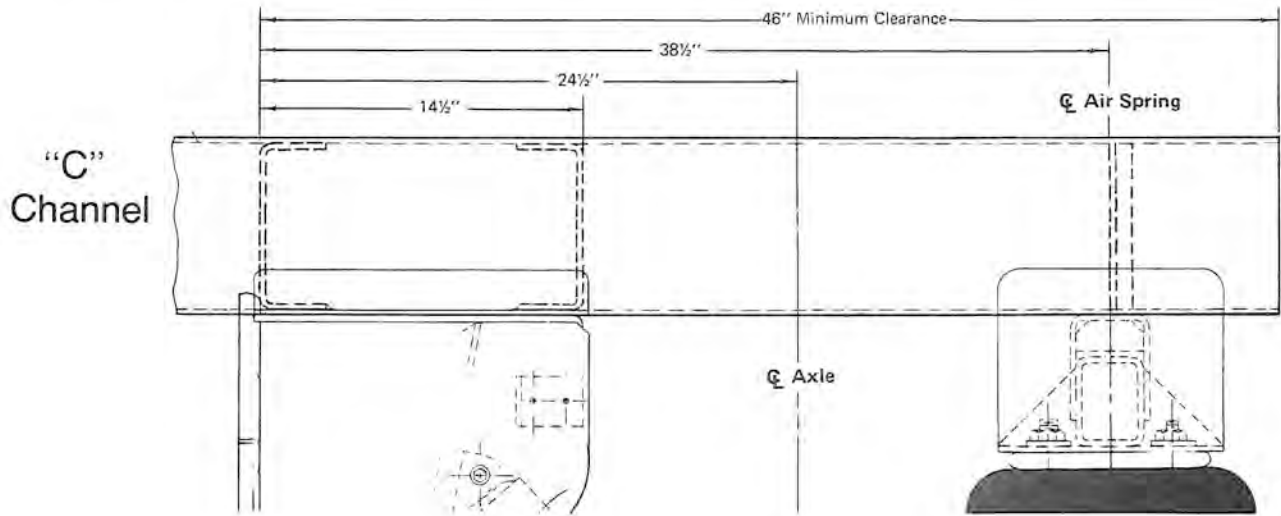
Provide for a vertical clearance above the tire for 5" upward travel. The nominal axle lift limit is 4".

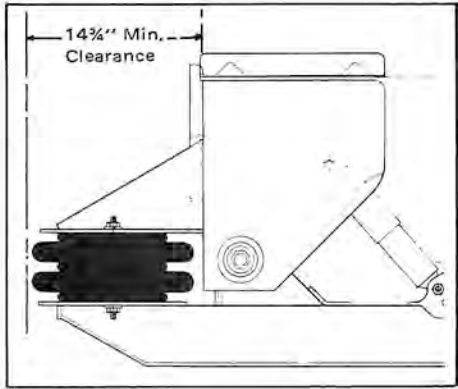


## 3. FRAME PREPARATION

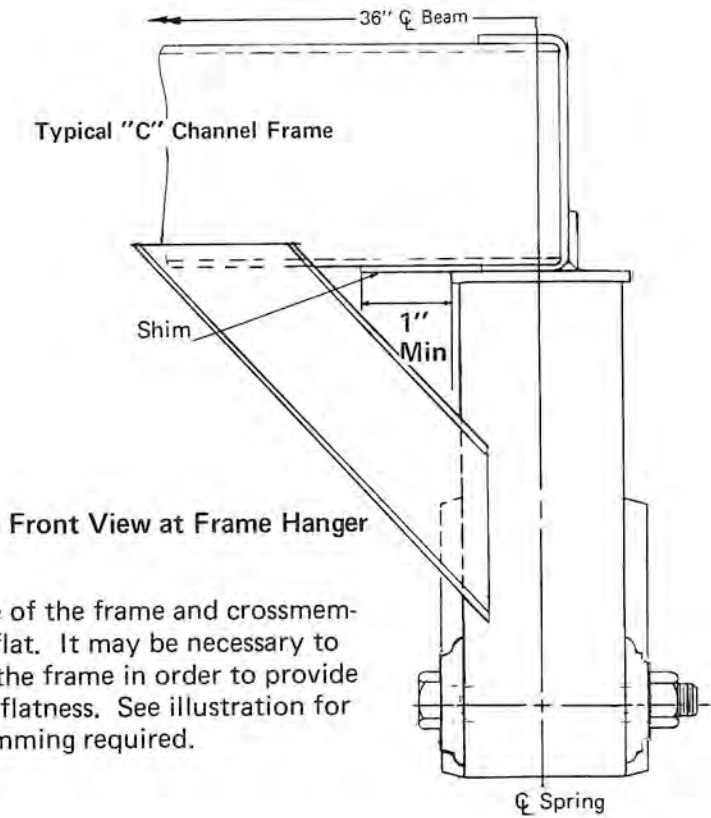
Two cross members are required at the front hanger location. These are to be furnished by the installer.

A stiffener gusset or cross member should be installed in the frame at the air spring location.





NOTE: Mounting of the LMk<sub>2</sub> is the same as for the standard, except for forward clearance.

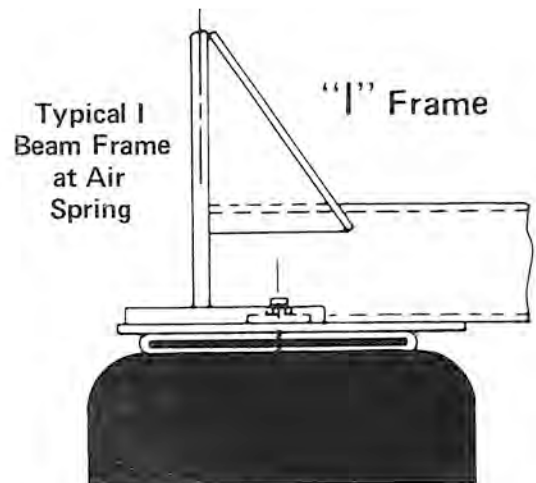
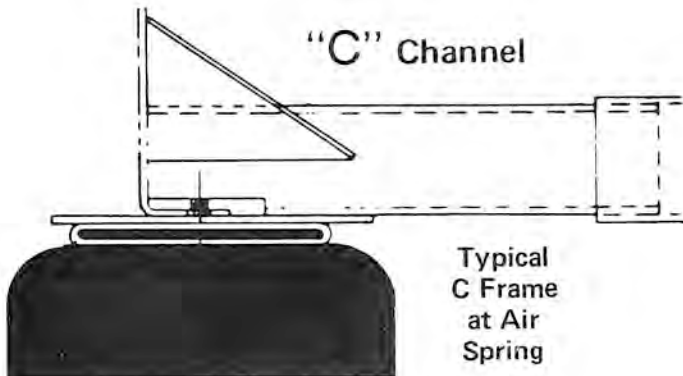


Front View at Frame Hanger

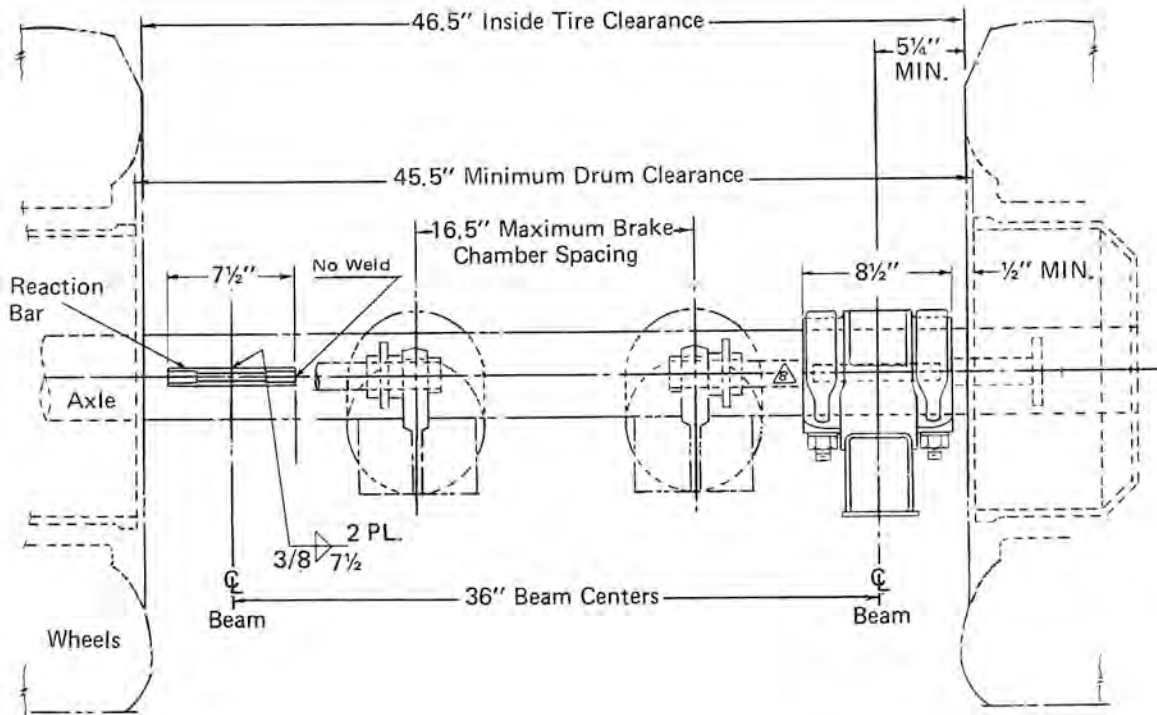
The underside of the frame and crossmembers must be flat. It may be necessary to cope or shim the frame in order to provide the necessary flatness. See illustration for minimum shimming required.

## 1200 Mk<sub>2</sub> 9 Adjustable Rear Crossmember Installation

It may be necessary to drill or relieve frame flanges to provide clearance for 2 x 2 plates at air spring mounting studs.

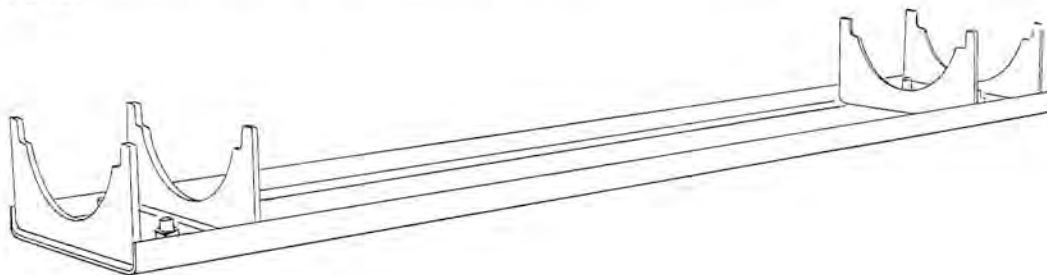


## 4. AXLE PREPARATION



Brake camshafts should be located on or above the rear horizontal centerline of the axle. Using installation templates, position reaction bars at the proper beam centers an equal distance from the midpoint of the axle.

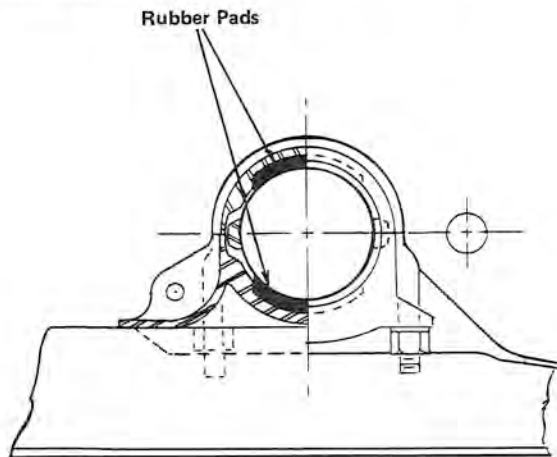
REACTION BARS SHOULD BE LOCATED DIRECTLY OPPOSITE FROM EACH OTHER. BARS SHOULD BE TIGHT AGAINST THE AXLE BEFORE WELDING. WELD AS INDICATED. CARE SHOULD BE TAKEN TO AVOID CRATERS WHERE WELD STOPS AND TO LEAVE A VOID OF APPROXIMATELY 3/16" AT ENDS OF BAR, TOP AND BOTTOM.



Hutchens fixture assembly number 10856-00 will simplify this installation. Shown above, this part is not included with the unit and must be ordered separately.

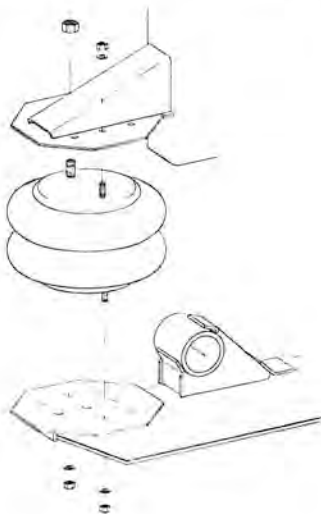
## 5. ASSEMBLE AXLE AND BEAM:

- a. Apply rubber lubricant to pads and press into place in caps and beam seat castings.



Moderate thumb pressure is sufficient to accomplish this. Make sure cap is centered in U-bolts. Tighten each U-bolt nut a little at a time until metal to metal contact is achieved between the cap and seat, fore and aft! The torque required to accomplish this may vary but should seldom exceed 500 pounds feet.

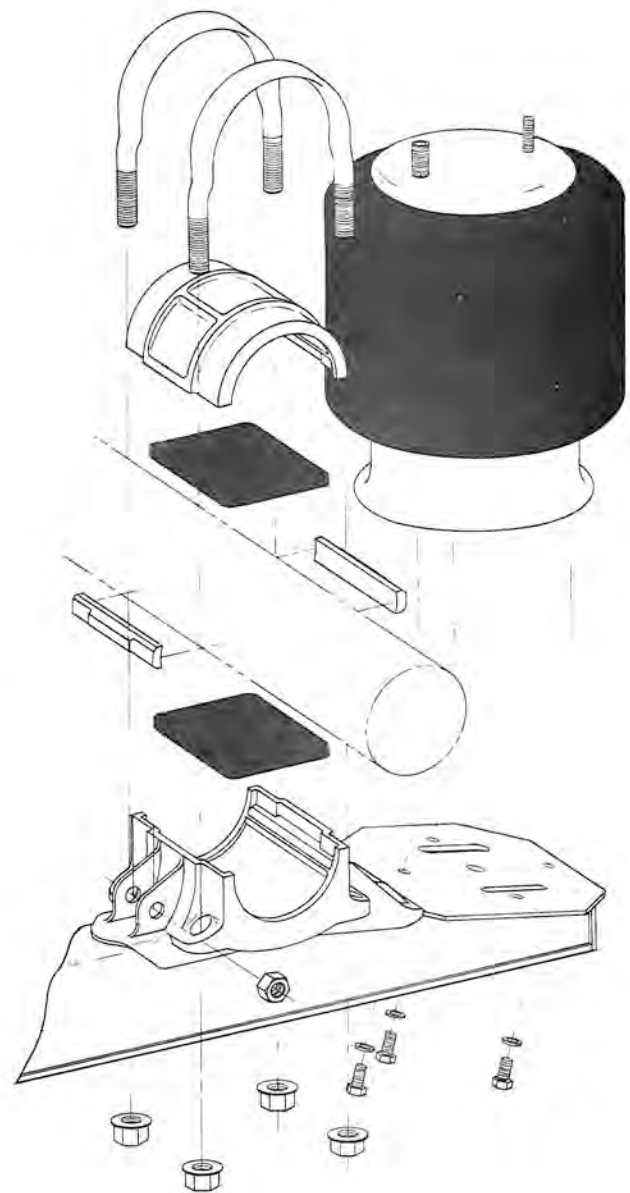
**THE AXLE CONNECTION IS "TIGHT" WHEN THE CAP AND SEAT CASTINGS ARE METAL TO METAL AND U-BOLT TORQUE EXCEEDS 375 FT. LBS.**



- b. Assemble air bag to beam assembly as shown.

### Front lift

On front lift models, front air bag should be installed in the beam and hanger (as shown).



## 6. INSTALLATION OF SUSPENSION AXLE ASSEMBLY TO TRAILER:

**a.** Locate the suspension on the frame or sub-frame and align the axle to the kingpin by moving hanger brackets as necessary. The brackets should then be clamped securely to the frame.

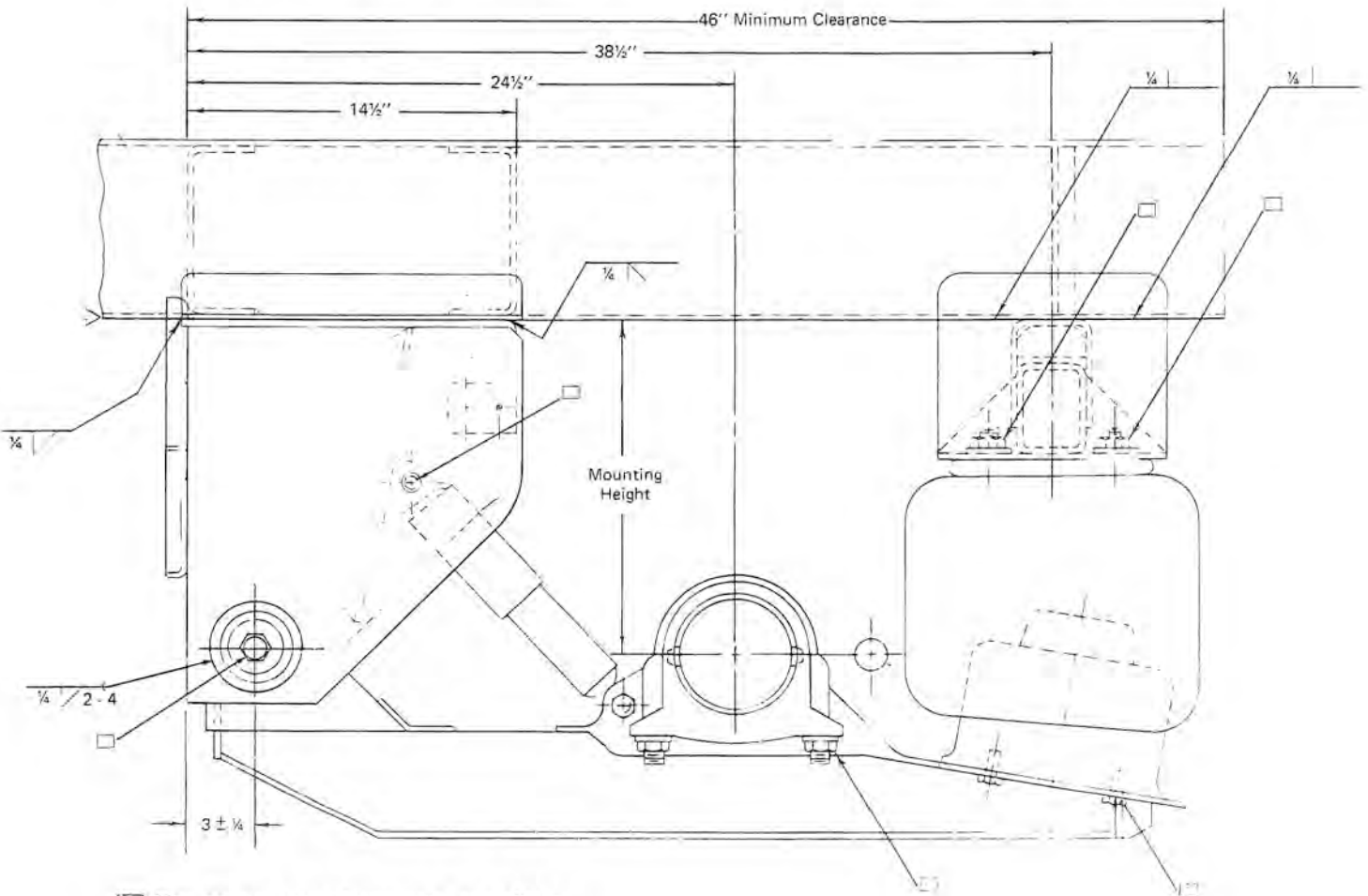
Mounting of the front lift is the same as for the standard.

**b.** Weld brackets and spring supports to the frame. Use electrodes compatible with Lo-Med carbon steel - grade 70xx. Protect rubber from splatter and temperature above 250° F. Omit weld 1/2" from free edges.

Mounting of the front lift is the same as mounting of the standard unit, except for forward clearance requirement.

### RECHECK ALL MOUNTING DIMENSIONS

#### "C" CHANNEL FRAME Welding Recommendations



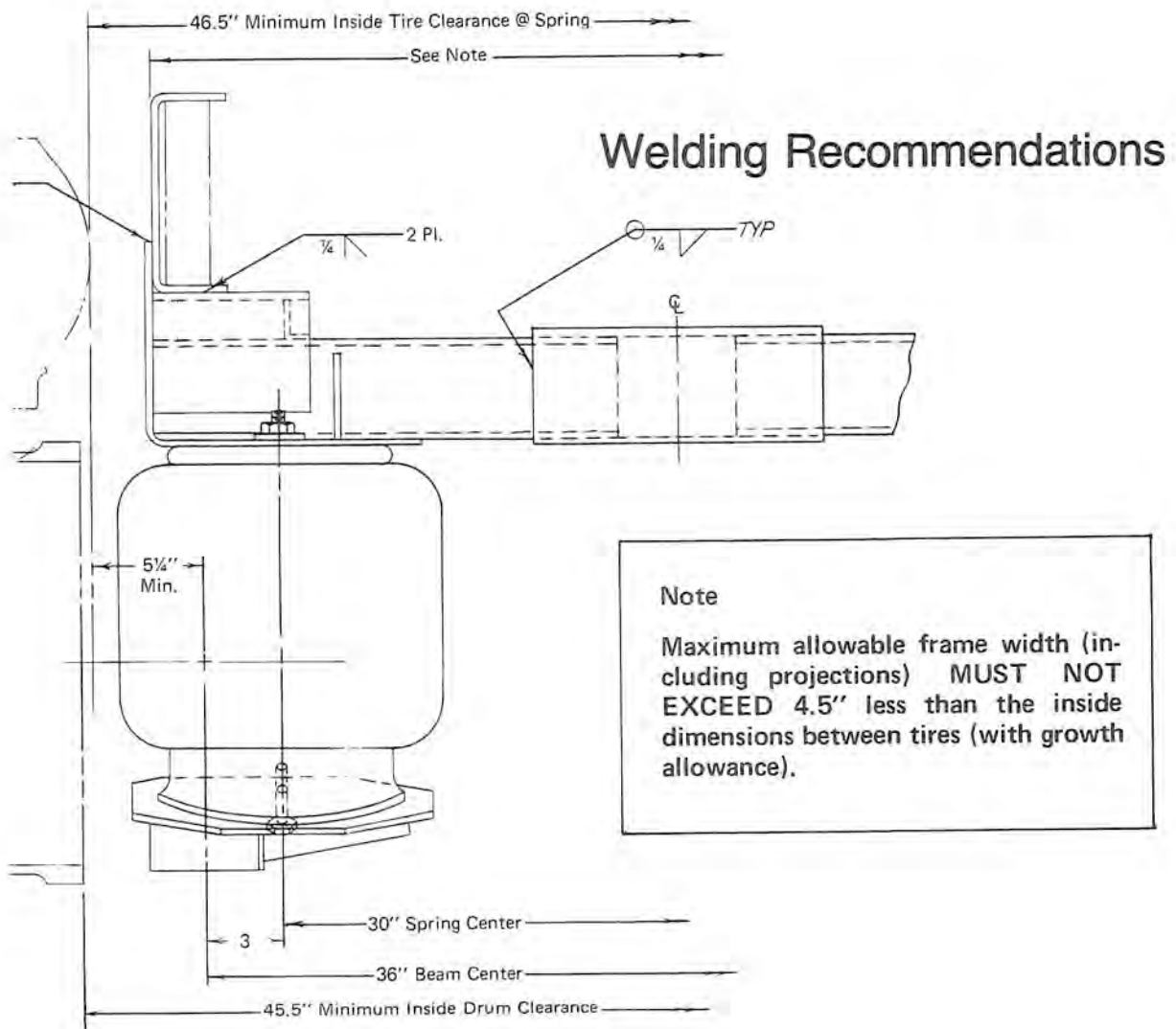
□ For torque requirements, see chart on page 20.



C. When welds have cooled, install air springs and shock absorbers (large end up). Torque  $\frac{3}{4}$ " nuts to 120-150 pounds feet.

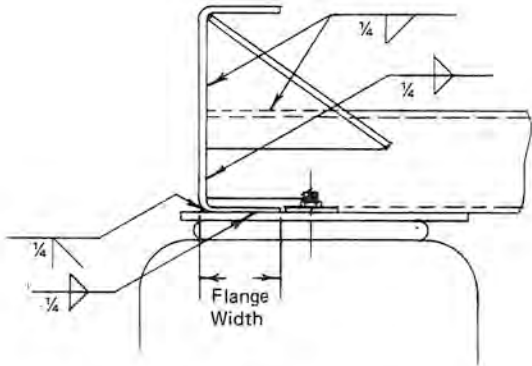
d. Recheck axle alignment. Though the hanger brackets are installed on the beams and the bolts tightened to recommended torque values,

the alignment blocks of the left-hand hanger are not welded. If alignment correction is necessary, loosen bolt and move alignment blocks as required. Retighten bolt and weld blocks securely as shown. It is absolutely necessary that these blocks are welded before the trailer is put in service.

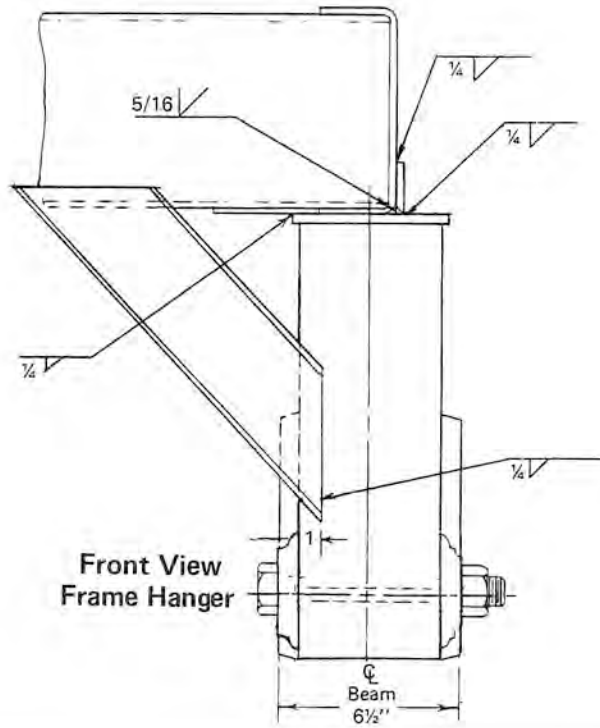


Rear View Mk<sub>2</sub> 13 - 17 at Air Spring

**“C” Channel (continued)**  
**Welding Recommendations**

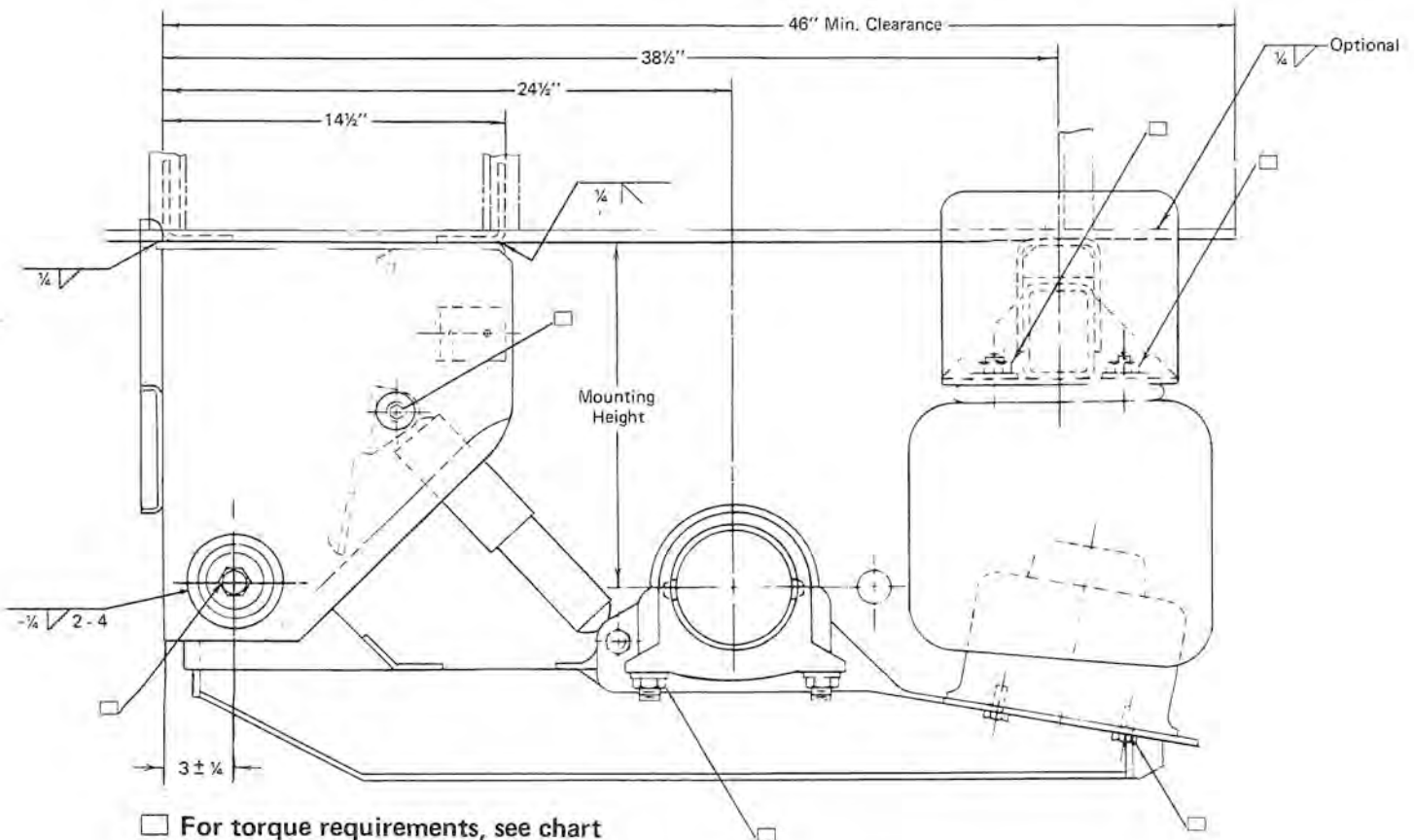


**Rear View Mk<sub>2</sub> - 9  
 at Air Spring**



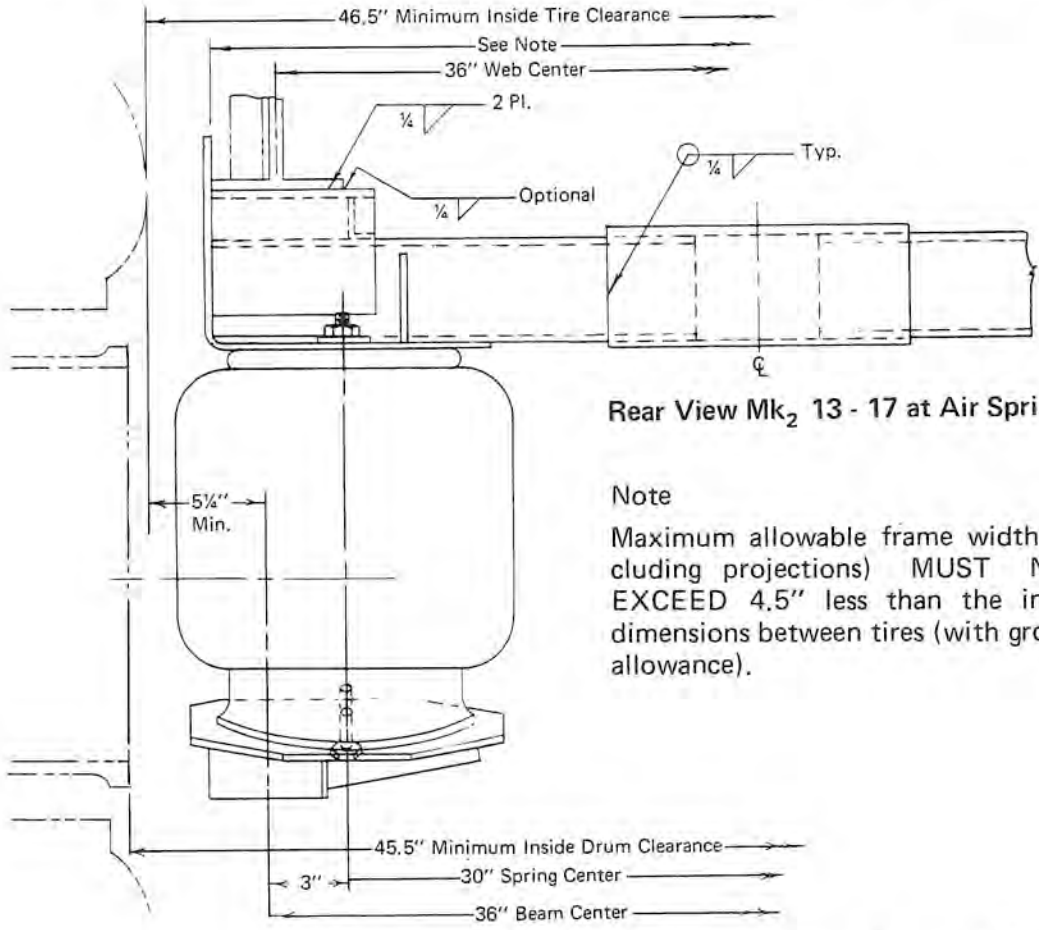
**Front View  
 Frame Hanger**

**“I” SECTION FRAME Welding Recommendations**



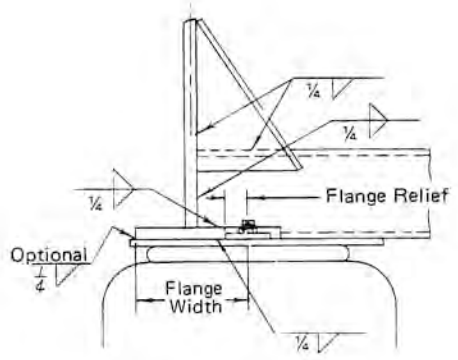
□ For torque requirements, see chart on page 20.

# "I" Frame (continued) Welding Recommendations

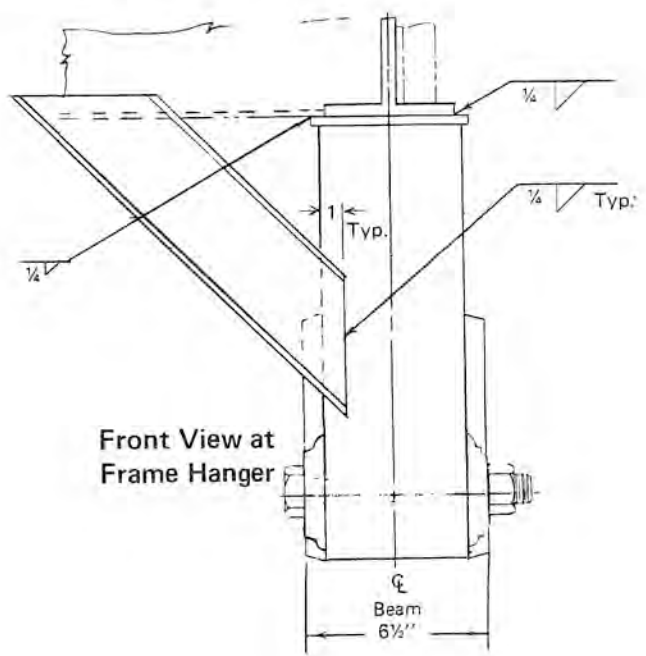


Rear View Mk<sub>2</sub> 13 - 17 at Air Spring

**Note**  
 Maximum allowable frame width (including projections) **MUST NOT EXCEED 4.5"** less than the inside dimensions between tires (with growth allowance).



Rear View Mk<sub>2</sub> - 9 at Air Spring



Front View at Frame Hanger

## 7. AIR CONTROL SYSTEM INSTALLATION:

Separate installation instructions are available for the 1200 Air Control System.

## 8. VISUAL INSPECTION:

Make a final, visual inspection of the trailer and suspension. Make certain all welded connections are secure and all bolts are tightened to the proper torque. (see chart) Check the axle connections for metal to metal contact and confirm that the axle is "centered" in the suspension unit. Make certain air springs are properly and securely located on their upper and lower mounting plates and that there is sufficient clearance between the air spring and tire.

## 9. MAINTENANCE:

**a.** After an initial break-in period on the road (up to 1,000 miles) thereafter, repeat Step 8. Pay particular attention to bolt tightness and re-torque all bolts as necessary.

**b.** The height control valve exhaust ports should be kept free of accumulated grease and grime.

**c.** The air supply filter should be periodically cleaned or replaced.

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### TORQUE REQUIREMENTS

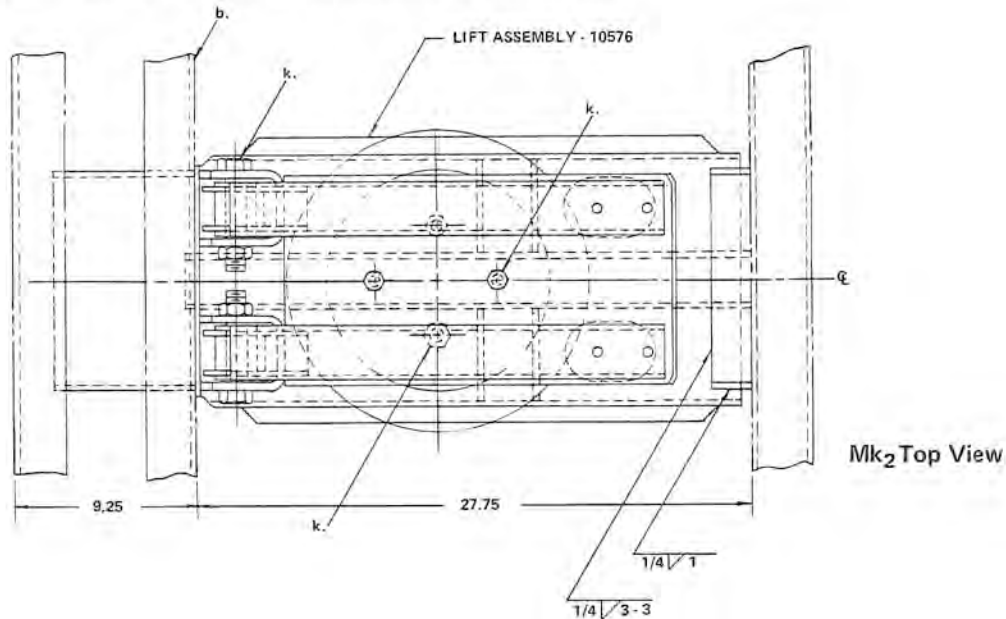
Minimum torque values for bolts with clean, dry threads

Air Springs and } Shock Absorbers }	1/2" – 20 UNF	55 pound feet
	3/4" – 16 UNF	150 pound feet
Front bearing plate	1 1/8" – 7 UNC	800 pound feet
* U-Bolts	7/8" – 14 UNF	*375 pound feet

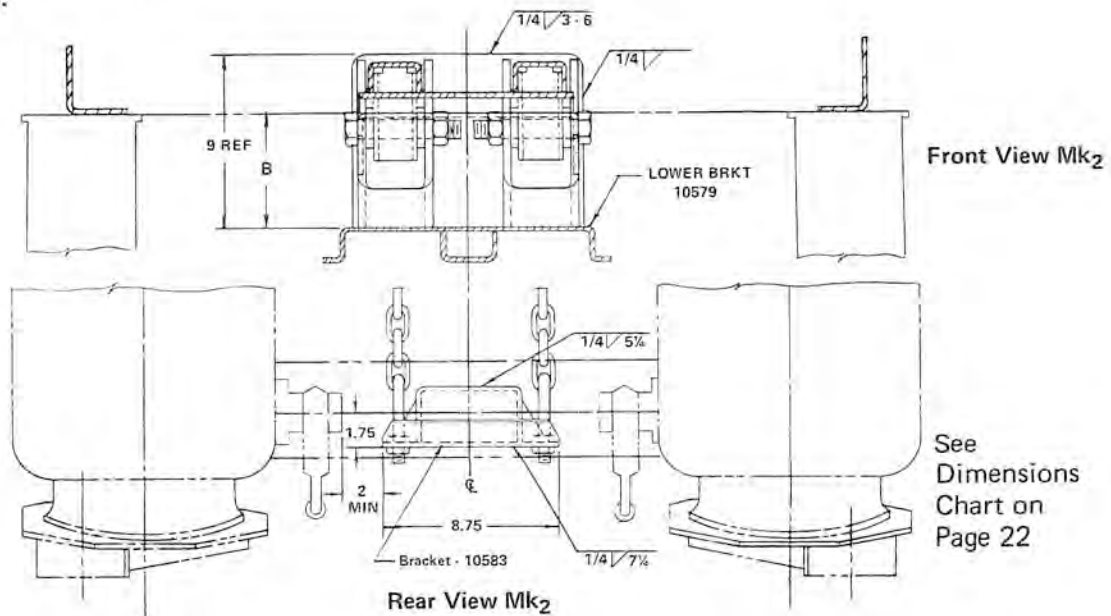
\*NOTE: U-Bolts must be tightened until axle clamp is closed metal to metal, front and back, and torque is at or above recommended value.

# 10. INSTALLATION OF CENTER LIFT ASSEMBLY

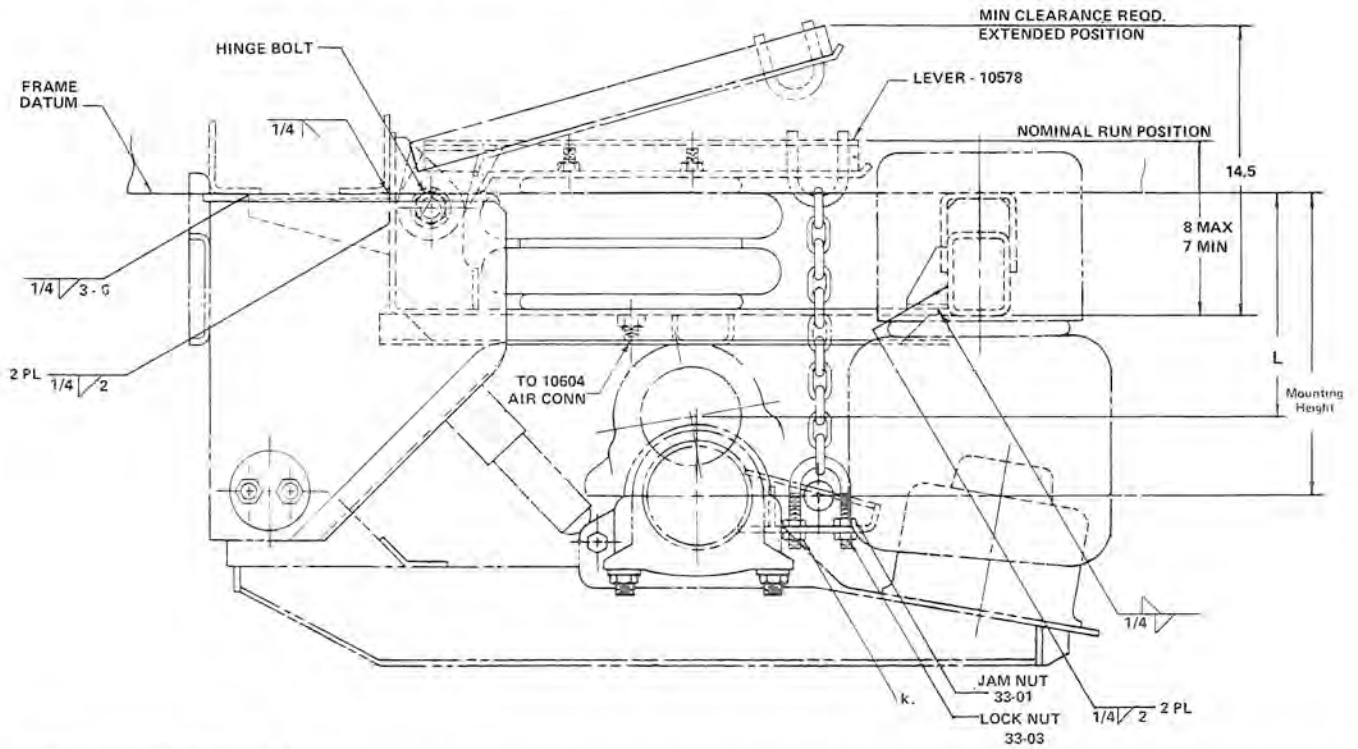
- a. Before installation, loosen hinge bolts and position lever in extended position. Tighten hinge bolts.
- b. Relocate or position second crossmember as illustrated.



- c. After completion of the 1200 Mk<sub>2</sub> suspension installation; position and weld lift assembly as shown. Attach lower bracket to axle. Center both upper assembly and lower bracket carefully. Camshaft must be at rear horizontal centerline (CL) of axle.
- d. Install the lift air control according to the 1200 Mk<sub>2</sub> Air Supply Installation Instructions is checked.
- e. Press lever down. Attach chain and U-bolts to lower axle bracket.
- f. Support axle at design mounting height. Back off jam nuts and adjust U-bolts to pull lever to nominal run position. Re-adjust as necessary after trial to level axle at required lift position.



# Center Axle Lift Welding Recommendations



DIMENSIONS CHART

Mtg. Ht.	"L" Lifted Axle Height	Rebound Height	"B" Bracket Lock Below Frame
9"	5"	14"	0
13"	9"	18"	4"
14"	10"	19"	5"
15"	11"	20"	6"
16"	12"	21"	7"
17"	13"	22"	8"

- g.** Tighten jam nuts to 65 - 90 ft. lbs. Check all nuts to torque shown on page 20.
- h.** Attach air and electric supply and check lift operation.
- i.** Adjust U-bolts to pull lifted axle to lifted mounting height. Adjustment must be even on each end of axle.
- j.** Optional quick release valve or air reservoir may be used as shown in air control drawing No. 10604.
- k.** Torque requirements are shown on page 20.
- l. Caution:** Do not lift a loaded axle unless the remaining load bearing axles have adequate capacity for the additional load.

**CENTER LIFT INTENDED FOR USE WITH 1200 Mk<sub>2</sub> SERIES SUSPENSIONS ONLY!**

