



# SPRING GROUP

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SPRING SPECIFICATIONS

MODELS	L-110	L-120	LM-120	L-130	LB-140	L-150	L-153	LM-150
<b>FRONT SPRINGS:</b>								
No. of leaves	7	9	9	8	8	8	8	10
Length (flat)	42"	42"	42"	42"	42"	46"	46"	42"
Width	1-3/4"	1-3/4"	1-3/4"	1-3/4"	1-3/4"	2"	2"	1-3/4"
Thickness (per leaf)	.262"	.262"	.291"	.291"	.291"	.323"	.323"	.291"
Load to bump	4-3/16"	4"	4-3/8"	4"	3-16/16"	4"	4"	3-7/8"
<b>REAR SPRINGS:</b>								
No. of leaves	8	10	10	8	10	8	10	10
Length (flat)	52"	52"	52"	52"	52"	50"	52"	52"
Width	1-3/4"	1-3/4"	1-3/4"	2-1/4"	2-1/4"	2-1/2"	2-1/2"	2-1/4"
Thickness (per leaf)	.291"	.323"	.323"	.360"	.360"	.401"	.401"	.360"
Load to bump	4-3/8"	4-13/16"	4-13/16"	4-3/8"	3-9/16"	4-1/8"	4-1/8"	4"
<b>AUXILIARY SPRINGS:</b>								
Standard								
Optional	optional	optional	optional	optional	optional	optional	optional	optional
No. of leaves	5	5	5	6	6	8	.....	6
Length (flat)	33"	33"	33"	34"	32-7/8"	33"	.....	32-7/8"
Width	1-3/4"	1-3/4"	1-3/4"	2-1/4"	2-1/4"	2-1/2"	.....	2-1/4"
Thickness (per leaf)	.262"	.262"	.262"	.262"	.262"	.262"	.....	.262"
Load to bump	3"	3"	3"	3"	3-3/8"	4-1/8"	.....	3-3/8"

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MODELS	L-160	L-163	L-164	L-165	LC-160	L-170	L-173	L-174
<b>FRONT SPRINGS:</b>								
No. of leaves	8	8	9	9	10	9	9	10
Length (flat)	46"	46"	46"	46"	46"	46"	46"	46"
Width	2-1/4"	2-1/4"	2-1/4"	2-1/4"	2-1/4"	2-1/4"	2-1/4"	2-1/4"
Thickness (per leaf)	.323"	.323"	.323"	.291"	.323"	.323"	.323"	.323"
Load to bump	4"	4-5/16"	3-7/8"	3-3/4"	3-5/16"	3-7/16"	3-1/4"	3-3/8"
<b>REAR SPRINGS:</b>								
No. of leaves	8	12	10	8	8	10	14	12
Length (flat)	52"	52"	52"	52"	52"	52"	52"	52"
Width	2-1/2"	2-1/2"	2-1/2"	2-1/2"	2-1/2"	2-1/2"	2-1/2"	2-1/2"
Thickness (per leaf)	.401"	.401"	.401"	.401"	.401"	.401"	.401"	.401"
Load to bump	4"	5-1/2"	4-1/2"	3-7/8"	4-1/8"	4-9/16"	6"	5-1/16"
<b>AUXILIARY SPRINGS:</b>								
Standard	standard		standard	standard	standard	standard		standard
Optional								
No. of leaves	6		6	6	6	8		9
Length (flat)	37"		37"	37"	37"	38"		38"
Width	2-1/2"		2-1/2"	2-1/2"	2-1/2"	2-1/2"		2-1/2"
Thickness (per leaf)	.323"		.323"	.323"	.323"	.291"		.201"
Load to bump	4"		4"	3-7/8"	4-1/8"	4-9/16"		5-1/16"

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MODELS	L-175	LF-170	L-180	L-183	L-184	L-185	LC-180	L-190
<b>FRONT SPRINGS:</b>								
No. of leaves	8	12	10	10	11	9	12	9
Length (flat)	46"	46"	46"	46"	46"	46"	46"	52"
Width	2-1/4"	2-1/4"	2-1/4"	2-1/4"	2-1/4"	2-1/4"	2-1/4"	3"
Thickness (per leaf)	.323"	.323"	.323"	.323"	.323"	.323"	.323"	.360"
Load to bump	3-9/16"	3-5/16"	3-5/16"	3-5/16"	3-5/16"	3-1/2"	3-1/4"	3-5/8"
<b>REAR SPRINGS:</b>								
No. of leaves	10	10	11	13	14	11	11	12
Length (flat)	52"	32-1/4"	54"	54"	54"	54"	54"	54"
Width	2-1/2"	3"	3"	3"	3"	3"	3"	3"
Thickness (per leaf)	.401"	8-.447" 2-.401"	8-.401" 3-.360"	3-.447" 10-.401"	6-.401" 8-.360"	8-.401" 3-.360"	8-.401" 3-.360"	.401"
Load to bump	4-9/16"		3-11/16"	4-1/4"	3-1/8"	3-11/16"	3-11/16"	3-3/8"
<b>AUXILIARY SPRINGS:</b>								
Standard	standard		standard		standard	standard	standard	standard
Optional								
No. of leaves	8		7		9	7	7	7
Length (flat)	38"		39"		39"	39"	39"	41"
Width	2-1/2"		3"		3"	3"	3"	3"
Thickness (per leaf)	.291"		.323" 6-.291"		3-.323"	.323"	.323"	.323"
Load to bump	4-9/16"		3-11/16"		3-1/8"	3-11/16"	3-11/16"	3-3/8"

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MODELS	L-193	L-194	L-195	LF-190	LC-190	L-200	L-204	L-205
<b>FRONT SPRINGS:</b>								
No. of leaves	9	9	8	9	.....	9	10	9
Length (flat)	52"	52"	52"	52"	.....	52"	52"	52"
Width	3"	3"	3"	3"	.....	3"	3"	3"
Thickness (per leaf)	.401"	.401"	.360"	.401"	.....	.401"	.401"	.360"
Load to bump	3-3/4"	3-7/16"	3-7/8"	3-9/16"	.....	3-5/16"	3-5/8"	3-5/8"
<b>REAR SPRINGS:</b>								
No. of leaves	12	13	12	12	.....	13	16	13
Length (flat)	56"	54"	54"	37-3/4"	.....	54"	56"	54"
Width	3"	3"	3"	4"	.....	3"	3"	3"
Thickness (per leaf)	7-.447" 5-.401"	.447"	.401"	9-.447" 3-.401"	.....	.447"	.447"	.447"
Load to bump	3-7/8"	3-1/4"	4-3/8"		.....	3-1/2"	4-7/16"	3-3/4"
<b>AUXILIARY SPRINGS:</b>								
Standard		standard	standard			standard	standard	standard
Optional					.....			
No. of leaves		8	7		.....	8	10	8
Length (flat)		41"	41"		.....	41"	41"	41"
Width		3"	3"		.....	3"	3"	3"
Thickness (per leaf)		.323"	.323"		.....	.323"	.323"	.323"
Load to bump		3-1/4"	4-3/8"		.....	3-1/2"	4-7/16"	3-3/4"



SPRING SPECIFICATIONS

MODELS	LC-200	L-210	LF-210	L-220	LF-220	L-225	L-230	LF-230
<b>FRONT SPRINGS:</b>								
No. of leaves		10	10			10		
Length (flat)		52"	52"			52"		
Width		3"	3"			3"		
Thickness (per leaf)		9-.447" 1-.401"	9-.447" 1-.401"			.401"		
Load to bump		3-3/4"	3-3/4"			3-1/2"		
<b>REAR SPRINGS:</b>								
No. of leaves		15	12					
Length (flat)		56"	37-3/4"					
Width		3"	3"					
Thickness (per leaf)		.499"	10-.500" 2-.375"					
Load to bump		4-3/16"						
<b>AUXILIARY SPRINGS:</b>								
Standard		standard						
Optional								
No. of leaves		9						
Length (flat)		41"						
Width		3"						
Thickness (per leaf)		3-.401" 6-.360"						
Load to bump		4-3/16"						

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# SPRINGS

## Front Spring Mounting

Front springs are mounted at the front with brackets and at the rear by shackles.

## Rear Spring Mounting

Rear springs are mounted at the front with brackets and at the rear with shackles.

## Auxiliary Spring Mounting

Auxiliary springs are mounted on top of the main rear spring and under load the auxiliary spring ends will contact the brackets attached to the side rails.

## Rubber Bushed Spring Mounting (Rear Only)

On trucks equipped with rubber bushed spring mountings, it is necessary to remove the complete spring assembly to replace the rubber bushings. These rubber bushings are made up of two parts on each pin. To install new bushings, the following instructions are to be used:

1. Remove nuts and washers from bracket pins at front and rear.
2. Remove U-bolts and slide spring off of both front and rear bracket pins.
3. Place spring in vise and remove shackle pin nut and washer.
4. The rubber bushings are separated at the center of each pin, making it possible to remove a half of a bushing from each side of the spring and shackle eye.
5. Install new bushings by reversing the above operation.
6. Application of soap solution to the bushing will facilitate installation of the bushings.
7. When installing nuts on the shackle and bracket pins, the knurled side of the nut must face toward the outside. Tighten spring and bracket pin nuts securely (approximately 35 ft. lbs.).

## Spring Maintenance

Spring leaf failures at the spring eye are generally a result of improper spring pin adjustment. If the pin is drawn up too tightly in the bracket or shackle, a bind will result.

Spring failures at the center section, or near the center bolt hole, are generally caused by loose U-bolts. These bolts must be kept tight and checked frequently. The best results will be obtained by having the vehicle fully loaded at the time of tightening the U-bolts,

since this assures the spring leaves being compressed.

Spring pins on the L-line trucks are of three types:

1. Spring pins that are threaded into shackles or brackets.
2. Spring pins that are driven into shackles or brackets.
3. Spring pins that are welded or pressed in brackets.

Spring pins which are threaded into the bracket require that the pin be tightened into the bracket and then backed out one-half turn. The locknut should then be tightened securely and the cotter pin installed.

NOTE: Do not back off nut to permit installation of cotter pin since this would permit pin to turn in the bracket, and cause excessive wear. If necessary, turn pin out of bracket a slight amount to permit installation of cotter pin when the locknut is tight.

Spring pins which are to be driven into the shackle or bracket, require that the pin be aligned so as to be able to install lock bolt through bracket or shackle with pin in place.

Spring pins that are welded or pressed into bracket or shackle require that spring pin nut be tightened securely with knurled side out. This is a self-lock type nut.

When installing threaded spring pins in threaded spring shackles, the lubricant hole in the spring pin should be located in an area approximately 90° on either side of top center of the spring eye or away from the loaded side of the spring pin (See Fig. 1).

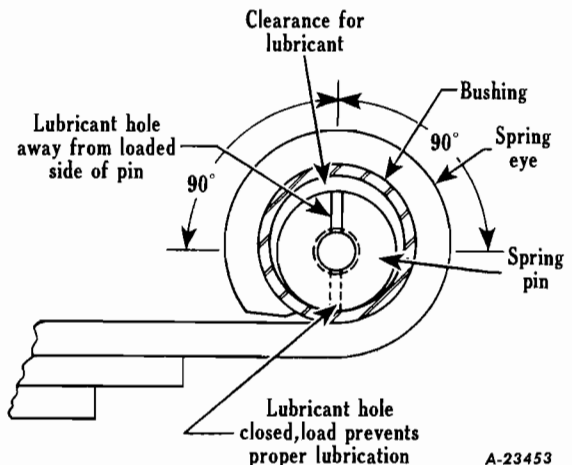


Fig. 1 - Spring Pin Installation (Diagramatic). With the pin in this position, adequate lubrication is assured.



### Rubber Bushed Spring (Front Spring Only)

To remove rubber bushing from front springs, the following instructions are to be used:

#### (FRONT END)

1. Remove the self-locking nut from spring bracket.
2. To remove the front spring pin, remove the two bolts and nuts that hold the inside half of the pin bracket to the frame channel. This will allow the spring pin to be removed with the inside half of the spring bracket.
3. Unless replacement of the spring pin is necessary, do not attempt to drive spring pin out of bracket. This will damage and loosen the pin in the inner bracket eye.

#### (REAR END)

To remove the rubber bushings from the rear end of front spring, use the following procedure:

1. Remove nuts from both rear spring pins.
2. Remove retainer from pins.
3. This will let the inside shackle be removed with both shackle pins attached.

### Disassembly of Springs

The disassembly of front or rear springs is identical in procedure. Disassemble springs as follows:

1. Place spring in vise, clamping assembly near center of spring.
2. Remove nuts from four spring clip bolts, and remove bolts from clips.
3. Remove nut from spring center bolt.
4. Release vise to permit leaves to separate. Remove spring from vise. Separate and remove leaves from center bolt.

### Auxiliary Springs

Disassembly of the auxiliary springs differ only slightly from that of the front or rear springs:

1. Place auxiliary spring in vise, and clamp leaves together.
2. Straighten tabs of two spring clips, being careful not to break them off. Heating clips with a torch will help avoid breakage.
3. Remove nut from center bolt, and release vise to permit leaves to separate. Remove spring from vise.
4. Remove spring leaves from center bolt.

### Cleaning and Inspection of Springs

Wash or scrub all parts in cleaning solvent or clean all parts with steam cleaning equipment. Brushing of spring leaves with a wire brush will facilitate scale removal. (NOTE: Do not immerse rubber spring bushings in cleaning solvent.)

1. Inspect all spring leaves for breakage and cracks. Replace defective leaves. Inspect all leaves for arch by comparison with new leaves. If leaves are flattened out, either re-arch or replace.
2. Examine spring pins for wear. If wear is apparent, or if pins are corroded or cracked, replace with new pins.
3. Inspect spring eye bushing, and rear spring shackle bushings for wear, and replace if defective.
4. Inspect spring bracket for breakage and for wear in mounting bolt, or rivet holes, and replace if worn or broken.
5. Replace center bolts at each overhaul.

### Assembly of Front and Rear Springs

1. Lightly coat spring leaves with graphite grease. Replace spring leaves in proper order, lining up the center bolt holes.
2. Partially compress spring leaves, and insert center bolt and nut.
3. Place spring assembly in vise, and compress spring leaves fully.
4. Install four spring clip bolts in spring clips, and install nuts on bolts. Tighten center bolt nut.
5. Run over end of clip bolts and center bolt enough to prevent loosening of nut.

### Auxiliary Spring Assembly

1. Coat spring leaves lightly with graphite grease. Place leaves one on top of another in accordance with length.
2. Compress spring leaves and install center bolt and nut.
3. Place spring in vise and compress leaves fully. Tighten center bolt nut. Bend down ends of spring clips, being careful not to break them. Heating the clips with a torch will facilitate operation.

## FRONT SPRING MOUNTINGS

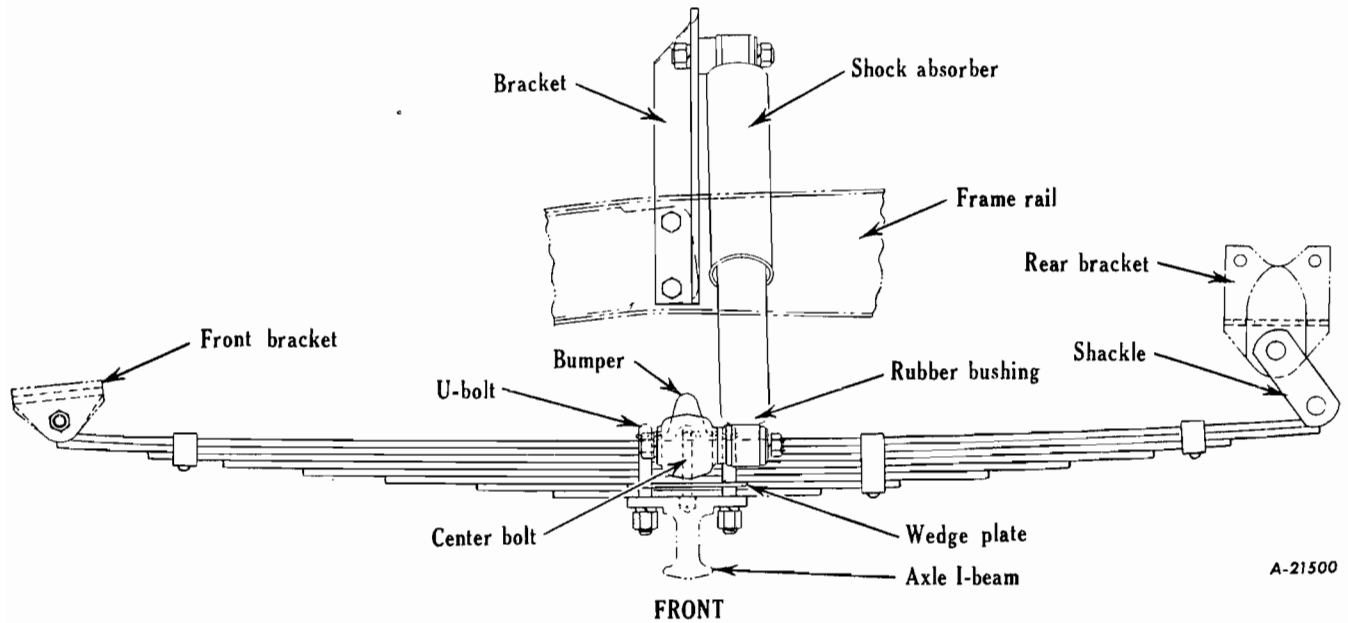


Fig. 1 - Models L-110, L-120, LM-120, L-130, LB-140, LM-150.

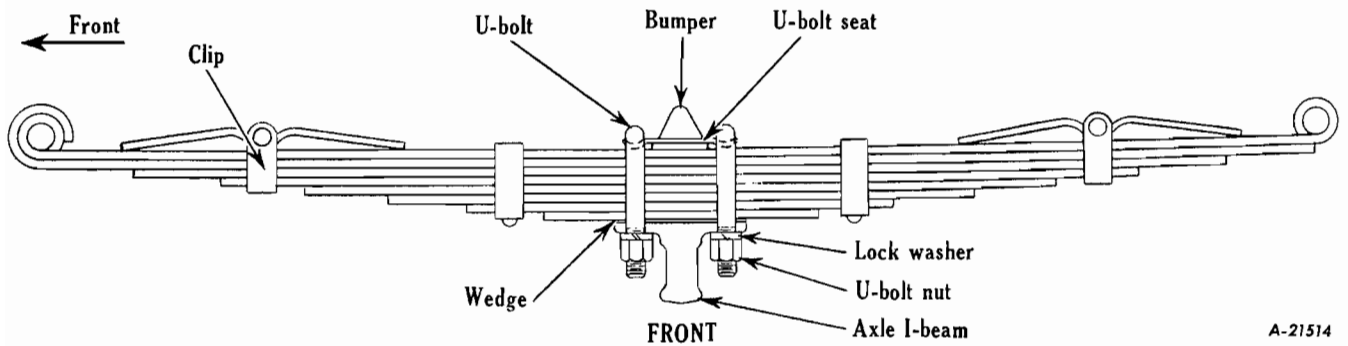


Fig. 2 - L-150, L-153, L-160, L-163, L-164, L-165, LC-160.

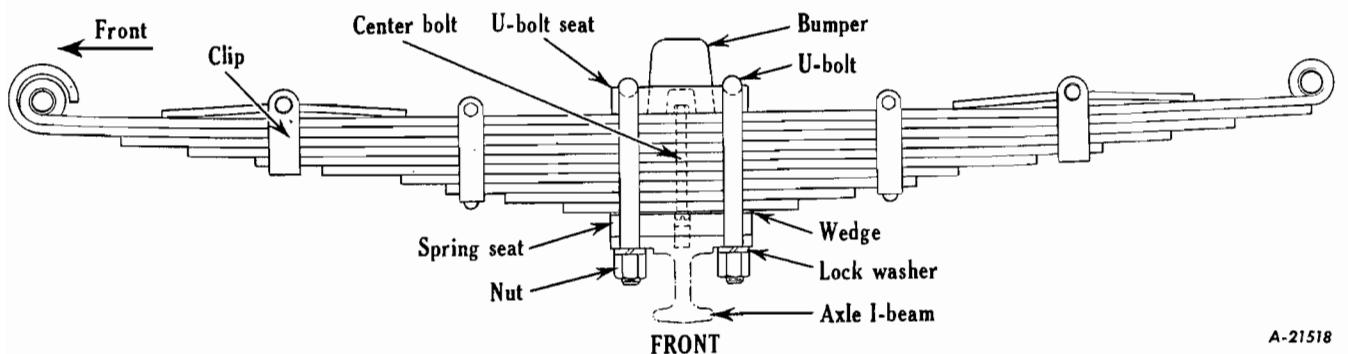


Fig. 3 - Models L-170, L-173, L-174, L-175, LF-170, L-180, L-183, L-184, L-185, LC-180.

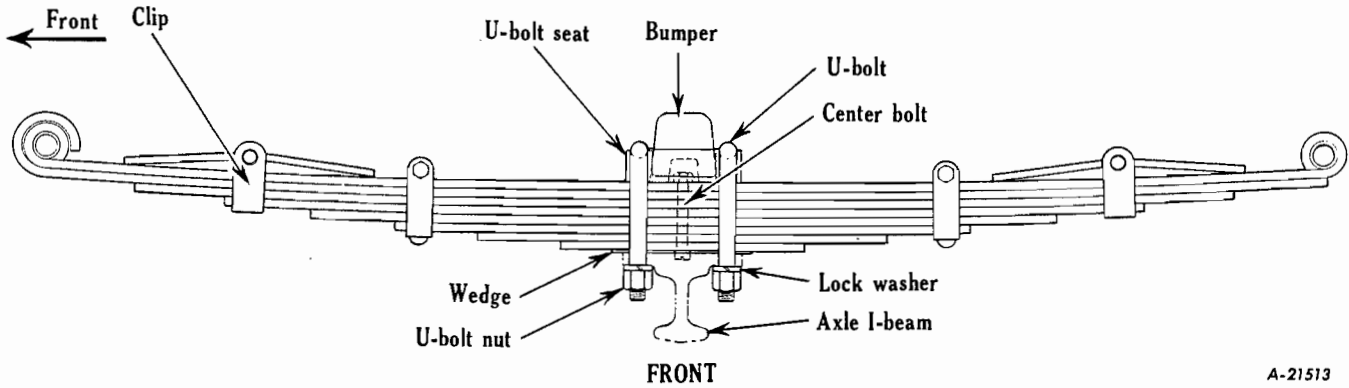


Fig. 4 - Models L-190, L-193, L-194, L-195, LF-190, L-200, L-204, L-205, L-210, LF-210.

### REAR SPRING MOUNTINGS

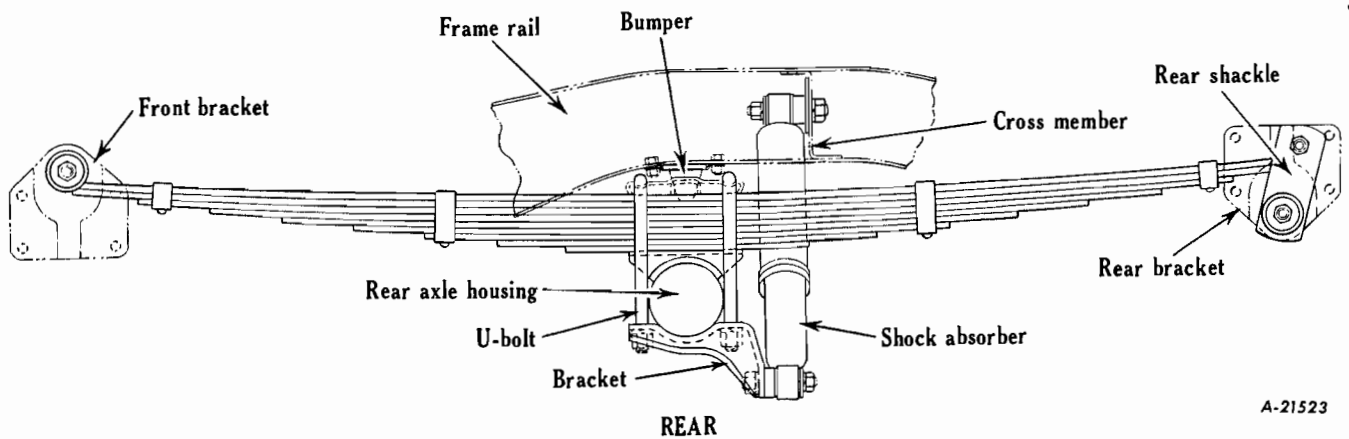


Fig. 5 - Models L-110, L-120, LM-120 (Shock Absorbers-Standard) L-130, LB-140, LM-150 (Shock Absorbers-Optional).

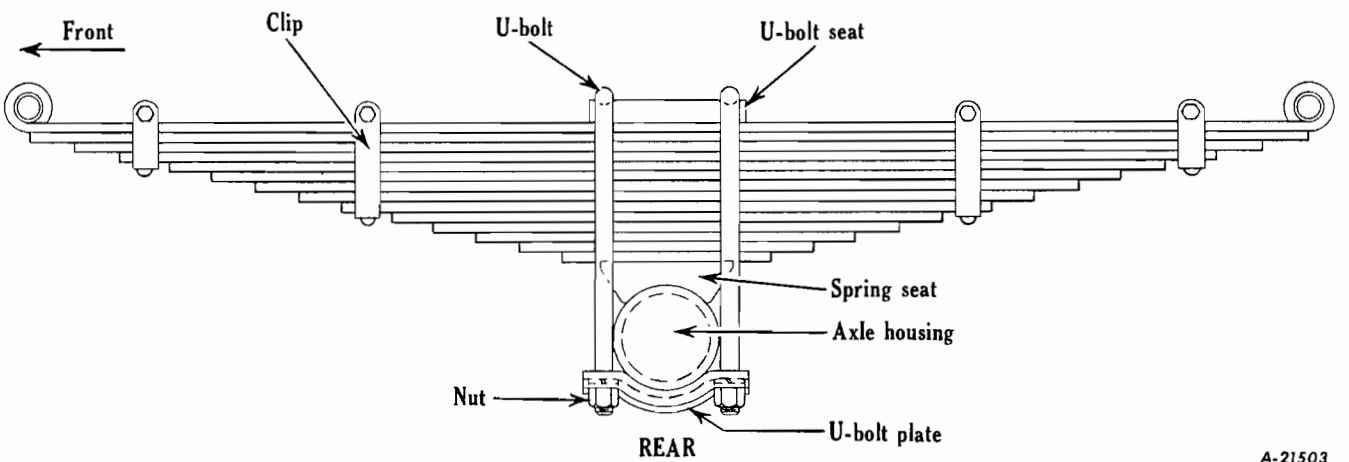
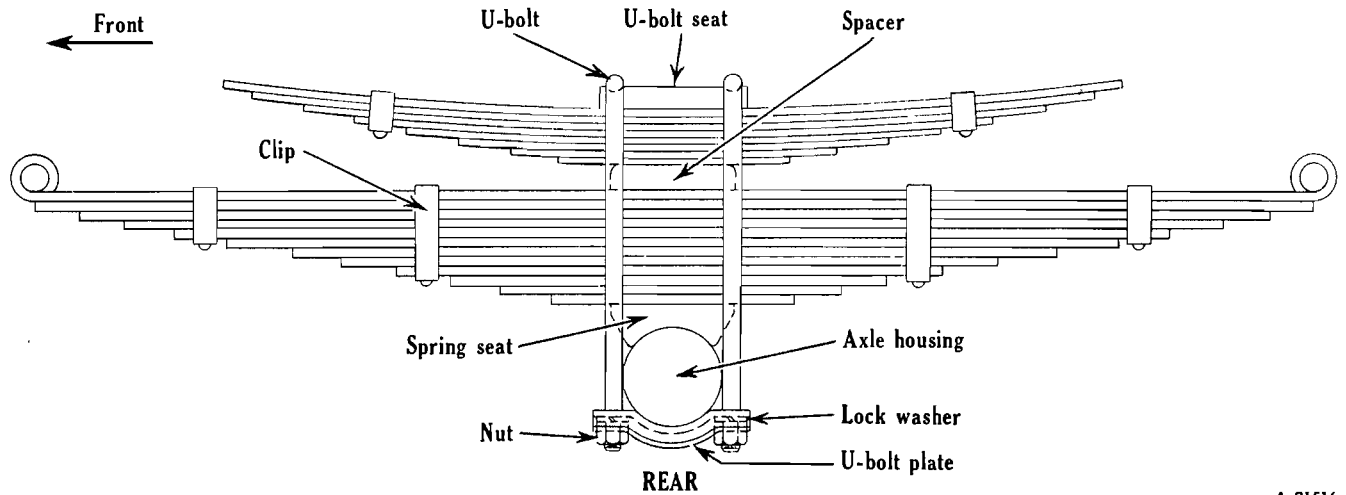
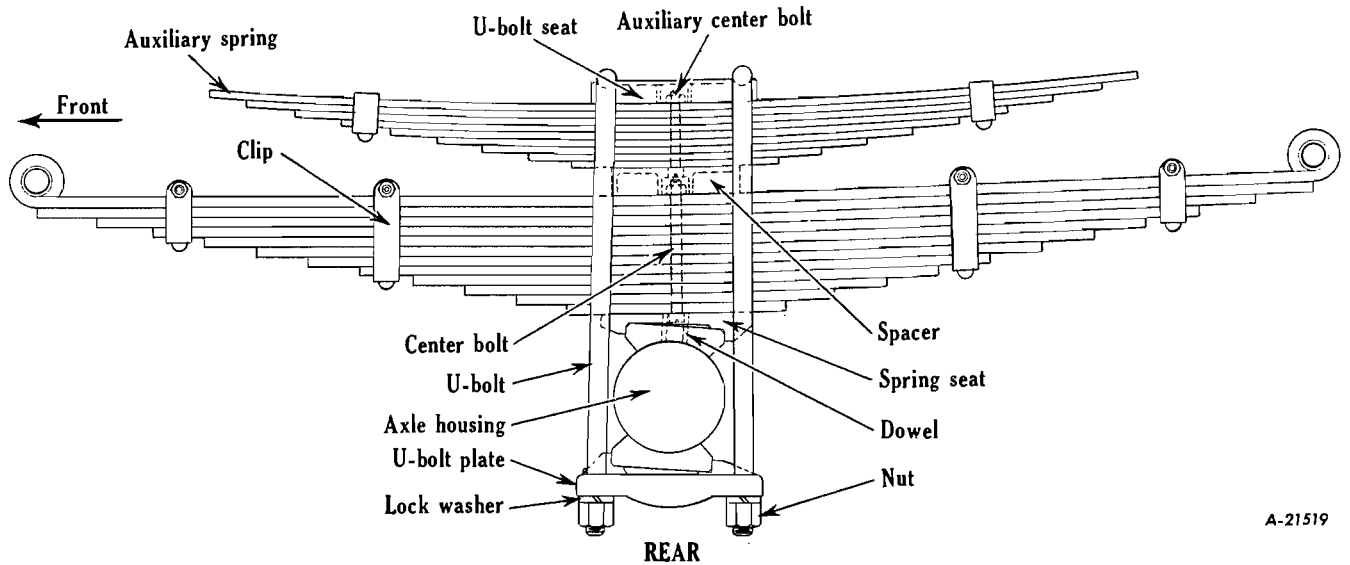


Fig. 6 - Models L-150, L-153, L-163.



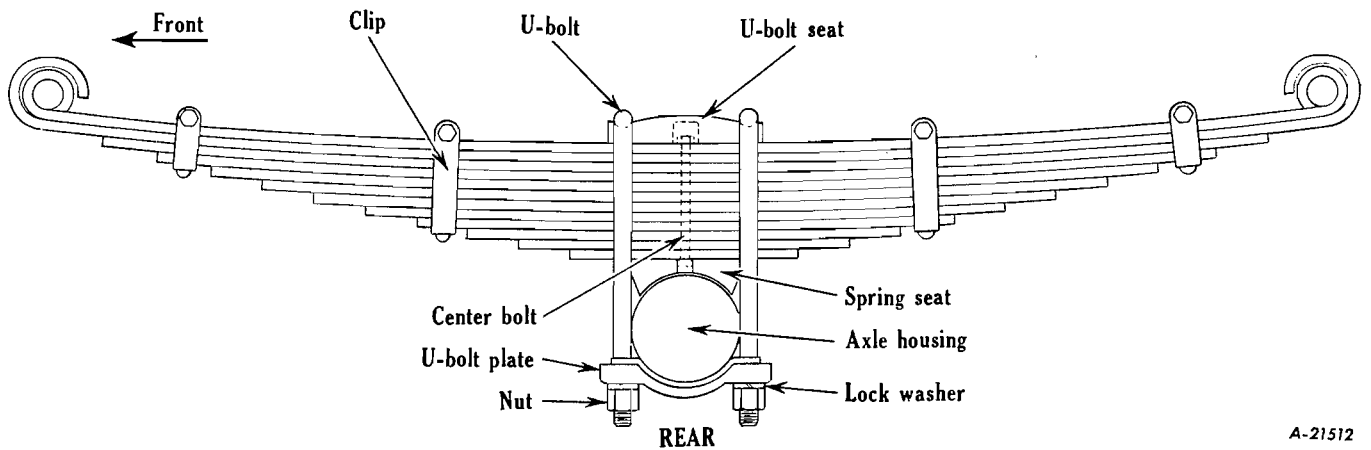
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Fig. 7 - Models L-160, L-164, L-165, LC-160, L-170, L-175.



A-21519

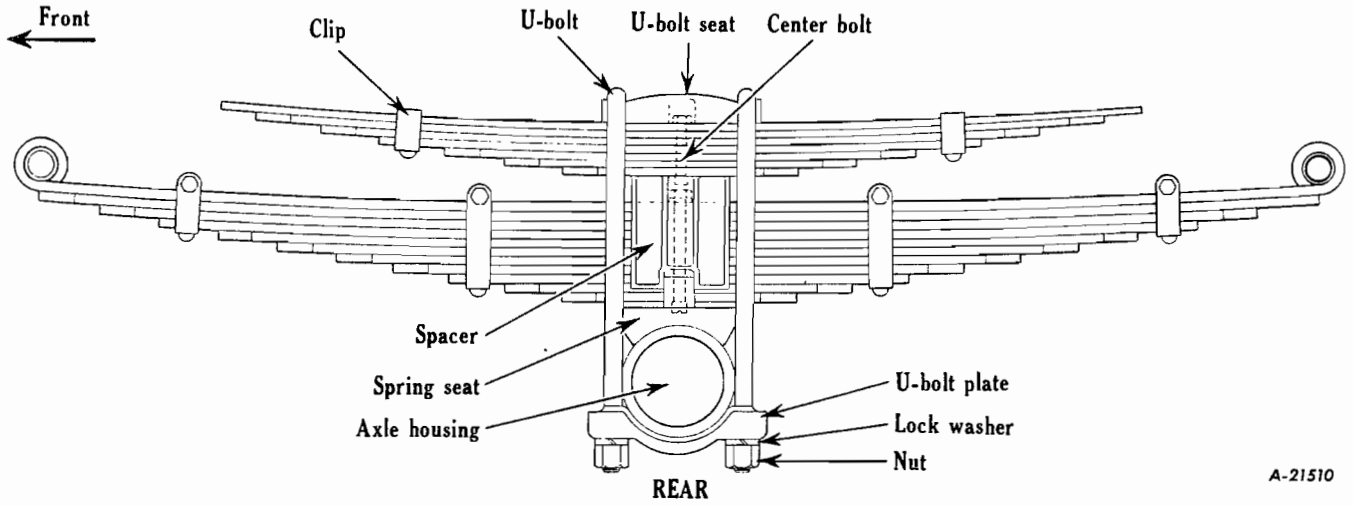
Fig. 8 - Models L-174.



A-21512

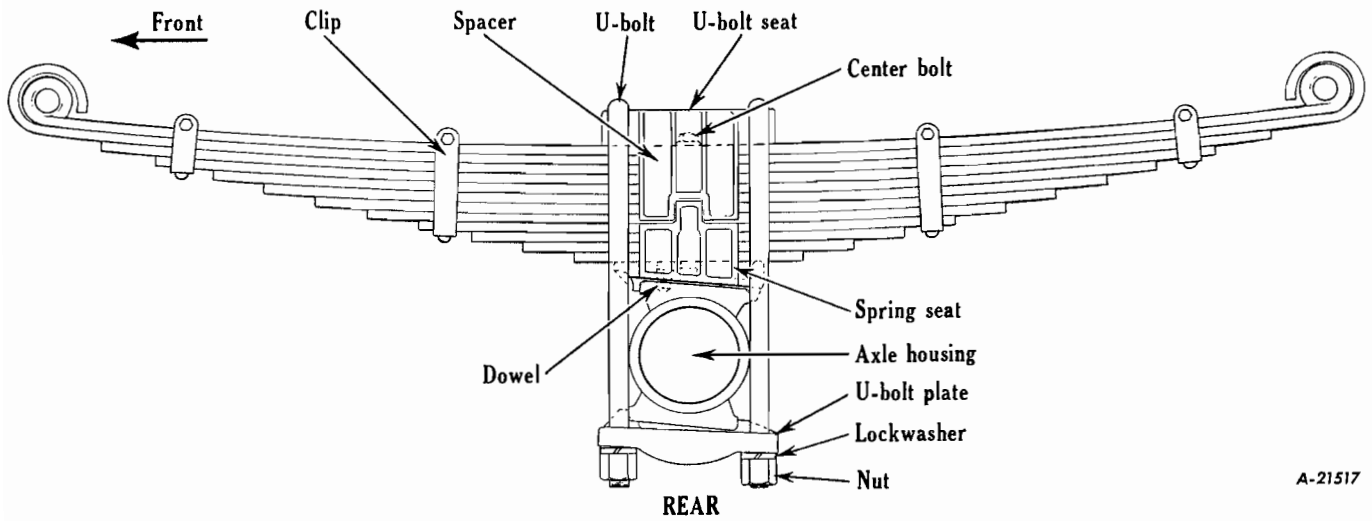
Fig. 9 - Models L-173, L-183.





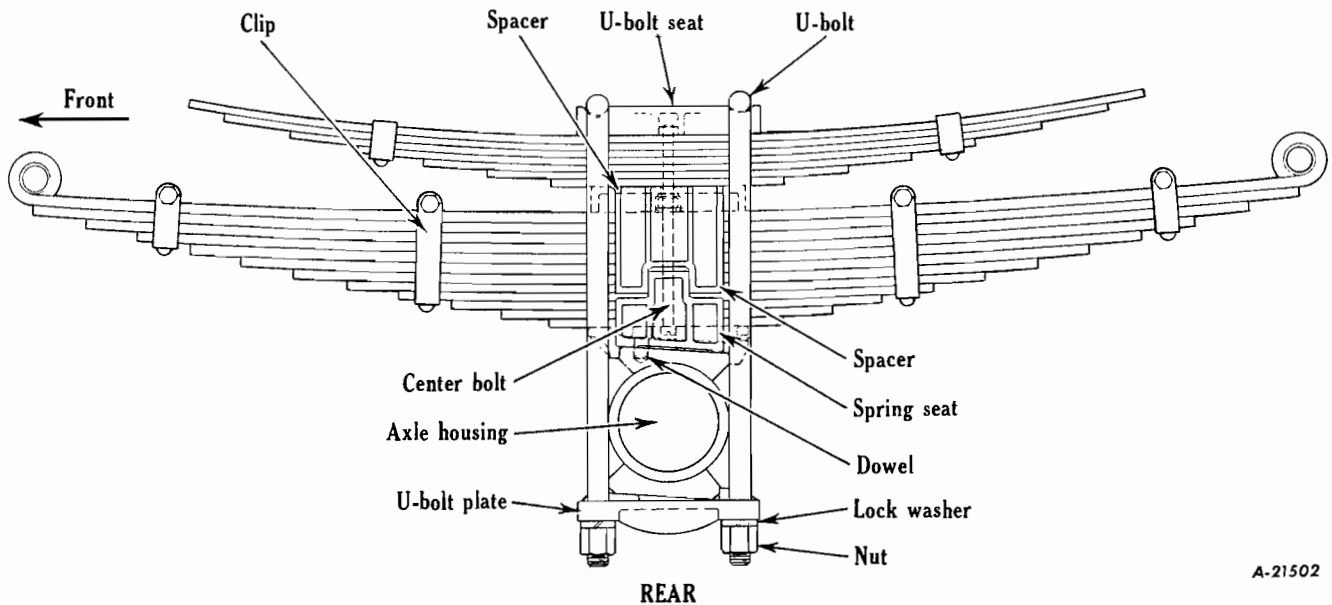
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Fig. 10 - Models L-180, L-185, LC-180.



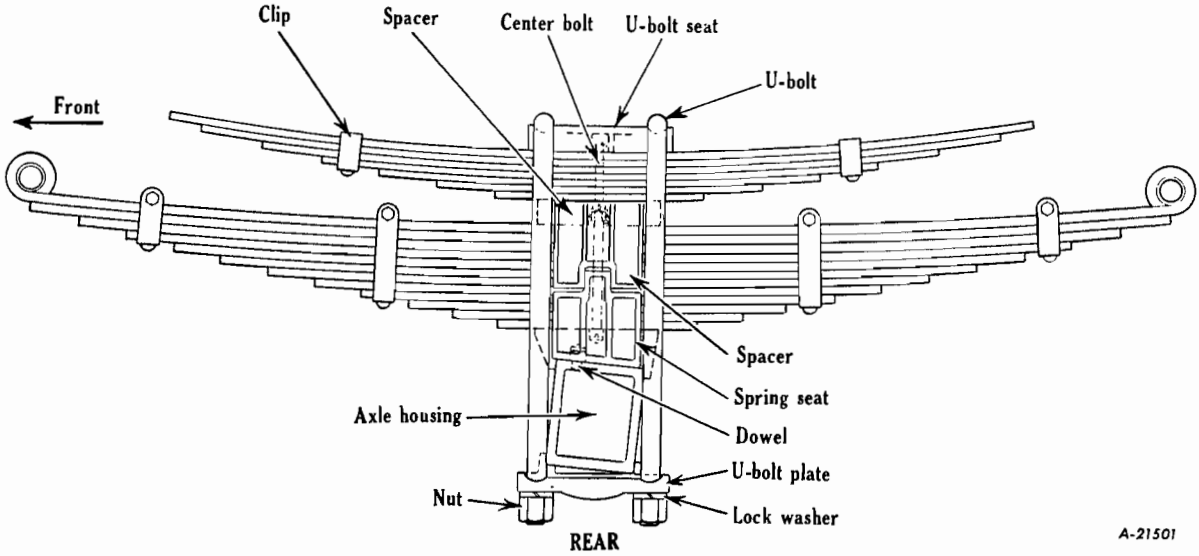
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Fig. 11 - Models L-193.



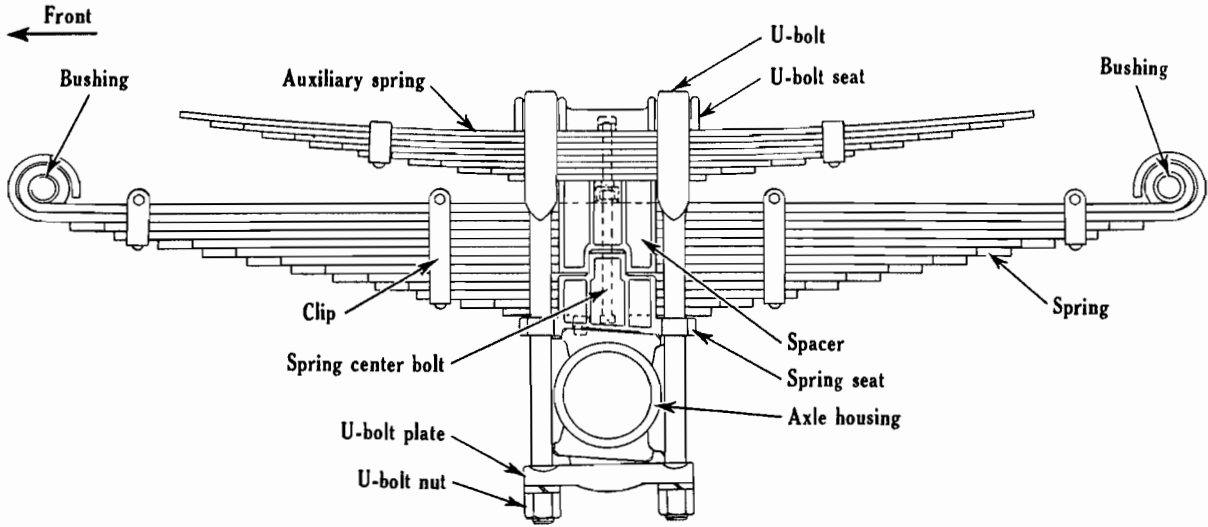
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Fig. 12 - L-184, L-190, L-195.



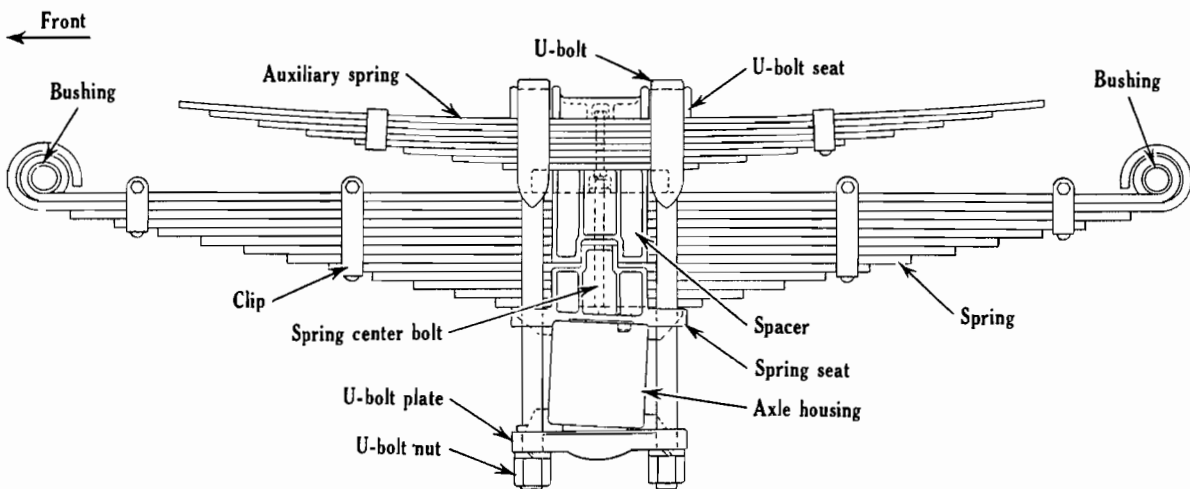
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Fig. 13 - Models L-195.



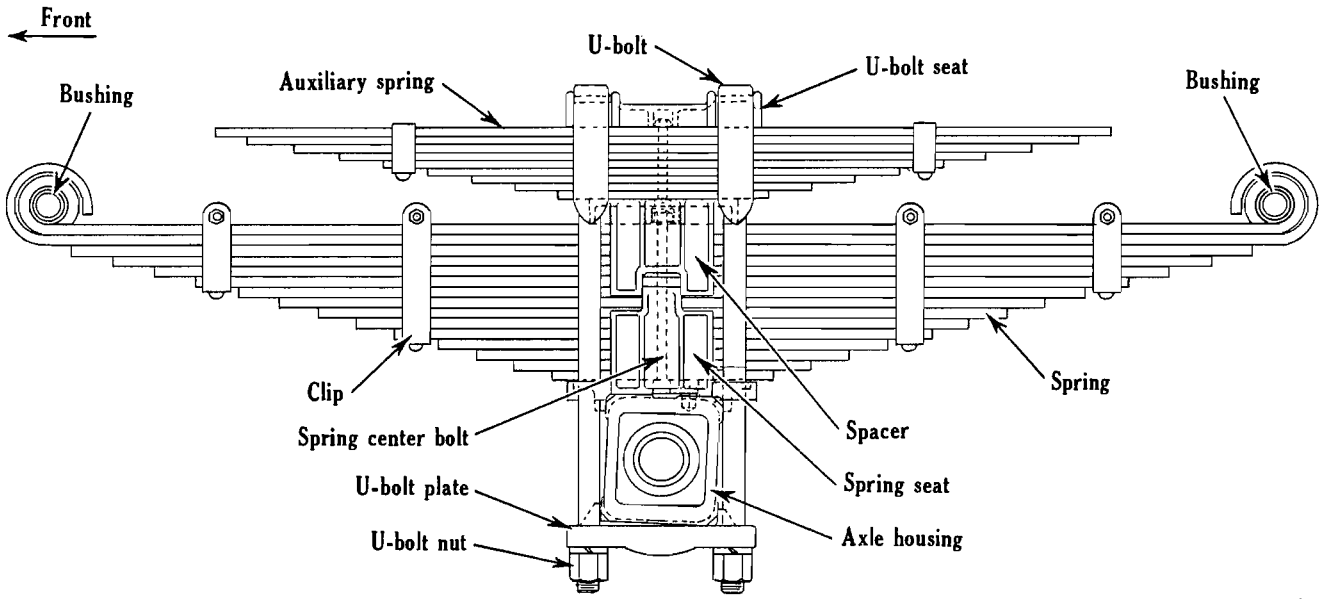
A-21742

Fig. 14 - Models L-194, L-200, L-205.



A-21741

Fig. 15 - Models L-204.



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Fig. 16 - Models L-210.



# SPRING SHACKLES AND BRAKES

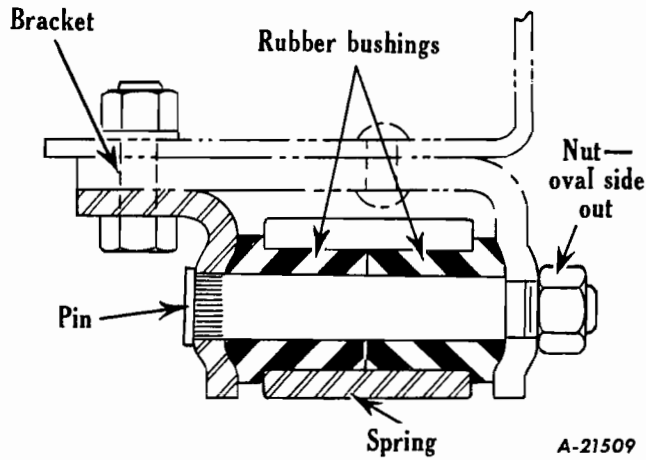


Fig. 1 - Front Spring Front Bracket For Models L-110, L-120, LM-120.

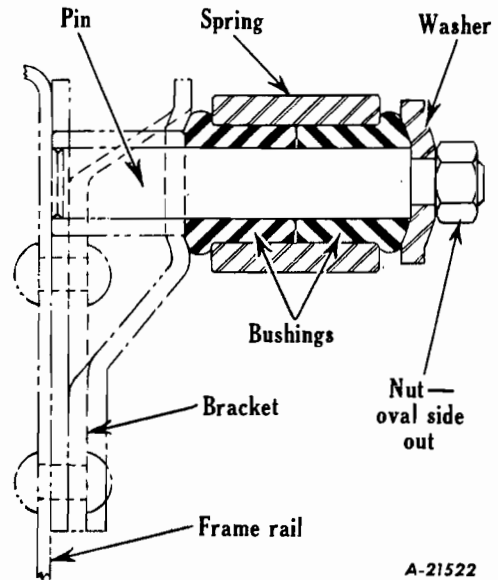


Fig. 3 - Rear Spring Front Bracket For Models L-110, L-120, LM-120.

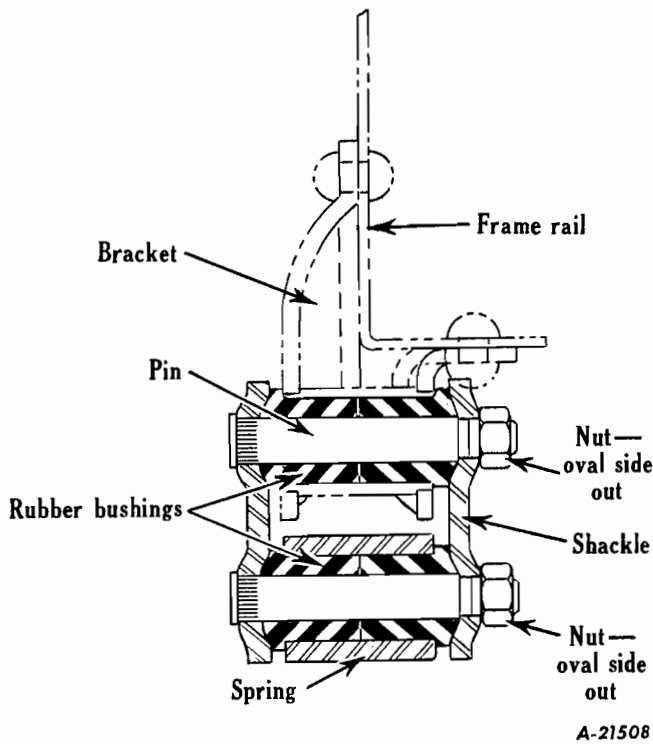


Fig. 2 - Front Spring Rear Shackle For Models L-110, L-120, LM-120.

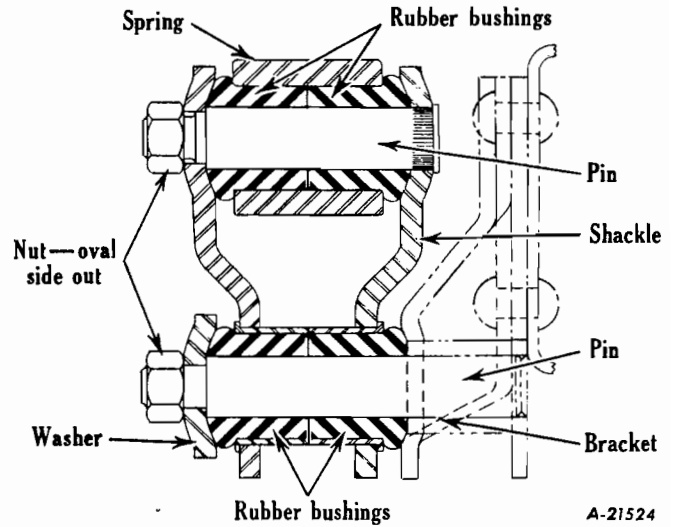


Fig. 4 - Rear Spring Rear Shackle For Models L-110, L-120, LM-120.

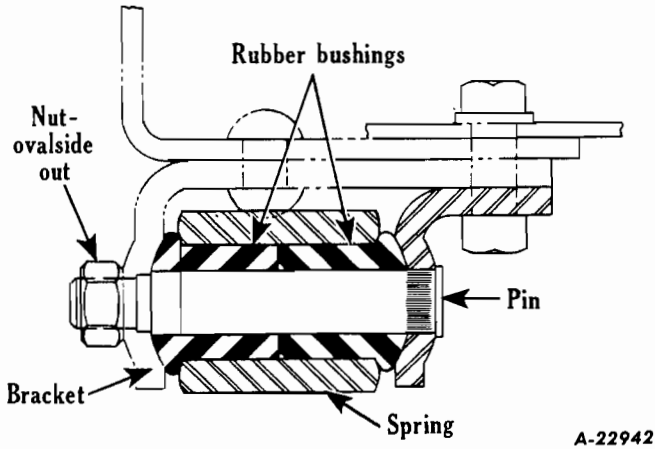


Fig. 5 - Front Spring Front Bracket For Models L-130, LB-140, LM-150.

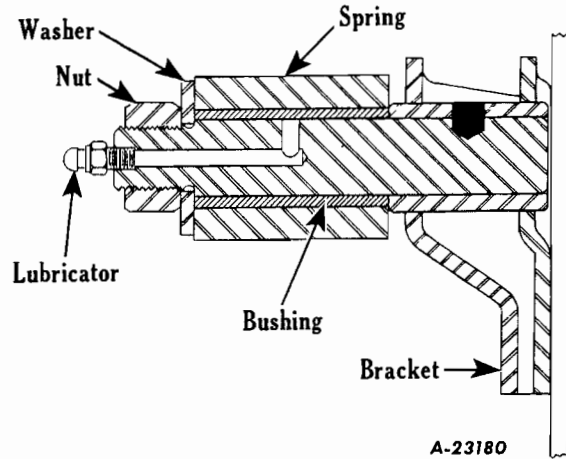


Fig. 7 - Rear Spring Front Bracket For Models L-130, LB-140, LM-150.

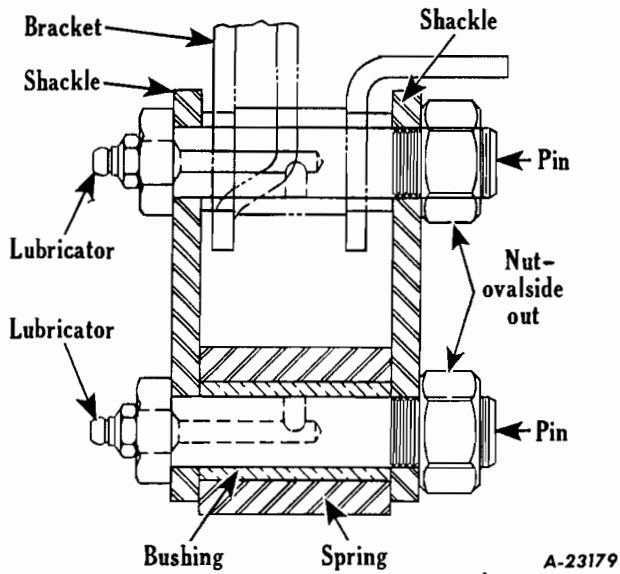


Fig. 6 - Front Spring Rear Shackle For Models L-130, LB-140, LM-150.

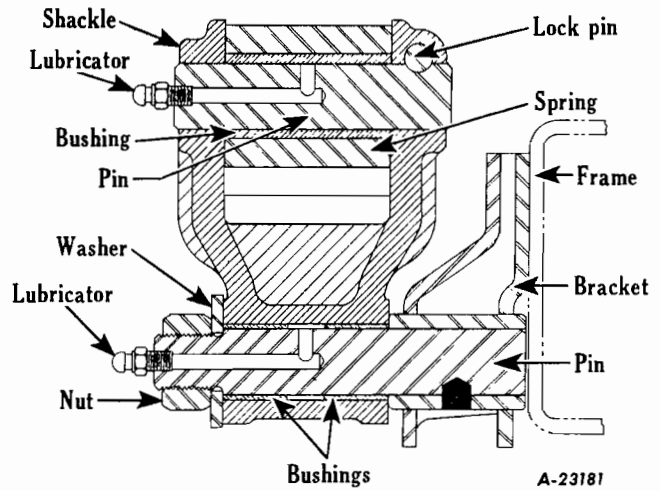


Fig. 8 - Rear Spring Rear Shackle For Models L-130, LB-140, LM-150.

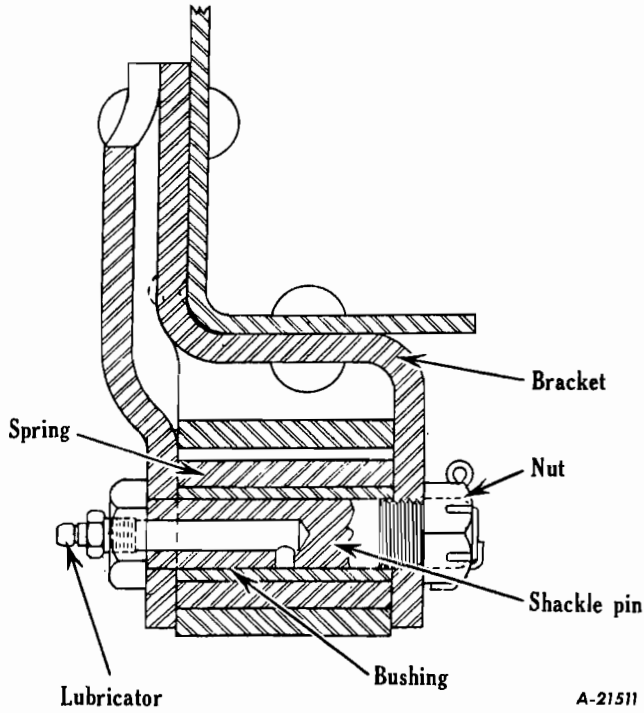


Fig. 9 - Front Spring Front Bracket For Models L-150, L-153, L-160, L-163, L-164, L-165, LC-160, L-170, L-173, L-174, L-175, LF-170, L-180, L-183, L-184, L-185, LC-180.

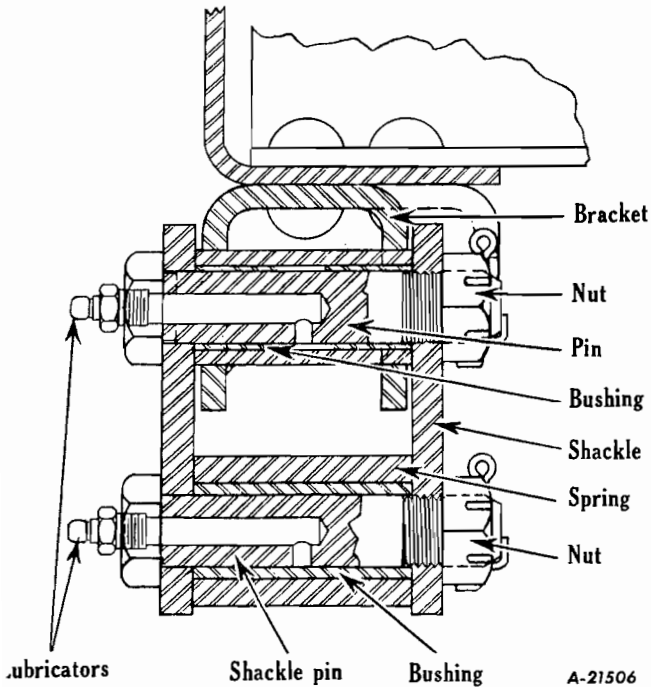


Fig. 10 - Front Spring Rear Shackle For Models L-150, L-153, L-160, L-163, L-164, L-165, LC-160, L-170, L-173, L-174, L-175, LF-170, L-180, L-183, L-184, L-185, LC-180.

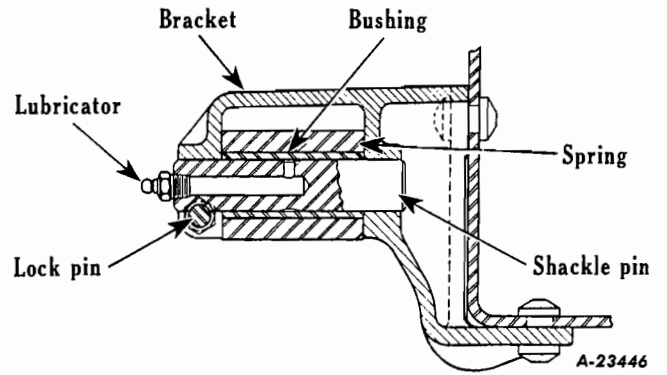


Fig. 11 - Rear Spring Front Bracket For Models L-150, L-153.

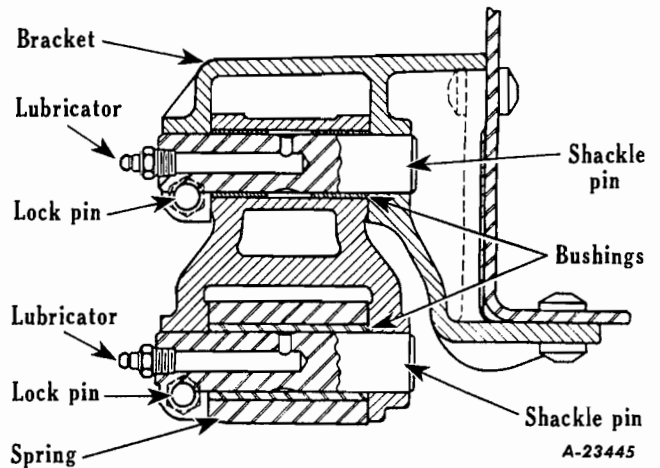


Fig. 12 - Rear Spring Rear Shackle For Models L-150, L-153.

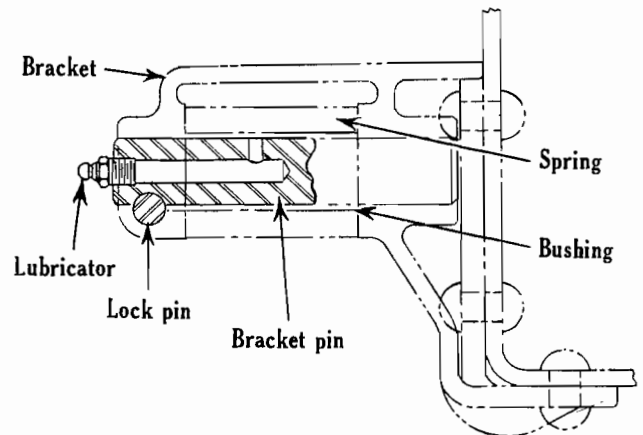


Fig. 13 - Rear Spring Front Bracket For Models L-160, L-163, L-164, L-165, LC-160, L-170, L-173, L-174, L-175.

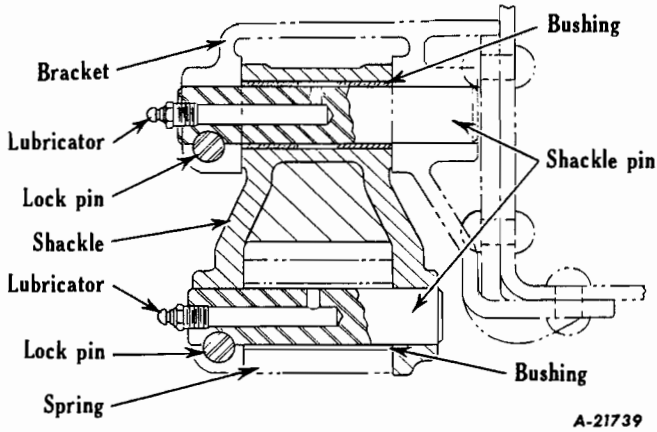


Fig. 14 - Rear Spring Rear Shackle For Models L-160, L-163, L-164, L-165, LC-160, L-170, L-173, L-174, L-175.

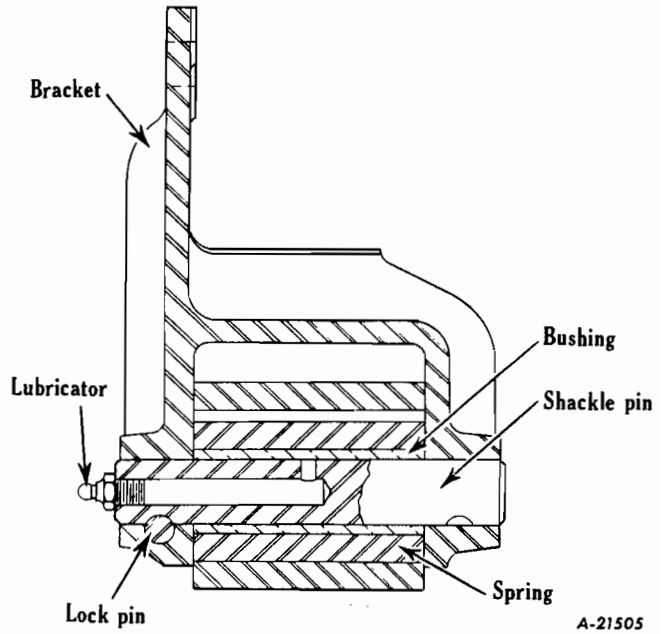


Fig. 17 - Front Spring Front Bracket For Models L-190, L-193, L-194, L-195, LF-190, L-200, L-204, L-205, L-210, LF-210.

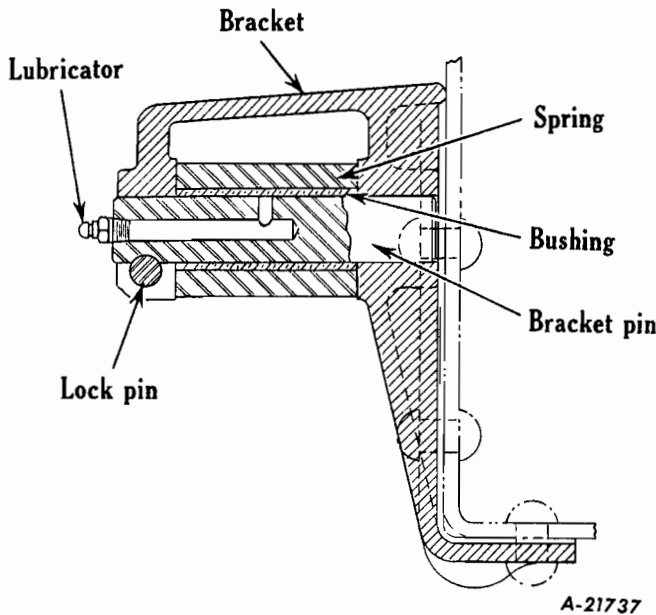


Fig. 15 - Rear Spring Front Bracket For Models L-180, L-183, L-184, L-185, LC-180, L-190, L-193, L-195.

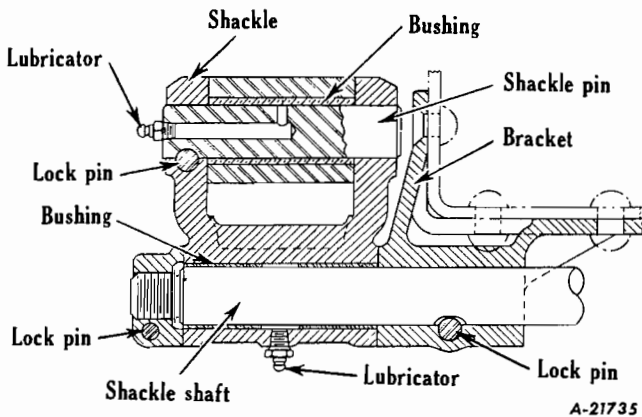


Fig. 16 - Rear Spring Rear Shackle For Models L-180, L-183, L-184, L-185, LC-180, L-190, L-193, L-195.

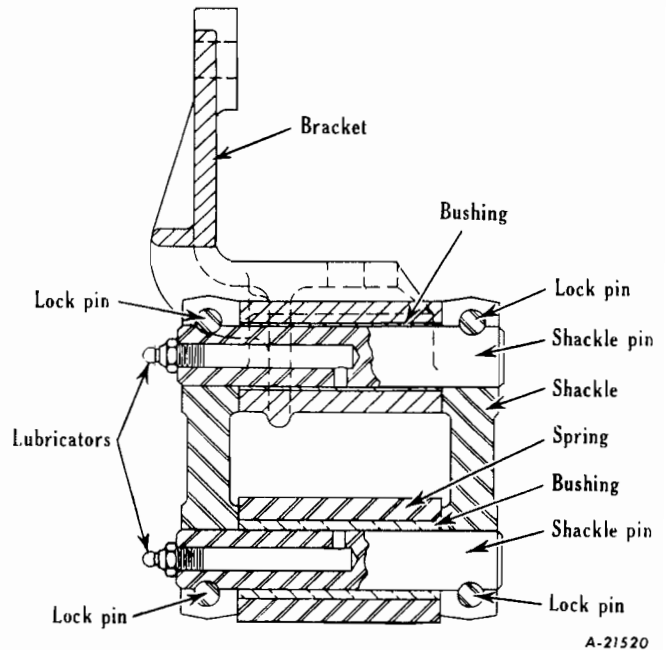


Fig. 18 - Front Spring Rear Shackle For Models L-190, L-193, L-194, L-195, LF-190, L-200, L-204, L-205, L-210, LF-210.





# L-LINE MOTOR TRUCK SERVICE MANUAL

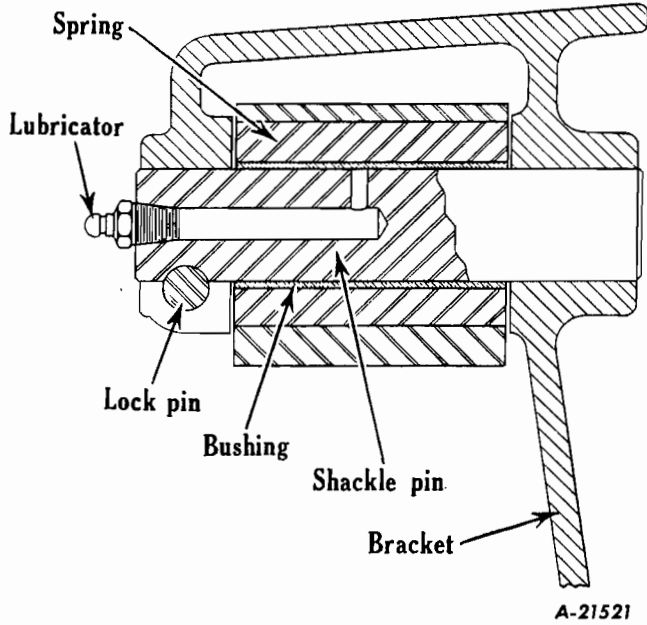


Fig. 19 - Rear Spring Front Bracket for Models L-194, L-200, L-204, L-205, L-210.

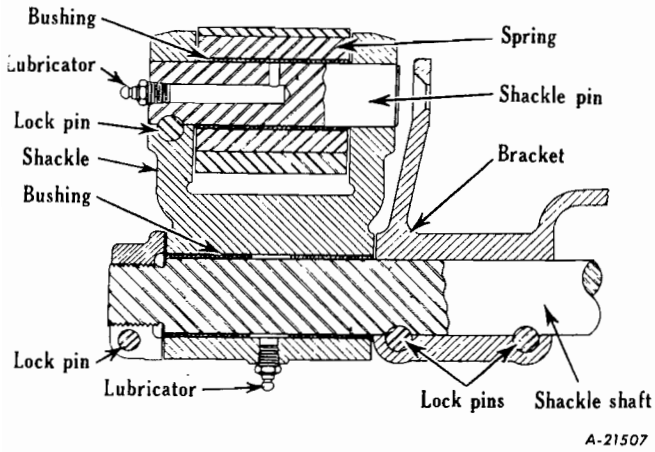


Fig. 20 - Rear Spring Rear Shackle For Models L-194, L-200, L-204, L-205, L-210.

