

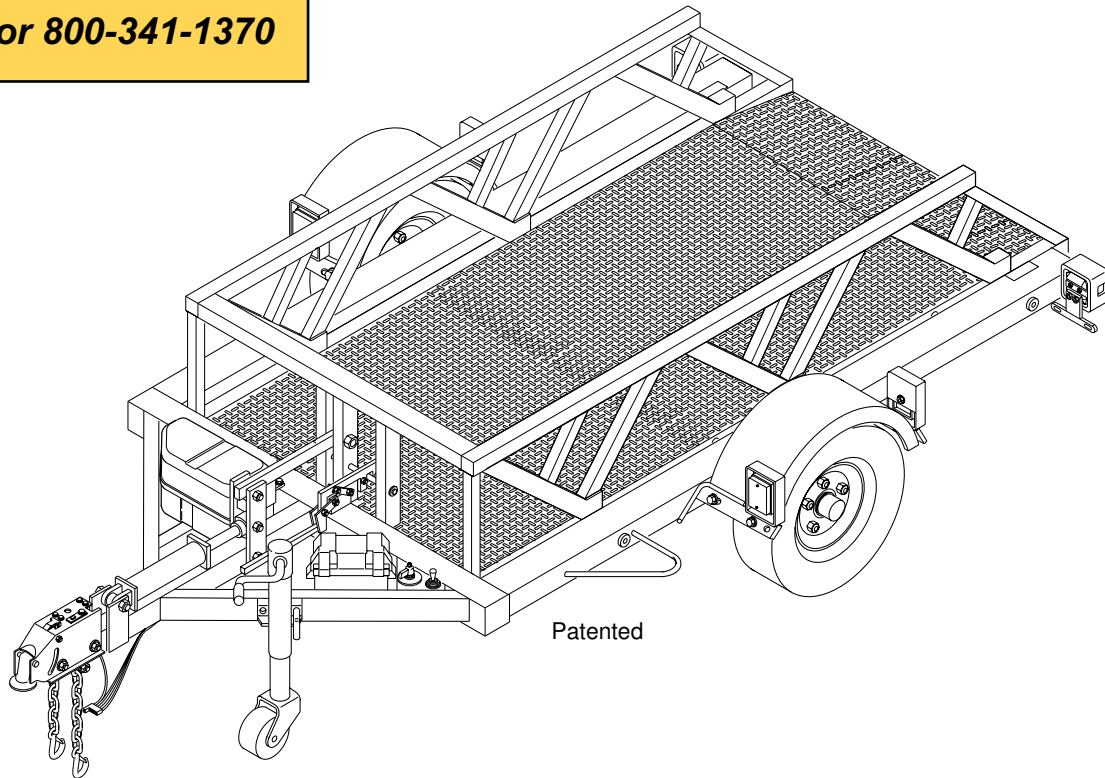
# ESCALATE<sup>®</sup> TRAILER

## Model ET 4000 Operation and Service Manual

Brought to you by:

**Robert's Diesel Works Inc.**

**407-246-1597 or 800-341-1370**



**Load Capacity: 4000 lbs**

The ET 4000 **ESCALATE<sup>®</sup>** TRAILER offers ground level roll-on loading and roll-off unloading of equipment with non-tilting lowering deck. The hydraulic lift deck allows one person to load and unload equipment.

### Contents

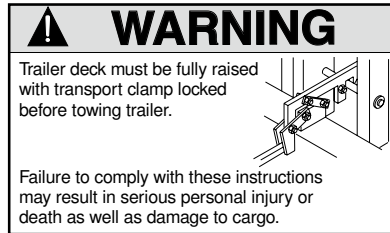
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# SAFETY

## Warnings and Cautions

Observe all warning labels on the trailer. The trailer warning labels are shown here as a reminder. Other warnings and cautions are included in this manual.

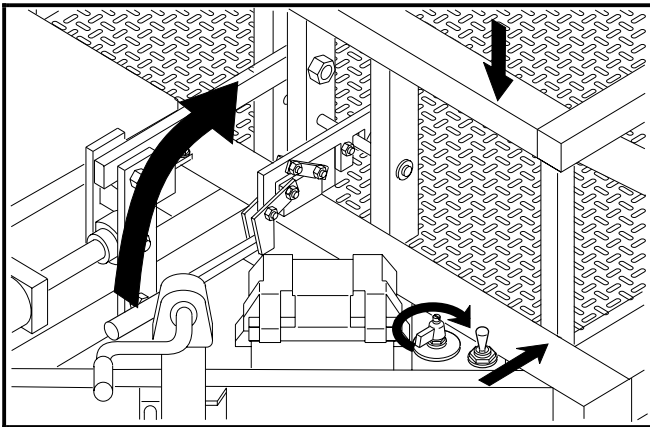
Failure to observe all warnings may result in serious injury or death. Failure to observe all cautions may result in equipment damage.



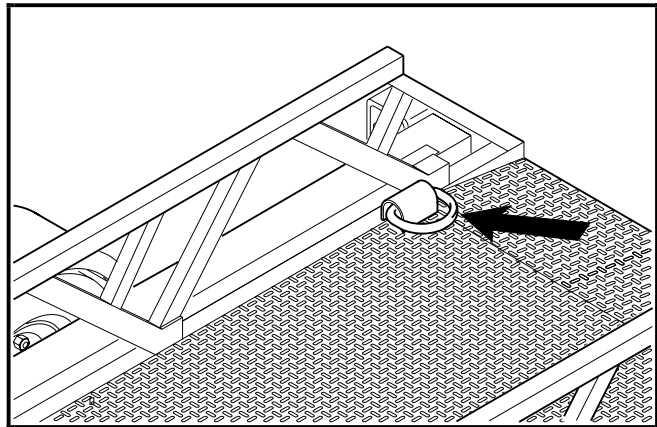
## SPECIAL FEATURES

The **Bil-Jax ESCALATE<sup>®</sup>** TRAILER includes all the features of a heavy duty trailer, plus:

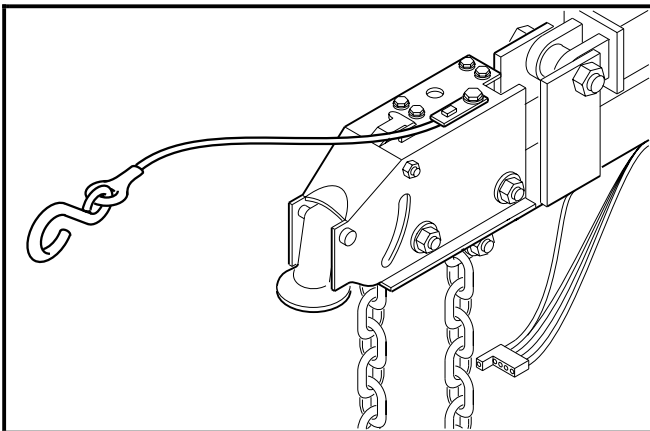
### Escalator Deck and Hydraulic Lift



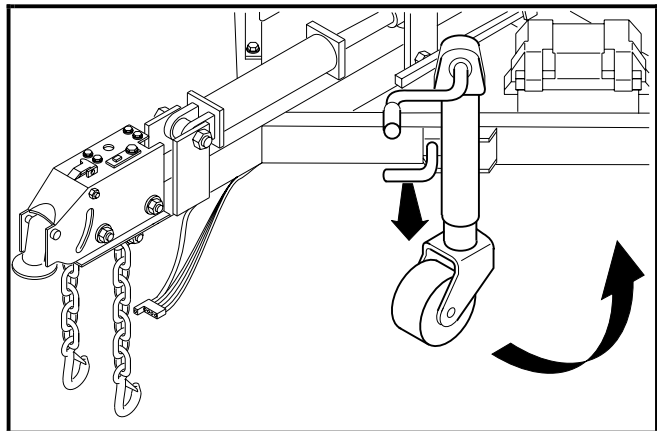
### Heavy Duty Tie-Down Brackets



### Surge Brake



### Stow-away Trailer Jack



**ESCALATE® TRAILER**

Model Number ET 4000

Serial Number \_\_\_\_\_

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**Specifications**

Rated Capacity	4000 lbs. (1814.4 kg) max.
Weight (Empty)	1910 lbs. (866.4 kg)
Overall Width	94 in. (238.8 cm)
Overall Length	185 in. (469.9 cm)
Overall Height (Bed Raised)	36 in. (91.4 cm)
Bed Height (Raised)	16 in. (40.6 cm)
Bed Size (Flat Surface)	54 in. wide x 96 in. long (137.2 cm wide x 243.8 cm long)
Overall Bed Size (Including Ramp)	54 in. wide x 120 in. long (137.2 cm wide x 304.8 cm long)
Ramp Grade	6 degrees
Hitch Size	2 in. (5.08 cm) ball
Suspension	Leaf Spring
Brakes	Standard – Hydraulic Surge; Optional – Electric

**WARRANTY**

Bil-Jax warrants its trailers for one year from the date of delivery against all defects of material and workmanship, provided the unit is operated and maintained in compliance with Bil-Jax's operating and maintenance instructions; structural components are also warranted for one year. Bil-Jax will, at its option, repair or replace any unit or component part which fails to function properly in normal use.

This warranty does not apply if the trailer and/or its component parts have been altered, changed, or repaired without the consent of Bil-Jax or by anyone other than Bil-Jax or its factory trained personnel, nor if the trailer and/or its components have been subjected to misuse, negligence, accident or any conditions deemed other than those considered as occurring during normal use.

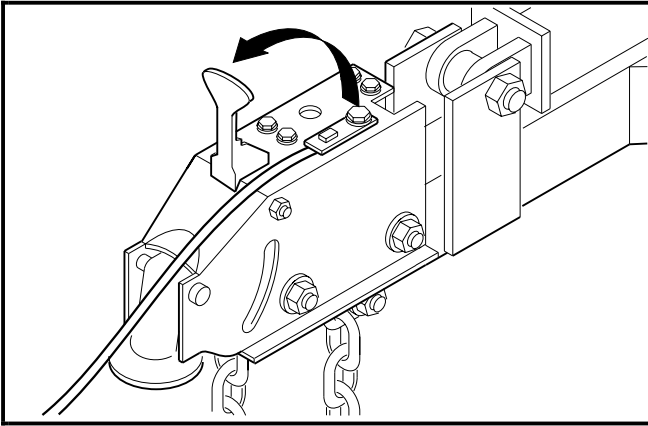
Components not manufactured by Bil-Jax are covered by their respective manufacturers warranties. A list of those components and their warranties is available upon written request to Bil-Jax.

Bil-Jax shall not in any event be liable for the cost of any special, indirect or consequential damages to anyone, product, or thing. This warranty is in lieu of all other warranties expressed or implied. We neither assume nor authorize any representative, or other person, to assume for us any other liability in connection with the sale, rental, or use of this product.

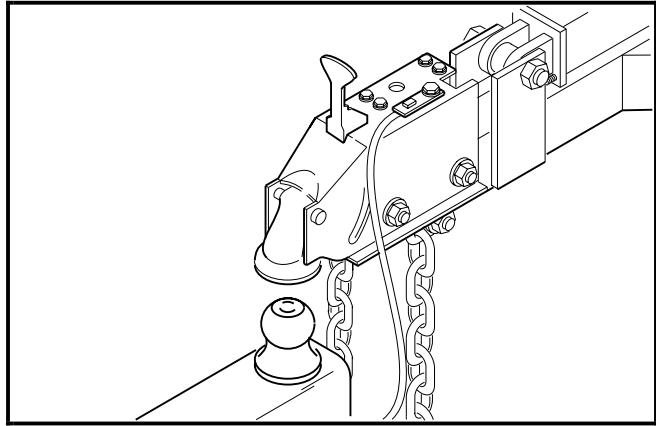
# TRAILER HITCHING

## Hook Up the Trailer

1. Raise trailer and lift ball latch.

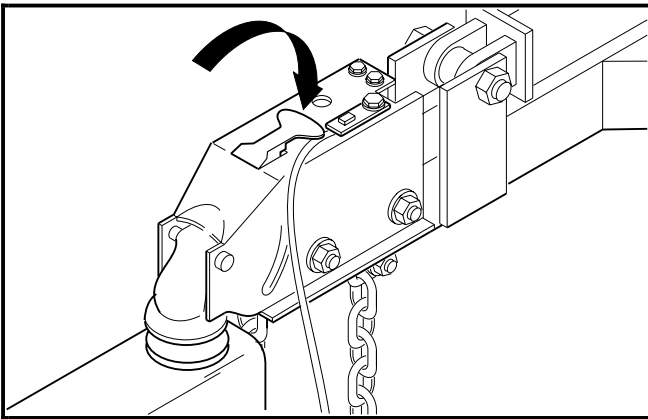


2. Line up ball with hitch.



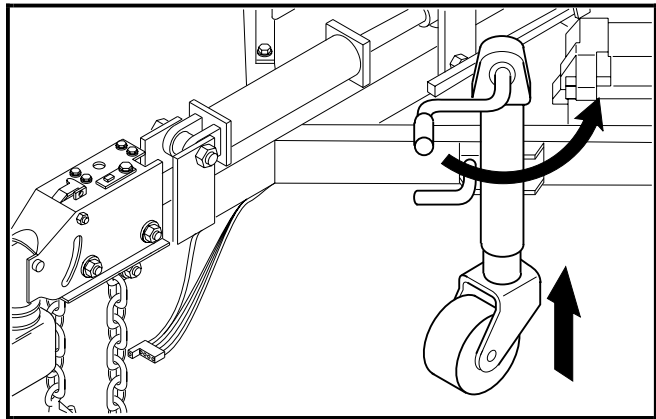
**NOTE:** The trailer hitch uses a 2 inch ball.

3. Lower hitch onto ball and close ball latch.



**NOTE:** Trailer frame should be level when hitch is on ball. Adjust height of tow bar as needed.

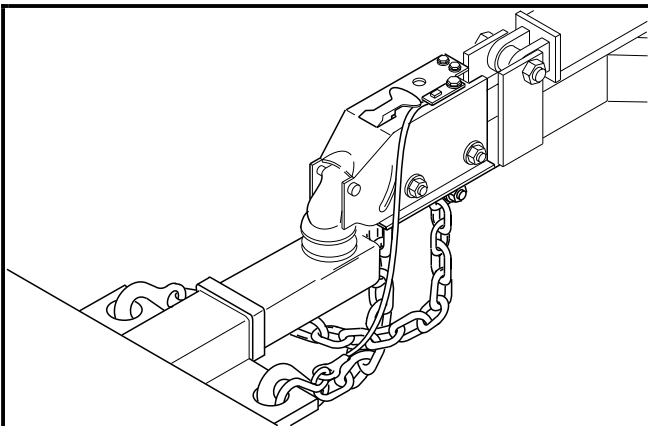
4. Raise and secure jack.



**CAUTION**

Always raise and pin the jack before towing.

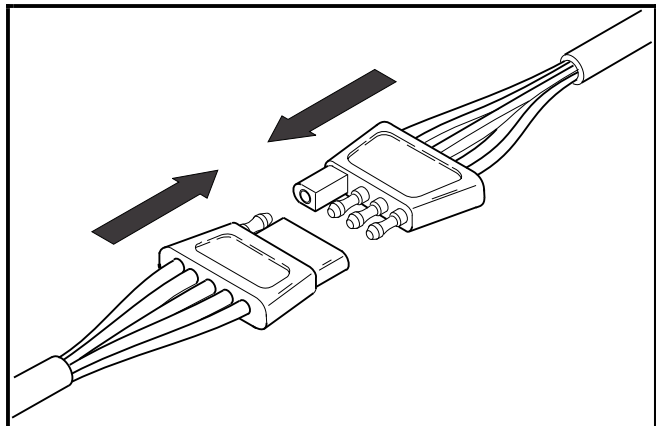
5. Hook safety chains and attach breakaway cable.



**CAUTION**

Always cross safety chains below tongue. Safety chains must hold tongue up if hitch fails.

6. Connect and check trailer lights.



**CAUTION**

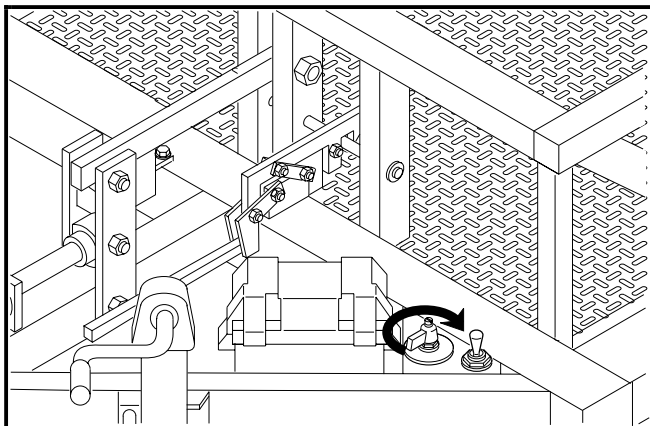
Always check the tail lights and brake lights before towing.

# EQUIPMENT LOADING

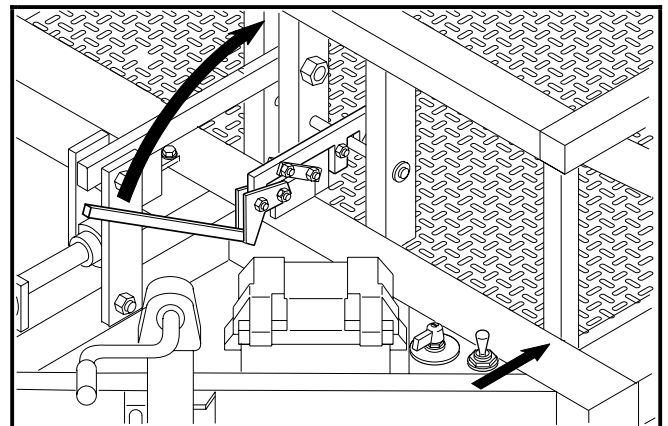
## Lower the Deck

**NOTE:** Trailer must be hitched to vehicle according to page 4 before lowering or raising the deck.

1. Turn power switch to ON position.



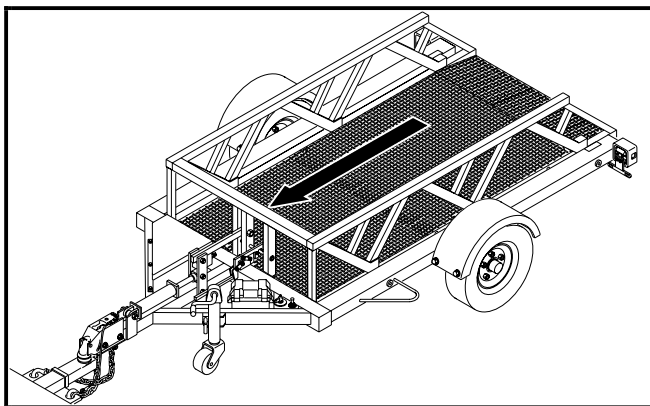
2. Hold toggle switch in DOWN position. Lift latch handle and push handle back.



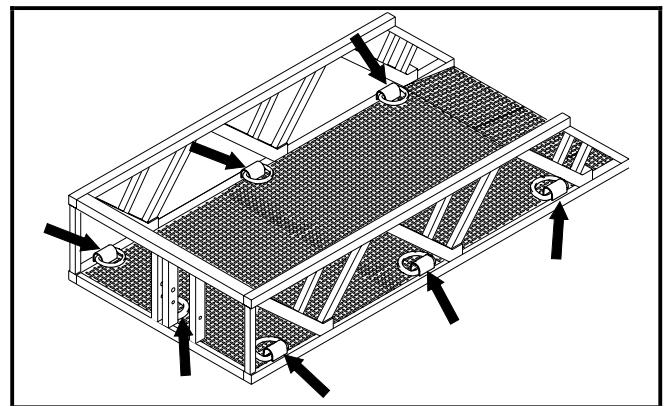
**NOTE:** The trailer frame should be on a level surface when lowering the deck.

## Load the Equipment

1. Load equipment so that the resulting tongue weight is 15 to 20% of the total load.



2. Install tie-down straps to keep the load from shifting. Use tie-down anchors shown.



### **WARNING**

Maximum capacity = 4000 lbs. Do not exceed.

### **WARNING**

Always secure the load with tie-down straps before towing. Failure to properly secure the load may result in injury, death, or equipment damage.

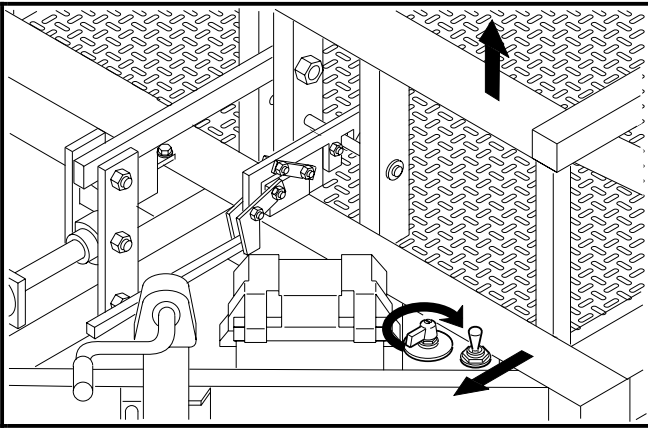
### **CAUTION**

Do not hook tie-down straps on the roller guides.

## EQUIPMENT LOADING

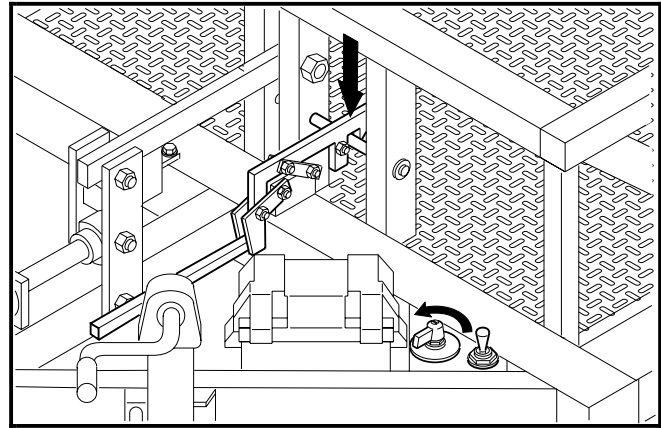
### ***Raise the Deck (trailer must be hitched to vehicle)***

1. Turn power switch to ON position and hold toggle switch in up position. Stop raising deck when deck latch is on latch bar.
2. Verify that deck latch is on latch bar. Turn power switch to OFF position.



#### **⚠ WARNING**

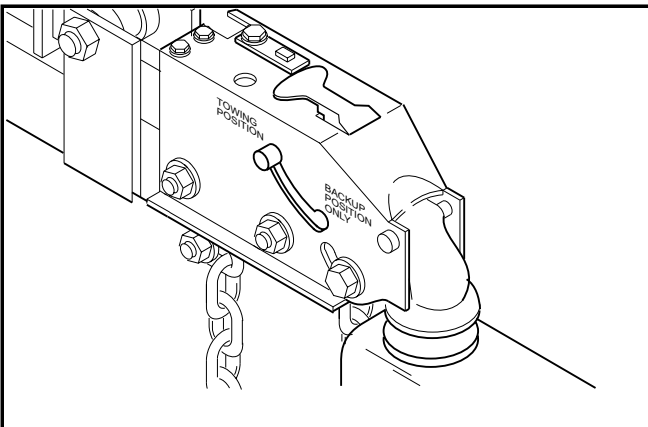
Make sure people are away from the trailer before raising the deck. Keep hands and feet away from deck and rails. Hands and feet can get crushed between the deck and frame.



#### **⚠ WARNING**

If not clamped, the deck may fall during travel. Always clamp the deck before towing. Failure to clamp the deck may result in injury, death, or equipment damage.

### ***Towing and Backing the Trailer***



1. After backing and before towing trailer on highway, always check the position of the backup lever. Make sure the backup lever is in the TOWING position (up).




#### **⚠ CAUTION**

Trailer surge brake will not work when backup lever is in BACKUP POSITION.

2. Before towing, check position of breakaway cable. If cable is pulled, brakes will drag and overheat. Check periodically on long trips.

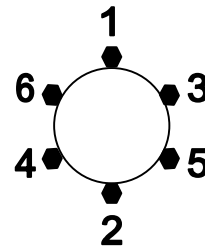
## Tire Maintenance

At least once each week, use an accurate tire pressure gage to check the air pressure in both trailer tires. Inflate to the pressure recommended by the tire manufacturer (located on the tire).

 <b>CAUTION</b>
Low or uneven tire pressures will not properly support a loaded trailer and could lead to premature tire wear.
 <b>WARNING</b>
When replacing tires, it is important to use a tire of appropriate size and load rating (75D-15).
 <b>WARNING</b>
Failure to maintain proper torque on the lug nuts may result in the wheel shearing off of the trailer, possibly causing an accident and seriously damaging the equipment.

## Wheel Torque Requirements

It is extremely important to apply and maintain proper wheel mounting torque on your axle. Wheel nuts should be retorqued after 50 miles and 100 miles and periodically there after.



The tightening of the lug nuts should be torqued in the sequence above.

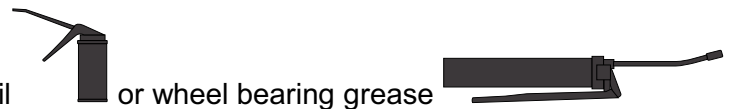
Lug nuts should be torqued in stages:

Stage 1	Stage 2	Stage 3
25 Ft-Lbs	60 Ft-Lbs	100 Ft-Lbs

This procedure should be followed after each time the tire is removed.

## Lubrication (every 6 months)

Lubricate the following parts with clean motor oil where shown.

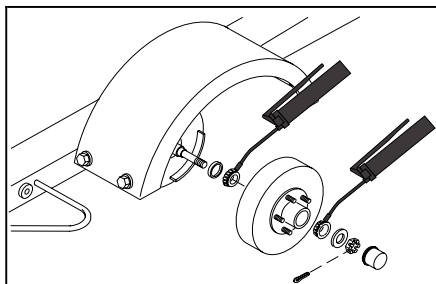


or wheel bearing grease

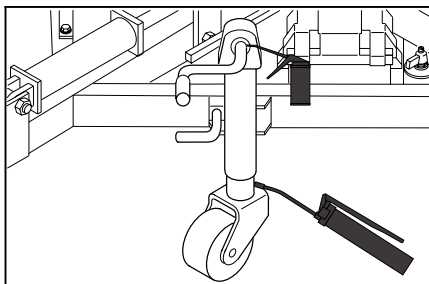
For additional brake operating and service instructions, refer to the Surge Brake Actuator Manual provided with the trailer.

**NOTE:** Be sure that no grease is applied to brake pad.

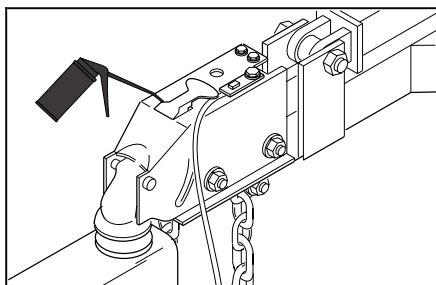
### Wheel Bearings



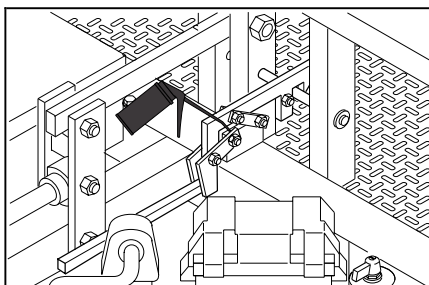
### Jack



### Hitch

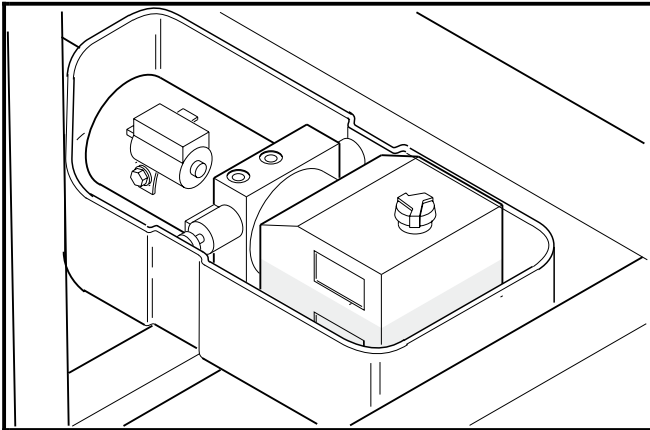


### Deck Latch



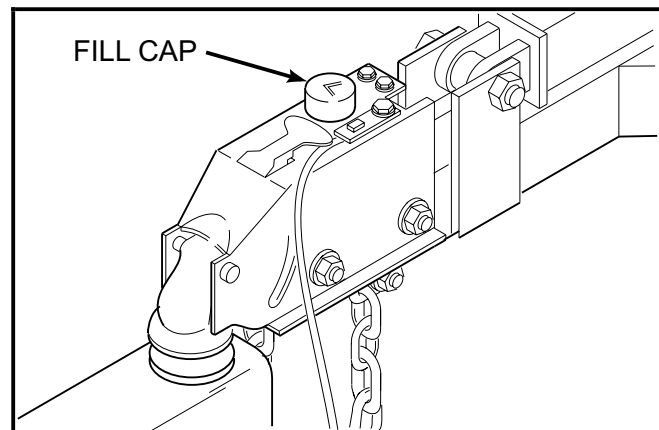
## Hydraulic Fluid Levels

1. Remove cover from hydraulic pump. Check fluid level in hydraulic reservoir.
2. Lower trailer deck. If oil level is below 3 inches with deck down, add 1/2 quart of hydraulic oil. Use BP type HLP-46 or 10w hydraulic oil.



**NOTE:** When trailer deck is raised, hydraulic fluid level should be at least 1/2 of reservoir volume.

3. Remove fill cap from surge brake reservoir. Add DOT 3 brake fluid as needed to bring fluid level to 1/2 inch below fill port.



## Battery

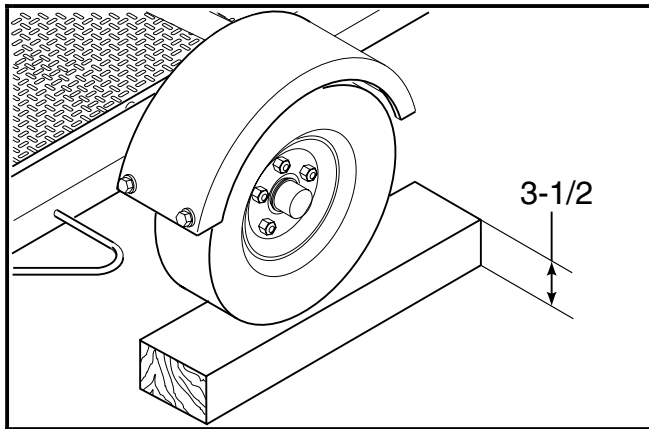
1. Use hydrometer to check battery charge daily or weekly, depending on frequency of use. If the battery charge drops below 25% of full charge (S.G. below 1.155 as corrected to 80°F) the battery must be recharged. Refer to step 2 before charging battery.
2. Check the electrolyte level weekly. If battery charge is low, add water to bring electrolyte level just above plates.  
  
If battery is fully charged, add water to raise electrolyte to full mark in each cell.
3. Charge battery at one of the following charge rates. The slow charge rate is preferred.

22 hours @ 5 amps  
5 hours @ 20 amps  
2 hours @ 50 amps

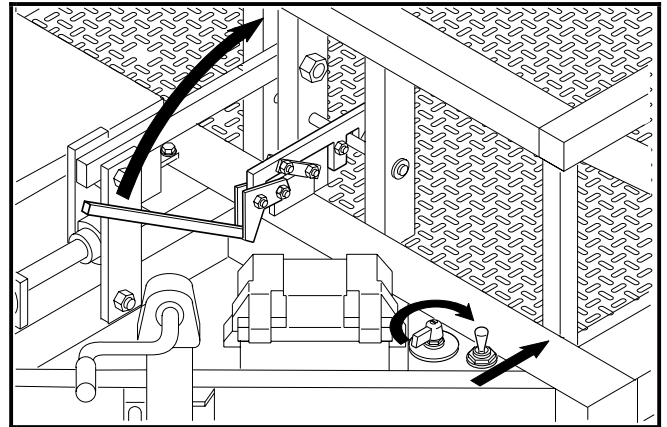


## Replacing the Lift Rollers

1. On a paved, level surface, pull trailer onto 4x6 blocks. Jack up and unhitch the trailer.



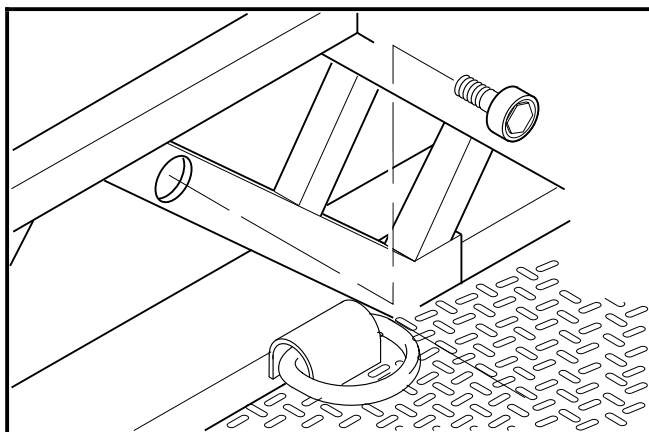
2. Lower the deck until the front or rear lift rollers can be removed from the roller access holes.



### **CAUTION**

The deck must be supported by the paved surface or shoring before the lift rollers are removed.

3. Loosen the setscrews that prevent the rollers from backing out. The setscrews are located on the trailer frame where the rollers thread in. Use a socket wrench, with a 1 1/2" socket, to unscrew and remove the rollers. Install and tighten new rollers. Retighten the setscrews.



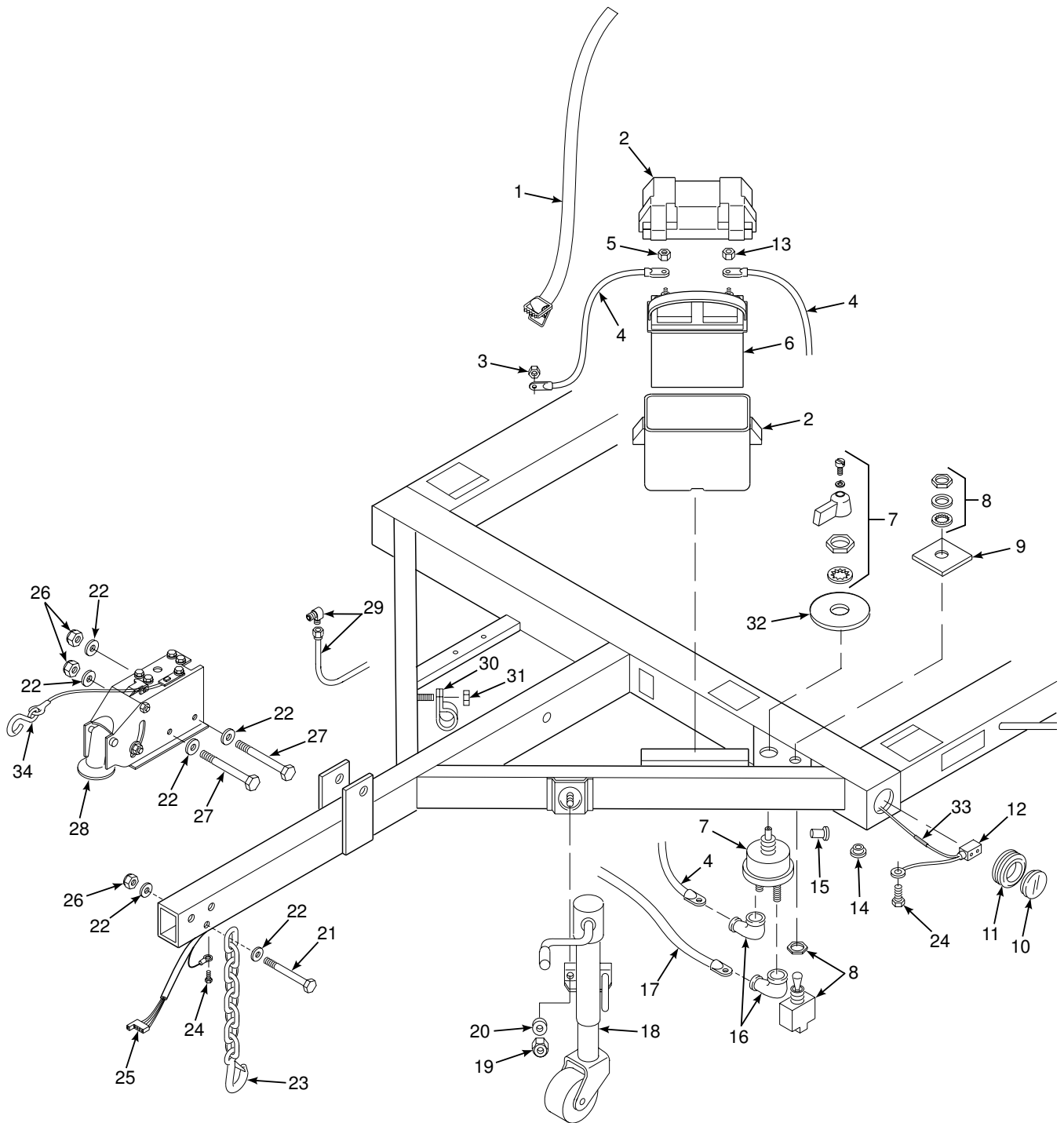
**NOTE:** It is easier to remove and replace one roller at a time. You can adjust the jack to access each roller.

# PARTS LIST

## Model ET 4000 ESCALATE<sup>®</sup> TRAILER, Hitch Section

Item No.	Part No.	Description	Qty
1	B00-00-0114	Strap, Tie-Down, Battery Cover	1
2	B01-10-0150	Box, Battery (includes lid & strap)	1
3	0090-0188	Nut, Nylon Lock, 3/8-16	1
4	B01-01-0027	Cable, Battery, 19"	2
5	0090-0160	Nut, Hex, 5/16-18	1
6	B01-04-0002	Battery, 12 Volt, Deep Cycle	1
7	B01-02-0060	Switch, Master Power	1
8	B01-02-0019	Switch, Toggle	1
9	B06-00-0345	Decal, UP/DOWN	1
10	B01-10-0151	Light, Marker	2
11	B01-10-0152	Grommet, Marker Light	2
12	B01-10-0153	Plug Assembly, Marker Light	2
13	0090-0162	Nut, Hex, 3/8-16	1
14	B01-09-0026	Bushing, Hole	2
15	B01-09-0057	Bushing, Tube	4
16	B01-09-0018	Boot, Terminal	2
17	B01-01-0119	Cable, Battery, 55"	1
*18	B23-02-0046	Jack, Tongue	1
19	0090-0192	Hex Nut, Self-Locking, 1/2-13	1
20	B25-00-0062	Bushing, Flanged Sleeve	1
21	0090-0081	Screw, Cap, 1/2 -13 x 5	1
22	0090-0574	Washer, SAE Flat, 1/2	6
23	B03-00-0017	Safety Chain Assembly	2
24	0090-0344	Screw, #10-24 x 1/2	3
25	B01-01-0120	Harness, Wiring	1
26	0090-0192	Nut, Lock, 1/2-13	3
27	0090-0080	Screw, Cap, 1/2-13 x 4-1/2	2
28	B12-00-0013	Hitch, Brake Surge Type, 2 in.	1
29	B21-00-0015	Kit, Brake Line	1
30	B04-07-0036	Clamp, Hose	1
31	0090-0183	Nut, Lock, 1/4-20	1
32	B00-00-0112	Face Plate, Power Switch	1
33	B01-09-0050	Wire, Butt Splice	2
34	B12-00-0101	Kit, Brake-away Cable	1

\* Jack assembly includes items 18, 19, and 20.

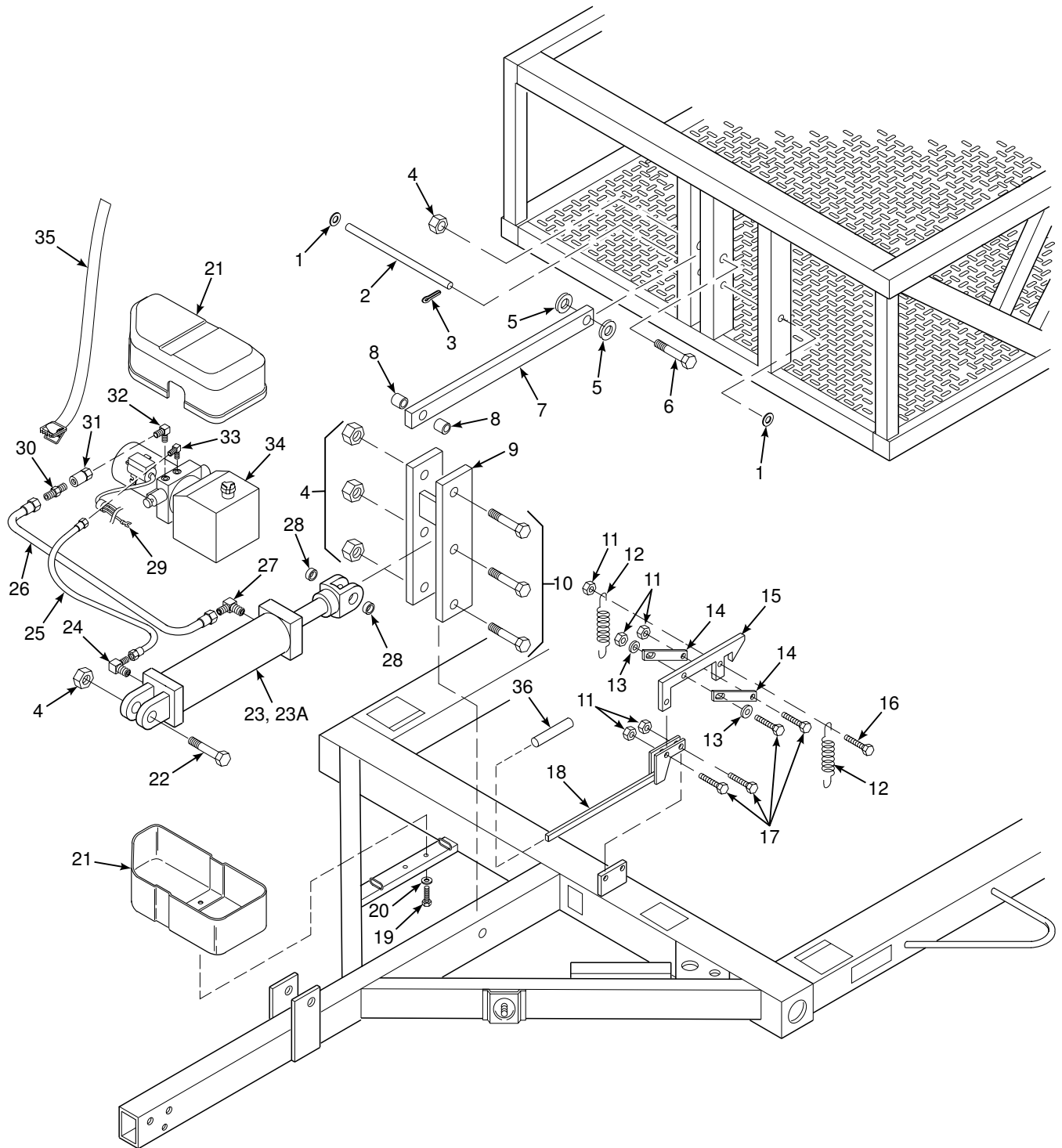


Model ET 4000 ESCALATE<sup>®</sup> TRAILER, Hitch Section

# PARTS LIST

## Model ET 4000 ESCALATE<sup>®</sup> TRAILER, Lift Section

Item No.	Part No.	Description	Qty
1	0090-0428	Washer, SAE Flat, 3/4	2
2	B07-06-1035	Bar, Deck Latch	1
3	0090-0147	Pin, Cotter, 1/8 x 1-1/4	2
4	0090-0689	Nut, Nylon Lock, 1-8	5
5	0090-0429	Washer, SAE Flat, 1	2
6	0090-0902	Screw, Cap, 1-8 x 7	1
7	B07-07-5010	Bar, Lift	1
8	B07-10-1087	Spacer, 1-7/32 in.	2
9	B12-00-0076	Link, Lift Multiplier	1
10	0090-0901	Screw, Cap, 1-8 x 6-1/2	3
11	0090-0188	Nut, Nylon Lock, 3/8-16	6
12	B39-00-0031	Spring, Extension	2
13	0090-0422	Washer, SAE Flat, 3/8	2
14	B07-06-5353	Link, Latch	2
15	B07-06-5358	Deck Latch	1
16	0090-0049	Screw, Cap, 3/8-16 x 2-1/4	2
17	0090-0046	Screw, Cap, 3/8-16 x 1-3/4	4
18	B11-00-0040	Lever, Latch	1
19	0090-0040	Screw, Cap, 3/8-16 x 3/4	2
20	0090-0210	Washer, Split Lock, 3/8	2
21	B18-00-0130	Cover, Pump (includes top, bottom, & strap)	1
22	0090-0900	Screw, Cap, 1-8 x 5-1/2	1
23	B02-03-0016	Hydraulic Cylinder	1
23A	B02-13-0104	Seal Repair Kit, Hydraulic Cylinder	1
24	B02-02-0072	Fitting, Hydraulic	1
25	B02-01-0135	Hose, Hydraulic, 1/4" dia. x 40"	1
26	B02-01-0026	Hose, Hydraulic, 3/8" dia. x 30"	1
27	B02-02-0070	Fitting, Hydraulic	1
28	B07-10-1086	Spacer	2
29	B01-09-0033	Wire End, Fork	3
30	B02-02-0017	Fitting, Hydraulic	1
31	B02-04-0002	Valve, Flow Control	1
32	B02-02-0185	Fitting, Hydraulic	1
33	B02-02-0072	Fitting, Hydraulic	1
34	B02-05-0023	Pump Assembly, Hydraulic	1
35	B00-00-0115	Strap, Tie-Down, Pump Cover	1
36	B46-00-0026	Grip, Handle	1



Model ET 4000 ESCALATE® TRAILER, Lift Section

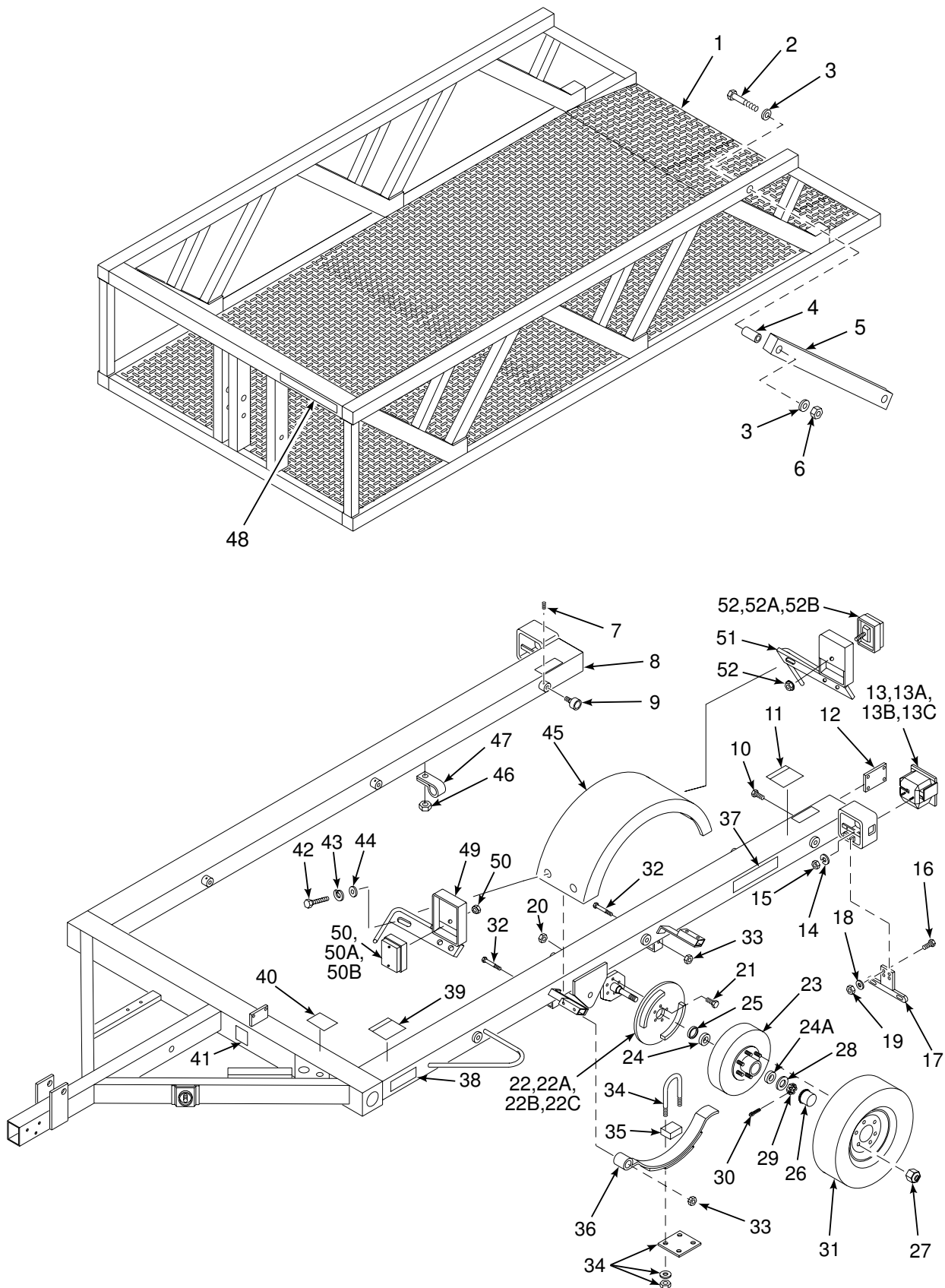
# PARTS LIST

## Model ET 4000 ESCALATE<sup>®</sup> TRAILER, Deck and Frame Section

Item No.	Part No.	Description	Qty
1	B12-00-0061	Deck Weldment	1
2	0090-0060	Screw, Cap, 3/8-16 x 5-1/2	4
3	0090-0422	Washer, SAE Flat, 3/8	8
4	B30-00-0026	Spacer, Guide Bar	4
5	B11-00-0038	Guide Bar	2
6	0090-0188	Nut, Nylon Lock, 3/8-16	4
7	0090-0355	Setscrew, Cup Pt. 1/4-20 x 1/4	6
8	B12-00-0062	Frame Weldment	1
9	B25-00-0058	Roller, Lift	6
10	0090-0509	Screw, Cap, Nylon, 3/8-16 x 3/8	8
11	B06-00-0313	Decal, "Stand clear ..."	2
12	B31-00-0029	Wear Pad, Guide Bar	2
13	B01-10-0024	Light Assembly, Left Tail	1
13A	B01-10-0023	Light Assembly, Right Tail	1
13B	B01-10-0070	Lamp, Tail Light, GE-1157	2
13C	B01-10-0069	Replacement Lens, Tail Light	2
14	0090-0206	Washer, Split Lock, 1/4	4
15	0090-0159	Nut, Hex, 1/4-20	4
16	0090-0005	Screw, Cap, 1/4-20 x 3/4	2
17	B29-00-0037	Bracket, License Plate	1
18	0090-0419	Washer, SAE Flat, 1/4	2
19	0090-0183	Nut, Nylon Lock, 1/4-20	2
20	0090-0896	Nut, Lock, 3/8-16	10
21	0090-0042	Screw, Cap, 3/8-16 x 1	10
22	B10-00-0033	Brake Assembly, Left-Hand	1
22A	B10-00-0032	Brake Assembly, Right-Hand	1
22B	B10-00-0038	Brake Pad, Front	2
22C	B10-00-0016	Brake Pad, Rear	2
*23	B12-00-0071	Wheel Assembly, 6 Lug	2
24	B25-00-0060	Bearing, Wheel, Inner	2
24A	B25-00-0061	Bearing, Wheel, Outer	2
25	B32-00-0014	Seal, Bearing	2
26	B32-00-0013	Cap, Hub	2
27	0090-0624	Nut, Wheel Lug	12

Item No.	Part No.	Description	Qty
28	0090-0882	Washer, Wheel	2
29	0090-0880	Nut, Castle	2
30	0090-0881	Pin, Cotter, 5/32 x 2	2
31	B08-02-0003	Tire, 75D-15 (Outside Diameter 27.59 Max.)	2
32	0090-0905	Bolt, 9/16-16 x 3-1/2	4
33	0090-0906	Nut, Lock, 9/16-16	4
34	B39-00-0033	Hanger Kit, Leaf Spring	1
35	B31-00-0028	Pad, Leaf Spring	2
36	B39-00-0032	Leaf Spring	2
37	B06-00-0317	Decal, Escalate Trailer Logo	2
38	B06-00-0351	Decal, ET 4000	2
39	B06-00-0312	Decal, "Moving Deck ..."	2
40	B06-00-0344	Decal, Raise Bar, Press Switch	1
41	Not Replaceable	Plate, Serial #	1
42	0090-0033	Screw, Cap, 5/16-18 x 1-3/4	8
43	0090-0208	Washer, Split Lock, 5/16	8
44	0090-0420	Washer, SAE Flat, 5/16	8
45	B12-00-0082	Fender	2
46	0090-0183	Nut, Nylon Lock, 1/4-20	13
47	B04-07-0032	Clamp, Hose	11
48	B06-00-0347	Decal, 4000# Max. Cap.	1
49	B29-00-0147	Bracket, Side Marker Light, Left Front/Right Rear	2
50	B01-10-0021	Light, Side Marker, Left/Right Front - Amber	2
50A	B01-10-0066	Replacement Lens - Amber	2
50B	B01-10-0068	Lamp, Side Marker	2
51	B29-00-0146	Bracket, Side Marker Light, Left Rear/Right Front	2
52	B01-10-0022	Light, Side Marker, Left/Right Rear - Red	2
52A	B01-10-0067	Replacement Lens - Red	2
52B	B01-10-0068	Lamp, Side Marker	2

- Wheel assembly includes items 24 through 27.



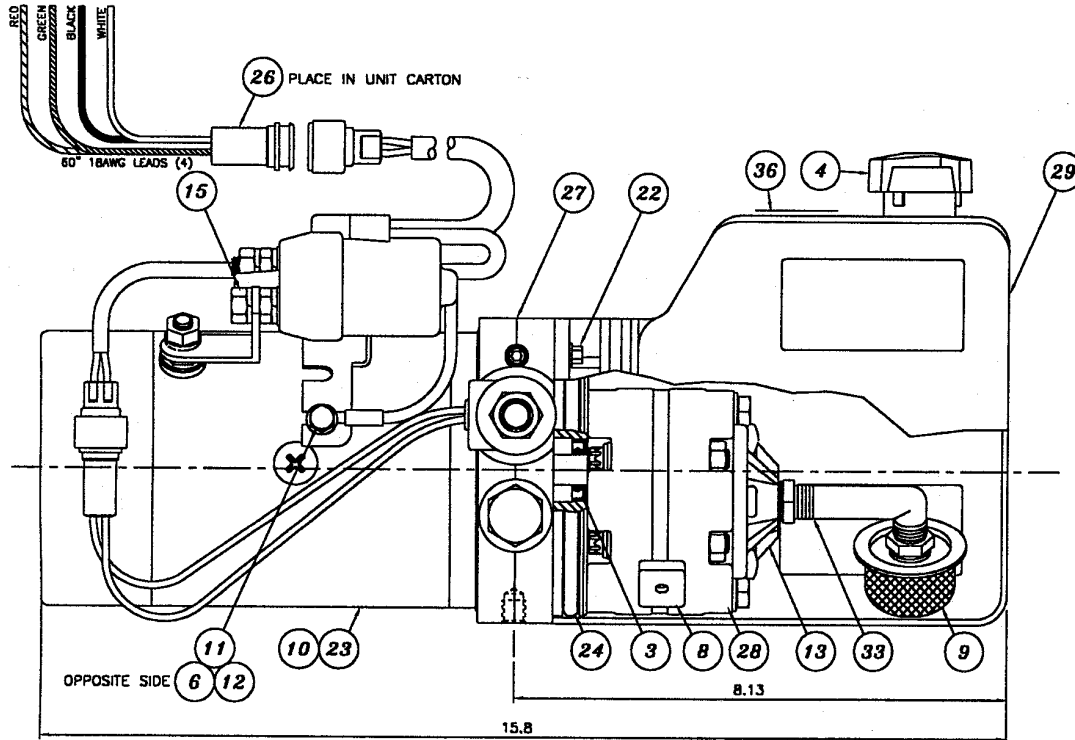
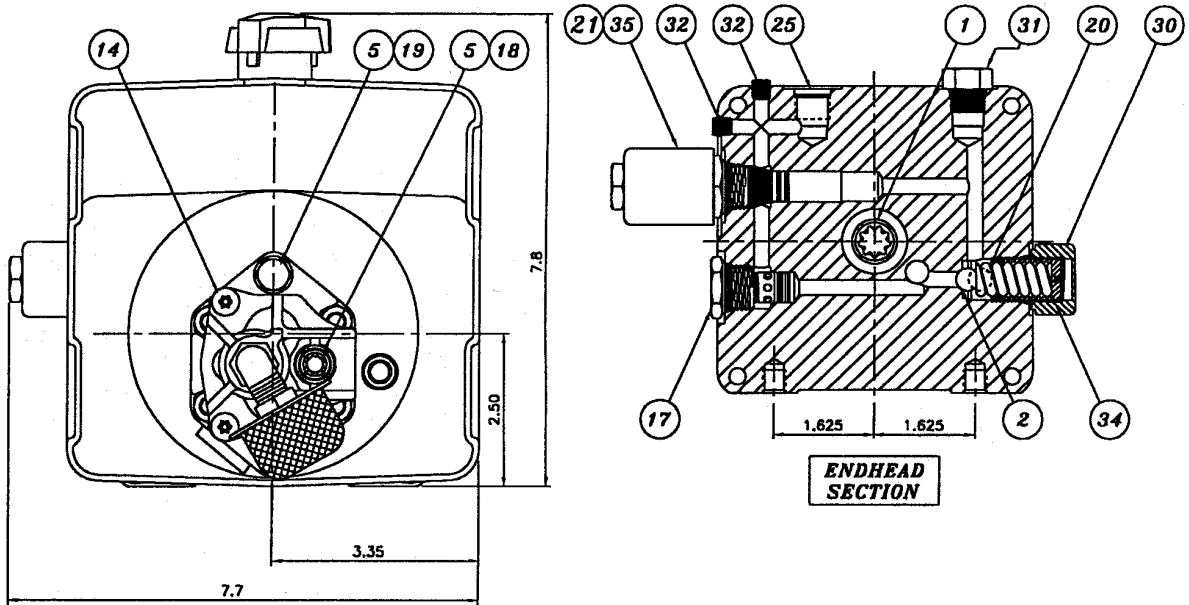
**Model ET 4000 ESCALATE® TRAILER, Deck and Frame Section**

# PARTS LIST

## Model DB-1343 Hydraulic Pump Assembly

Item No.	Part No.	Description	Qty
1	B02-15-0119	Coupling, SAE 9T-20/40 1.26	1
2	B02-15-0128	Ball, 0.375 Steel, G50	1
3	B02-15-0091	Seal, Shaft 0.500 x 1.00 x 0.25	1
4	B02-15-0201	Breather, Plastic	1
5	B02-15-0093	Washer, 0.338 x 0.625 x 0.60 Steel	3
6	B02-15-0166	Washer, Lock, 0.255 x 0.485 x 0.062	1
8	B02-15-0061	Magnet, Plumbing	1
9	B02-15-0121	Filter, 149 Micron 1.50 x 1	1
10	B02-15-0122	Motor, DC - 12V, 1T, Std. Duty	1
11	B02-15-0123	Screw, Taptite, 1/4-20 x 0.25, Hex	1
12	B02-15-0358	Screw, Taptite, 1/4-20 x 0.37, Hex	1
13	B02-15-0125	Cover, Suction, 3/8 NPT	1
14	B02-15-0126	Screw, Taptite, M6 x 1, 12 mm	2
15	B02-15-0345	Solenoid, Smart Start, 12VDC	1
17	B02-15-0197	Cartridge, Check Valve	1
18	B02-15-0170	Screw, 5/16-18 x 1.00 Torx	1
19	B02-15-0359	Bolt, M8 x 75 MM, Hex	2
20	B02-15-0360	Spring, RV 1000-2000 PSI Green	1
21	B02-15-0349	Coil, Solenoid, 12VDC, 2 Pin	1
22	B02-15-0199	Bolt, #12-24 x 0.50 Hex Washer	4
23	B02-15-0114	Pin, 1/8 x 1/4	1
24	B02-15-0073	O-Ring, 2-348 Buna	1
26	B02-15-0355	Wiring Assembly, 4 Pin	1
27	B02-15-0356	Endhead, Finished	1
28	B02-15-0078	Pump Assembly, 1.6 Short Spline	1
29	B02-15-0206	Tank, Plastic, Horizontal Mount w/Drain	1
30	B02-15-0030	Cap, Relief, Assembly (B-2)	1
31	B02-15-0195	Plug, Plumbing, 9/16 SAE	1
32	B02-15-0204	Plug, Plumbing, 1/16 NPT Flush	2
33	B02-02-0059	Nylon EII (X-111)	1
34	B02-15-0026	Screw, Valve, Adjustment	1
35	B02-15-0357	Valve Cartridge, Relief, Normally Closed, w/o Coil	1
36	B02-15-0102	Nameplate, Fenner Serial	1





**Model DB-1343 Hydraulic Pump Assembly**

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**BIL-JAX**  
a step above<sup>®</sup>

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