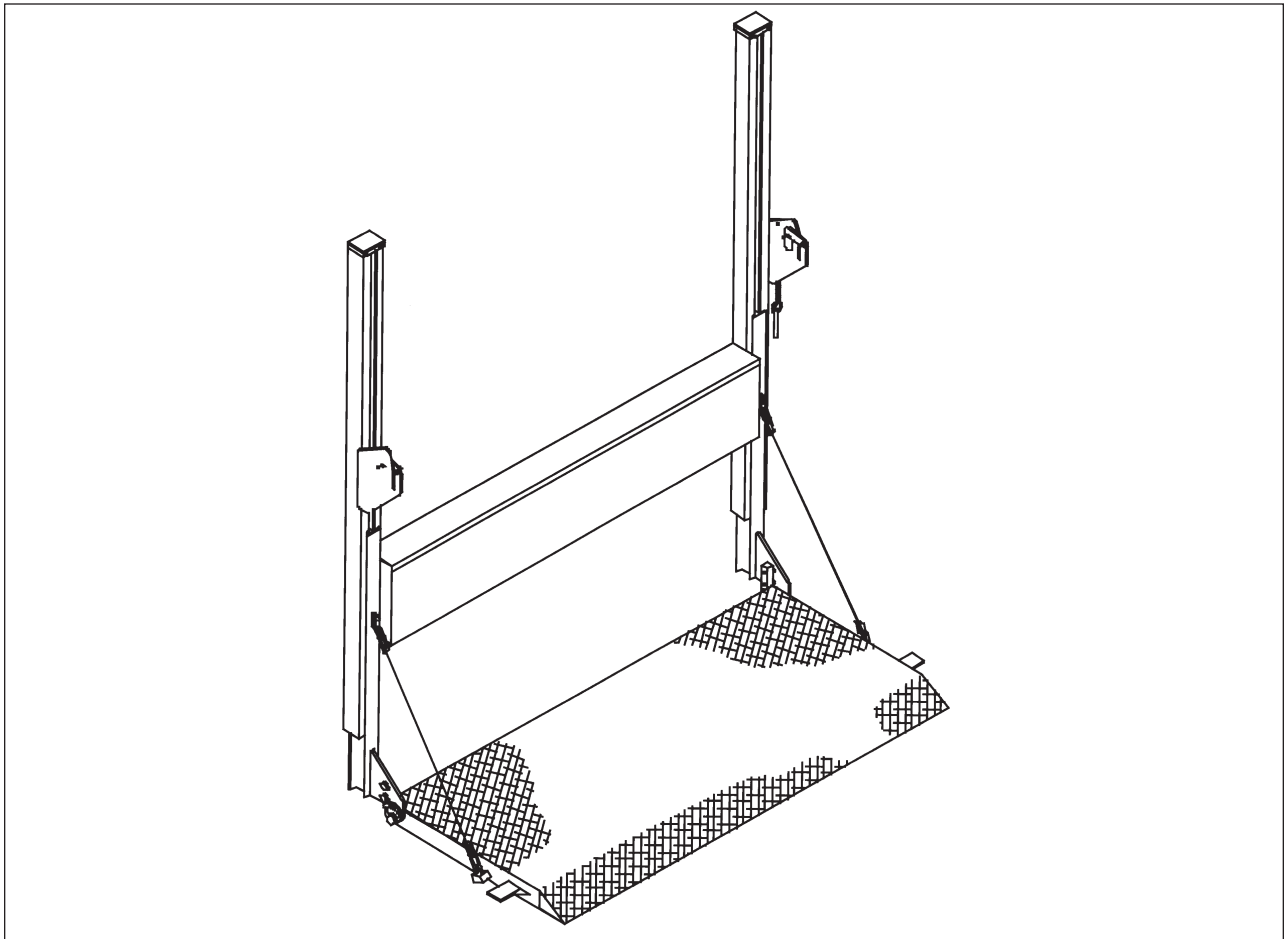


# **TVL** *SERIES*

**Railgates By THIEMAN**

## **TVL 20, TVL 30, TVL 20A, TVL 30A OWNERS MANUAL/PARTS LIST**



**IMPORTANT! KEEP IN VEHICLE!**

PLEASE READ AND UNDERSTAND THE CONTENTS OF THIS  
MANUAL BEFORE OPERATING THE EQUIPMENT.



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## FOR YOUR RECORDS

Model No. \_\_\_\_\_ Date Purchased \_\_\_\_\_

Serial No. \_\_\_\_\_

**NOTE: When Ordering Parts Be Sure To Include This Information!**

Your Thieman Tailgate is constructed of top quality material and is warranted to be free from defects in material and workmanship under normal use. With routine maintenance and proper operation this liftgate will provide long lasting service and dependability.

## PARTS ORDERING PROCEDURE

When ordering parts, please include all the information asked below. If this information is not available, a complete written description or sketch of the required part will help Thieman identify and deliver the needed part to you.

### THE FOLLOWING INFORMATION MUST BE INCLUDED:

1. Serial Number – Thieman TVL liftgate serial numbers can be found on the tag located on the inner side of the curb side frame rail
2. Model number and capacity
3. Platform size and material – steel or aluminum
4. Part number
5. Description
6. Quantity required

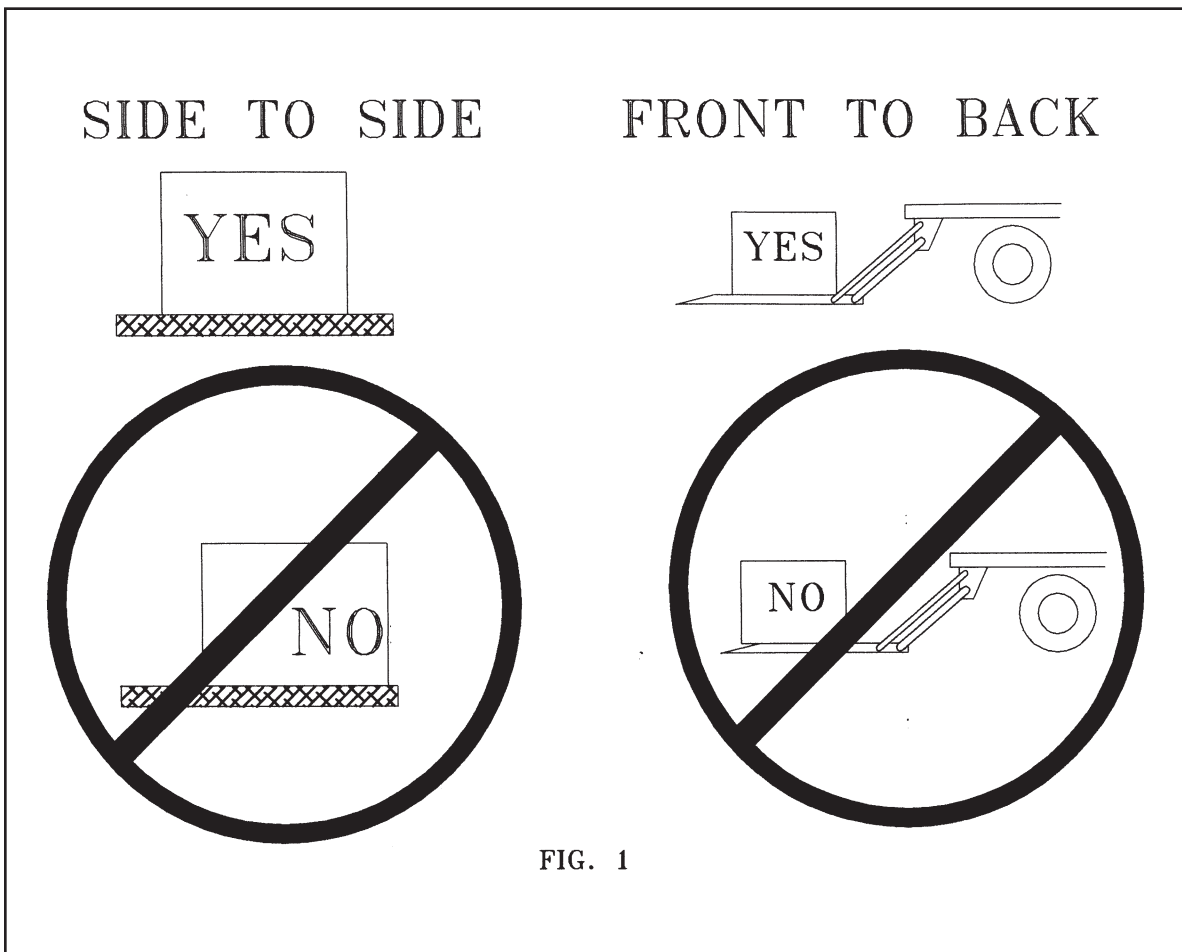
## **WARNING!**

The following list of warnings are to be read before operating the TVL series liftgate.

- +Read this Owner's Manual and all of the decals on the liftgate BEFORE operating the liftgate.
- +All protective covers and guards must be in place before operating the liftgate.
- +DO NOT operate the liftgate if you do not have a thorough knowledge and understanding of the operation of the liftgate.
- +NEVER OVERLOAD THE LIFTGATE. The maximum rated capacity of the TVL series liftgate differs with each model as follows:
  - TVL 20 - 2000 lbs. Maximum Load
  - TVL 30 - 3000 lbs. Maximum Load
- +Never use the liftgate if it makes any unusual noises, has vibrations, or fails to operate freely.
- +Make certain that the area below the platform is clear before and at all times during operation of the liftgate.
- +Keep hands and feet clear of all pinch points.
- +The platform must be in the closed position and the cam latches properly pinned before transit.
- +Always load as close to the center of the platform and as close to the cylinder housing as possible. See figure 1.
- +Never operate lift trucks on or over any part of the platform.
- +Load and unload the platform from the rear and not from the side of the platform. Never remove the platform support chains to load or unload.
- +Only operate liftgate when vehicle is on level ground and parking brake is set.
- +Follow the maintenance guide as outlined in this manual.
- +DO NOT attempt any repairs unless you are a qualified and authorized THIEMAN distributor.
- +If any repairs, adjustments, or maintenance not covered in this manual are required, contact your nearest Thieman distributor or the factory.
- +DO NOT ride the liftgate, it is not intended as personnel lift.
- +This liftgate is intended for the use of loading and unloading cargo only, and it is not to be used for anything other than this.
- +DO NOT modify this liftgate. Altering this liftgate may cause serious personal injury or damage the liftgate and will void all warranties.

## WATER LEVEL LOADING

When a maximum load is to be raised or lowered, this load must be centered on the load bearing platform, both front to back and side to side.

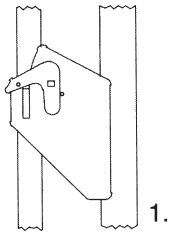


# OPERATING INSTRUCTIONS

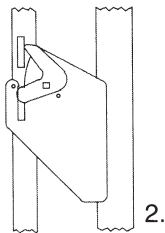
## CAUTION:

Be sure to operate liftgate at a safe distance and never improperly load platform as this may cause personal injury or damage to the liftgate.

### OPENING OF PLATFORM

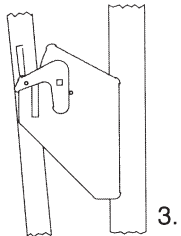


1. Remove latch pin and raise platform until it is completely out of the resting plates. Lower platform so guide plate rides over cam and is below resting plate. See Illustrations.



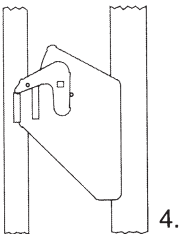
2. Lower platform to a comfortable height for unfolding. Unfold the platform manually to the horizontal position.

### LOADING AND UNLOADING



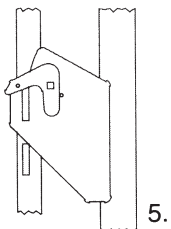
3. Raise or lower platform to the desired level for loading or unloading.

### CLOSING OF PLATFORM



4. Fold platform up manually and raise until guide plates raise locking cam and are free to drop into resting plates.

### LIFTGATE TRANSIT



5. Lower platform until guide plates are in resting plates completely. Push latch pin in hole through resting plate and cam to secure platform.

## MAINTENANCE GUIDE

The following inspection and maintenance operations should be performed at the recommended intervals or anytime the liftgate shows signs of abuse, and improper or abnormal operation.

### MONTHLY INSPECTION AND MAINTENANCE

Operate the liftgate throughout its entire operational cycle and check the following:

1. Check that there are no unusual noises or vibrations.
2. Check that the platform is level when raised to bed height. If adjustments are necessary, this can be done by adjusting nuts (A) on U-bolt (B) on platform block (C). See Figure 2.

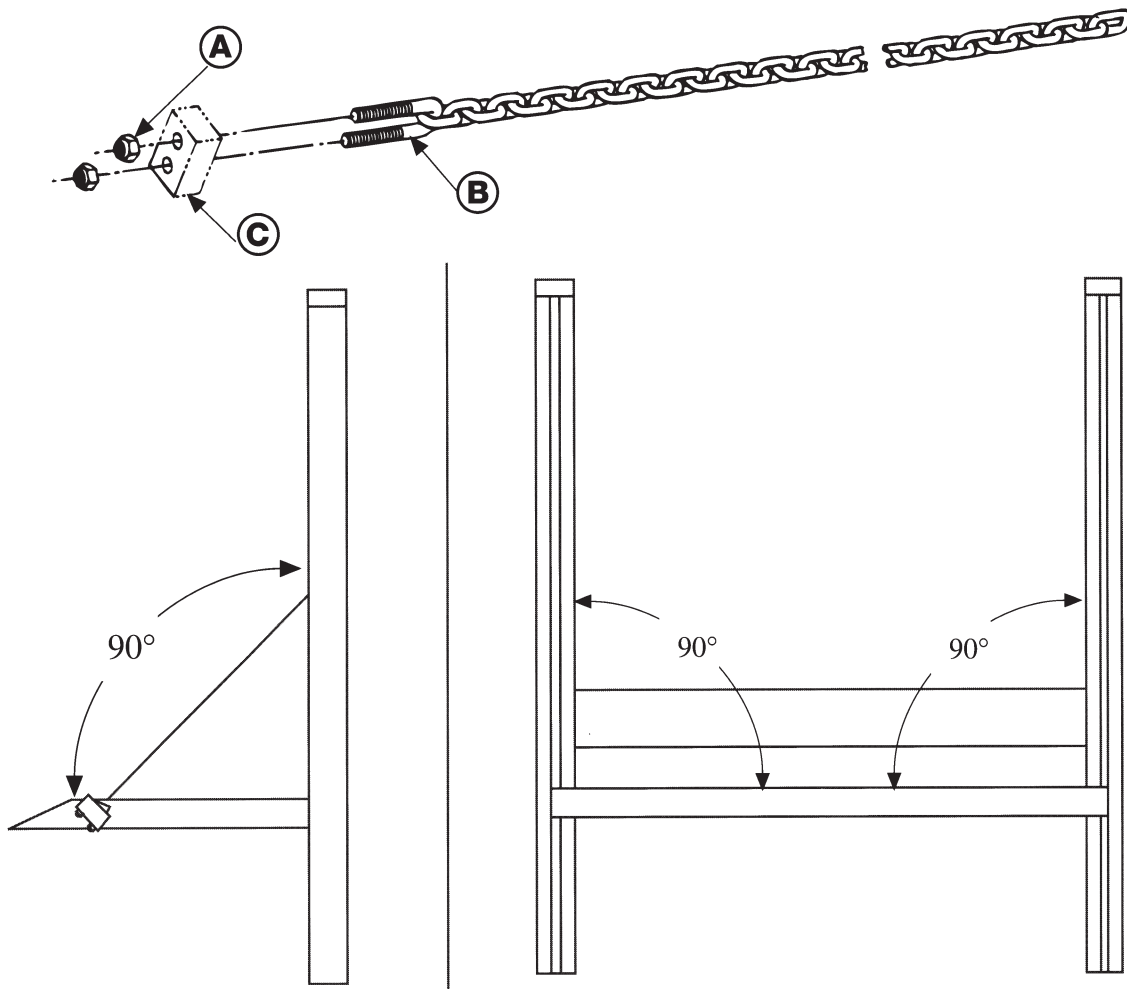


FIG. 2.

3. Check for apparent damage to the liftgate such as bent or distorted members, any cracked welds, which may have resulted from overloading or abuse.
4. Check for any excessive wear in the following areas:
  - A. Roller and pin assemblies
  - B. Platform and hinge pins and pivot plates
  - C. Platform support chains and chain anchor points
5. Check that all platform pivot pins are in place and retained by their proper retainers.
6. Check that all protective covers and guards are properly in place and secured.
7. Check for oil leaks in these areas:
  - A. Lift cylinder
  - B. Hydraulic hose - replace if it shows signs of wear or cracking.
  - C. Hydraulic fittings - tighten or replace as may be required to stop leakage.
8. Check the oil level in the hydraulic reservoir located in the cylinder housing. With the platform open and at ground level, the oil should be within 1/2 inch from the top of the reservoir. See chart below.

<b>HYDRAULIC FLUID CHART</b>	
Temperature Range	Acceptable Fluids
-20 to 130°F	Dexron III Exxon Superflo ATF Shell Donax TG
-50 to 80°F	Shell Aero Fluid 4 Mobil Aero HFA Exxon Univis J-13 MIL H-5606

9. Check that all wiring and battery cable connections are tight and free of corrosion.
10. Lubrication of the TVL series gate should be as follows for all user conditions:

<u>Area of Tailgate</u>	<u>Type of Lubrication</u>	<u>*Frequency</u>
Slider Rails	SAE 10 to SAE 20 oil	50 cycles
Lift Chain	SAE 10 to SAE 20 oil	100 cycles
Chain Anchor Links	SAE 10 to SAE 20 oil	100 cycles
Locking Cams	SAE 10 to SAE 20 oil	100 cycles

\*NOTE: TVL gates which see less than 50 cycles per week must be lubricated in the areas listed above no less than once a week. Once lubricated, run the gate up and down through one complete cycle to spread lubricant more evenly.

11. Check the pump relief pressure and also the motor amperage at this pressure. These values should be as follows:

Model	Max Amp Draw	Relief Pressure (psi)
TVL20	160	3000
TVL30	220	2250

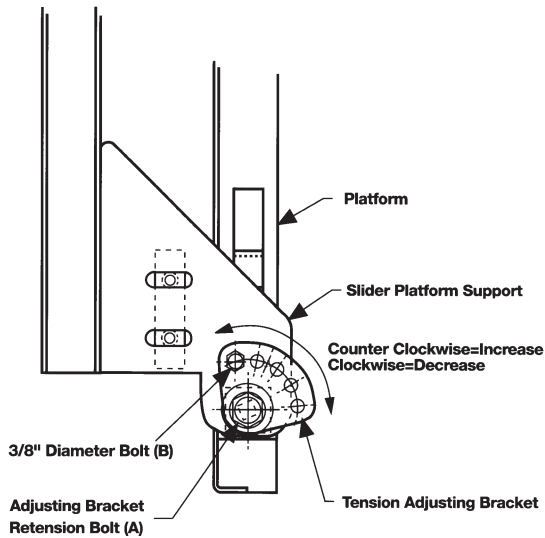


Fig.3

12. Torsion bar adjustment (See figure 3).

- A. Place platform in stowed (vertical) position.
- B. Remove 5/8" diameter bolt (A) from center of tension adjusting bracket.
- C. Place 1/2" square breaker bar in the square hole of the adjusting bracket pin.
- D. Turn breaker bar clockwise to relieve tension on 3/8" diameter bolt (B) and remove it from the bracket.
- E. To increase tension, rotate bracket counterclockwise until desired tension is reached. Line up hole in bracket to hole in slider platform support and replace bolt (B).

## Semi-Annual Inspection

1. Perform the procedures outlined in the "Monthly Inspection and Maintenance."

2. Inspect pump motor by:

- A. Disconnecting battery cable
- B. Remove motor end cover
- C. Examine the armature brushes for wear. (Brushes should be replaced if they are less than 1/8" long).
- D. Clean all residue out from inside of the motor housing.
- E. Apply several drops of light weight machine oil to the armature shaft bearing in the motor end cover and reassemble the motor end cover.

3. If the hydraulic oil in the reservoir is dirty:

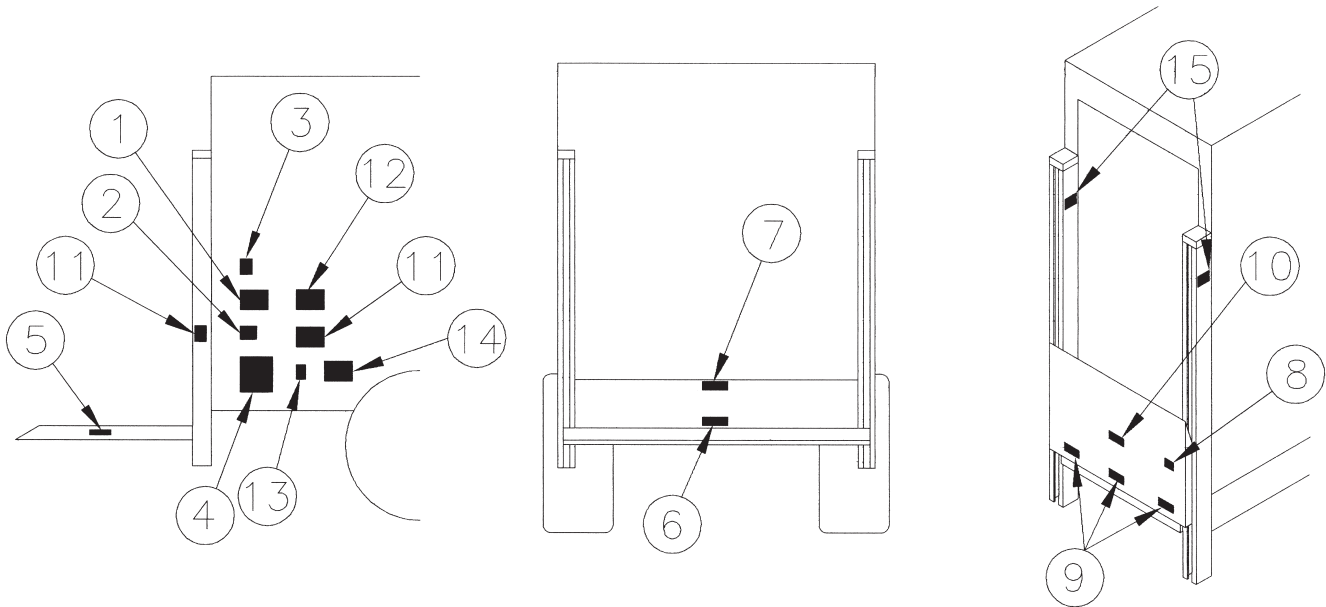
- A. Unfold platform and lower platform to the ground so the cylinder is fully retracted.
- B. Drain the oil from the hydraulic system and flush the entire system.
- C. Remove the reservoir from the pump and clean the suction line filter. Also clean out any contaminants from the reservoir. Remount the reservoir when completed.
- D. Replace the oil as outlined in Section 8 under Monthly Maintenance and Inspection.



# INSPECTION AND LOCATION OF DECALS

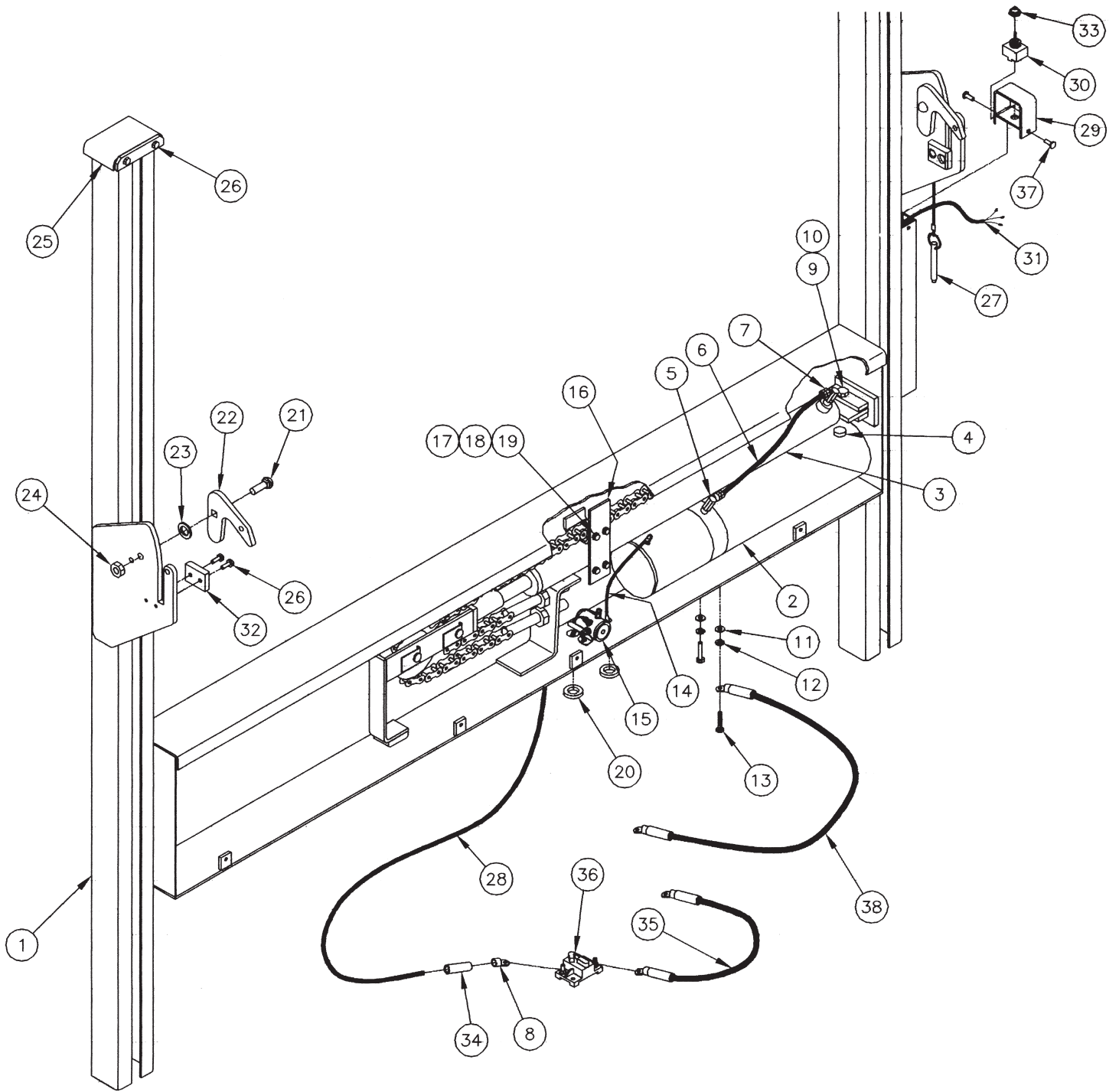
Inspect all decals listed below to be certain that they are in the proper location and they are legible.

**All decals must be in place and legible or all warranties are void!**



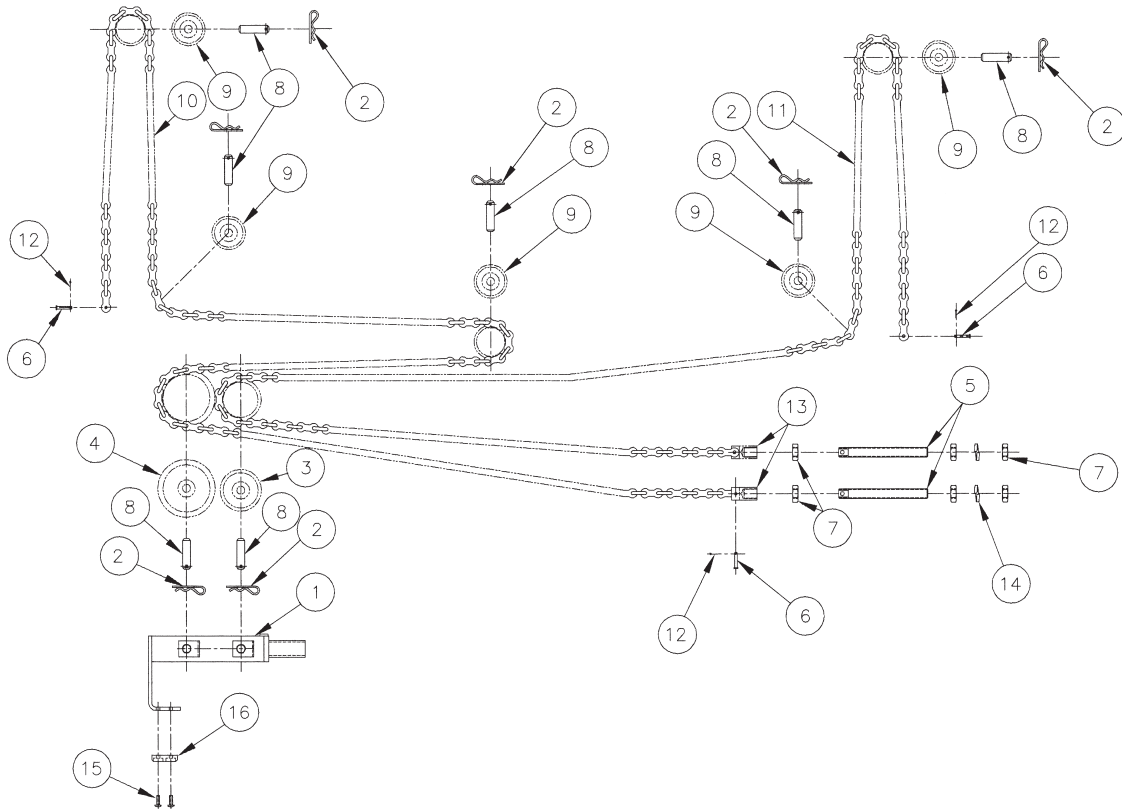
Item	Part Name	Part Number
1	Warning Decal	4671050
2	PTO Decal	4650140
2	Fast Idle Decal	4650150
3	Danger Decal	4609
4	Operating Decal	4650780
5	Capacity Decal 2000#	4650100
5	Capacity Decal 3000#	4650120
6	Warning Decal	4650790
7	Warning Decal	4650760
8	Caution Decal	4650770
9	Reflector(3)	5705
10	Thieman Nameplate	4650801
11	Toggle Switch Decal	4650820
12	Wiring Decal	4617
13	Warning Decal	4620
14	Lubrication Decal	4662
15	Lube Location Decal (4)	4663

# MAIN FRAME ASSEMBLY



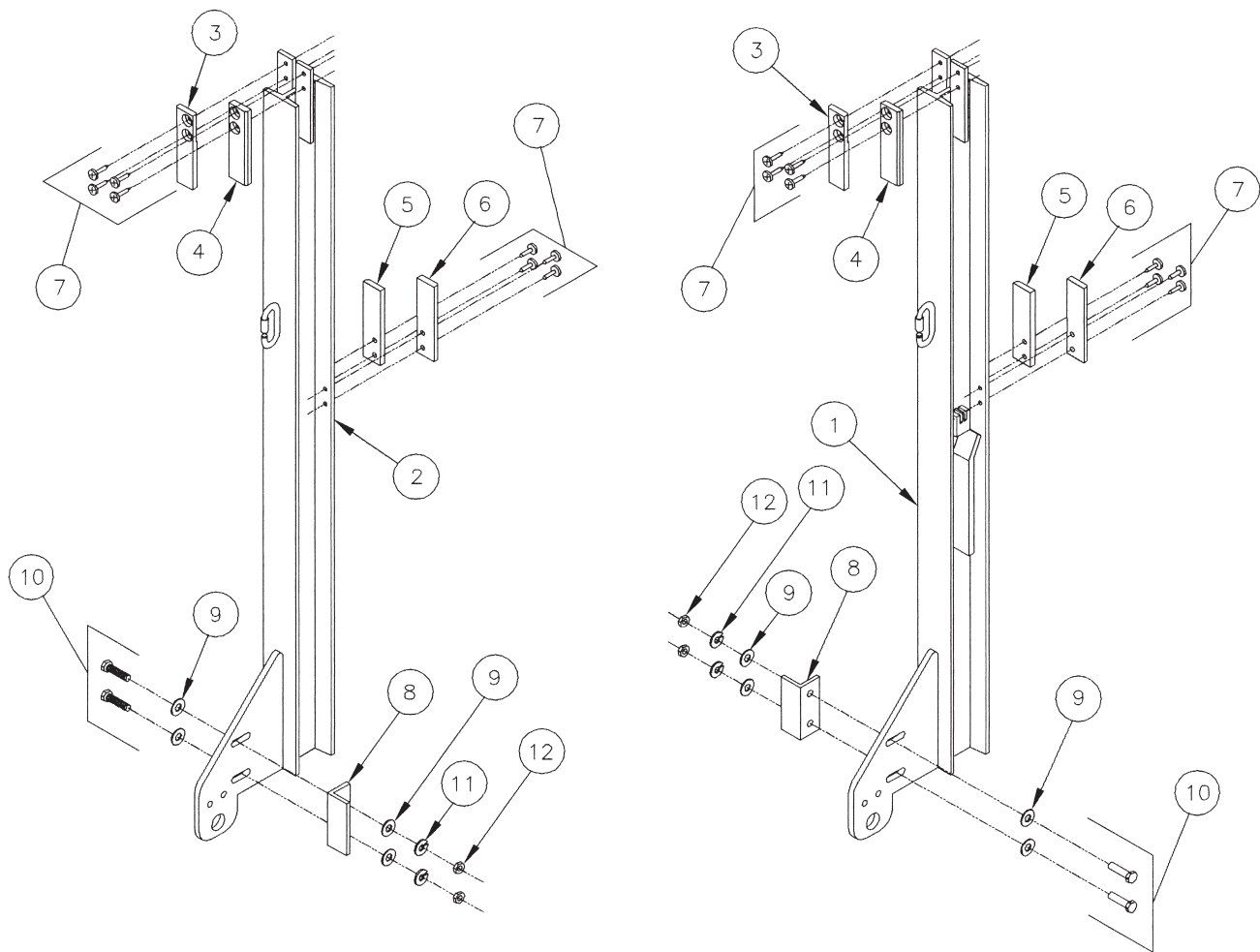
Item	Part Number	Description	Gate Model Qty.			
			20	20A	30	30A
1	3139-001	Main frame 80 (56" BH)	1			
1	3139-002	Main frame 90 (56" BH)	1			
1	3139-003	Main frame 95 (56" BH)	1			
1	3139-004	Main frame 100 (56" BH)	1			
1	3139-005	Main frame 80 (46" BH)		1		
1	3139-006	Main frame 90 (46" BH)		1		
1	3139-007	Main frame 95 (46" BH)		1		
1	3139-008	Main frame 100 (46" BH)		1		
1	3140-001	Main frame 80 (56" BH)			1	
1	3140-002	Main frame 90 (56" BH)			1	
1	3140-003	Main frame 95 (56" BH)			1	
1	3140-004	Main frame 100 (56" BH)			1	
1	3140-005	Main frame 80 (46" BH)				1
1	3140-006	Main frame 90 (46" BH)				1
1	3140-007	Main frame 95 (46" BH)				1
1	3140-008	Main frame 100 (46" BH)				1
2	4400851	Power unit	1	1		
2	4400701	Power unit			1	1
3	3109606	Cylinder assembly	1	1		
3	3109605	Cylinder assembly			1	1
4	4900480	Breather cap	1	1	1	1
5	4900040	.38-.25 swivel elbow	1	1	1	1
6	4965010	.25 Hose assembly	1	1	1	1
7	4900030	Restrictor Elbow	1	1		
8	4350	Cable Lug #2	1	1	1	1
9	8101-001	Clevis pin	1	1	1	1
10	5700022	Hairpin cotter	1	1	1	1
11	8120388	.38 Flatwasher	2	2	2	2
12	8120382	.38 Lockwasher	2	2	2	2
13	8180126	.38 x 1.50 Screw	2	2	2	2
14	4430	Battery cable	1	1	1	1
15	4422710	Solenoid	1	1	1	1
16	31184	Retainer plate	1	1		
16	2303-002	Retainer plate			1	1
17	8180022	.25 x 1 Screw	4	4	4	4
18	8120380	.25 Lockwasher	4	4	4	4
19	8120375	.25 Nut	4	4	4	4
20	5701960	Grommet	2	2	2	2
21	8456922	.50 x 1.50 carriage bolt	2	2	2	2
22	2103160	Locking cam	2	2	2	2
23	8120396	.50 Flatwasher	2	2	2	2
24	8103-021	.50 Lock nut	2	2	2	2
25	3109577	Roller housing assembly	2	2	2	2
26	5793010	.25 x .75 Screw	8	8	8	8
27	3109140	Latch cable assembly	2	2	2	2
28	4300030	Battery cable 25'	1	1	1	1
29	31225	Cap	1	1	1	1
30	4301550	Toggle switch	1	1	1	1
31	4301290	Wiring harness	1	1	1	1
32	5703	Wear pad	2	2	2	2
33	4301740	Toggle Seal	1	1	1	1
34	4319-002	Heat Shrink	1	1	1	1
35	4318-001	Battery Cable #2 x 2'	1	1	1	1
36	4301770	Circuit Breaker	1	1	1	1
37	8109-014	.25 x .50 Screw	2	2	2	2
38	4318-003	Battery Cable #2 x 5'	1	1	1	1

# LIFTING CHAIN ASSEMBLY



Item	Part Number	Description	Gate Model Qty.			
			20	20A	30	30A
1	3109576	Pusher assembly	1	1	1	1
2	5700022	Hairpin cotter	7	7	7	7
3	31213-002	3.25 Chain roller asm	1	1	1	1
4	31213-003	4.50 Chain roller asm	1	1	1	1
5	5002590	Tension rod	2	2	2	2
6	2502100	Chain anchor pin	4	4	4	4
7	8219758	.75 Jam nut	6	6	6	6
8	5041	Pin	7	7	7	7
9	31213-001	2.63 Chain roller asm	5	5	5	5
10	4100-010	Chain SS 90 (56" BH)	1		1	
10	4100-011	Chain SS 95 (56" BH)	1		1	
10	4100-012	Chain SS 100 (56" BH)	1		1	
10	4100-013	Chain SS 90 (37", 46" BH)		1		1
10	4100-014	Chain SS 95 (37", 46" BH)		1		1
10	4100-015	Chain SS 100 (37", 46" BH)		1		1
10	4100-018	Chain SS 80 (56" BH)	1		1	
10	4100-019	Chain SS 80 (37", 46" BH)		1		1
11	4100-009	Chain CS All widths (56" BH)	1		1	
11	4100-011	Chain CS All widths (LB)		1		1
12	8116-001	Cotter pin	4	4	4	4
13	2350001	Chain anchor housing	2	2	2	2
14	8106-005	.75 Lockwasher	2	2	2	2
15	8449646	Self tapping screw	2	2	2	2
16	5703	Wear pad	1	1	1	1

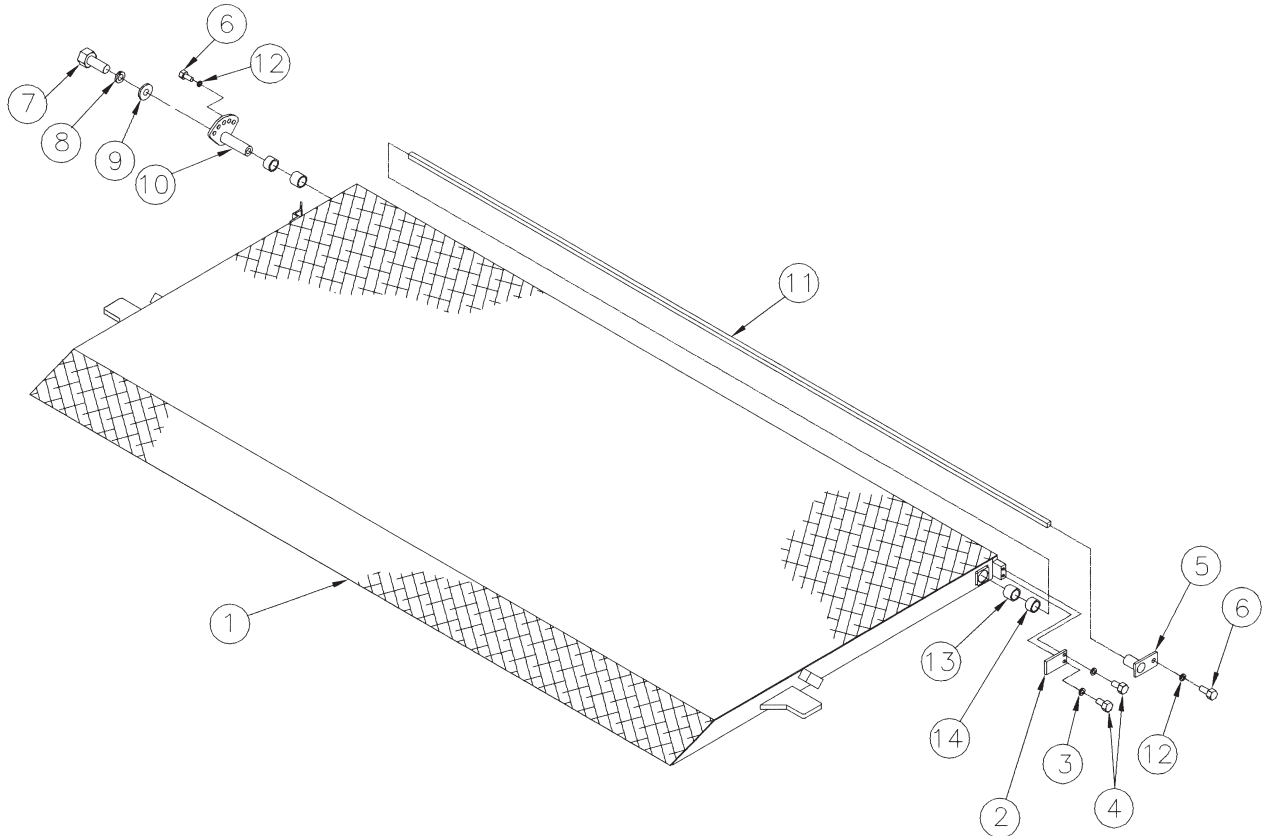
# SLIDER ASSEMBLY



Item	Part Number	Description	Gate Model Qty.			
			20	20A	30	30A
1	3156-001	Slider weldment RH	1	1	1	1
1	3156-002+	Slider weldment RH	1	1	1	1
2	3157-001	Slider weldment LH	1	1	1	1
3	5702201	Wear pad LH upper	2	2	2	2
4	5702202	Wear pad RH upper	2	2	2	2
5	5702241	Wear pad LH lower	2	2	2	2
6	5702242	Wear pad RH lower	2	2	2	2
7	8449646	Self tapping screw	16	16	16	16
8	2013	Adjustment screw	2	2	2	2
9	8120388	.38 Flatwasher	8	8	8	8
10	8180126	.38-16 x 1.50 Screw	4	4	4	4
11	8120382	Lockwasher .38	4	4	4	4
12	8120377	Nut .38	4	4	4	4

+Used with aluminum platforms requiring a spring assembly.

# STEEL PLATFORM ASSEMBLY



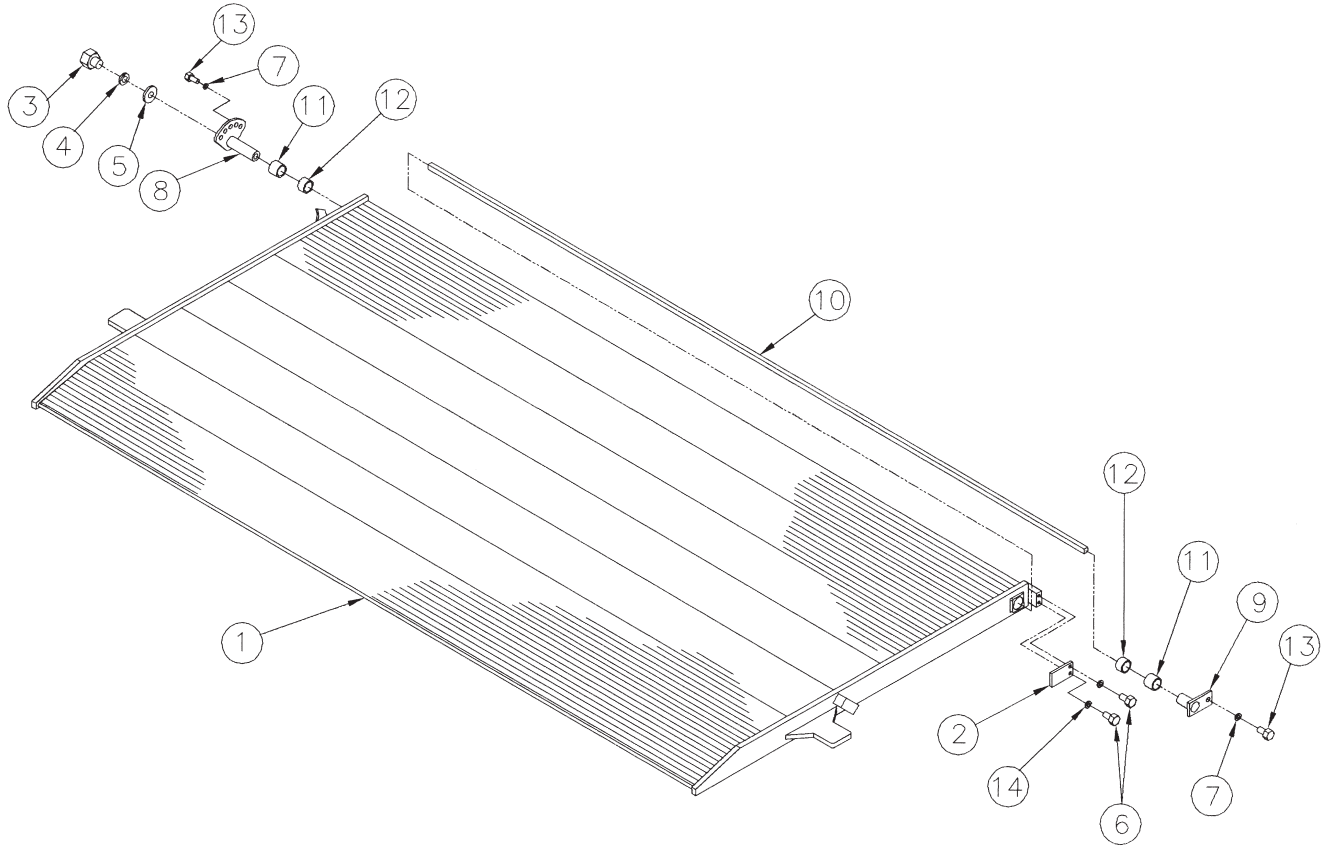
Item	Part Number	Description	Gate Model Qty.			
			20	20A	30	30A
1	3408-001	7530 Platform	1	1		
1	3408-002	7536 Platform	1	1		
1	3408-003	7542 Platform	1	1		
1	3408-004	8530 Platform	1	1		
1	3408-005	8536 Platform	1	1		
1	3408-006	8542 Platform (see note 1)	1	1		
1	3408-007	9030 Platform	1	1		
1	3408-008	9036 Platform	1	1		
1	3408-009	9042 Platform (see note 1)	1	1		
1	3408-010	9530 Platform	1	1		
1	3408-011	9536 Platform	1	1		
1	3408-012	9542 Platform (see note 1)	1	1		
1	3409-001	7530 Platform			1	1
1	3409-002	7536 Platform			1	1
1	3409-003	7542 Platform			1	1
1	3409-004	8530 Platform			1	1
1	3409-005	8536 Platform			1	1
1	3409-006	8542 Platform (see note 1)			1	1
1	3409-007	9030 Platform			1	1
1	3409-008	9036 Platform			1	1
1	3409-009	9042 Platform (see note 1)			1	1
1	3409-010	9530 Platform			1	1

Item	Part Number	Description	Gate Model Qty.			
			20	20A	30	30A
1	3409-011	9536 Platform (see note 1)			1	1
1	3409-012	9542 Platform (see note 1)			1	1
2	2329	Stop	1	1	1	1
3	8120380	.25 Lockwasher	2	2	2	2
4	8180022	.25 x 1.00 Screw	2	2	2	2
5	3199	Pin retainer	1	1	1	1
6	8180120	.38 x .75 Screw	2	2	2	2
7	8271713	.62 x .75 Screw	1	1	1	1
8	8121574	.62 Lockwasher	1	1	1	1
9	8130999	.62 Flatwasher	1	1	1	1
10	3108980	Adjusting bracket	1	1	1	1
11	5101-001	Torsion bar 85" platform	1	1	1	1
11	5101-002	Torsion bar 90" platform	1	1	1	1
11	5101-003	Torsion bar 95" platform	1	1	1	1
11	5101-004	Torsion bar 75" platform	1	1	1	1
12	8120382	.38 Lockwasher	2	2	2	2
13	5504-005	Bushing	2	2	2	2
14	5504-001	Bushing	2	2	2	2

**Notes:**

1. Requires one spring assembly and appropriate RH slider.

# ALUMINUM PLATFORM ASSEMBLY



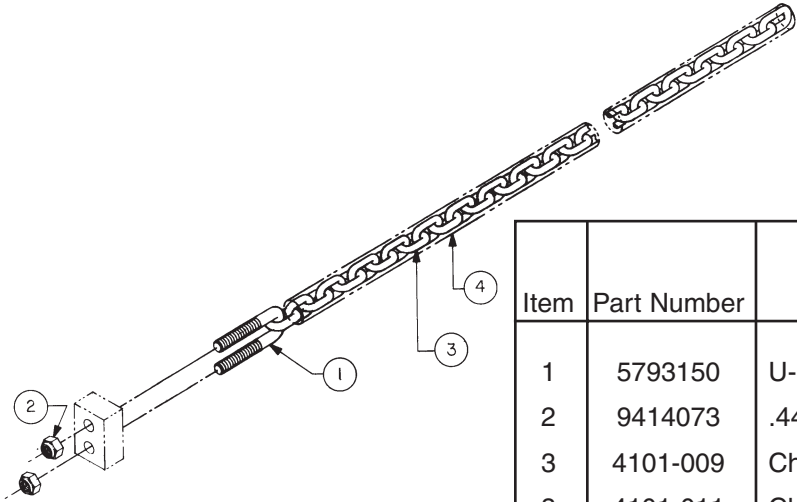
Item	Part Number	Description	Gate Model Qty.			
			20	20A	30	30A
1	3407-001	7530 Platform	1	1	1	1
1	3407-002	7536 Platform	1	1	1	1
1	3407-003	7542 Platform	1	1	1	1
1	3407-004	7548 Platform	1	1	1	1
1	3407-005	7554 Platform	1	1	1	1
1	3407-006	7560 Platform	1	1	1	1
1	3407-007	7566 Platform	1	1	1	1
1	3407-008	8530 Platform	1	1		
1	3407-009	8536 Platform	1	1	1	1
1	3407-010	8542 Platform	1	1	1	1
1	3407-011	8548 Platform	1	1	1	1
1	3407-012	8554 Platform	1	1	1	1
1	3407-013	8560 Platform	1	1	1	1
1	3407-014	8566 Platform (see note 1)	1	1	1	1
1	3407-015	9030 Platform	1	1		
1	3407-016	9036 Platform	1	1		
1	3407-017	9042 Platform	1	1	1	1
1	3407-018	9048 Platform	1	1	1	1
1	3407-019	9054 Platform	1	1	1	1
1	3407-020	9060 Platform	1	1	1	1
1	3407-021	9066 Platform (see note 1)	1	1	1	1
1	3407-022	9530 Platform	1	1		

Item	Part Number	Description	Gate Model Qty.			
			20	20A	30	30A
1	3407-023	9536 Platform	1	1		
1	3407-024	9542 Platform	1	1		
1	3407-025	9548 Platform	1	1	1	1
1	3407-026	9554 Platform	1	1	1	1
1	3407-027	9560 Platform (see note 1)	1	1	1	1
1	3407-028	9566 Platform (see note 1)	1	1	1	1
2	2329	Stop	1	1	1	1
3	8271713	.62 x .75 Screw	1	1	1	1
4	8121574	.62 Lockwasher	1	1	1	1
5	8130999	.62 Flatwasher	1	1	1	1
6	8109-001	.25 x 1.00 Screw SS	2	2	2	2
7	8120382	.38 Lockwasher	2	2	2	2
8	3108980	Adjusting bracket	1	1	1	1
9	3199	Pin retainer	1	1	1	1
10	5101-001	Torsion bar 85" platform	1	1	1	1
10	5101-002	Torsion bar 90" platform	1	1	1	1
10	5101-003	Torsion bar 95" platform	1	1	1	1
10	5101-004	Torsion bar 75" platform	1	1	1	1
11	5504-001	Bushing	2	2	2	2
12	5504-005	Bushing	2	2	2	2
13	8180120	.38 x .75 Screw	2	2	2	2
14	8106-002	.25 Lockwasher SS	2	2	2	2

**Notes:**

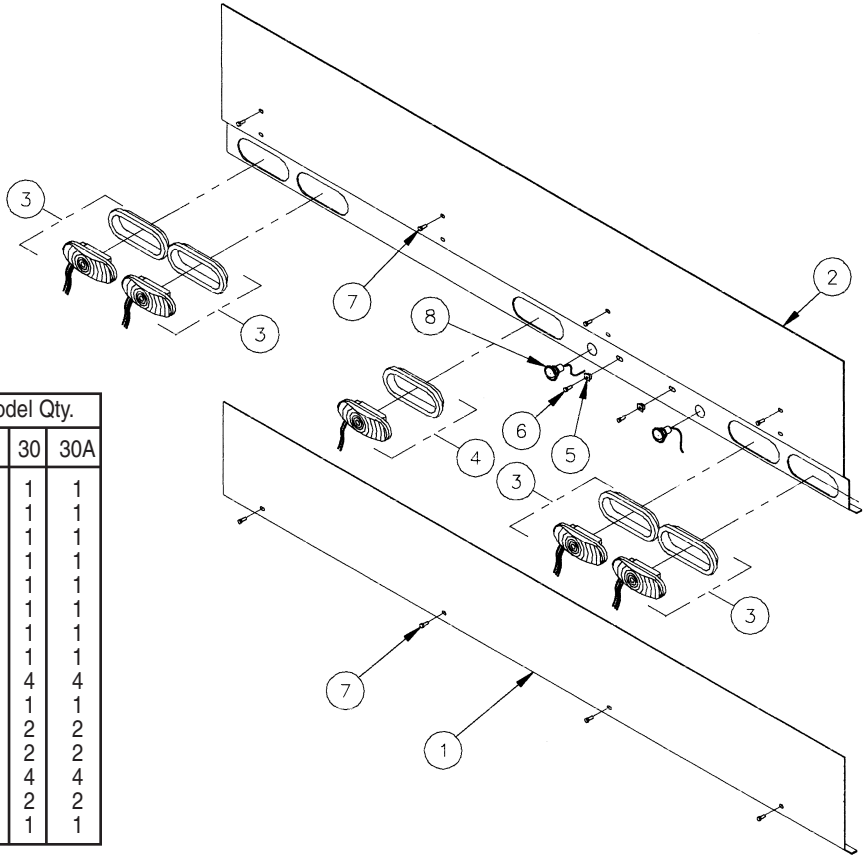
- 1. Requires one spring assembly and appropriate RH slider.

# PLATFORM CHAIN ASSEMBLY



Item	Part Number	Description	Gate Model Qty.			
			20	20A	30	30A
1	5793150	U-Bolt	2	2	2	2
2	9414073	.44 Locknut	4	4	4	4
3	4101-009	Chain 48,54" deep alum.	2	2	2	2
3	4101-011	Chain 60,66" deep alum.	2	2	2	2
3	4101-012	Chain-steel,30,36,42" alum.	2	2	2	2
4	5702300	Protective sleeve	2	2	2	2

# HOUSING COVERS



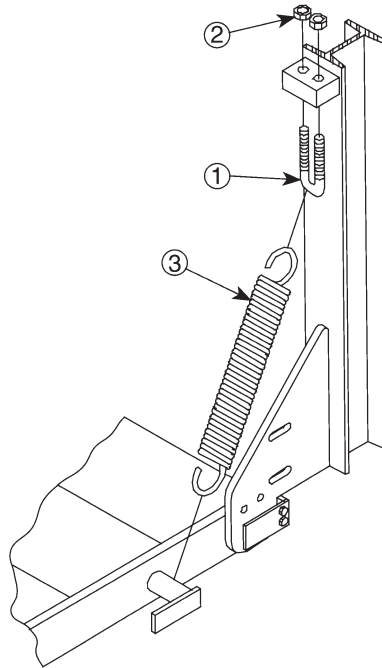
Item	Part Number	Description	Gate Model Qty.			
			20	20A	30	30A
1	2714-001	Steel Cover 80	1	1	1	1
1	2714-002	Steel Cover 90	1	1	1	1
1	2714-003	Steel Cover 95	1	1	1	1
1	2714-004	Steel Cover 100	1	1	1	1
1	2715-001	Steel Cover 80 W/Lower Lights*	1	1	1	1
2	2715-002	Steel Cover 90 W/Lower Lights*	1	1	1	1
2	2715-003	Steel Cover 95 W/Lower Lights*	1	1	1	1
2	2715-004	Steel Cover 100 W/Lower Lights*	1	1	1	1
3	4301320	Stop/Turn/Taillight	4	4	4	4
4	4301330	Back-up light	1	1	1	1
5	5702270	Plastic square nut	2	2	2	2
6	5702280	Screw	2	2	2	2
7	5793010	.25 x .75 Screw	4	4	4	4
8	4300550	License plate light	2	2	2	2
9	5792020	Gasket (not shown)	1	1	1	1

\*Not for use on Low Bed applications



# SPRING ASSEMBLY

Item	Part Number	Description	Qty.
1	5793150	U-BOLT	1
2	9414073	Locknut	2
3	5101120	Spring	1



## ELECTRICAL PICTORIAL

### GRAVITY DOWN ELECTRIC CONTROL (TOGGLE OR REMOTE PENDANT)

