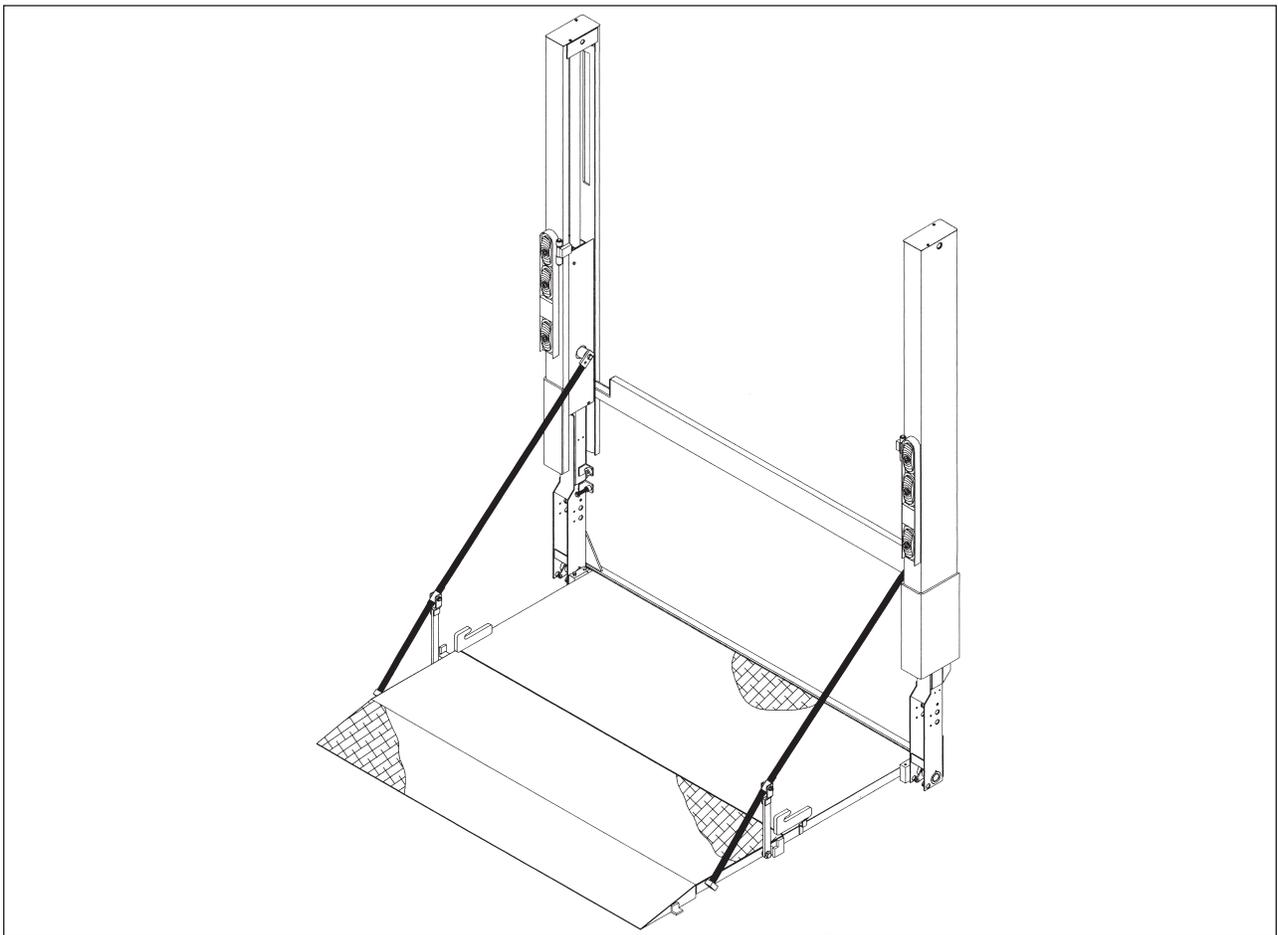


TDR *SERIES*

Railgates By THIEMAN

TDR-35

OWNERS MANUAL/PARTS LIST



IMPORTANT! KEEP IN VEHICLE!

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



THIEMAN
TAILGATES, INC.

600 East Wayne Street
Celina, Ohio 45822

Phone: 419-586-7727 Fax: 419-586-9724

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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.

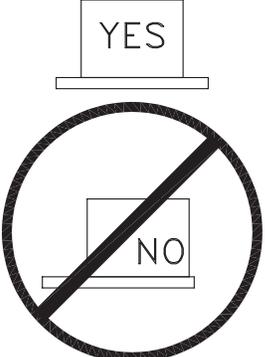
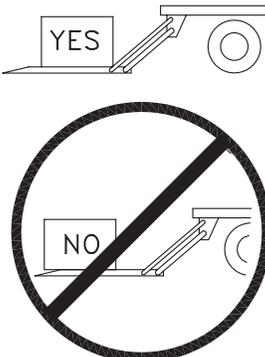
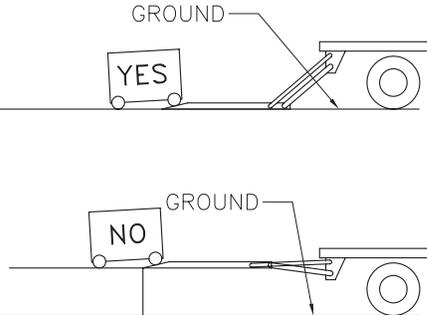
WARNING!

THE FOLLOWING LIST OF WARNINGS ARE TO BE READ BEFORE OPERATING THE TDR SERIES LIFTGATE:

- + Read this Owner's Manual and all of the decals 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 understanding of the operation of the liftgate.
- + NEVER OVERLOAD THE LIFTGATE! The maximum rated capacity of the TDR35 is 3500 lbs.
- + 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 the operation of the liftgate.
- + Keep hands and feet clear of all pinch points.
- + The platform must be in the closed position and lowered into the stow latches before transit.
- + Always load as close to the center of the platform and as close to the truck 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 a personnel lift.
- + This liftgate is intended for the use of loading and unloading cargo only, and is not to be used for anything other than this.
- + DO NOT modify or alter the function of this liftgate. Altering this liftgate may cause serious personal injury or damage the liftgate and will void all warranties.
- + Dock loading bed heights for a 62" deep platform is 40 to 60 inches. Dock loading bed heights for the 74" deep platform is 45 to 60 inches.
- + DO NOT fold or unfold the platform unless the liftgate is in the fully raised position or damage to the liftgate may occur.

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.

 WARNING		
<p>SIDE TO SIDE</p>  <p>DO NOT OFF CENTER LOAD</p>	<p>FRONT TO BACK</p>  <p>DO NOT OFF CENTER LOAD</p>	<p>GROUND</p>  <p>DO NOT LOAD OR UNLOAD WITH RAMP OFF GROUND</p>

OPERATING INSTRUCTIONS

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. Push RAISE switch until the platform is in the fully raised position and is completely clear of the stow latches.
2. Raise platform fold latch and push UNFOLD switch to the left to completely unfold platform.

LOADING AND UNLOADING

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

DOCK LOADING

Note: Not all TDR-35 liftgates are capable of dock loading. See page 3.

4. Push RAISE switch until the platform is in the fully raised position and is completely clear of the stow latches.
5. Lift and rotate stow latches until they are clear of platform. The platform can now be lowered in the closed position.

6. Lower platform with fold latch engaged until the desired height is reached for dock loading.
7. After dock loading is complete, push RAISE switch until platform is in the fully raised position.
8. Rotate and lower stow latches back to their locked position.

CLOSING OF PLATFORM

9. Raise open platform completely to bed height.
10. Push FOLD switch to the right until platform folds completely. Fold latch will engage automatically.

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 the U-bolt thru the platform block.
3. Check for apparent damage to the liftgate such as bent or distorted members and any cracked welds which may have resulted from overloading or abuse. Repair as necessary.
4. Check for excessive wear in the following area:
 - A. Roller assemblies on slider
 - B. Platform hinge pins and platform pivot pins
 - C. Platform support chains
 - D. UHMW wear pads on slider
5. Check that the platform pivot pins are in place and retained by their proper retainers.
6. Check that all protective covers and guards are in place and properly secured.
7. Check for leaks in these areas:
 - A. Lift cylinders - replace or repack as necessary
 - B. Fold cylinders - replace or repack as necessary
 - C. Hydraulic hose - replace if it shows signs of wear or cracking
 - D. Hydraulic fittings - tighten or replace as may be required to stop leakage
8. Check the oil level in the pump reservoir located in the pump enclosure. With the platform open and at ground level, the oil should be within .50" from the top of the reservoir. See the following chart.

HYDRAULIC FLUID CHART	
Temperature Range	Acceptable Fluids
-75 to 165°F	Exxon Univis J-26
-20 to 130°F	Dexron III Exxon Superflo ATF Shell Donax (R) 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 TDR series liftgates should be as follows for all conditions:

Area of Liftgate	Type of Lubrication	Frequency
Slider Rails	SAE 10 to 20 oil	100
Chain Anchor Links	SAE 10 to 20 oil	100
Platform Hinges	Grease*	100
Pump Oil Change	See above chart	Yearly

*See the parts list for location of the grease zerks.

For -40 to 120 F use #0 Grade grease.

For -20 to 200 F use #1 Grade grease.

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

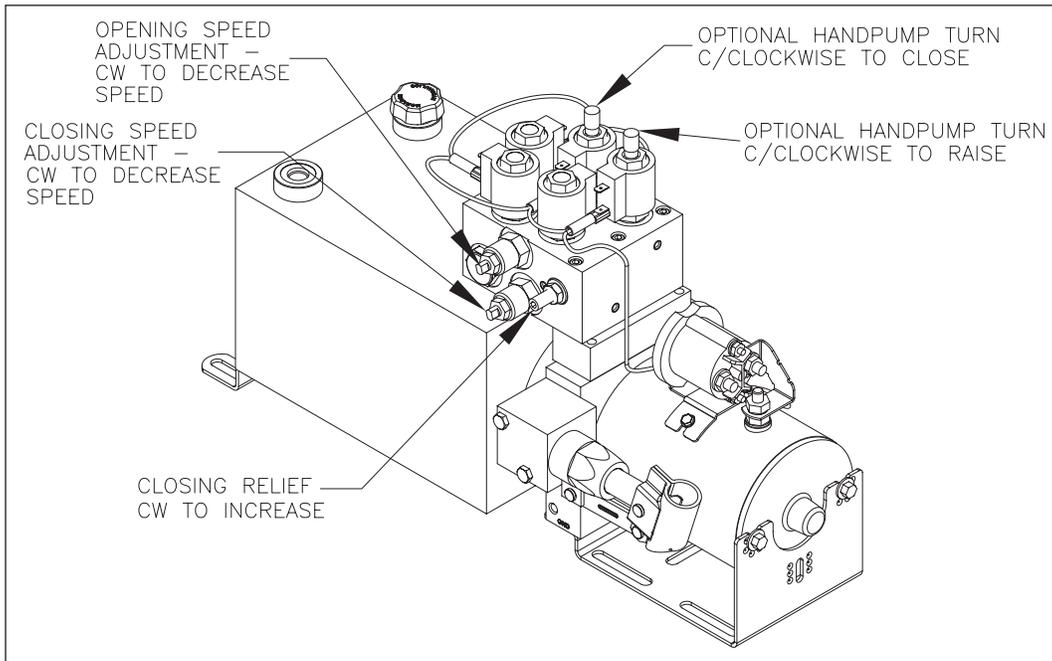
Model	Max Amp Draw	Relief Pressure (psi)
TDR35	190	3000

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 .12" long.)
 - D. Clean out all residue from inside the motor housing.
 - E. Apply several drops on light weight machine oil to the armature shaft bearing in the motor end.
3. If the hydraulic oil in the reservoir is contaminated:
 - A. Unfold platform and lower platform to the ground.
 - B. Drain the oil from the 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.

OPENING AND CLOSING SPEED ADJUSTMENT

1. The opening and closing speed of the platform can be adjusted with the flow controls. To increase the speed screw the adjustment valve counterclockwise, and to decrease, screw the adjustment valve clockwise. See the following figure.



PARTS ORDERING PROCEDURE

When ordering parts, please include all the information asked for 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 TDR liftgate serial numbers can be found on the tag located on the outside of the curb side rail at the bottom.
2. Model number and capacity.
3. Platform size.
4. Part number.
5. Description.
6. Quantity required.

DIRECT YOUR REQUEST TO:

**THIEMAN TAILGATES, INC.
600 E. WAYNE ST.
CELINA, OH 45822**

PHONE: 419-586-7727

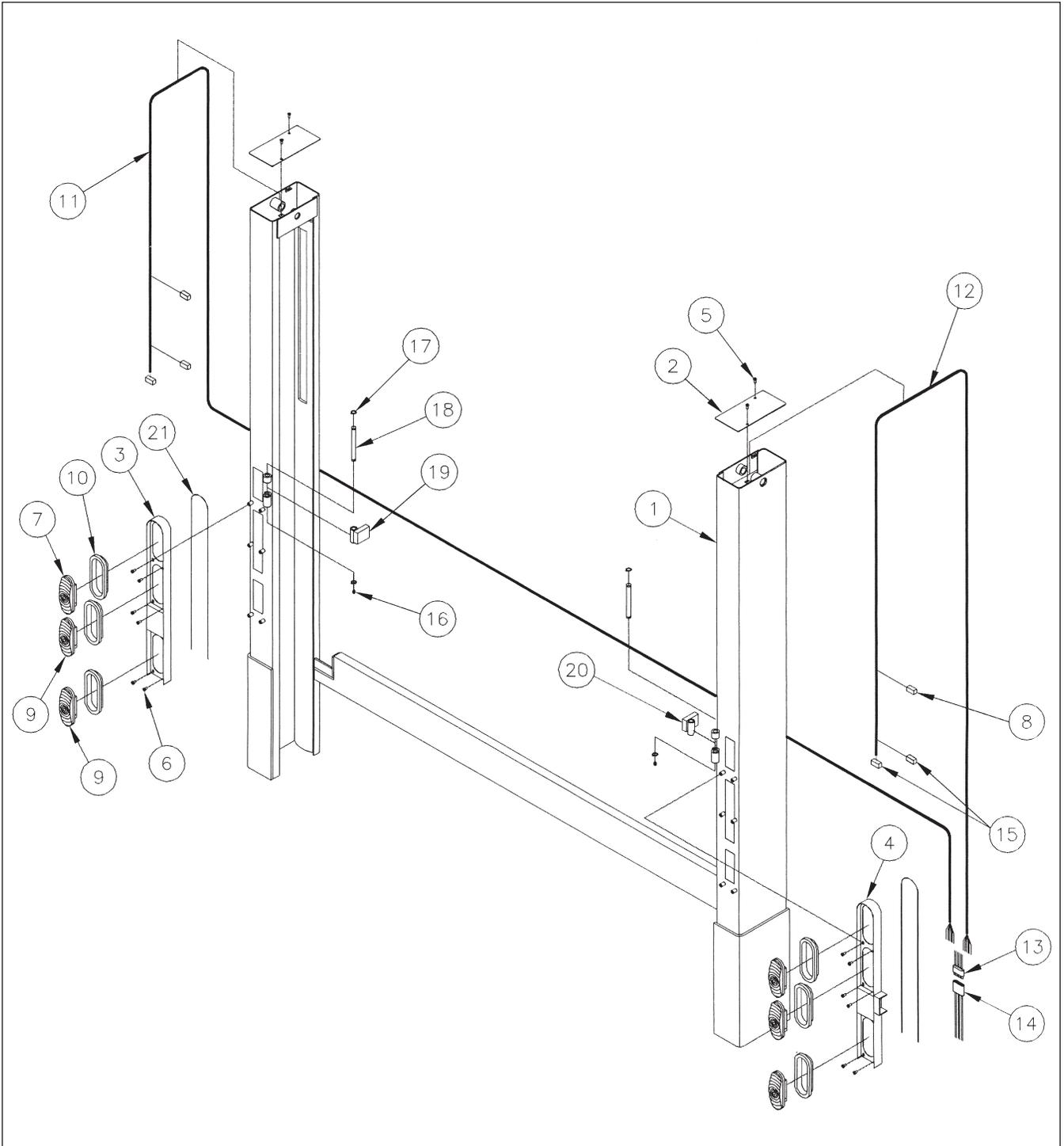
FAX: 419-586-9724

IMPORTANT

IT IS REQUIRED THAT EVERY VEHICLE THAT HAS A THIEMAN LIFTGATE HAS LEGIBLE WARNING AND OPERATION DECALS CLEARLY POSTED ON THE VEHICLE AT ALL TIMES AS A GUIDE FOR PROPER OPERATION AND MAINTENANCE.

ADDITIONAL WARNING DECALS, OPERATION DECALS AND OWNER'S MANUALS CAN BE OBTAINED FROM THIEMAN TAILGATES, INC.

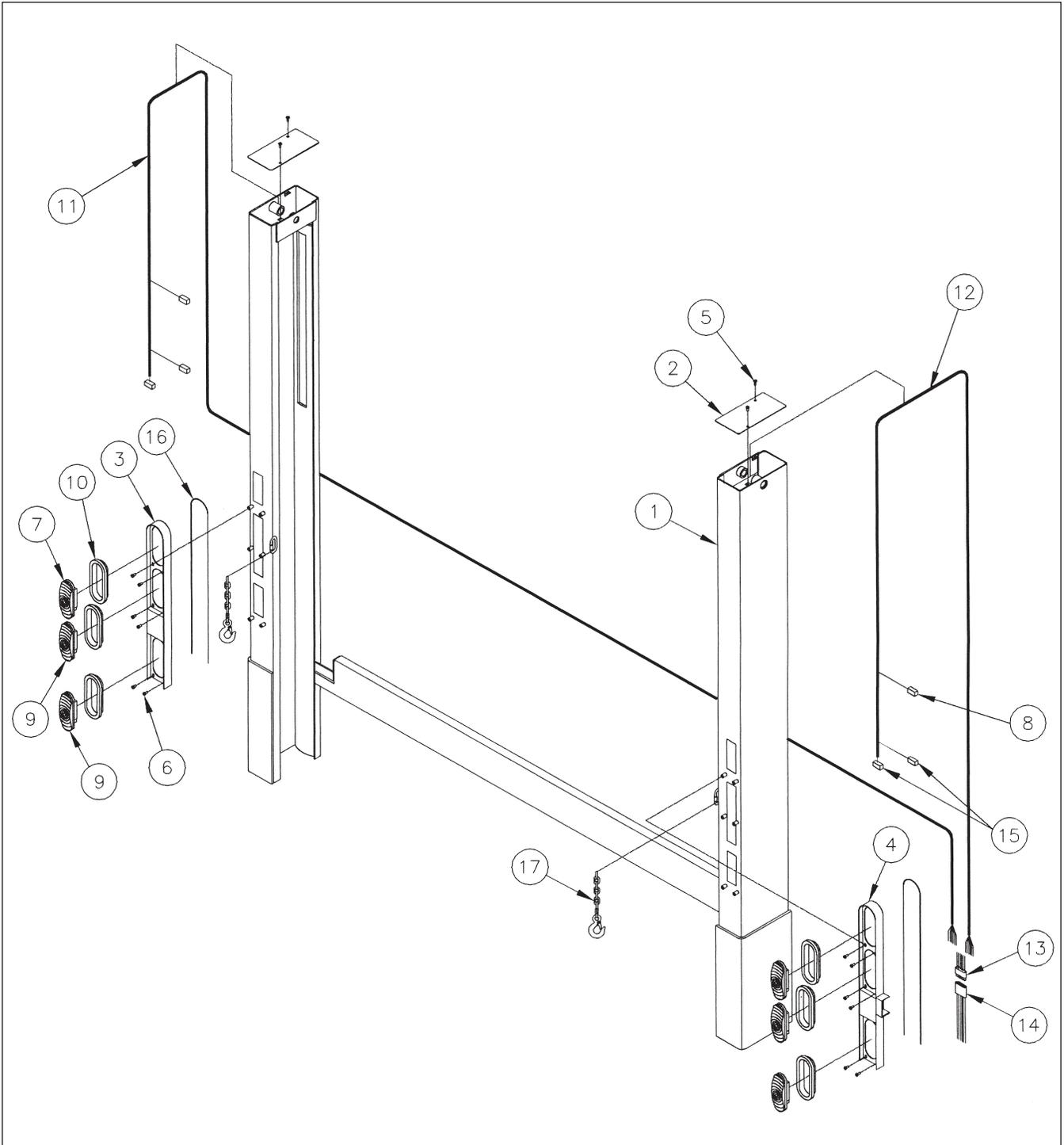
FRAME ASSEMBLY



FRAME ASSEMBLY

Item	Part Number	Description	Qty
1	31492-001	Frame Weld 8262	1
1	31492-002	Frame Weld 8862	1
1	31492-003	Frame Weld 8274	1
1	31492-004	Frame Weld 8874	1
2	27157	Cover	2
3	31481-001	Light Box Cover LH	1
4	31481-002	Light Box Cover RH	1
5	8109-014	.25 x .75 Screw	4
6	5793010	.25 x .75 Screw	12
7	4301400	Back-up Light	2
8	4301381	Wire Harness	2
9	4301401	Stop/Turn/Tail Light	4
10	4301370	Grommet	6
11	43015	LH Light Harness (Truck/Trailer)	1
12	43016	RH Light Harness (Truck/Trailer)	1
13	43017	Wire Harness (Truck/Trailer)	1
14	43018	Wire Harness (Truck/Trailer)	1
15	4301380	Wire Harness	4
16	8271291	Zerk	2
17	5781017	Retaining Ring	4
18	5054	Latch Pin	2
19	31236-001	Latch Weld LH	1
20	31236-002	Latch Weld RH	1
21	5749-003	Grommet	2

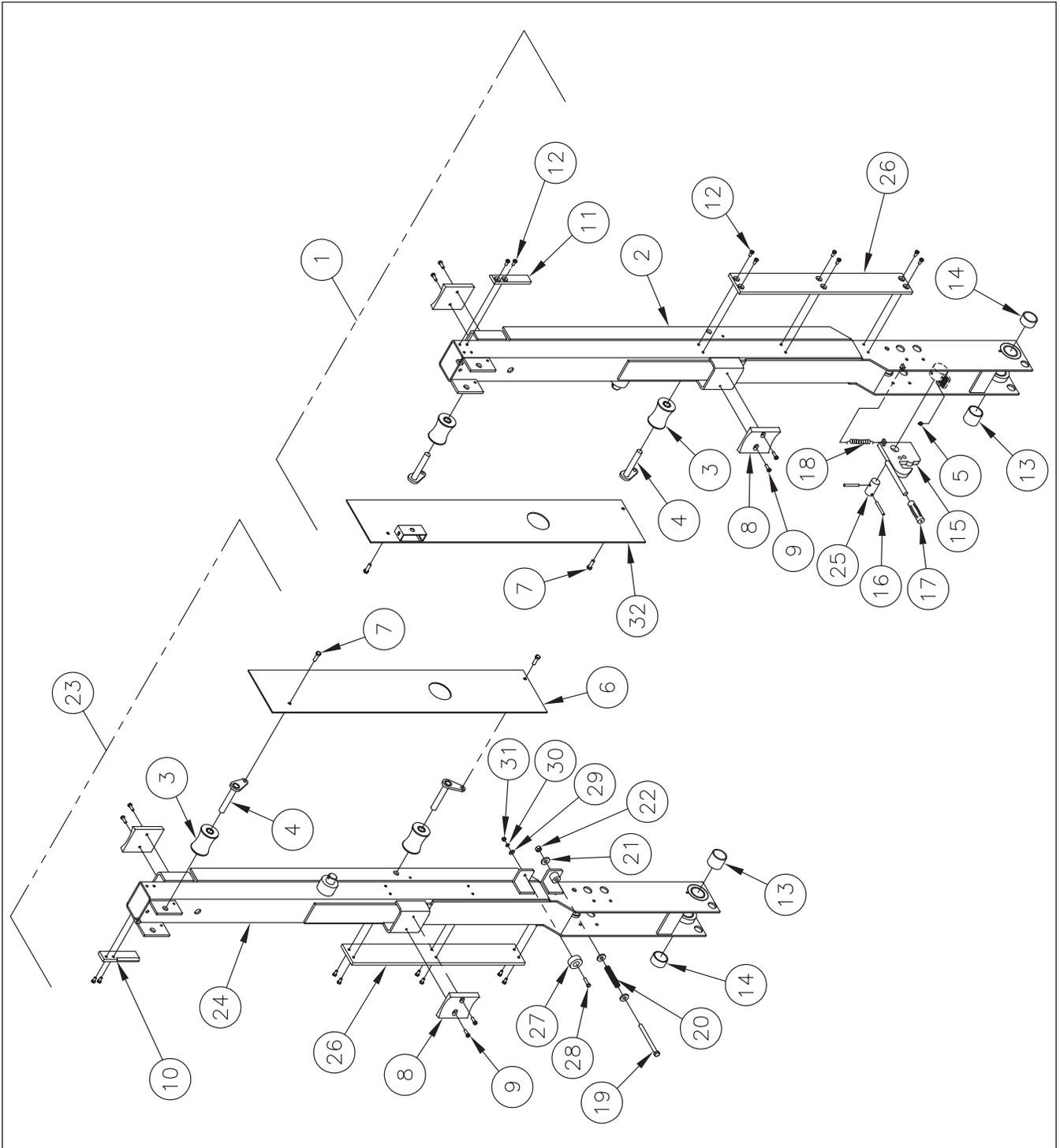
BOTTLE GAS FRAME ASSEMBLY



BOTTLE GAS FRAME ASSEMBLY

Item	Part Number	Description	Qty
1	31492-005	Frame Weld 8236, 8242	1
1	31492-006	Frame Weld 8836. 8842	1
2	27157	Cover	2
3	31481-001	Light Box Cover LH	1
4	31481-002	Light Box Cover RH	1
5	8109-014	.25 x .75 Screw	4
6	5793010	.25 x .75 Screw	12
7	4301400	Back-up Light	2
8	4301381	Wire Harness	2
9	4301401	Stop/Turn/Tail Light	4
10	4301370	Grommet	6
11	43015	LH Light Harness (Truck/Trailer)	1
12	43016	RH Light Harness (Truck/Trailer)	1
13	43017	Wire Harness (Truck/Trailer)	1
14	43018	Wire Harness (Truck/Trailer)	1
15	4301380	Wire Harness	4
16	5749-003	Grommet	2
17	31533	Chain Asm.	2

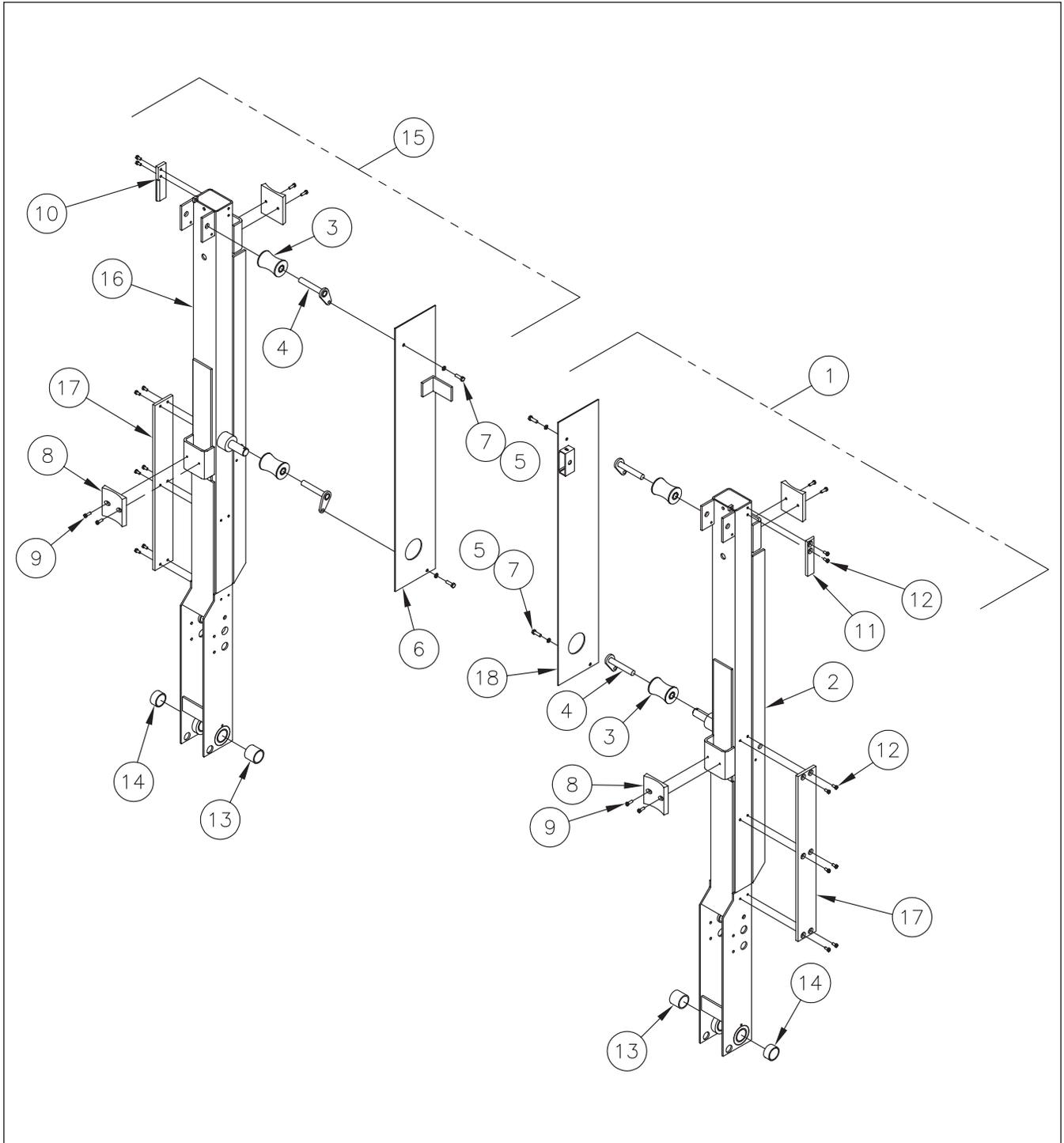
SLIDER ASSEMBLY



SLIDER ASSEMBLY

Item	Part Number	Description	Qty
1	31498	Slider Asm RH	1
2	31499	Slider Weld RH	1
3	31488	Roller Asm	4
4	31486	Pin Weld	4
5	8271291	Zerk	1
6	27146	Cover LH	1
7	8104-006	.31 x 1.00 Screw	4
8	5722	Wear Pad	4
9	8449646	.25 x .75 Screw	8
10	5702201	Wear Pad	1
11	5702202	Wear Pad	1
12	8109-014	.25 x .50 Screw	16
13	5504-007	Bushing	2
14	5504-006	Bushing	2
15	31507	Latch	1
16	5708-001	Spring Pin	2
17	5701041	Handle Grip	1
18	5101100	Spring	1
19	8108-007	.38 x 4.50 Screw	1
20	5105	Spring	1
21	8120388	.38 Flatwasher	2
22	9413534	.38 Locknut	1
23	31495	Slider Asm LH	1
24	31496	Slider Weld LH	1
25	5037-002	Pin	1
26	5745	Wear Pad	2
27	5701	Rubber Bumper	2
28	8180022	Screw .25 x 1	2
29	8120386	Flatwasher .25	2
30	8120380	Lockwasher .25	2
31	8120375	Nut .25	2
32	31491-001	Cover Weld RH	1

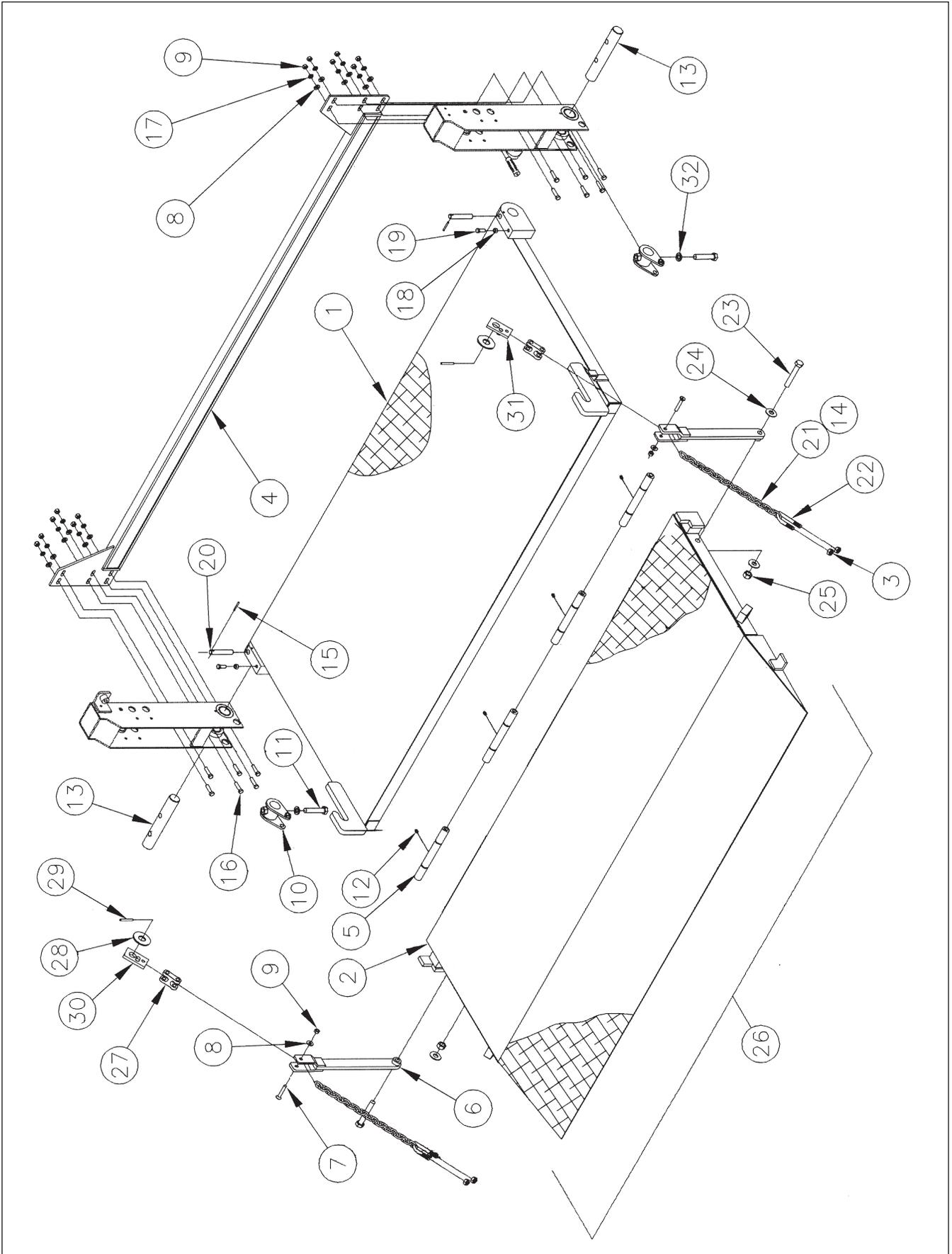
BOTTLE GAS SLIDER ASSEMBLY



BOTTLE GAS SLIDER ASSEMBLY

Item	Part Number	Description	Qty
1	31519	Slider Asm RH BG	1
2	31514	Slider Weld RH BG	1
3	31488	Roller Asm	4
4	31486	Pin Weld	4
5	8120214	Lockwasher .31	4
6	31517	Cover Weld LH BG	1
7	8104-006	.31 x 1.00 Screw	4
8	5722	Wear Pad	4
9	8449646	.25 x .75 Screw	8
10	5702201	Wear Pad	1
11	5702202	Wear Pad	1
12	8109-014	.25 x .50 Screw	16
13	5504-007	Bushing	2
14	5504-006	Bushing	2
15	31518	Slider Asm LH BG	1
16	31516	Slider Weld LH BG	1
17	5745	Wear Pad	2
18	31491-002	Cover Weld RH BG	1

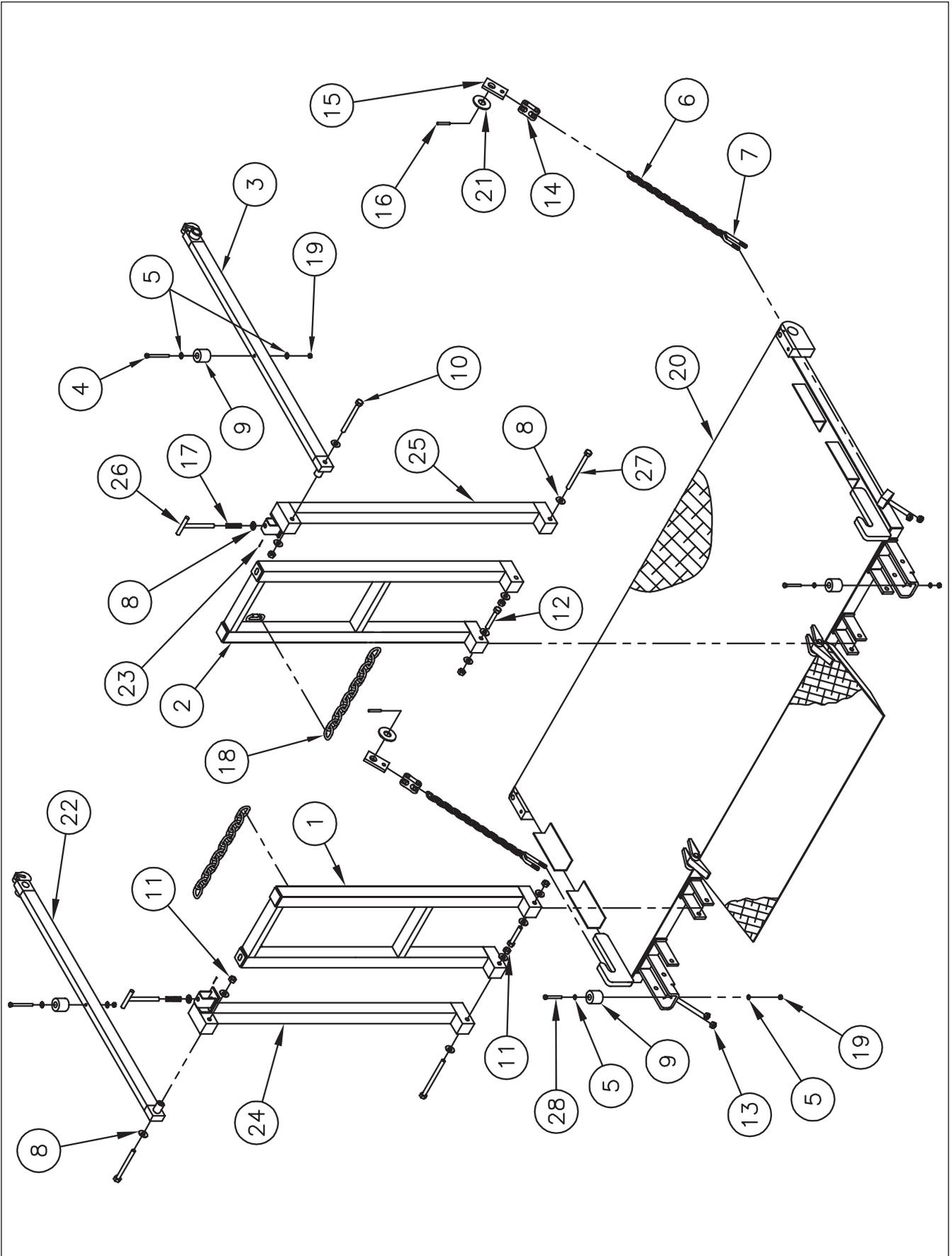
PLATFORM ASSEMBLY - 62" & 74" DEEP



PLATFORM ASSEMBLY - 62" & 74" DEEP

Item	Part Number	Description	Qty
1	31501-001	Main Section 8262	1
1	31501-002	Main Section 8862	1
1	31503-001	Main Section 8274	1
1	31503-002	Main Section 8874	1
2	31502-001	Extension 8262	1
2	31502-002	Extension 8862	1
2	31505-001	Extension 8274	1
2	31505-002	Extension 8874	1
3	9414073	Locknut	4
4	31487-001	Slider Support - 96" Width	1
4	31487-002	Slider Support - 102" Width	1
5	3106270	Hinge Asm	5
6	31375-001	Fold Lever	2
7	8108-006	.38 x 2.25 Screw	2
8	8120388	.38 Flatwasher	14
9	9413534	.38 Locknut	14
10	31489	Closing Bracket	2
11	8102-012	.62 x 3.00 Screw	2
12	8271291	Zerk	5
13	5079	Platform Pivot Pin	2
14	5702300	Nylon Chain Cover	4
15	5708-004	Spring Pin .18 x 1.50	2
16	8108-009	.38 x 1.50 Screw	12
17	8120382	.38 Lockwasher	12
18	8103-007	.38 Jam Nut	2
19	8180122	.38 x 1.00 Screw	2
20	5082	Pin	2
21	4100356	Chain - 74" Deep	2
21	4100357	Chain - 62" Deep	2
22	5793150	U-Bolt	2
23	8102-013	.62 x 4.00 Screw	2
24	8130999	.62 Flatwasher	4
25	8103-001	.62 Locknut	2
26	31500-001	Platform Asm 8262, incl-1,2,5	1
26	31500-002	Platform Asm 8862, incl-1,2,5	1
26	31500-003	Platform Asm 8274, incl-1,2,5	1
26	31500-004	Platform Asm 8874, incl-1,2,5	1
27	5725	Double Clevis Link	2
28	8107-010	1.00 Flatwasher	2
29	5708-001	.25 x 2.00 Spring Pin	2
30	31524-001	Chain Anchor Weld LH	1
31	31524-002	Chain Anchor Weld RH	1
32	8106-003	.62 Lockwasher	2

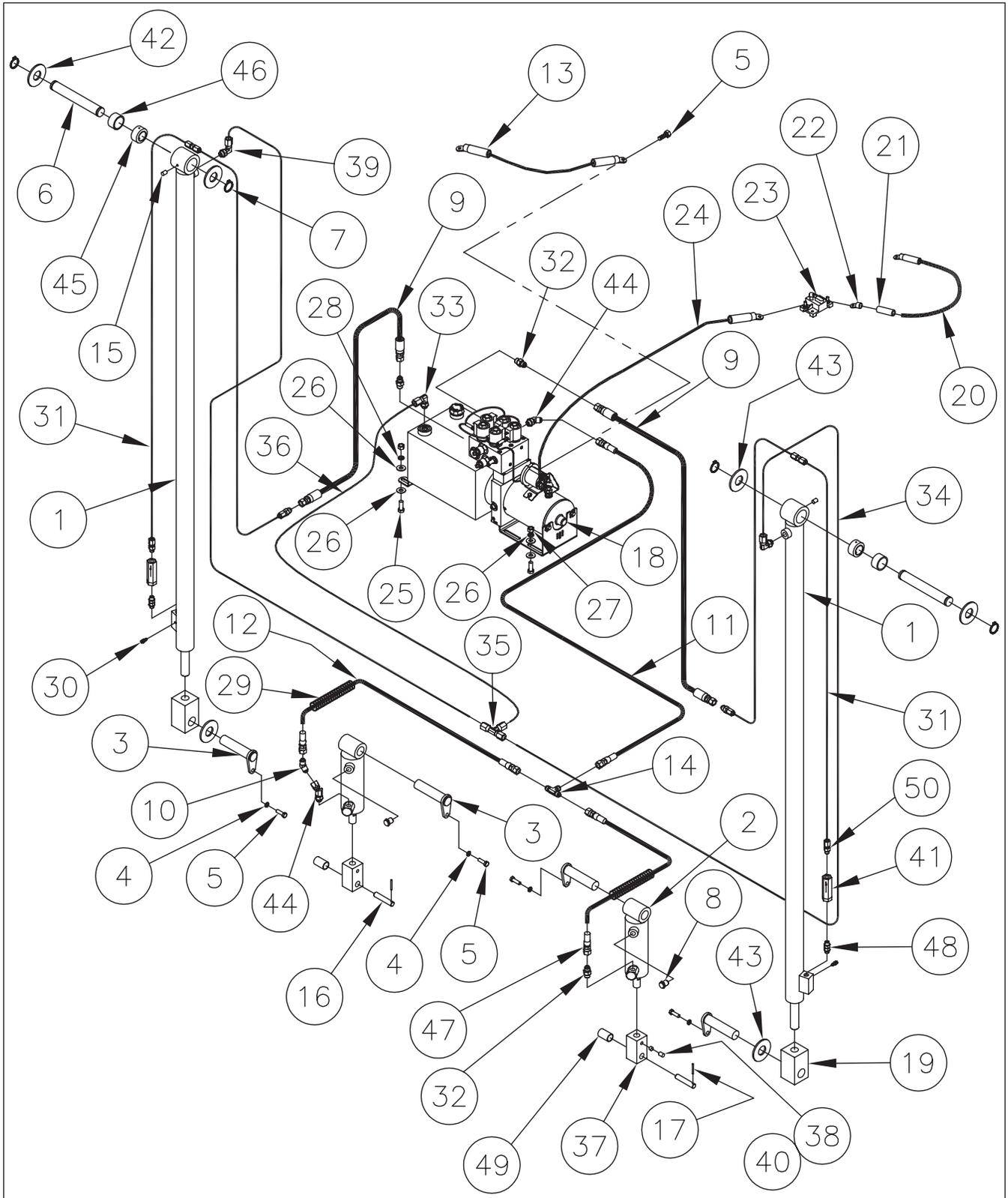
FOLD DOWN BOTTLE GAS RACK



FOLD DOWN BOTTLE GAS RACK ASSEMBLY

Item	Part Number	Description	Qty
1	31510-001	End Rail Weld LH 82 Wide	1
1	31510-003	End Rail Weld LH 88 Wide	1
2	31510-002	End Rail Weld RH 82 Wide	1
2	31510-004	End Rail Weld RH 88 Wide	1
3	31513-002	Hor. End Rail 42" RH	1
3	31513-004	Hor. End Rail 36" RH	1
4	8104-001	Screw .31 x 3.50	2
5	8120386	Flatwasher .31	8
6	4100359	Platform Chain	2
7	5793150	U-Bolt	2
8	8120396	Flatwasher .50	14
9	5702290	Rubber Bumper	4
10	8100-008	Screw .50 x 5.25	2
11	9414074	Locknut .50-13	6
12	8100-007	Screw .50 x 4.00	2
13	9414073	Locknut .44	2
14	5725	Double Clevis Link	2
15	2384	Chain Anchor	2
16	5708-001	Spring Pin	2
17	5101160	Spring	2
18	4100304	Chain 42" Deep	2
18	4100302	Chain 36" Deep	2
19	9413447	Locknut .31	4
20	31520-001	Platform 8236	1
20	31520-002	Platform 8836	1
20	31520-003	Platform 8242	1
20	31520-004	Platform 8842	1
21	8107-010	Flatwasher 1.00	2
22	31513-001	Hor. End Rail 42" LH	1
22	31513-003	Hor. End Rail 36" LH	1
23	8121222	Cotter Pin	2
24	31511-001	Vertical Rail Weld LH	1
25	31511-002	Vertical Rail Weld RH	1
26	31336	Locking Pin Weld	2
27	8100-013	Screw .50 x 6.50	2
28	8180091	Screw .31 x 2.50	2

GRAVITY DOWN PUMP & CYLINDER ASSEMBLY

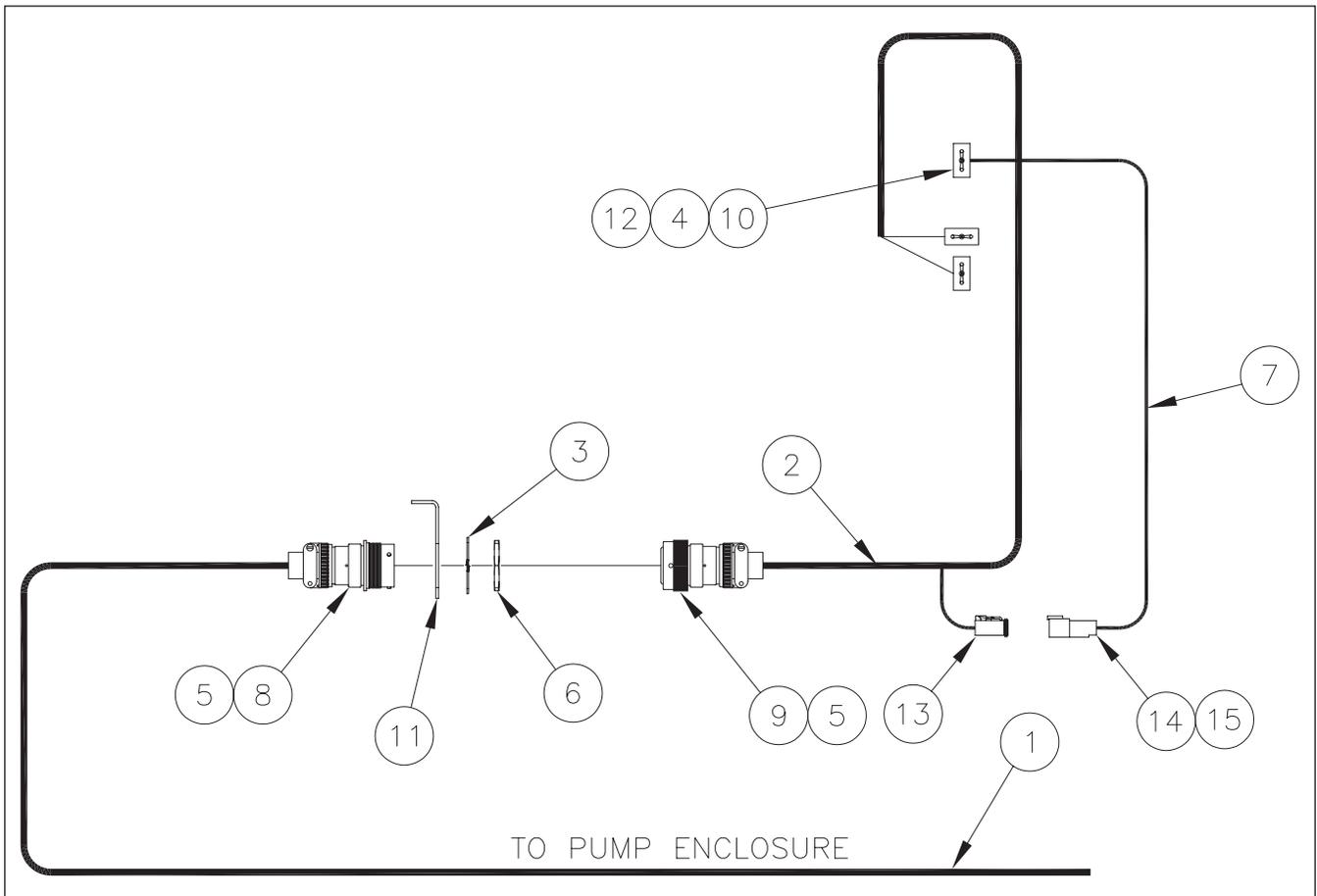


**GRAVITY DOWN
PUMP & CYLINDER ASSEMBLY**

Item	Part Number	Description	Qty
1	42011	Lift Cylinder	2
2	42013	Fold Cylinder	2
3	31506	Pin Weld	4
4	8120214	.31 Lockwasher	4
5	8104-006	.31 x 1.00 Screw	5
6	5080	Pin	2
7	5781008	Retaining Ring	4
8	4954	Breather	2
9	4950-002	.38 Hose 248"	2
10	4958-001	MJ-FJS 45°	1
11	4951-009	.25 Hose 205"	1
12	4959	.25 Hose 248"	2
13	4318-002	Ground Cable #2 x 2'	1
14	4953-001	Tee MJ-MJ-MJ	1
15	8271291	Zerk	2
16	5081	Pin	2
17	5708-004	Spring Pin	2
18	4440	Power Unit	1
18	4441	Power Unit w/ Handpump	1
19	23099	Lift Cylinder Clevis	2
20	4301240	Battery Cable #2 x 33'	1
21	4319-002	Heat Shrink	1
22	4350	Cable Lug	1
23	43010	Circuit Breaker	1
24	4318-001	Battery Cable	1
25	8180122	.38 x 1.00 Screw	4
26	8106-010	.38 Internal Tooth Lockwasher	8
27	8120377	.38 Nut	4
28	8120388	.38 Flatwasher	4
29	5109	Spring - 36"	2
30	5735	Bleeder Screw	2
31	4464	.38 Steel Tubing	2
32	4941-001	MJ-MORB STRAIGHT	3
33	4933-002	BT-MAORB 90°	1
34	4921-002	Tube-178"	2
35	4942-001	BT-BT-BT TEE	1
36	4922-002	Tube-240"	1
37	23100	Adjustment Block	2
38	8181635	.38 Set Screw	2
39	4933-001	BT-MAORB 90°	2
40	4220240	Nylon Insert	2
41	4956	Flow Control-3GPM	2
42	8107-008	Shim Washer 1.00	2
43	8107-010	Flatwasher 1.00	4
44	4940-001	MJ-MAORB 45°	2
45	5509	Spherical Bearing	2
46	3055	Spacer	2
47	4960	Reusable Fitting FJ	2
48	4944-002	MAORB-ORB Straight	2
49	5504-025	Bushing	2
50	4941-002	MJ-MORB Straight	2

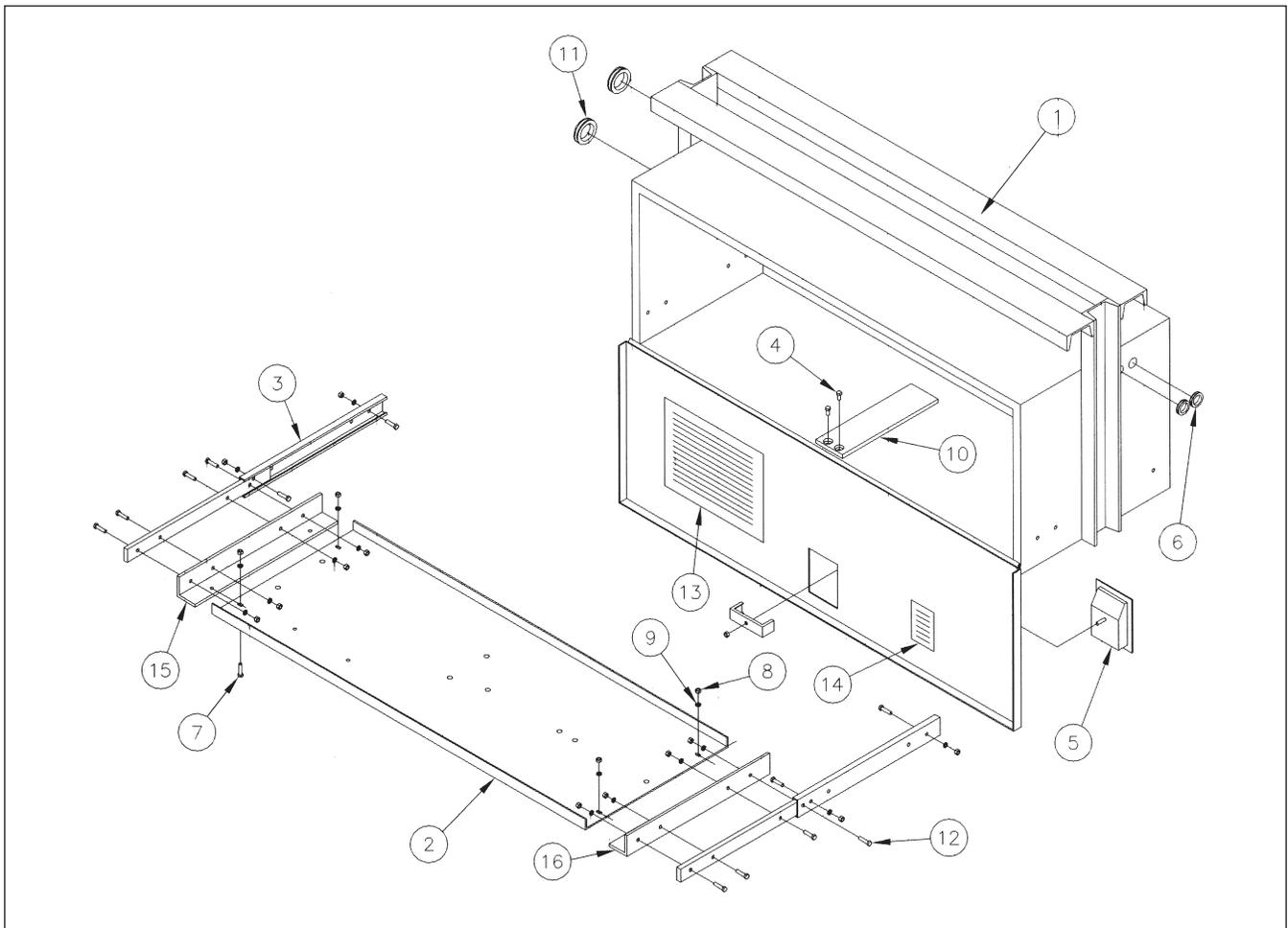
HARNES ASSEMBLIES

Item	Part Number	Description	Qty
1	4383	Wiring Harness - Toggle Control	1
2	43008	Wiring Harness - Toggle Control	1
3	4390	Washer	1
4	4301740	Toggle Switch	3
5	4393	Seal Plug	20
6	4389	Nut	1
7	43011-002	Control Cord 18/4	1
8	4388	Socket Connector	1
9	4387	Male Connector	1
10	4301750	Toggle Seal	3
11	27106	Connector Mounting Bracket	1
12	4339	Jumper	3
13	43013	Four Way Plug	1
14	43012	Four Way Receptacle	1
15	4300-022	Male Terminals	4



PUMP ENCLOSURE ASSEMBLY

Item	Part Number	Description	Qty
1	31178-001	Enclosure Weld	1
2	31570	Tray Weld	1
3	5729-002	Slides (Pair)	1
4	8109-014	Screw .25 x .50	2
5	5728	Latch	1
6	5701960	Grommet	2
7	8180022	.25 x 1.00 Screw	4
8	8120375	.25 Nut	6
9	8120380	.25 Lockwasher	6
10	5761	Wear Pad	1
11	5701200	Grommet	2
12	8111-002	Screw #10 x .75	8
13	4672	Wiring Decal	1
14	4620	Warning Decal - High Pressure	1
15	2030-001	Angle LH	1
16	2030-002	Angle RH	1



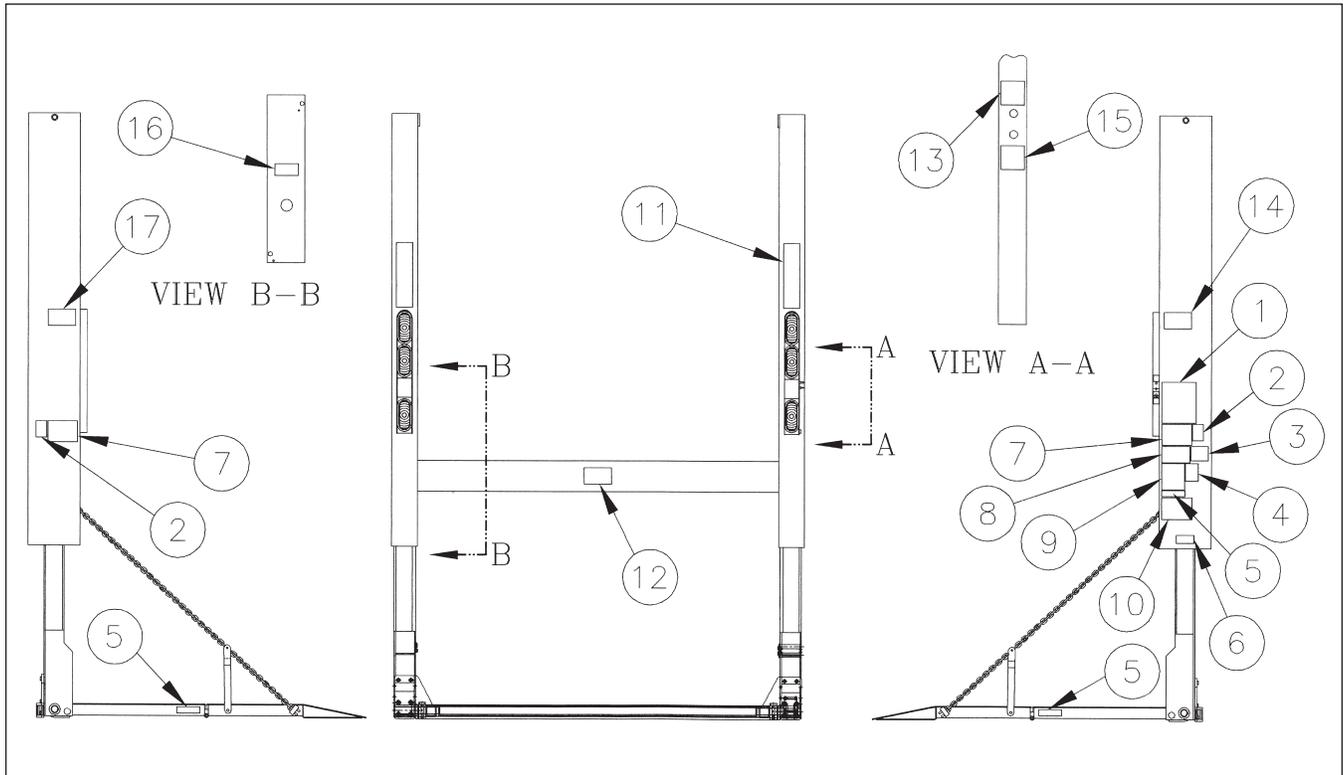
INSPECTION AND LOCATION OF DECALS

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

ALL DECALS MUST BE IN PLACE AND LEGIBLE OR ALL WARRANTIES ARE VOID!

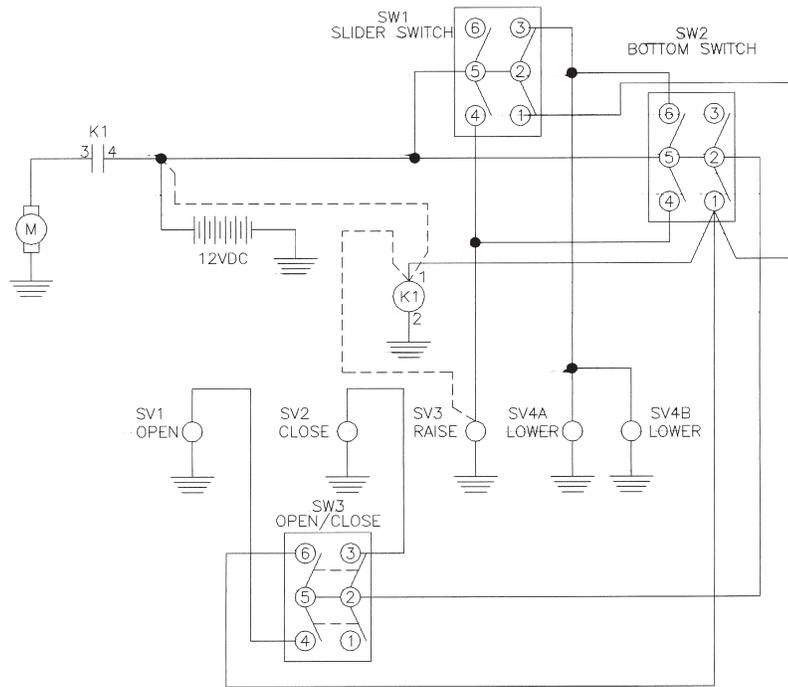
Item	Part Name	Part Number
1	Operating Decal	4625
2	Warning Decal (2)	4620
3	Fast Idle Decal	4650150
4	No Riding Decal	4609
5	Capacity Decal 3500# (3)	4650830
6	Serial Tag	4650310
7	Warning Decal-Off Center Decal (2)	4671050
8	Caution Decal-Working Area	4650770
9	Warning Decal	4650530
10	Wiring Decal-Tail Light	4623
11	Thieman Nameplate (2)	4622
12	Pinch Point Decal	4650790
13	Toggle Decal-Open/Close	4626
14	Latching Decal (2)	4671
15	Toggle Decal-Raise/Lower (2)	4650820
16	Warning Decal-Cover (2)	4650760

NOTE: For pump enclosure decals see page 23.



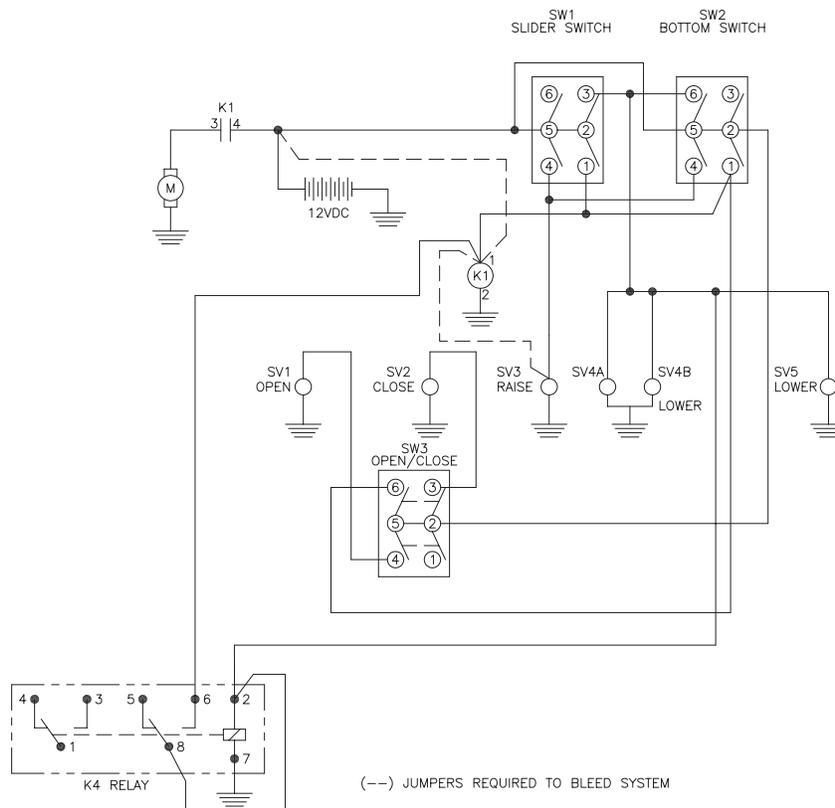
ELECTRICAL SCHEMATICS

ELECTRICAL SCHEMATIC (GRAVITY DOWN)



(-- JUMPERS REQUIRED TO JUMP SYSTEM

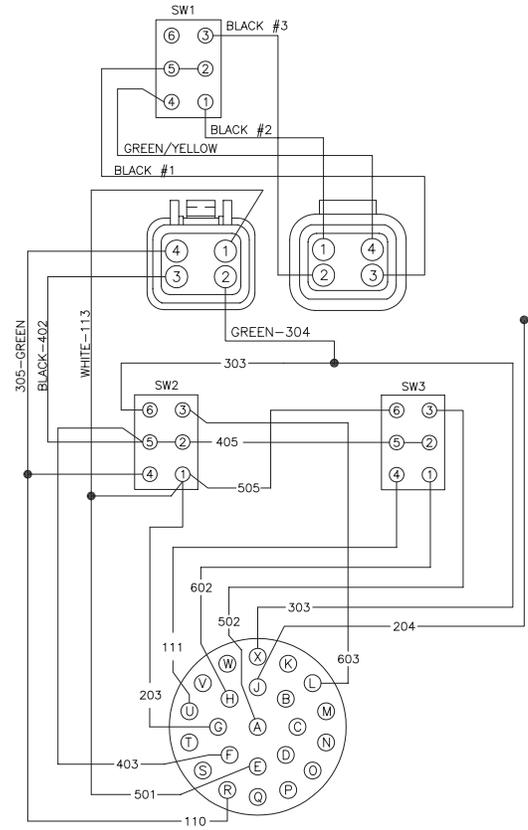
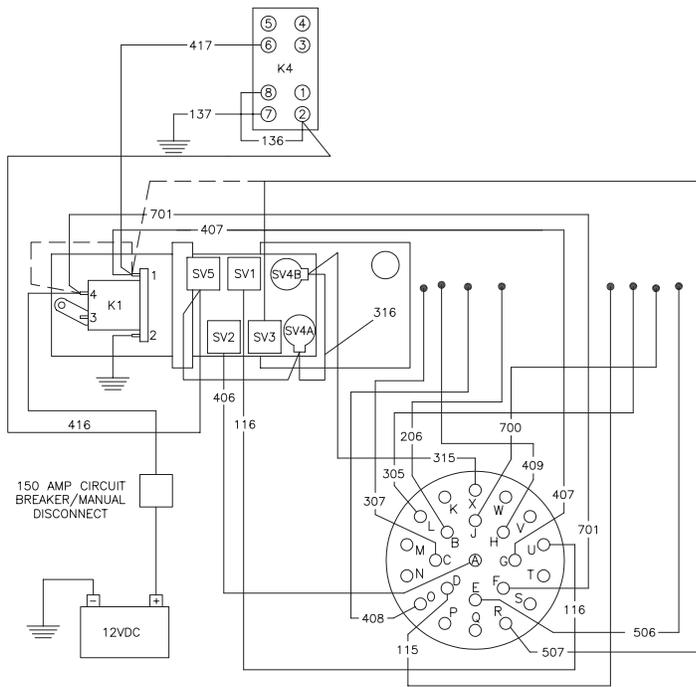
POWER DOWN ELECTRICAL SCHEMATIC



(-- JUMPERS REQUIRED TO BLEED SYSTEM

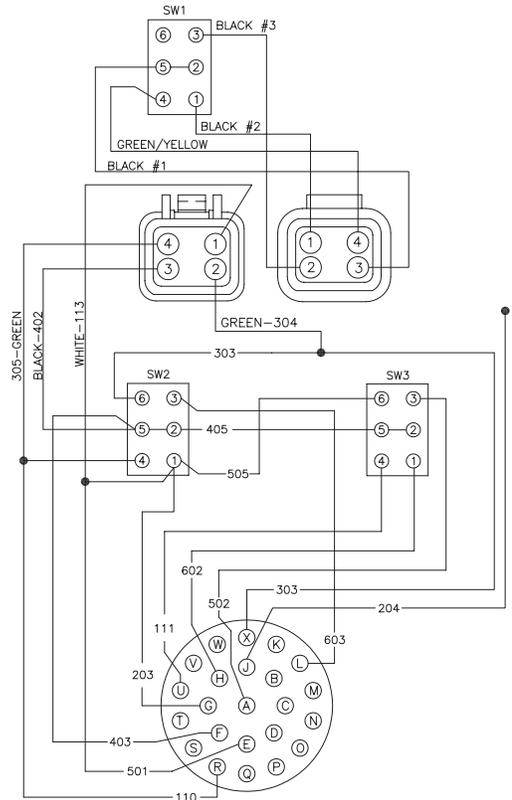
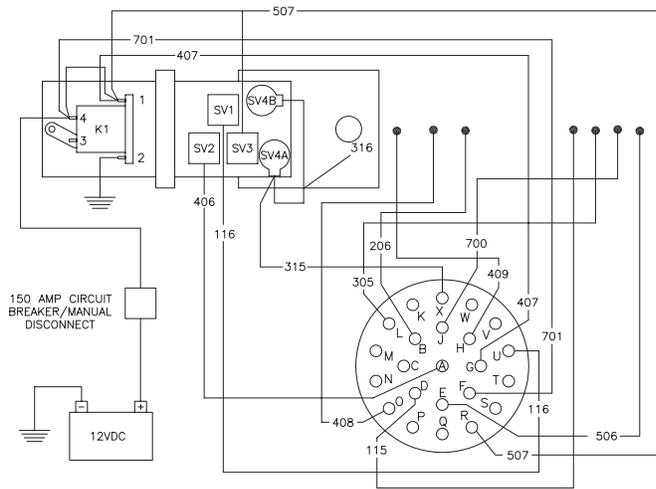
ELECTRICAL PICTORIALS

POWER DOWN ELECTRIC CONTROL



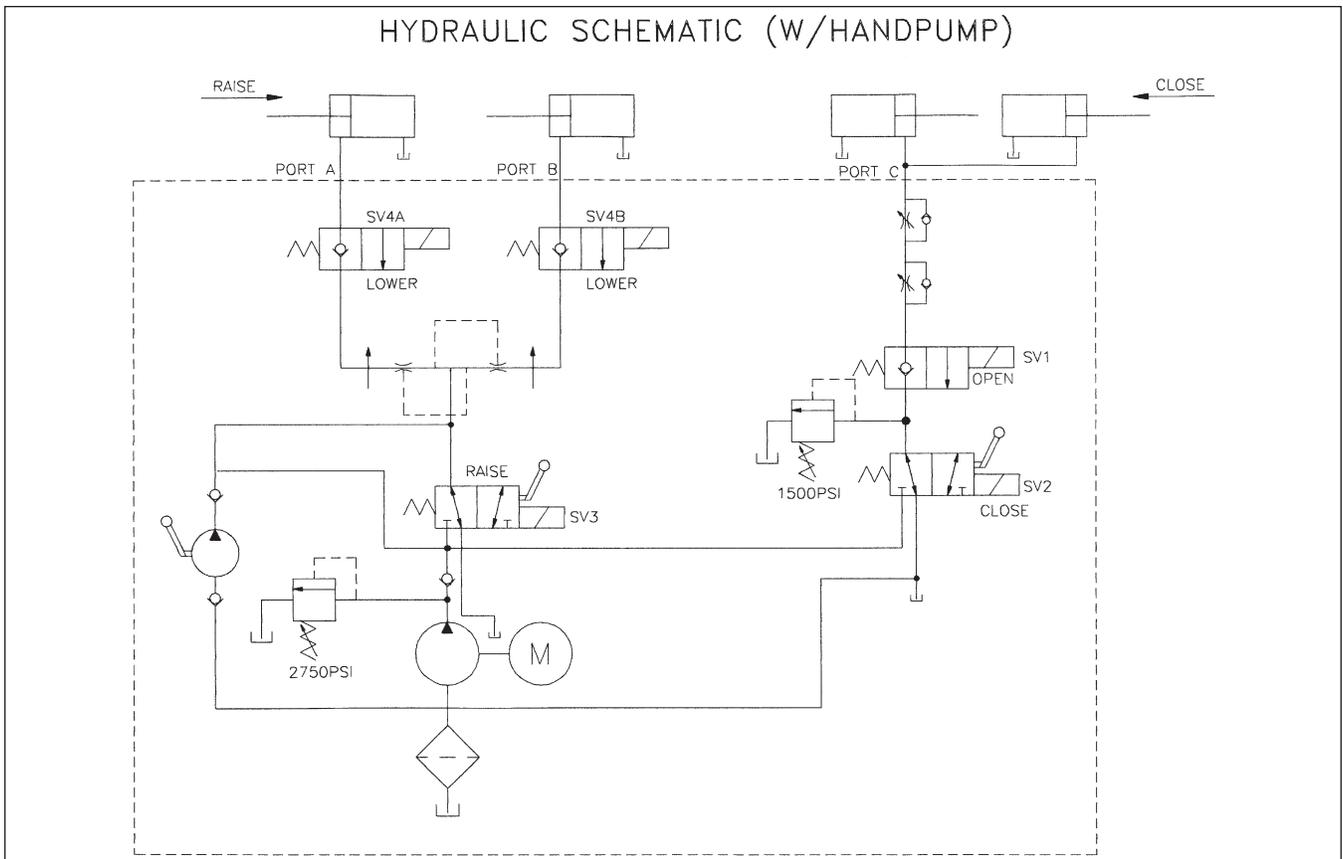
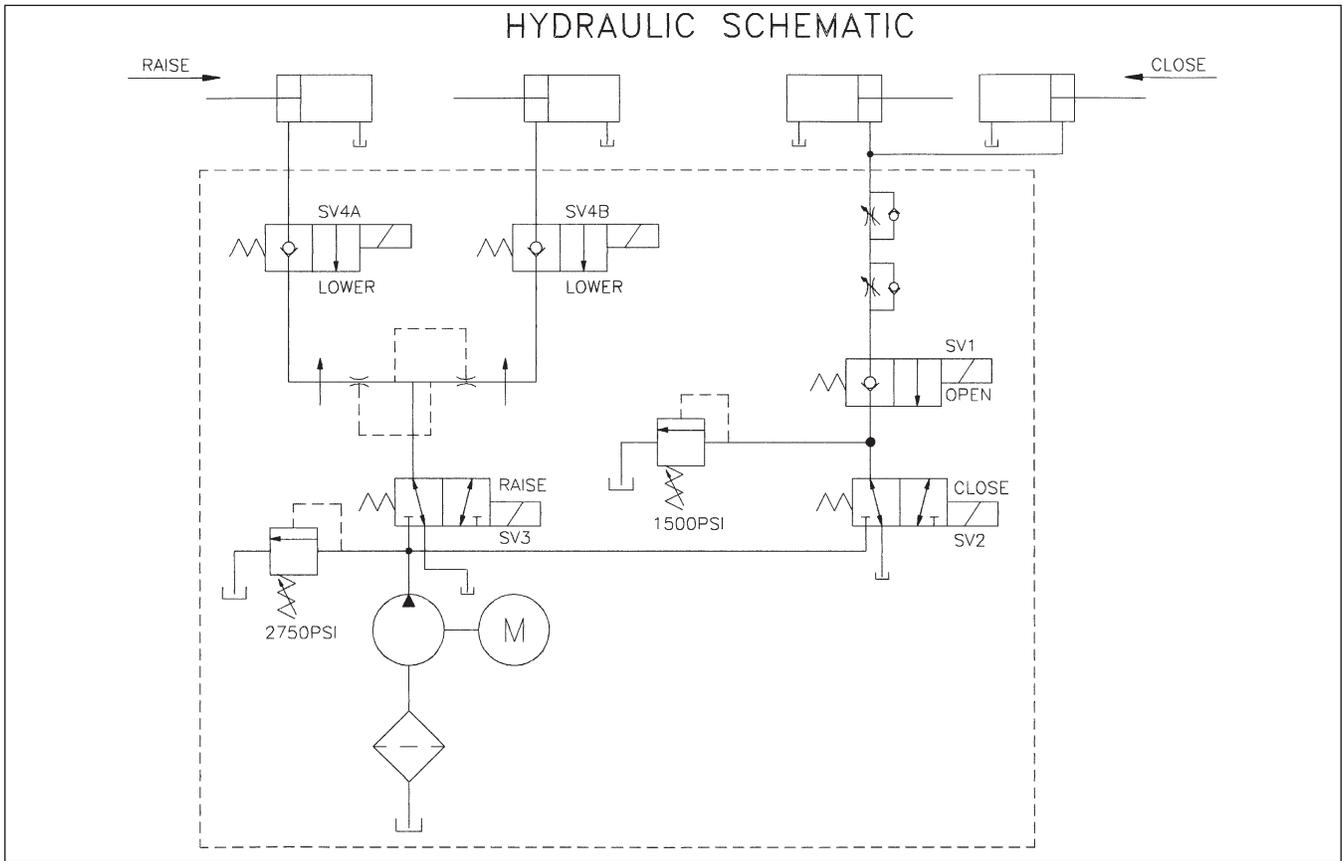
(-- JUMPERS REQUIRED TO BLEED SYSTEM

GRAVITY DOWN ELECTRIC CONTROL

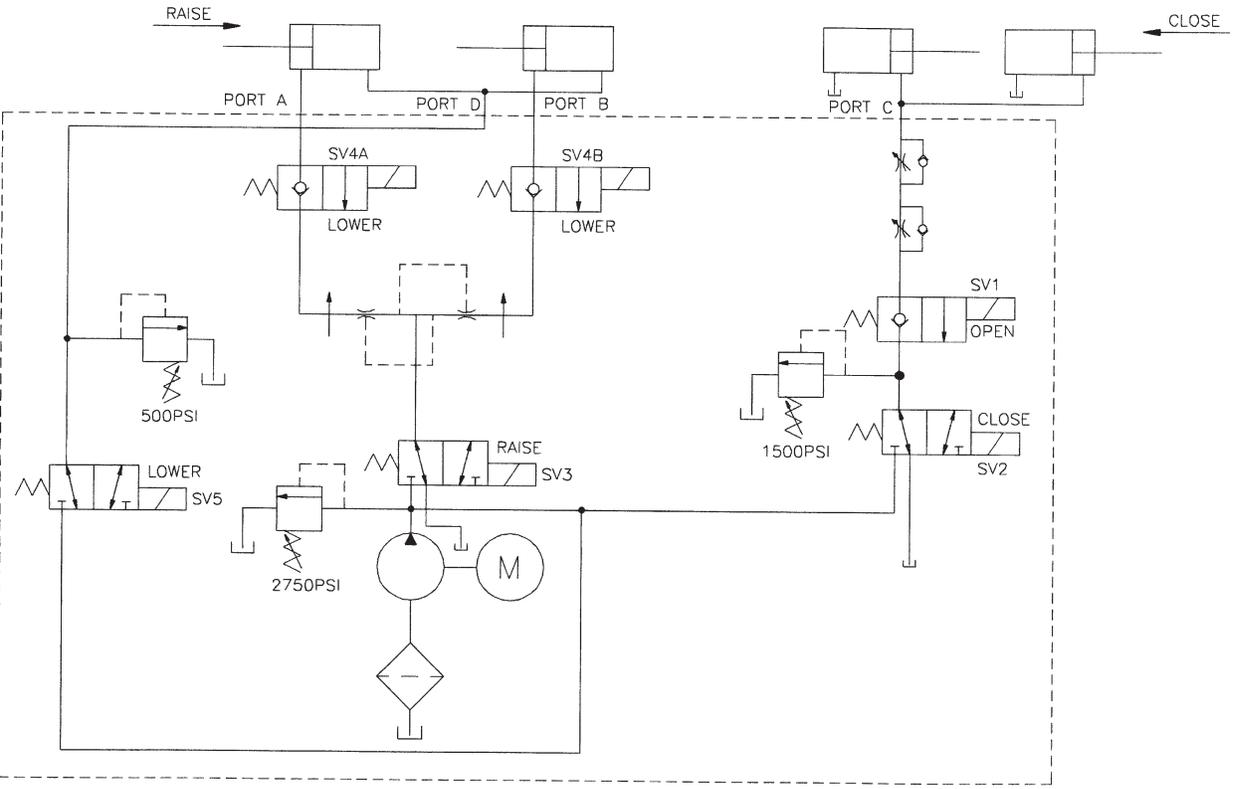


(-- JUMPERS REQUIRED TO BLEED SYSTEM

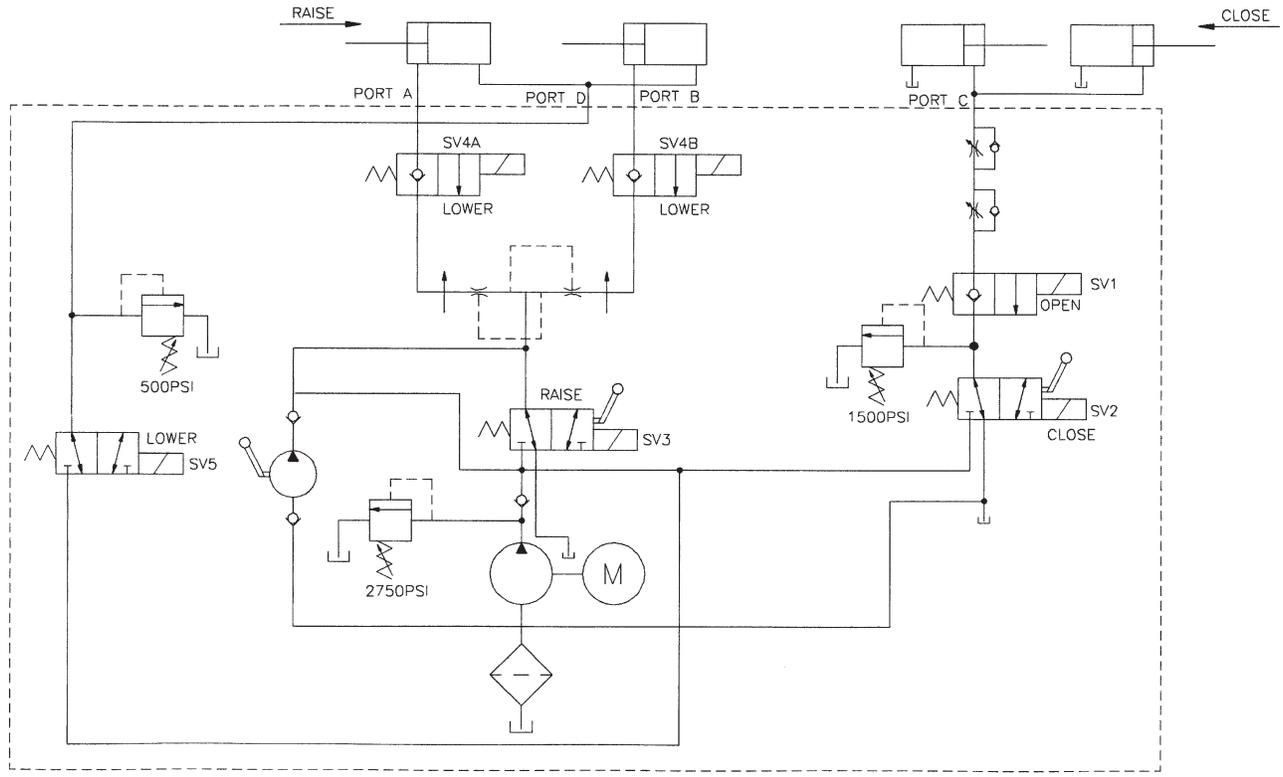
HYDRAULIC SCHEMATICS



POWER DOWN HYDRAULIC SCHEMATIC



POWER DOWN HYDRAULIC SCHEMATIC (W/HANDPUMP)



THIEMAN TDR35

Troubleshooting Guide-Gravity Down

NOTE: Please refer to the electrical and hydraulic diagrams in the Owner's Manual when troubleshooting the TDR35. **Follow the corrections in the order they are shown.**

- 1. Problem Causes** - Pump motor will not run in the raise mode.

 - a. Tripped circuit breaker
 - b. Defective battery(ies)
 - c. Improper battery cable connections or ground
 - d. Defective top switch (SW1)
 - e. Defective solenoid start switch (K1)
 - f. Defective bottom switch (SW2)
 - g. Defective pump motor

Corrections

 - a. Reset circuit breaker.
 - b. The battery(ies) on the vehicle should be that which has a minimum 150 amp reserve capacity. Low voltage problems can be a result of having too small of a battery. Replace battery(ies) as necessary.
 - c. Trace battery and ground cable connections to locate improper connection(s).
 - d. Check for voltage at SW1-5; if none the wire from SW4-2 is broken and needs replaced. If voltage exists then check for voltage at SW1-2 and SW1-1 with switch activated to the "UP" position, if none then replace SW1. If voltage exists then proceed to next step. Be sure the jumper is in place from SW1-5 to SW1-2.
 - e. Check for voltage at K1-1 when SW1 is actuated. If none then wire from SW1-1 is broken and needs replaced. If there is voltage and coil does not energize then replace start switch.
 - f. Check for voltage at SW2-5; if none the wire from SW1-2 is broken and needs replaced. If voltage exists then check for voltage at SW2-2 and SW2-1 with switch activated to the "UP" position, if none then replace SW2. If voltage exists check lead from SW2-1 to SW1-1 and replace wire if broken. Be sure jumper is in place from SW2-5 and SW2-2.
 - g. With the SW1 or SW2 switch activated in the "UP" position and the K1 coil is activated, check for voltage at the motor terminal. If voltage is present and the motor is not running, replace the motor.

- 2. Problem Causes** - Pump motor will not run in the close mode.

 - a. Tripped circuit breaker
 - b. Defective battery(ies)
 - c. Improper battery cable connections or ground
 - d. Defective open/close switch (SW3)
 - e. Defective solenoid start switch (K1)
 - f. Defective pump motor

Corrections

 - a. Reset circuit breaker.
 - b. The battery(ies) on the vehicle should be that which has a minimum 150 amp reserve capacity. Low voltage problems can be a result of having too small of a battery. Replace battery(ies) as necessary.
 - c. Trace battery and ground cable connections to locate improper connection(s).
 - d. Check for voltage at SW3-2; if none trace back the circuit to SW4-2 to find the broken line. If voltage exists then check for voltage at SW3-6 with the switch activated in the "CLOSE" position, if none then replace SW3. If voltage exists, check for voltage at K1-1 and if none find broken line from K1-1 to SW1-1 or SW1-1 to SW2-1 or SW2-1 to SW3-6. Be sure jumper is in place from SW3-5 and SW3-2.
 - e. If there is voltage at K1-1 and coil does not energize then replace start switch.
 - f. With the SW3 switch activated in the "CLOSE" position and the K1 coil is activated, check for voltage at the motor terminal. If voltage is present and the motor is not running, replace the motor.

- 3. Problem Causes** - Liftgate will not raise - Perform the corrections as listed in Section 1 then proceed to the following:

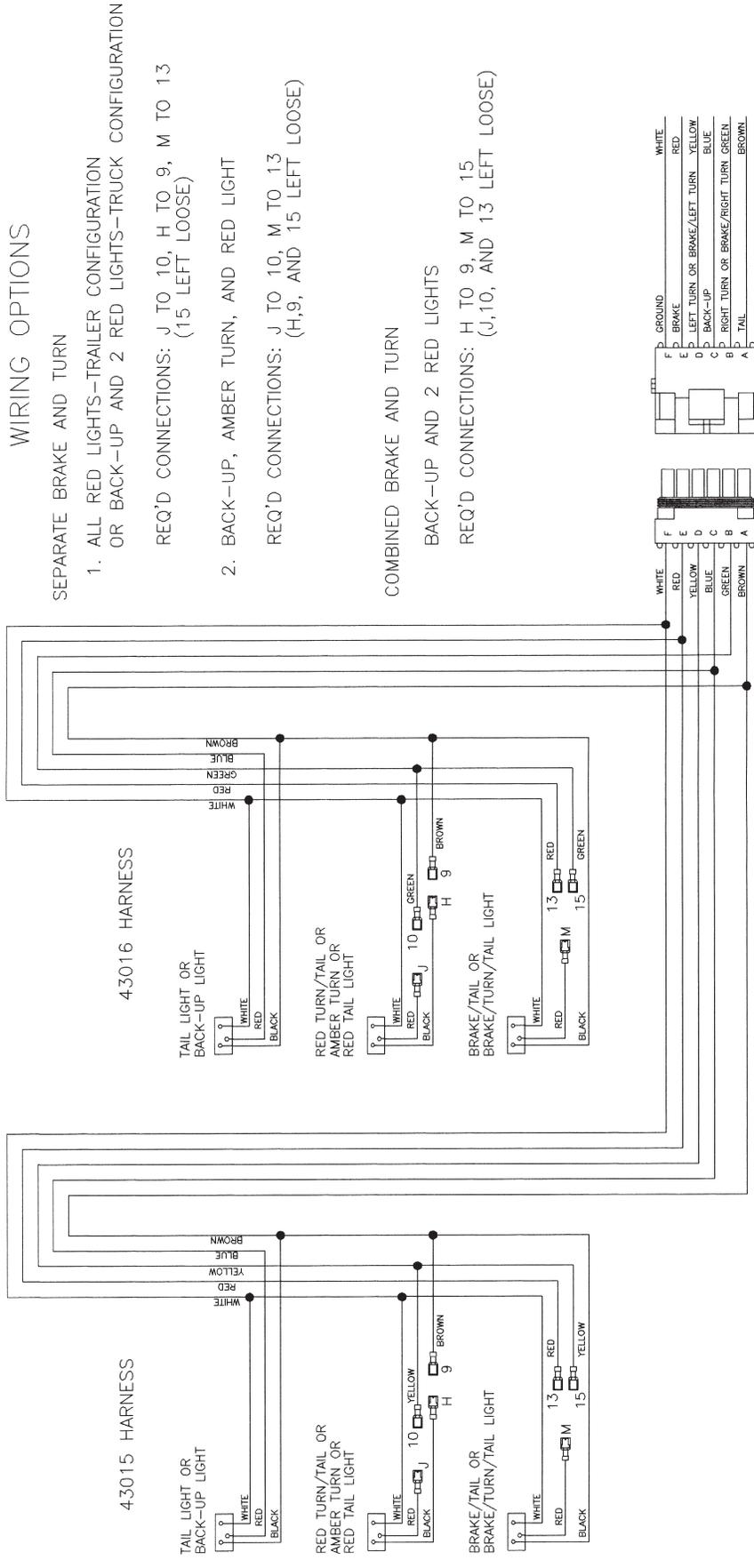
 - a. Overload condition
 - b. Defective SW1 and/or SW2 switch
 - c. Defective SV3 raise solenoid valve and/or coil
 - d. Relief valve misadjusted or defective
 - e. Lift cylinders are bypassing
 - f. Broken hydraulic line or hose
 - g. Defective pump

- Corrections**
- a. The power unit on the Thieman TDR35 is equipped with a lifting relief valve to prevent overloading of the liftgate. The relief setting is 3000 psi. If the liftgate is overloaded it will not raise. Remember the capacity of the TDR35 is 3500 lbs.
 - b. Check for voltage at SW1-4 with the switch in the "UP" position and replace switch if none exists. The next step is to check for voltage at SW2-4 with switch in the "RAISE" position and replace switch if none exists. Next check the lead between SW1-4 and SW2-4 for continuity and replace if necessary. If liftgate does not raise proceed to step e.
 - c. With SW1 or SW2 in the "UP" position check for voltage at the SV3 valve coil terminal, if no voltage is present the wire from SW1-4 is broken. If there is voltage and the coil is not energizing to shift the valve, the valve and coil must be replaced.
 - d. See section c for relief valve settings and adjust as necessary by using a pressure gauge. If the relief pressure is not attainable the relief valve must be replaced.
 - e. If liftgate is raising very slowly or only partially and fluid is coming out of the return line or breather at a steady rate the lifting cylinder(s) will need to be replaced.
 - f. Broken or punctured hydraulic lines and hoses must be replaced with care to avoid injury from high pressure oil streams.
 - g. If all else fails replace the power unit, it is probably worn out.
- 4. Problem Causes**
- Liftgate platform will not open-perform the corrections as listed in Section 1a thru 1d and 2e
 - a. Kickout spring is damaged or broken.
 - b. Defective SW3 switch is defective.
 - c. Defective SV1 open solenoid valve and/or coil.
- Corrections**
- a. Replace spring and bolt as needed located on the inside edge of the left hand slider.
 - b. With the SW3 switch activated in the "CLOSE" position check for voltage on SW3-4 and replace if no voltage is present.
 - c. With the SW3 in the "OPEN" position check for voltage at the SV1 valve coil terminal, if no voltage is present the wire from SW3-4 is broken and needs replaced. If there is voltage and the coil is not energizing to shift the valve, the valve and coil must be replaced.
- 5. Problem Causes**
- Liftgate platform will not lower or one side will lower only-perform the corrections as listed in Section 1a thru 1d.
 - a. Defective SW1 top switch
 - b. Defective SW2 bottom switch
 - c. Defective SV4A lowering solenoid valve and/or coil
 - d. Defective SV4B lowering solenoid valve and/or coil
- Corrections**
- a. Check for voltage at SW1-3 with the switch in the "DOWN" position and if none replace the switch.
 - b. Check for voltage at SW2-6 with the switch in the "DOWN" position and if none replace the switch. Check for voltage at SW1-3 with SW2 switch in the "DOWN" position and if none the lead from SW2-6 is broken and needs replaced.
 - c. With SW2 in the "DOWN" position check for voltage at the SV4A valve coil terminal, if no voltage is present the wire(s) from SW1-3 are broken and need replaced. These wires are lead numbers 315 and 303; see wiring pictorial. If voltage is present replace the valve and coil.
 - d. With SW2 in the "DOWN" position check for voltage at the SV4B valve coil terminal, if no voltage is present one of the wires from SW1-3 is broken and needs replaced. These wires are lead numbers 303, 315 and 316; see wiring pictorial. If voltage is present replace the valve and coil.
- 6. Problem Causes**
- Liftgate platform will not close-perform the corrections listed in Section 2
 - a. Defective SW3 open/close switch
 - b. Defective SV2 closing solenoid valve and/or coil
 - c. Defective closing cylinder(s)
- Corrections**
- a. With the SW3 switch in the "CLOSE" position check for voltage at SW3-3 and if none is present this switch needs to be replaced.
 - b. Check for voltage at the coil terminal of the SV2 valve and if none exists the wire from SW3-3 will need replaced. Otherwise the SV2 valve needs replaced if voltage is present and the platform is not closing.
 - c. If fluid is leaking from the closing cylinder(s) breather port or the rod seal at a steady stream the cylinder will need to be replaced or repaired.
- 7. Problem Causes**
- One side or the other, or both sides of the platform are drifting at a rapid rate-more than 1" per day
 - a. Air in lifting hydraulic circuit
 - b. Defective SV4A and/or SV4B solenoid valve
 - c. Defective cylinder piston seals

- Corrections** - a. Raise the liftgate completely then raise the latch on the curb side and at the same time open the platform with the toggle switch. Once the platform is completely open, lower the platform to the ground and then raise the platform completely to bed height and run the pump for five seconds to force any air out of the system.
- Additional bleeding of the system can be done by fully extending the lift cylinders. It may be necessary to raise the truck or trailer to obtain a bed of 60 inches. Open one bleeder screw, see parts list for location of this screw on the cylinder valve block. Connect a jumper wire from K1-1 to SV3 and a loose wire connected to K1-4. Touch the loose lead from K1-1 to K1-4 and hold the toggle switch in the "Down" position. This will force out any air in the cylinder. Then close the bleeder valve when a red stream of fluid is present. Repeat this procedure for the other side.
- b. Replace the solenoid valve for whichever side is drifting.
- c. Check the return lines for an excessive amount of fluid bypassing the piston seals and repair or replace the cylinder as necessary.

If you have any questions or problems that are not covered in this guide please call Thieman's Engineering Department at 1-800-524-5210.

TAILLIGHT PICTORIAL



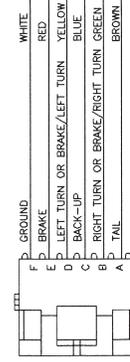
WIRING OPTIONS

SEPARATE BRAKE AND TURN

1. ALL RED LIGHTS—TRAILER CONFIGURATION OR BACK-UP AND 2 RED LIGHTS—TRUCK CONFIGURATION
REQ'D CONNECTIONS: J TO 10, H TO 9, M TO 13 (15 LEFT LOOSE)
2. BACK-UP, AMBER TURN, AND RED LIGHT
REQ'D CONNECTIONS: J TO 10, M TO 13 (H,9, AND 15 LEFT LOOSE)

COMBINED BRAKE AND TURN

- BACK-UP AND 2 RED LIGHTS
REQ'D CONNECTIONS: H TO 9, M TO 15 (J,10, AND 13 LEFT LOOSE)



43017 HARNESS 43018 HARNESS