# TBX50
# Two Box Trailer

# Owner's Manual


# General Information

# 1

## Introduction

This chapter will provide you with important general information regarding the safe operation of your unit and necessary warranty information.

This chapter is further broken down into the following sections:

We have attempted to cover as much information as possible in this manual. However, this information does not cover all the unique variations that a TBX-Two Box Trailer may present. Note that illustrations are typical but may not reflect all the variations of assembly. Also all data provided is based on information that was current at time of release. However, this information is **subject to change without notice**.

This section contains important safety warnings and cautions. Please read this section carefully to avoid serious injury or death. All safety precautions described in this section should be completely and thoroughly understood and used by all personnel using the equipment.

**Warning:** Carelessness in the operation of this equipment can result in serious injury or death. This equipment should only be operated by qualified personnel.

## Cautions

To prevent possible injury or death:

- **Do Not** travel with the hoist in the raised position.
- **Do Not** go under a raised hoist unit without first propping the hoist unit to prevent accidental lowering.

  **Warning:** Unload the unit before performing maintenance and service on it.
- **Do Not** leave the unit raised or partially raised while unattended or during performance of maintenance or service under unit. Unless you have propped the unit to prevent it from accidentally lowering.
- **Do Not** attempt to raise a loaded unit when vehicle is on unleveled ground.
- **Do Not** stand or move through the area where the unit is operating.

G&H Manufacturing, Ltd. designs and constructs its equipment with “state-of-the-art” precision incorporating every possible safety provision into the unit at the time of manufacture. However, no equipment can be designed for completely safe operation. Unless the equipment is installed and operated as intended by the Manufacturer and protected from tampering or misuse by unauthorized personnel.

Such persons, untrained operators and stray personnel, who may be tempted to play with the controls or equipment, are considered unauthorized personnel. Therefore, it is very important that the owner(s) and/or operator(s) take the following precautions regarding risks from mechanical or hydraulic components:

- **All malfunctions or indications of improper operation** should be reported to the owner(s) to allow for immediate inspection and repair.
- **No adjustments, modifications, alterations, or repairs should be made** to the equipment by anyone other than qualified personnel.
- **All individuals authorized to operate the equipment should be trained** in the proper use of the controls. All potential danger points should be specifically pointed out to the operator(s). The owner(s) of the equipment should keep in mind that newly hired employees might acquire bad working habits or misinformation from older employees. All training activities should be delegated only to responsible individuals.

**Note:** It is suggested that a periodic review of safety measures be conducted for all operators, particularly where equipment is leased to and operated by customers unfamiliar with refuse equipment.

- **No untrained personnel should be allowed to operate the equipment** at any time. No one other than the authorized operator(s) should be allowed to have the keys to this equipment.
- **No trash, oil, or other slippery materials** should be allowed to clutter the work area to prevent falls.

**Note:** The presence of hydraulic oil beneath the equipment may indicate a leak in need of repair.

- **All indications of a need for repair should be carefully monitored.** These indications include but are not limited to blown fuses, electrical equipment sparking, electrical shocks from touching the equipment, bulging or deformed structural members, cracked welds or steel members, excessive oil leaks, or abnormal appearance or performance of the equipment.

**Warning:** To prevent possible injury or death, the hoist must be in the full down position for over the road travel.

**Warning:** The manufacturer is responsible for safety in design and construction, but the owner(s) and operator(s) are responsible for safe operation of the equipment.

**Warning:** G&H Manufacturing makes no warranties regarding the safety of the equipment unless these safety instructions are observed by the owner(s) and operator(s) at all times.

G&H Manufacturing, Ltd., referred to herein as the Manufacturer, warrants each new product of its own manufacture to be free from defects in material and workmanship, under normal use and service, to the original purchaser only, for a period of twelve (12) months, subject to the conditions outlined below. Our obligation under this warranty is limited to repair or replacement with a genuine G&H part, any part of the product of our manufacture which **is returned to us within thirty (30) days after discovery of the defect**, properly identified and transportation charges prepaid, and not more than twelve (12) months after purchase by the original purchaser, provided that, in our judgment, the part is defective.

The Manufacturer will furnish, without charge, **FOB** our plant a genuine G&H part. To replace any part of a product of its manufacture that proves to be defective in normal use and service during this period.

The Manufacturer's warranty or obligation in connection with the sale of this equipment:

1. Shall be expressly limited to the repair or replacement of the defective parts, as stated above and covers only those labor charges specifically authorized by the Manufacturer. All other damages and claims, statutory or otherwise, being hereby expressly waived by the purchaser, this includes but is not limited to any towing cost and damage incurred from equipment down time.
2. Shall not apply to any failure or damage incurred through neglect, lack of maintenance, misuse, accident, improper installation, redesigning of assemblies, or through any other cause beyond the control of the Manufacturer.
3. Shall not apply to any major component such as cylinders, pumps, valves, etc., which have been disassembled in any way, or if any parts are left uncovered.
4. Shall not apply if the equipment has been operated beyond the factory recommended maximum capacity.
5. Does not cover products of other manufacturers beyond such warranty as is made by such manufacture.
6. Service parts sold by G&H Manufacturing, Ltd (hoses, cables, filters, etc.) shall have a ninety (90) day warranty for replacement only, provided that factory inspection reveals a material or workmanship defect. Any labor required to replace or repair the part shall be the responsibility of the owner.

7. All perspective warranty parts must be returned to a location selected by G&H no more than thirty (30) days after receiving the replacement part or the warranty can be voided.
8. No claim under this warranty shall be valid, unless such claim is submitted within twelve (12) months after date of sale or within thirty (30) days after the discovery of the defect, which is the basis for such claim, whichever event shall occur first.
9. Equally important to you as any specific time warranty, is the fact that the Manufacturer's reputation for quality and dependability is tradition as old as the company itself. It has always been a basic company policy to insure complete customer satisfaction. This is your assurance that you can expect prompt and courteous service on your equipment from the entire factory organization.
10. There are no warranties, expressed or implied, which extend beyond the warranty set forth in this Owner's Manual, and any other warranties, expressed or implied, are hereby disclaimed by the Manufacturer.

To best serve our customers needs the warranty department will use the following procedure to handle all warranty claims.

1. Customer notifies G&H home office at (800) 654-5291 of warranty need. The replacement parts will be shipped out that day (overnight shipping is available upon request and depending on parts availability).
2. Warranty report ( Found on page 1-9 of this manual or call (800) 654-5291 to have a copy faxed to you) must be filled out completely and mailed or faxed to the contact information below.

   G&H Manufacturing Ltd.
   1015 Commercial Blvd. S.
   Arlington TX. 76001
   Fax: (817) 468-3272

3. Customer must issue a purchase order for the new part(s) and return the defective part(s) within two weeks of receiving the replacement part(s) or, the warranty request will be voided. To return a defective part(s), the customer needs to obtain a return number from the parts salesperson and send damaged or defective part(s) to the above address for G&H manufacturing.
4. G&H will return the part(s) to the original vendor for inspection or certification upon receipt of the damaged or defective part(s). If the warranty is valid G&H will issue credit to the customer for the warranty claim amount.

Customer_____ Date_____

Address_____Rep._____

City_____ State_____ Zip_____ Phone_____

Product_____ Model_____ S/N_____

Date Shipped_____ Date Put Into Service_____

Original Sales Order No._____ Original Work Order No._____

Problem

_____
_____
_____
_____

Solution

_____
_____
_____
_____

Action Taken

_____
_____
_____

Warranty Approved _____Yes _____No Repair Price $_____

Reported
By_____

Approved
By_____

# Operating a TBX-Two Box Trailer 2

## Introduction

This chapter contains information, instructions, and diagrams that will help you operate your TBX-Two Box Trailer. Please note that the first two sections must be read and fully understood before operating your TBX-Two Box Trailer.

G&H Manufacturing has designed this chapter for use in the cab by the operator. We suggest that you make a copy of this chapter, put it in a plastic page protector, and place it in the cab of the truck for reference.

Consider how airline pilots fly planes. No matter how often they have performed a task, they use a written procedure to increase safety. **You can never be too careful.**

This chapter is further broken down into the following sections:

Use the landing gear crank on the front driver's side to raise or lower the trailer. The crank on the landing gear is a two speed crank.

To Choose the Landing Gear Speed:

- Pull the crank out to operate faster (lighter loads).
- Push the crank in to operate slower (heavier loads).

To Raise and Lower the Landing Gear:

- Turn clockwise to raise the trailer and lower the landing gear.
- Turn counterclockwise to lower the trailer and raise the landing gear.

**Caution:** Always test the lights and breaks before transporting the trailer.

**To Hook the TBX-Two Box Trailer and a Truck:**

1. Crank the landing gear on the trailer to the appropriate height for the truck.
2. Back the truck in front of the trailer aligning the truck with the trailer.
3. Back the truck into the trailer triggering the automatic latch on the fifth wheel.
4. Pull the truck forward to make sure the automatic latch has locked.
5. Raise the landing gear completely.
6. Hook up the hydraulic lines.
7. Hook the red air supply line from the truck into the glad hand on the trailer.
8. Hook the blue control air line from the truck into the glad hand on the trailer.
9. Plug the electrical plug from the truck into the corresponding socket on the trailer.

**To Unhook the TBX-Two Box Trailer From a Truck:**

1. Unhook the hydraulic lines.
2. Unhook both glad hands.
3. Unplug the electrical plug from the socket.
4. Lower the landing gear.
5. Pull the Fifth Wheel Release.
6. Pull the truck away from the trailer.

The first two controls are used for operating the hoist and hoist cable. The third control is used for the transfer cable.

To Use the Cable and Hoist:

1. Locate the controls half way down on the driver's side of the trailer.
2. Use the left control to raise or lower the hoist:
    - Pull the handle to raise the hoist.
    - Push the handle to lower the hoist.

Use the middle control to let the cable in or out:

- Pull the handle to bring the cable in.
- Push the handle to let the cable out.

Use the right control to move the transfer cable back and forth on the trailer:

- Pull the handle to move the transfer cable to the front
- Push the handle to move the transfer cable to the rear.

**To Let Air In and Out of the Axle Air Bags:**

**Warning:** If you do not release the air from the air bags before loading or unloading the trailer you risk damaging the air bags.

In order to load or unload containers from the trailer you will need to let the air out of the axle air bags. The air bag control button is the button located on the trailer side of the control valve assembly. In order to operate the axle air bags:

- Turn the button to the right to let air out of the axle air bags.
- Turn the button to the left to push air back into the axle air bags.

**To Use the Trailer Park Brake Release Button:**

**Note:** To operate the trailer park brake release button the truck must be in neutral with the P.T.O. engaged and the truck brakes not set.

**Note:** The trailer park brake release button is a dead man's switch and will only release the trailer's parking brake when pushed in and held.

The trailer park brake release button is located on the trailer valve control directly behind the hoist and cable controls. To move the trailer and truck forward from outside the cab press and hold the trailer park brake release button. The trailer's parking brakes will release and the weight of the truck will pull the trailer forward. To stop moving the trailer and truck forward release the park brake release button.

**Warning:** **The P.T.O. must be shifted out before driving the truck.** Your failure to shift out the P.T.O. before driving the truck can result in injury or death.

**Warning:** When the transfer cable is not connected to a box be careful that the ring does not become entangled in the trailer components or cross members while moving the cable.

**Warning:** When raising or lowering the hoist, it is the operator's responsibility to make sure the transfer cable does not have slack and interfere with the operation of the hoist.

**Warning:** Only pull or back the trailer or truck over level ground. Do not pull or back the trailer or truck over ground that has been unleveled by dumping the truck or trailer.

**Warning:** Never operate the hoist while anyone is around the work area.

**Warning:** When lowering the hoist make sure the P.T.O. is in gear to prevent creating air in the system and overflowing the oil tank.

**Caution:** Read and understand the instructions for shifting the P.T.O. for your brand of truck and using the control valves for the TBX-Two Box Trailer before operating the trailer.

**Caution:** Do not load or unload the trailer with the axle air bags inflated.

**To Load the First Container:**

1. Back the trailer up to the container.
2. Set the trailer park brake from inside the cab leaving the truck in neutral.
3. Engage the P.T.O.
4. Release the air from the axle air bags.
5. Let the hoist cable out.
6. Raise the trailer hoist until the rear roller is touching the ground.
7. Hook the rectangular end of the hoist cable onto the container hook.
8. Pull the hoist cable in while releasing the trailer park brakes, this will allow the trailer to be pulled under the container as the container slides up the hoist.
9. Set the trailer park brake when the container guides are past the hinge point on the hoist.
10. Continue to pull the hoist cable in while lowering the trailer hoist gradually until the hoist is level.
11. Pull the container forward as far as possible.

**To Move the First Container to the Front of the Trailer:**

1. Let the hoist cable out enough to unhook from the container hook.
2. Pull in the hoist cable.
3. Place the rectangular cable end in front of the vertical sheave where it will not interfere with the operation of the transfer cable.
4. Attach the transfer cable ring to the container hook.
5. Engage the transfer cable, moving the container to the front of the trailer.
6. Pull the box completely to the front stops.
7. Attach the four ratchet tie downs to the container guides.
8. Tighten the ratchet tie downs with the ratchet, located by the valve controls, securely latching the container guide before transport.
9. Inflate the axle air bags.
10. Disengage the P.T.O.
11. Release the trailer park brake from inside the cab.

**To Load the Second Container:**

3. Back the trailer up to the container.
4. Set the trailer park brake from inside the truck cab leaving the truck in neutral.
5. Engage the P.T.O.
6. Attach the drop-in stops to the hoist.
7. Dump the air from the axle air bags.
8. Let the cable out.
9. Raise the trailer hoist until the rear roller is touching the ground.
10. Hook the rectangular end of the cable to the container hook.
11. Pull the cable in while releasing the trailer park brakes, this will allow the trailer to be pulled under the container as the container slides up the hoist.
12. Set the trailer park brake when the container guides are past the hinge point on the hoist.
13. Continue to pull the cable in while lowering the trailer hoist gradually until the hoist is level.
14. Pull the container completely to the drop-in stops.
15. Attach the four ratchet tie downs to the container guides.
16. Tighten the ratchet tie downs with the ratchet, located by the valve controls, securely latching the container guide before transport.

17. Inflate the axle air bags.
18. Disengage the P.T.O.
19. Release the trailer park brake from inside the cab.

**Warning:** **The P.T.O. must be shifted out before driving the truck.** Your failure to shift out the P.T.O. before driving the truck can result in injury or death.

**Warning:** When the transfer cable is not connected to a box be careful that the ring does not become entangled in the trailer components or cross members while moving the cable.

**Warning:** When raising or lowering the hoist, it is the operators responsibility to make sure the transfer cable does not have slack and interfere with the operation of the hoist.

**Warning:** Only pull or back the trailer or truck over level ground. Do not pull or back the trailer or truck over ground that has been unleveled by dumping the truck or trailer.

**Warning:** Never operate the hoist while anyone is around the work area.

**Warning:** When lowering the hoist make sure the P.T.O. is in gear to prevent creating air in the system and overflowing the oil tank.

**Caution:** Read and understand the instructions for shifting the P.T.O. for your brand of truck and using the control valves for the TBX-Two Box Trailer before operating the trailer.

**To Dump a Container:**

20. Back the truck up to the dumpsite.

21. Set the trailer park brakes from inside the cab, leaving the truck in neutral.

Engage the P.T.O.

Open the end gate on the container.

Raise the hoist.

Press the trailer park brake release button to move the truck and trailer forward and dump the contents of the container.

Lower the Hoist.

Close the end gate on the container.

Release the trailer park brake from inside the cab.

Disengage the P.T.O.

**Warning:** **The P.T.O. must be shifted out before driving the truck.** Your failure to shift out the P.T.O. before driving the truck can result in injury or death.

**Warning:** When the transfer cable is not connected to a box be careful that the ring does not become entangled in the trailer components or cross members while moving the cable.

**Warning:** When raising or lowering the hoist, it is the operators responsibility to make sure the transfer cable does not have slack and interfere with the operation of the hoist.

**Warning:** Only pull or back the trailer or truck over level ground. Do not pull or back the trailer or truck over ground that has been unleveled by dumping the truck or trailer.

**Warning:** Never operate the hoist while anyone is around the work area.

**Warning:** When lowering the hoist make sure the P.T.O. is in gear to prevent creating air in the system and overflowing the oil tank.

**Caution:** Read and understand the instructions for shifting the P.T.O. for your brand of truck and using the control valves for the TBX-Two Box Trailer before operating the trailer.

**To Unload the Second Container:**

1. Back the truck up to the offload site.
2. Engage the P.T.O.
3. Remove the four ratchet tie downs from the container guides.
4. Slowly raise the hoist while letting the cable out until the back of the container is touching the ground.
5. Let the rest of the cable out.
6. Pull the truck forward slowly, letting the rest of the container slide to the ground.
7. Unhook the rectangular end from the container hook.
8. Lower the hoist.
9. Hook the cable onto the trailer's holding hook.
10. Pull the cable in.
11. Disengage the P.T.O.

**To Move the First Container to the Rear:**

1. Remove any drop-in stops that are on the hoist.
2. Remove the four ratchet tie downs from the container guides.
3. Engage the transfer cable, moving the container to the back of the trailer.
4. Pull the box completely onto the hoist.
5. Unhook the transfer cable from the container hook.
6. Let the hoist cable out enough to attach the rectangular end.
7. Hook the rectangular end to the container hook.
8. Remove any slack from the hoist cable.

**To Unload the First Container:**

1. Back the truck up to the off load site.
2. Engage the P.T.O.
3. Slowly raise the hoist while letting the cable out until the back of the container is touching the ground.
4. Let the rest of the cable out.
5. Pull the truck slowly forward allowing the rest of the container slide to the ground.
6. Unhook the rectangular end from the container hook.
7. Lower the hoist.
8. Hook the rectangular cable end onto the trailer's holding hook.
9. Pull the cable in.
10. Disengage the P.T.O.

# Replacement Parts

# 3

## Ordering Replacement Parts

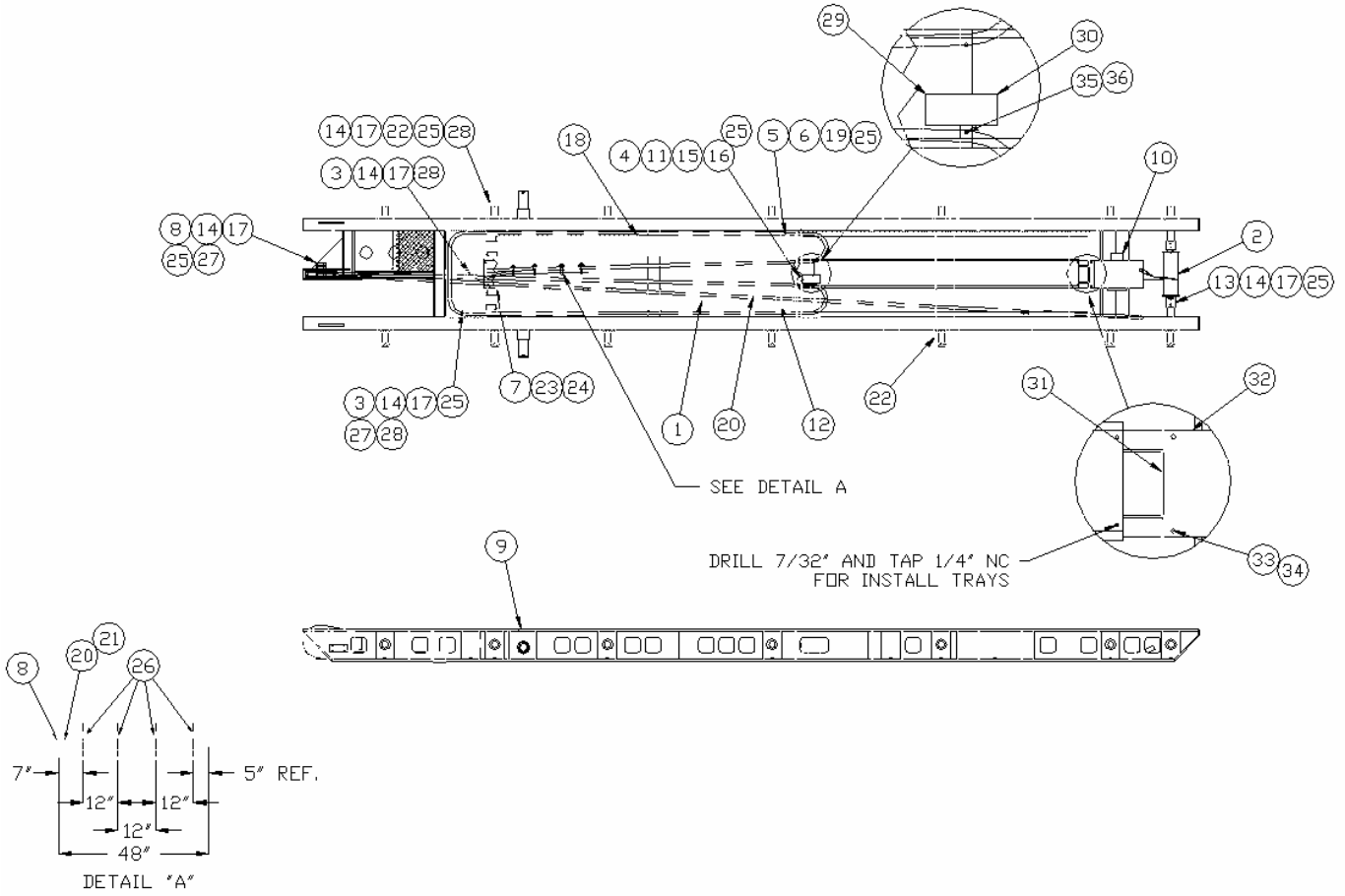
To order parts for your unit, please refer to the assembly drawings and the parts breakdown tables in this section for the proper part name. If you would like to speed up your ordering process please visit our online parts store at http://www.ghmfg.com and click on the Part Department. Also, please have the following information handy when you log on, call, or write to place your order:

- Your purchase order number.
- Your complete invoicing and shipping address.
- Your required method of shipment (if you do not specify a method, the least costly method will be used).
- Your correct part number, name, description, and quantity needed.
- Your equipments model and serial number for which you are ordering the part.

This chapter contains diagrams and parts breakdown tables for the following assemblies and options:

The Hoist Frame Assembly consists of the following parts:

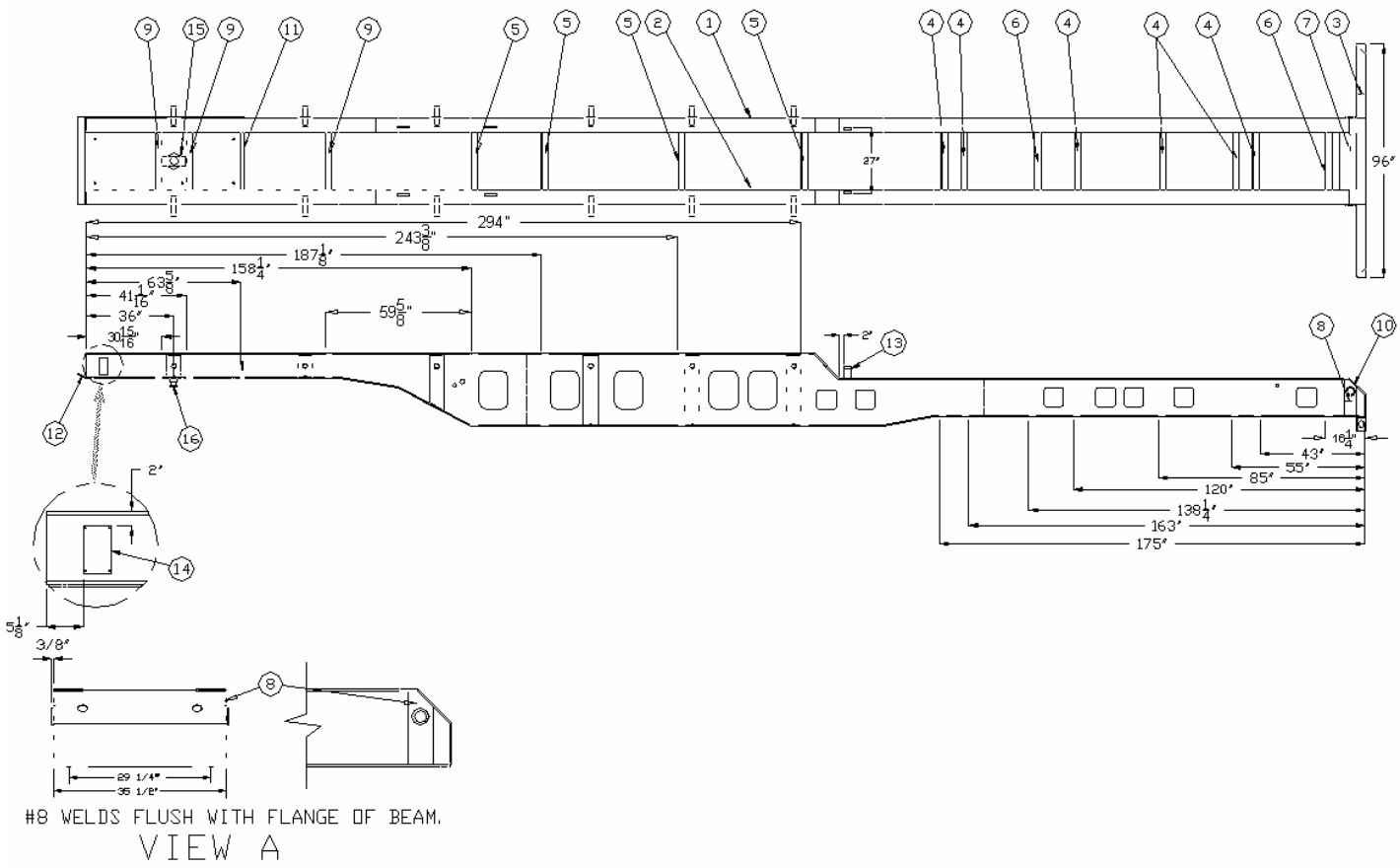
| Item # | Part # | Description | Qty. |
|---|---|---|---|
| 1 | A5231 | TBX50 Hoist Frame Without Rings | 1 |
| 2 | A4778 | TBX50 Rear Roller Assembly | 1 |
| 3 | A1423 | Horizontal Sheave Pin | 3 |
| 4 | A1424 | Guide Roller Pin | 1 |
| 5 | A1425 | Cable Cylinder Pin | 2 |
| 6 | A1426 | Sheave Slide Assembly | 2 |
| 7 | A1636 | Cylinder Anchor | 2 |
| 8 | A3931 | Vertical Sheave Pin | 1 |
| 9 | A4964 | Hoist Frame Weldment | 1 |
| 10 | A4809 | Electrical Winch Installation | 1 |
| 11 | D10454 | Guide Roller | 1 |
| 12 | D12118 | Spacer | 2 |
| 13 | D20756 | Collar Rear Roller | 2 |
| 14 | F1016 | Bolt 3/8 in. X 3 1/2 in. GR 5 | 20 |
| 17 | F1074 | Locknut 3/8 in. GR 5 | 20 |
| 15 | F1028 | Bolt 1/2 in. X 1 1/2 in. GR 5 | 1 |
| 16 | F1069 | Lock Washer 1/2 in. | 1 |
| 18 | H4370 | Cylinder Cable | 2 |
| 19 | M1018 | Cotter Pin | 2 |
| 20 | M1201 | Cable Assembly | 1 |
| 21 | M1009 | Cable End Fitting With Swivel Eye | 1 |
| 22 | M1845 | Side Roller | 14 |
| 23 | F1054 | Bolt 3/4 in. X 4 1/2 in. GR 5 | 2 |
| 24 | F1080 | Locknut 3/4 in. GR 5 | 2 |
| 25 | M1023 | Grease Fitting | 22 |
| 26 | M1008 | Cable Clamp | 4 |
| 27 | M1531 | Sheave | 3 |
| 28 | D10296 | Set Collar | 17 |
| 29 | D20810 | Cable Tray Front | 1 |
| 30 | D20811 | Cable Tray Rear | 1 |
| 31 | D20820 | Bar | 1 |
| 32 | D20821 | Winch Cover | 1 |
| 33 | F1001 | Bolt 1/4 in. X 3/4 in. GR 5 | 8 |
| 34 | F1065 | Lock Washer 1/4 in. | 8 |


SEE DETAIL A
DRILL 7/32" AND TAP 1/4" NC
FOR INSTALL TRAYS
7"
5" REF.
12"
12"
12"
48"
DETAIL "A"

The Main Frame Weldment consists of the following parts:

| Item # | Part # | Description | Qty |
|---|---|---|---|
| 1 | A4945 | Main Beam Weldment Right | 1 |
| 2 | A4946 | Main Beam Weldment Left | 1 |
| 3 | A3754 | Light Bumper Guard Weldment | 1 |
| 4 | D21249 | Rear Cross Beam | 6 |
| 5 | D21265 | Middle Beam | 4 |
| 6 | D21266 | Rear Cross Member | 2 |
| 7 | D12124 | Pivot Tube | 1 |
| 8 | D21270 | Pivot Plate | 2 |
| 9 | D21267 | King Pin Cross Member | 3 |
| 10 | D21268 | Rear Plate | 1 |
| 11 | D21269 | Cross Member Plate King Pin | 1 |
| 12 | D18113 | King Pin Plate | 1 |
| 13 | D20832 | Guide | 2 |
| 14 | D19401 | Vehicle ID Bracket | 1 |
| 15 | D17156 | Fifth Wheel Plate Brace | 1 |
| 16 | M1219 | King Pin | 1 |

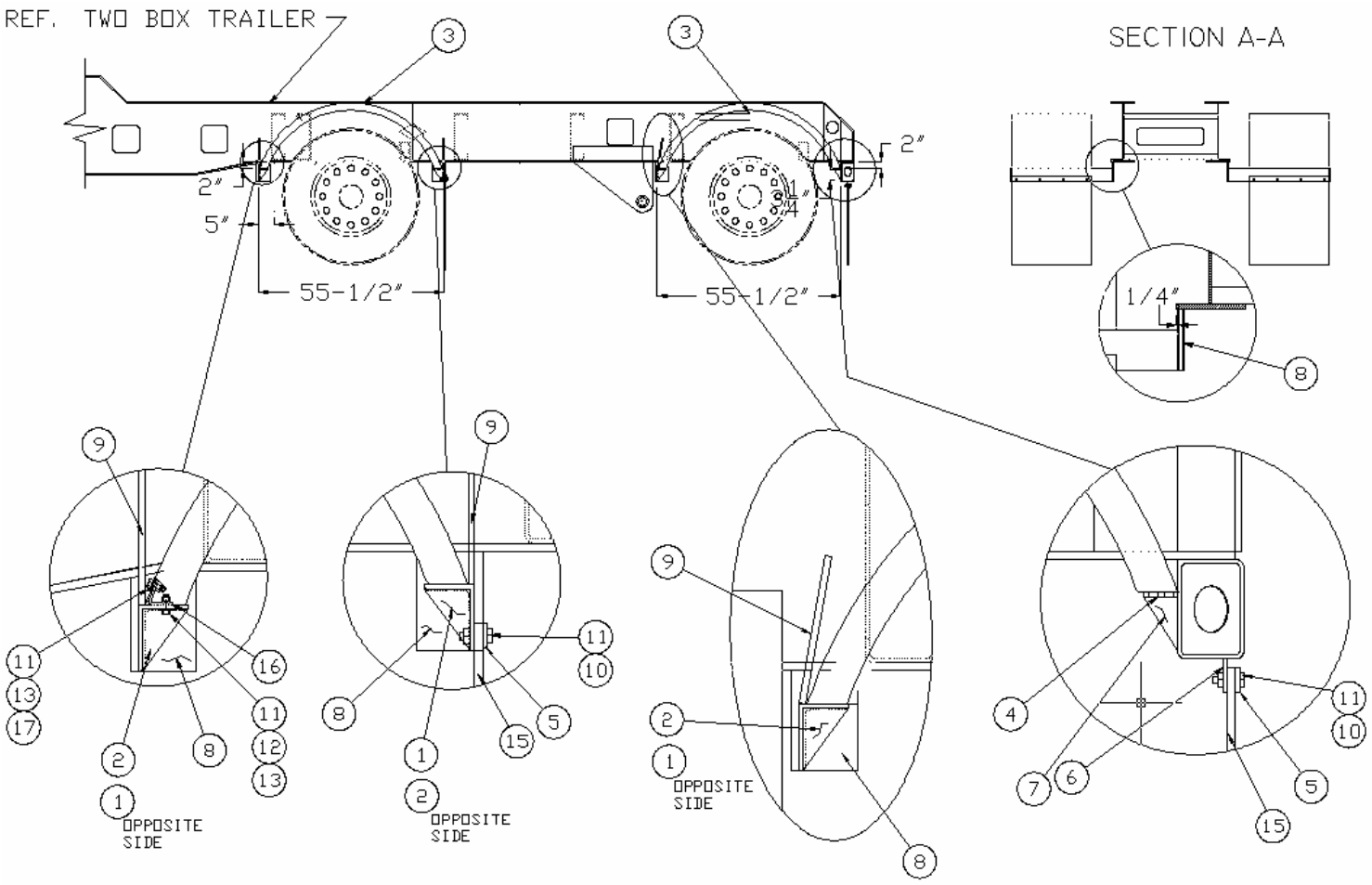
# Main Frame Weldment (36 in. Kingpin) Diagram



The Fender Installation consists of the following parts:

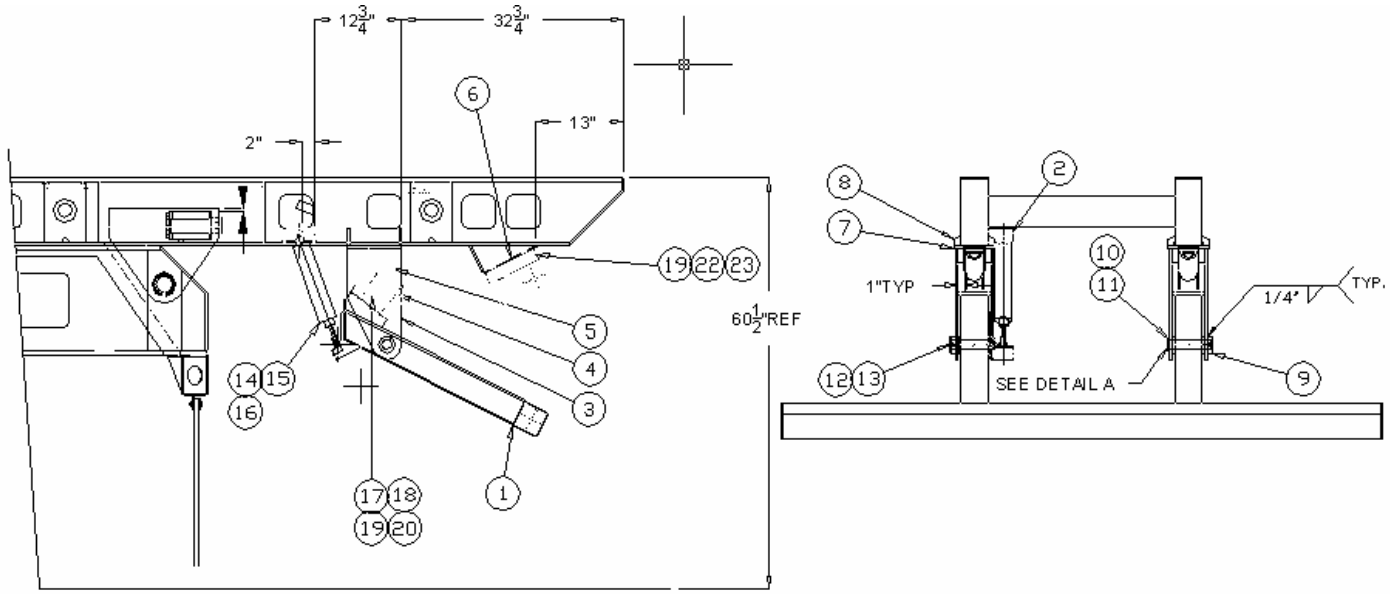
| Item # | Part # | Description | Qty |
|---|---|---|---|
| 1 | A1520 | Right Rear Bracket | 3 |
| 2 | A1521 | Left Rear Bracket | 3 |
| 3 | M2024 | Fender 24 in. Ploy Full | 4 |
| 4 | D12128 | Fender End Bar | 2 |
| 5 | D15973 | Mud Flap Plate | 4 |
| 6 | D10466 | Mud Flap Bracket | 2 |
| 7 | D20738 | Gusset | 2 |
| 8 | D18514 | Mounting Plate | 6 |
| 9 | D18163 | Support Fender Brace | 6 |
| 10 | F1011 | Bolt 3/8 in. X 1 3/4 in. GR 5 | 16 |
| 11 | F1074 | Lock Nut 3/8 in. GR 5 | 56 |
| 12 | F1009 | Bolt 3/8 in. X 1 1/4 in. GR 5 | 16 |
| 13 | F1030 | Flat Washer 3/8 in. | 64 |
| 14 | F1010 | Bolt 3/8 in. X 1 1/2 in. GR 5 | 16 |
| 15 | M1035 | Mud Flap Set | 2 |
| 16 | D17624 | Bracket Poly Fender | 8 |
| 17 | F1112 | Bolt 3/8 in. X 1 in. GR 5 | 32 |

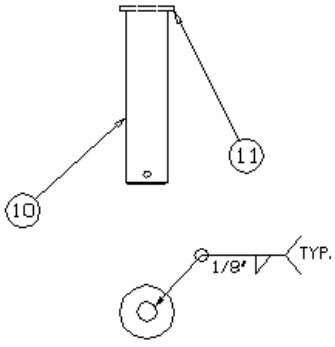
# Poly Fender Installation Diagram



The ICC Bumper Installation consists of the following parts:

| Item # | Part # | Description | Qty |
|---|---|---|---|
| 1 | A5132 | TBX50L BUMPER WELDMENT | |
| 2 | D21362 | HANGER BRACKET | 1 |
| 3 | D21360 | SIDE PLATE | 4 |
| 4 | D21366 | PLATE INSIDE BUMPER | 2 |
| 5 | D21835 | GUSSET SUPPORT | 4 |
| 6 | D21363 | TBX50LR ICC BUMPER STOP | 2 |
| 7 | D21361 | TOP PLATE | 2 |
| 8 | D21364 | GUSSET BUMPER | 8 |
| 9 | D21369 | COLLAR PIN | 2 |
| 10 | D12530 | CYLINDER PIN | 2 |
| 11 | F1064 | WASHER | 2 |
| 12 | F1125 | BOLT | 2 |
| 13 | F1217 | LOCKNUT | 2 |
| 14 | P1345 | BIMBA CYLINDER | 1 |
| 15 | P1341 | PIVOT BRACKET | 2 |
| 16 | P1343 | BIMBA ROD CLEVIS | 1 |
| 17 | D21399 | DOCK BUMPER | 2 |
| 18 | F1408 | BOLT | 4 |
| 19 | F1074 | LOCKNUT | 8 |
| 20 | D21756 | BAR, PAD RETAINER | 2 |
| 21 | D12252 | PAD. 8000 BUMPER | 2 |
| 22 | F1195 | BOLT | 4 |
| 23 | D12253 | BAR 8000 PAD RETAINER | 2 |

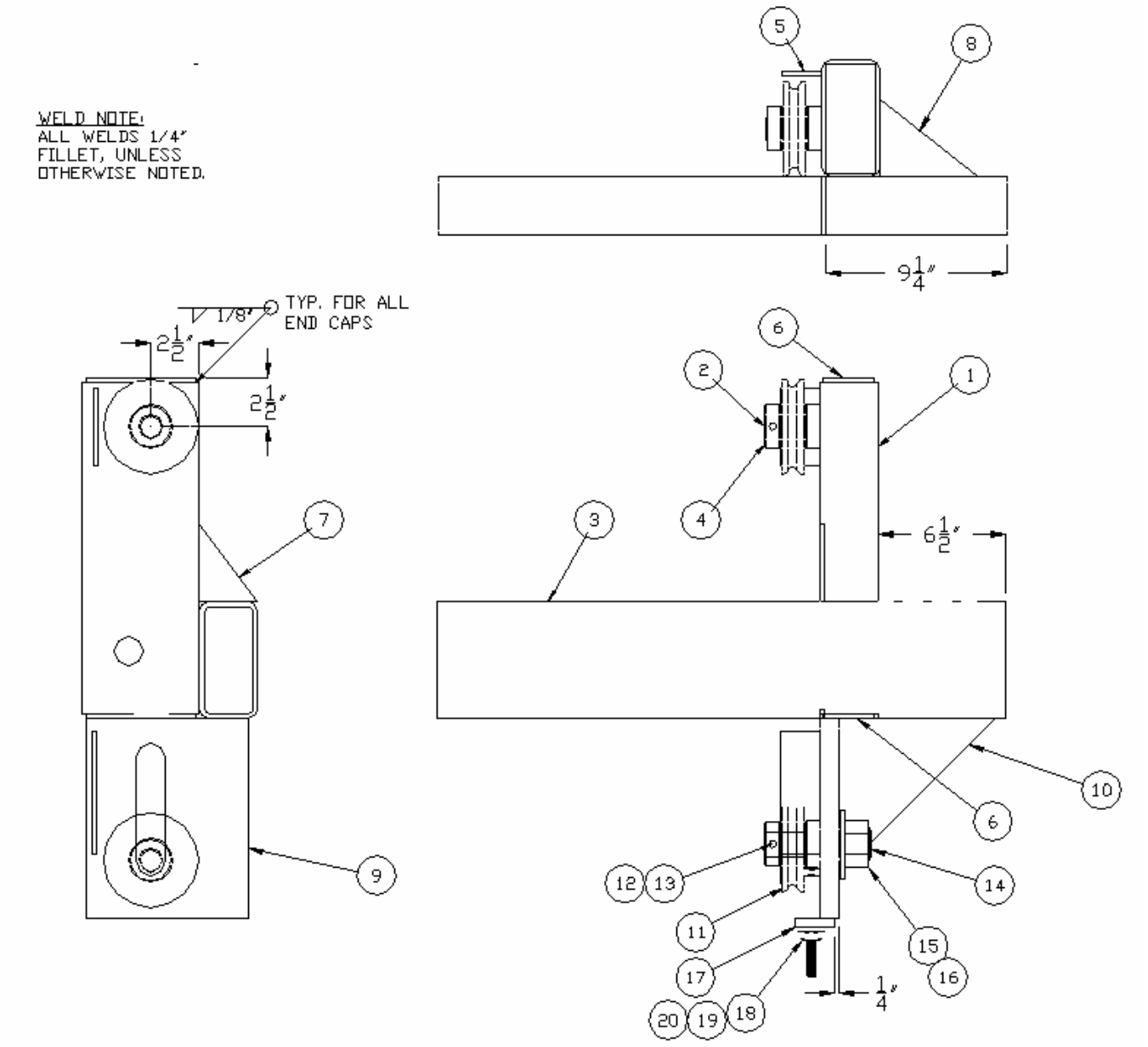

12 3/4"
32 3/4"
2"
13"
6
19 22 23
60 1/2" REF
5
4
3
14 15
16
17 18
19 20
1
2
8
7
10
11
1"TYP
1/4" TYP.
12 13
SEE DETAIL A
9


10
11
1/8" TYP.

DETAIL A

The Adjustable Idler Sheave Assembly consists of the following parts:

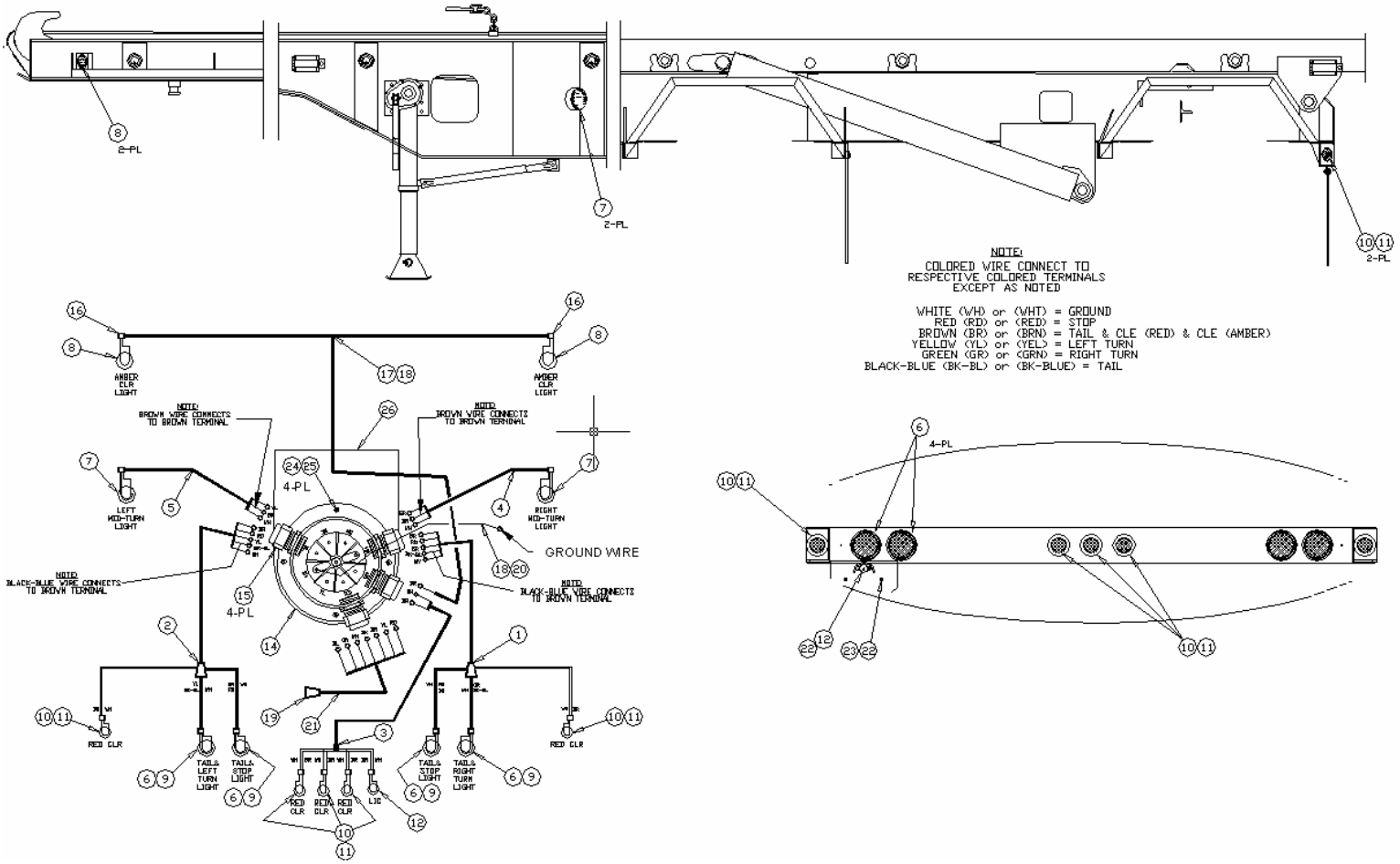
| Item # | Part # | Description | Qty |
|---|---|---|---|
| 1 | D21323 | Tube Idler Arm | 1 |
| 2 | D18430 | Pin | 1 |
| 3 | D21272 | Tube | 1 |
| 4 | D18431 | Collar | 2 |
| 5 | D18432 | Bar | 2 |
| 6 | D18396 | Cap | 2 |
| 7 | D13563 | Gusset | 2 |
| 8 | D13682 | Gusset | 1 |
| 9 | D19405 | Adjustment Plate | 1 |
| 10 | D19528 | Gusset | 1 |
| 11 | M1588 | Sheave | 2 |
| 12 | F1013 | Bolt 3/8 in. X 2 3/4 in. GR 5 | 2 |
| 13 | F1074 | Locknut 3/8 in. | 2 |
| 14 | D19404 | Sheave Pin | 1 |
| 15 | F1248 | Locknut 1 1/2 in. GR 5 | 1 |
| 16 | F1425 | Flat Washer 1 1/2 in. | 1 |
| 17 | D21132 | Adjuster Plate | 1 |
| 18 | F1040 | Bolt 1/2 in. X 6 GR 5 | 1 |
| 19 | F1076 | Locknut 1/2 in. GR 5 | 1 |
| 20 | F1061 | Flat Washer 1/2 in. | 1 |


WELD NOTE:
ALL WELDS 1/4"
FILLET, UNLESS
OTHERWISE NOTED.
TYP. FOR ALL
END CAPS
1/8"
2 1/2"
2 1/2"
9 1/4"
6 1/2"
1/4"
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20

The Light Assembly consists of the following parts:

| Item # | Part # | Description | Qty |
|---|---|---|---|
| 1 | E1386 | Side Marker Harness | 1 |
| 2 | E1387 | Side Marker Harness | 1 |
| 3 | E1114 | Harness License Plate Lamp and ID | 1 |
| 4 | E1115 | Harness Right Mid Turn And Mid Clearance | 1 |
| 5 | E1116 | Harness Left Mid Turn And Mid Clearance | 1 |
| 6 | E1413 | LED Light Kit SUPER 44 4” LIGHT (TRUCK-LITE) | 4 |
| 7 | E1416 | LED LIGHT KIT 4” MID-TURN LIGHT KIT | 2 |
| 8 | E1415 | LID LIGHT KIT 10050Y LMP MDL 10-LED | 2 |
| 9 | | | |
| 10 | E1401 | LED LIGHT LED CLEARANCE LIGHT | 5 |
| 11 | E1122 | GROMMET MODEL 10 #10700 | 5 |
| 12 | E1123 | Light License | 1 |
| 13 | E1124 | Plug Compound 2 oz. Tube | 1 |
| 14 | E1127 | Junction Box | 1 |
| 15 | E1129 | Fitting Compress | 4 |
| 16 | E1023 | Pigtail | 2 |
| 17 | E1162 | Wire Electrical | 15 |
| 18 | E1107 | Split Loom | 16 |
| 19 | E1002 | Socket | 1 |
| 20 | E1043 | Wire Electrical | 1 |
| 21 | | | |
| 22 | E1062 | 7 Way Wire | 65 ft. |
| 23 | F1001 | Bolt 1/4 in. X 3/4 in. GR 5 | 2 |
| 24 | F1059 | Flat Washer 1/4 in. | 2 |
| 25 | F1087 | Locknut GR 5 | 12 |
| 26 | F1210 | Screw Machine | 12 |
| 27 | D18441 | Terminal Mount | 1 |

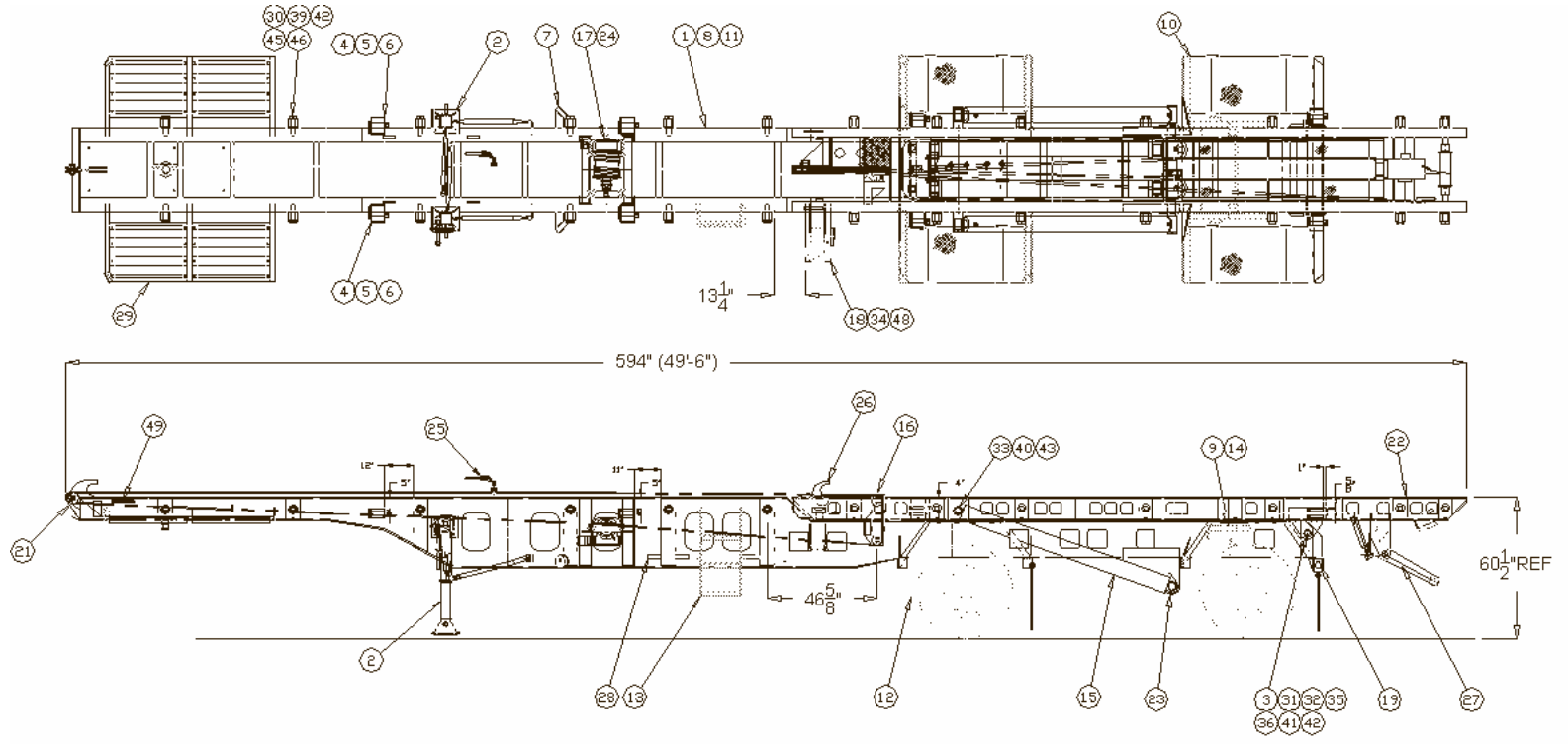
# LED Light Assembly Diagram



The TBX50LR Final Assembly consists of the following parts:

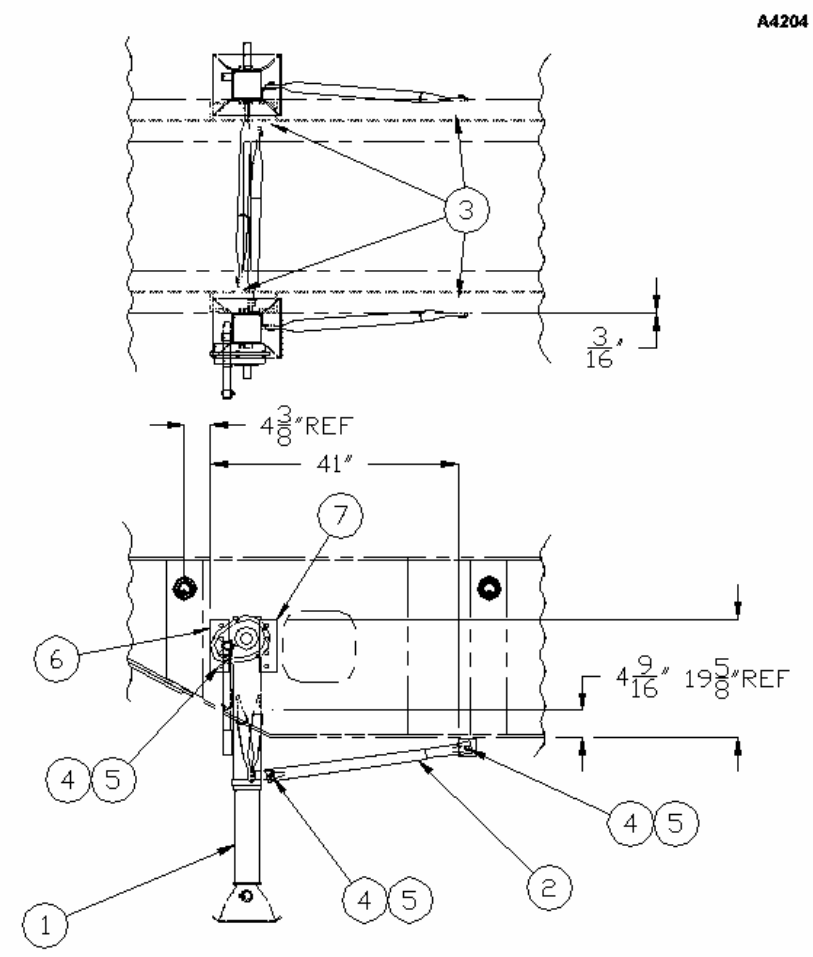
| Item # | Part # | Description | Qty |
|---|---|---|---|
| 1 | A4947 | TBX50L Main Frame Weldment – 36 Kingpin | 1 |
| 2 | A4204 | Landing Gear Installation | 1 |
| 3 | A1507 | Hinge Pin Assembly Standard | 1 |
| 4 | A3235 | Ratchet Tie Down Hook and Strap | 8 |
| 5 | A3318 | Ratchet Tie Down Assembly | 8 |
| 6 | A3534 | Ratchet Tie Down Installation | 1 |
| 7 | A3443 | Mid Turn Bracket Assembly | 2 |
| 8 | A4201 | Decal Installation | 1 |
| 9 | A3745 | Safety Prop Inst | 1 |
| 10 | A4758 | Poly Fender Inst | 1 |
| 11 | A4231 | Reflective Tape Installation | 1 |
| 12 | A4962 | TVX50L Suspension Inst | 1 |
| 13 | A3756 | Ladder Weldment and Inst | 1 |
| 14 | A3757 | Safety Prop Tube Stop | 1 |
| 15 | A4869 | Cylinder Lift | 2 |
| 16 | A4955 | Idler Sheave Assembly and Inst | 1 |
| 17 | A4129 | TBX50 Frame Hydraulic Install | 1 |
| 18 | A4954 | Valve Bracket Installation | 1 |
| 19 | A3924 | TBX Light Installation | 1 |
| 20 | | | |
| 21 | A4957 | Gooseneck Idler Sheave Mount | 1 |
| 22 | A4965 | TBX50LR Hoist Frame Assembly - I-Beam | 1 |
| 23 | A4956 | TBX Lower Cylinder Mount | 1 |
| 24 | A3930 | Single Winch Installation | 1 |
| 25 | A3932 | Transfer Cable Assembly | 1 |
| 26 | A4093 | Drop-In Stop | 2 |
| 27 | A5133 | TBX50L ICC Folding Bumper Installation | 1 |
| 28 | A4754 | Gooseneck Fender Installation – Poly | 1 |
| 30 | D10296 | Set Collar | 12 |
| 31 | D12120 | Hinge Head Retainer | 1 |
| 32 | D12123 | Rear Hinge Collar | 1 |
| 33 | D12139 | Cylinder Pin Collar | 4 |

| | | | |
|---|---|---|---|
| 34 | D12642 | Handle | 1 |
| 35 | D18230 | Hinge Plate | 2 |
| 36 | D18366 | Hinge Tube | 1 |
| 37 | | | |
| 38 | | | |
| 39 | F1016 | Bolt | 12 |
| 40 | F1039 | Bolt | 4 |
| 41 | F1049 | Bolt | 1 |
| 42 | F1074 | Locknut | 12 |
| 43 | F1076 | Locknut | 4 |
| 44 | F1078 | Mounting Bracket Right | 1 |
| 45 | M1845 | Side Roller Assembly | 12 |
| 46 | M1023 | Grease Fitting | 35 |
| 47 | | | |
| 48 | | | |
| 49 | D20824 | S/N Plate | 1 |



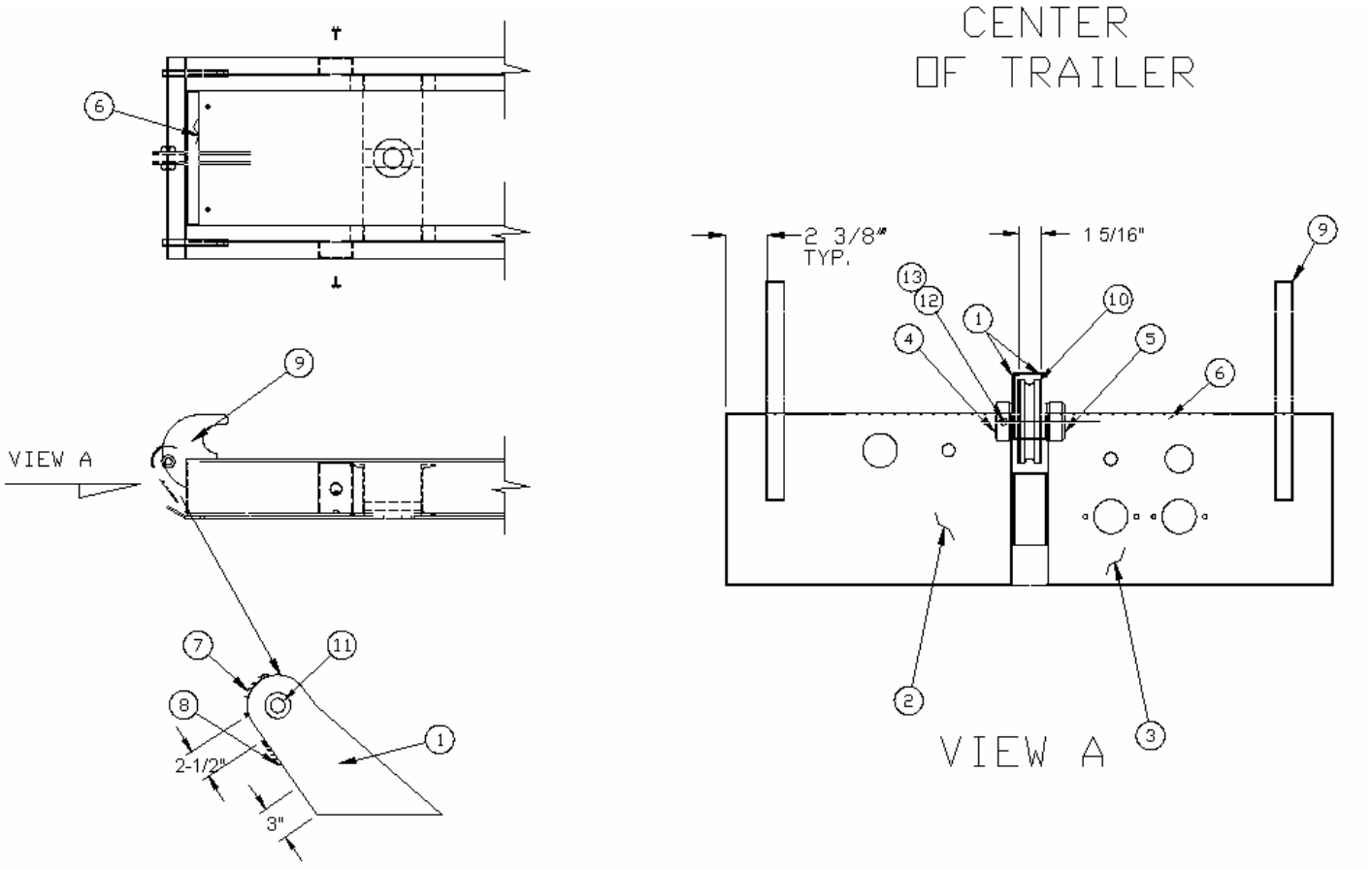
The Landing Gear Installation consists of the following parts:

| Item # | Part # | Description | Qty |
|---|---|---|---|
| 1 | M1217 | Landing Gear Set | 1 |
| 2 | M1473 | Adjustable Brace | 4 |
| 3 | D19403 | Bracket | 4 |
| 4 | F1044 | Bolt 5/8 in. NC X 2 GR 5 | 24 |
| 5 | F1078 | Locknut 5/8 in. NC GR. 5 | 24 |
| 6 | D18183 | Landing Gear Mount Angle With Notch | 1 |
| 7 | D18184 | Landing Gear Mount Angle | 3 |



The Gooseneck Idler Sheave mount consists of the following parts:

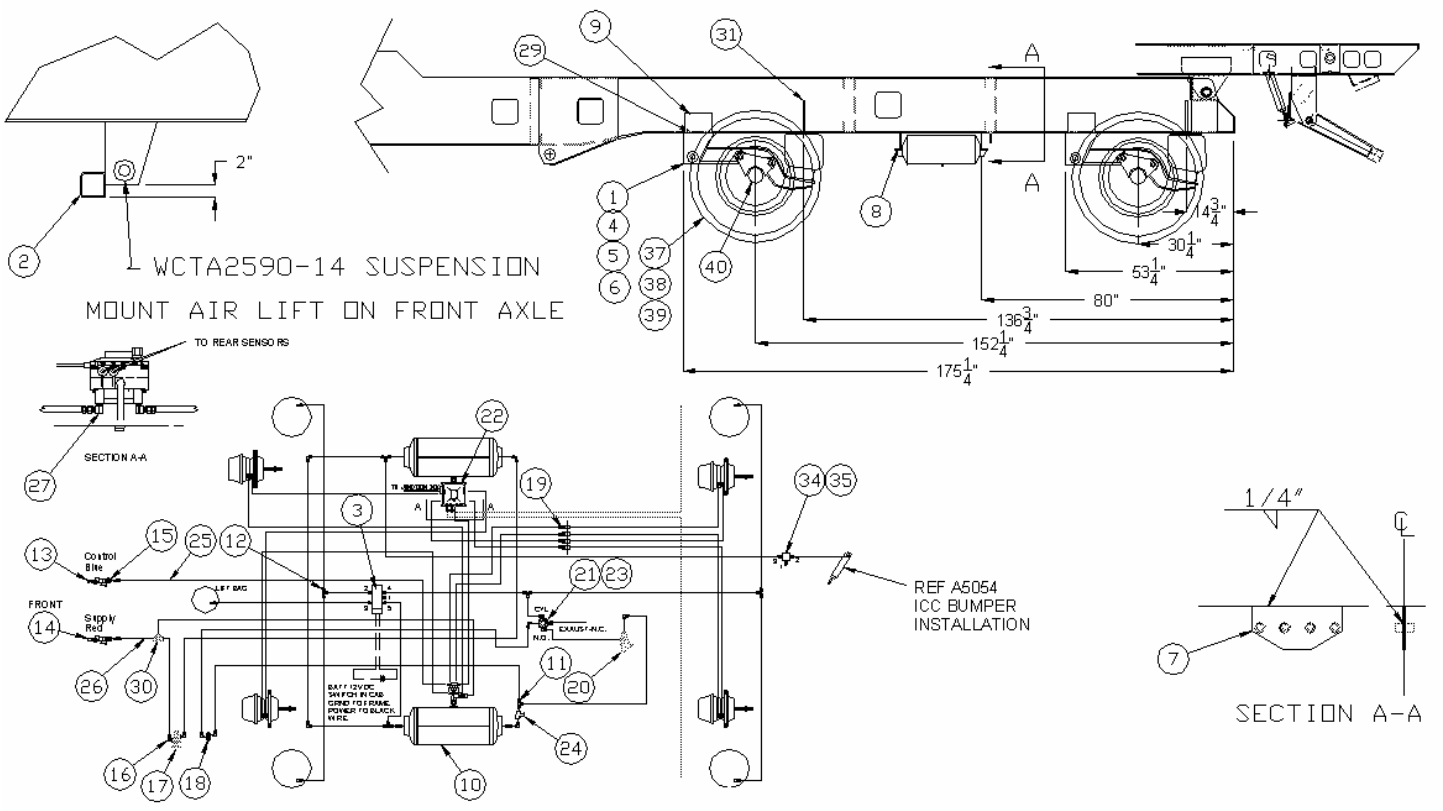
| Item # | Part # | Description | Qty |
|---|---|---|---|
| 1 | 108485 | Sheave Plate | 2 |
| 2 | D18490 | Front Plate (Left) | 1 |
| 3 | D18498 | Front Plate (Right) | 1 |
| 4 | D18486 | Collar Pin Support | 1 |
| 5 | D18487 | Collar | 1 |
| 6 | D21276 | Support Bar | 1 |
| 7 | D18494 | Plate Cover | 1 |
| 8 | D18495 | Plate Strap | 1 |
| 9 | D18517 | TBX Front Stop | 2 |
| 10 | M1588 | Sheave, 4-7/8” Diameter | 1 |
| 11 | D19295 | Sheave Pin | 1 |
| 12 | F1013 | Bolt | 1 |
| 13 | F1074 | Locknut | 1 |



The Suspension Installation consists of the following parts:

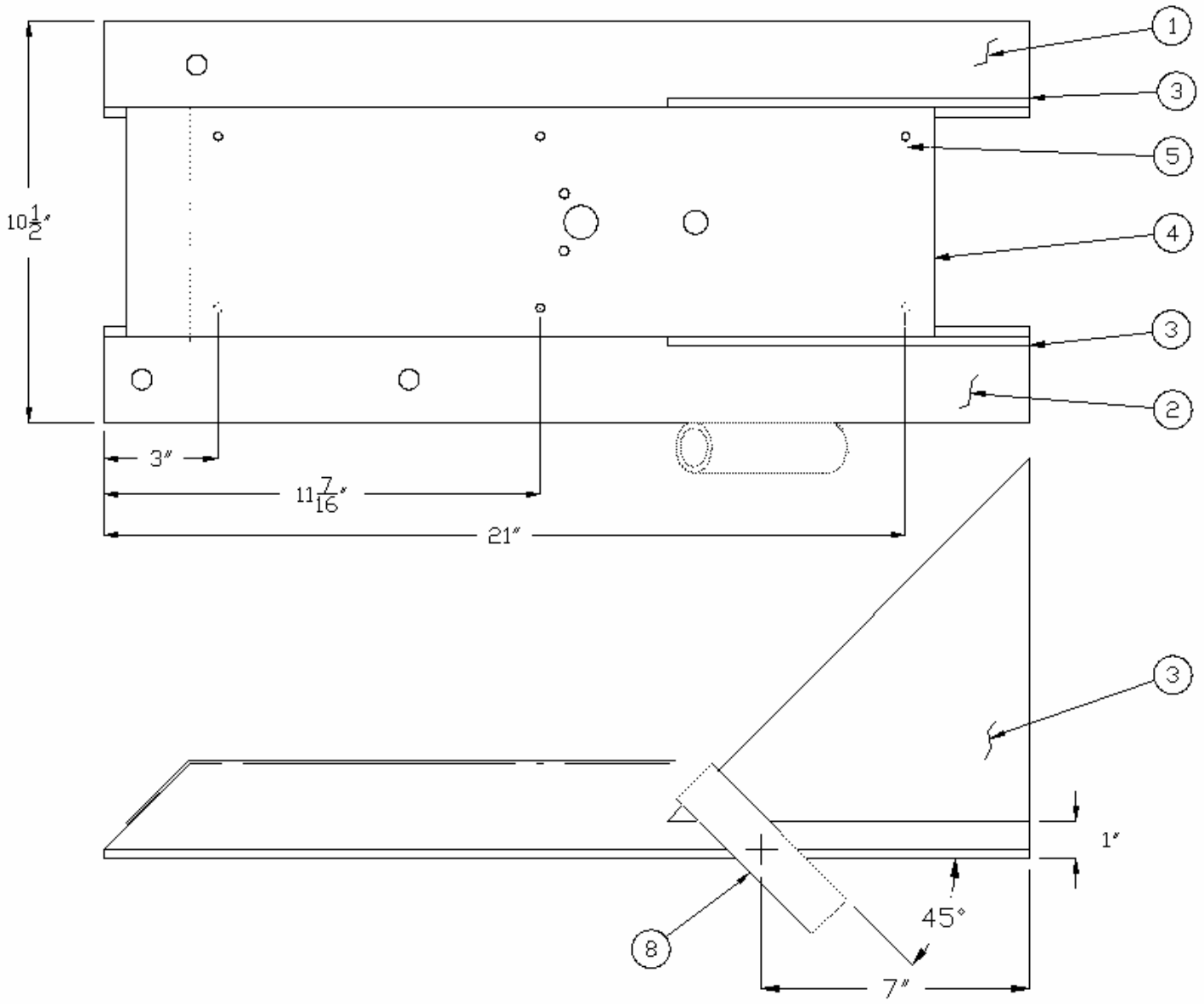
| Item # | Part # | Description | Qty |
|---|---|---|---|
| 1 | M1489 | Suspension | 2 |
| 2 | M2038 | Suspension | 1 |
| 3 | P1348 | Valve 4 Way | 1 |
| 4 | D20733 | Bracket | 4 |
| 5 | D20734 | Bottom Bar | 4 |
| 6 | D20735 | Bar | 4 |
| 7 | D18157 | Bulkhead Plate | 1 |
| 8 | D18158 | Air Tank Holder | 4 |
| 9 | D19316 | Gusset | 4 |
| 10 | P1302 | Tank Tandem Included in this kit | 1 |
| 11 | P1046 | Fitting NTA | |
| 12 | P1098 | Fitting NTA | |
| 13 | P1029 | Glad Hand Blue | |
| 14 | P1030 | Glad Hand Red | |
| 15 | P1050 | Adapter Bulk Head | |
| 16 | P1043 | Fitting NTA | 9 |
| 17 | P1329 | Push And Pull Valve | 1 |
| 18 | P1037 | Air Control Dump Kit | 1 |
| 19 | P1001 | Fitting NTA | 22 |
| 20 | M1840 | Leveling Valve | 1 |
| 21 | P1068 | Pilot Valve | 1 |
| 22 | M1902 | ABS Dedicated | 1 |
| 23 | D18159 | Pilot Bracket | 1 |
| 24 | P1083 | Valve Pressure, Protect | 1 |
| 25 | P1034 | Tubing Nylon (By the foot) | 40’ |
| 26 | P1033 | Tubing Nylon (By the foot) | 50’ |
| 27 | P1079 | Air Fitting | 8 |
| 28 | H2186 | Coupling | 4 |
| 29 | D20736 | Filler Bar | 4 |
| 30 | P1328 | Check Valve | 1 |
| 31 | D21094 | Gusset | 4 |
| 34 | P1344 | 3 Way Valve | 1 |
| 35 | D21767 | Valve Bracket | 1 |
| 37 | M1242 | Tubeless Tire 11R22.5 | 8 |
| 38 | M1783 | Wheel | 8 |

| | | | |
|---|---|---|---|
| 39 | M1088 | Valve Stem | 8 |
| 40 | M1214 | Axle Assembly | 2 |



The Main Valve Bracket Assembly consists of the following parts:

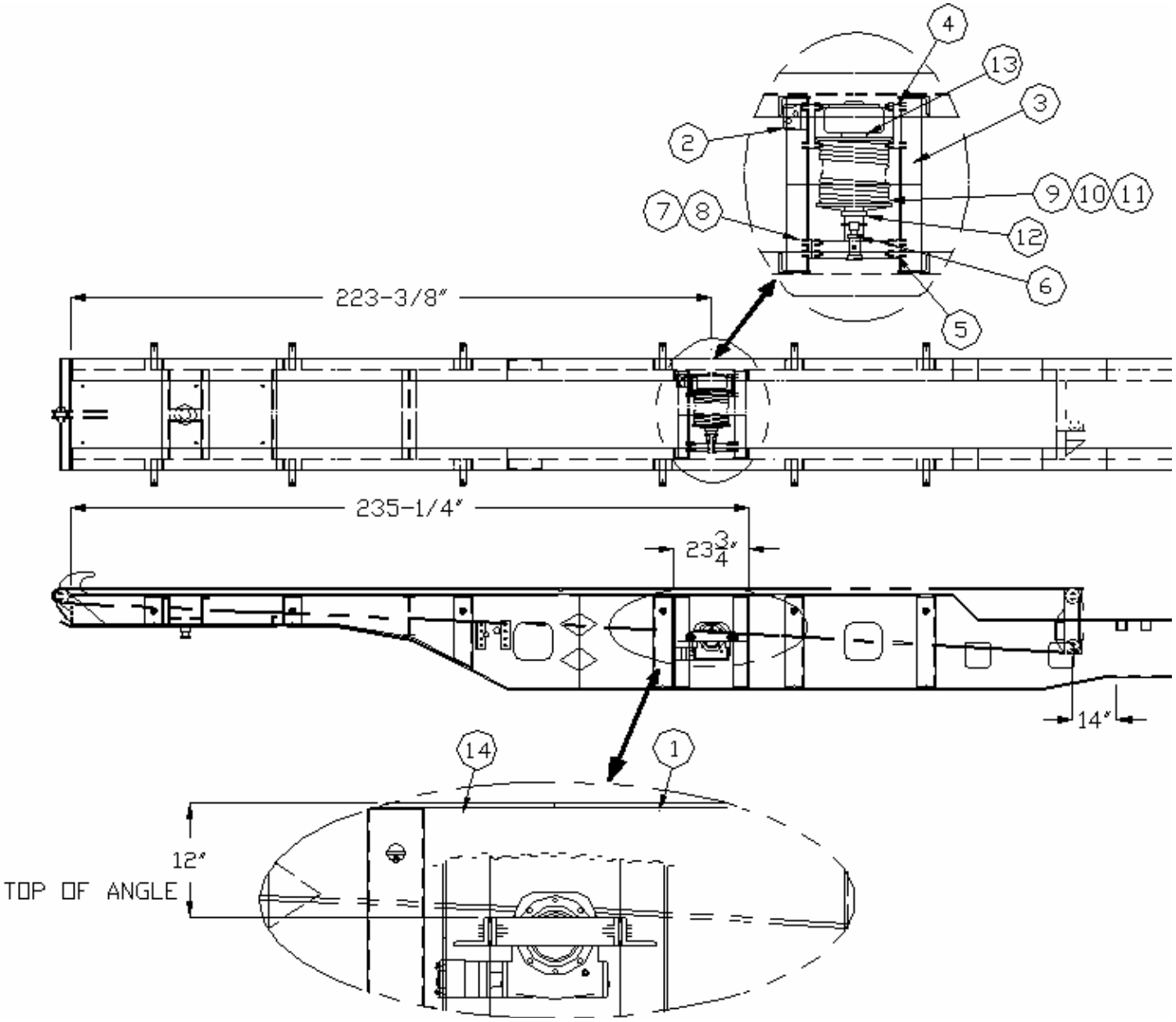
| Item # | Part # | Description | Qty |
|---|---|---|---|
| 1 | D15077 | Mounting Bracket Right | 1 |
| 2 | D15078 | Mounting Bracket Left | 1 |
| 3 | D21271 | Gusset | 2 |
| 4 | D19444 | Cover Plate | 1 |
| 5 | D13796 | Tab | 6 |
| 6 | D18571 | Air Valve Mount | 1 |
| 7 | | | |
| 8 | D16904 | Handle Holder | 1 |
| 9 | F1017 | Bolt 3/8 in. X 4 in. GR 5 | 3 |
| 10 | F1074 | Locknut 3/8 in. GR 5 | 3 |
| 11 | F1260 | Machine Screw | 4 |
| 12 | F1087 | Locknut GR 5 | 4 |
| 13 | F1001 | Bolt 1/4 in. X 3/4 in. | 6 |
| 14 | F1217 | Locknut 1/4 in. GR 5 | 10 |
| 15 | F1121 | Bolt 1/4 in. X 2 in. GR 5 | 4 |


1
3
5
4
3
2
10 1/2"
3"
11 7/16"
21"
3
1"
45°
8
7"

The Single Winch Installation consists of the following parts:

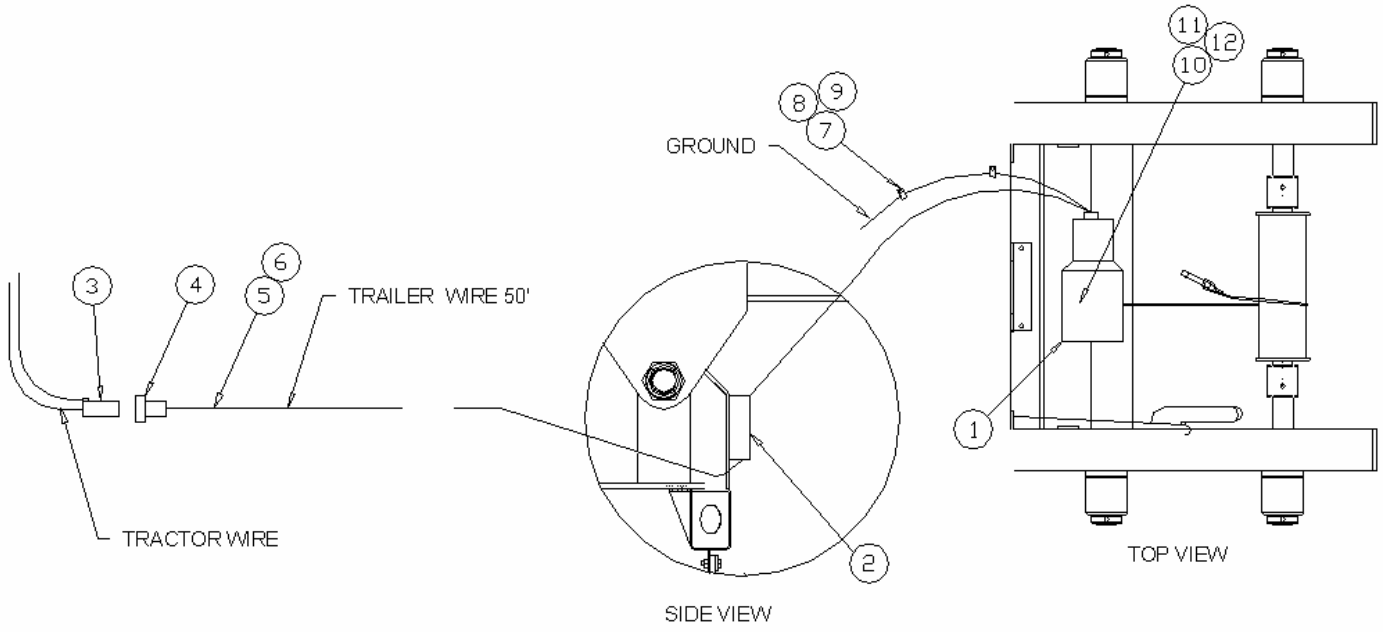
| Item # | Part # | Description | Qty |
|---|---|---|---|
| 1 | D19437 | Support Bar | 3 |
| 2 | | Mount Angle Front (Included with winch) | 1 |
| 3 | | Mount Angle Back (Included with winch) | 1 |
| 4 | D19440 | Right Spacer Bar | 2 |
| 5 | D19441 | Left Spacer Bar | 2 |
| 6 | M1803 | Tulsa Winch | 1 |
| 7 | F1044 | Bolt 5/8 in. X 2 in. GR 5 | 8 |
| 8 | F1078 | Locknut 5/8 in. GR 5 | 8 |
| 9 | A4284 | Screw Drum Assembly | 1 |
| 10 | D19639 | Drum Tube | 1 |
| 11 | D19640 | Bar | 1 |
| 12 | D20771 | Cable Block | 2 |
| 13 | F1205 | Set Screw 3/8 in. X 1/2 in. | 4 |
| 14 | D20779 | Spacer Winch | 1 |
| 15 | D20788 | Spacer | 1 |
| 16 | D21133 | Support Angle | |

Single Winch



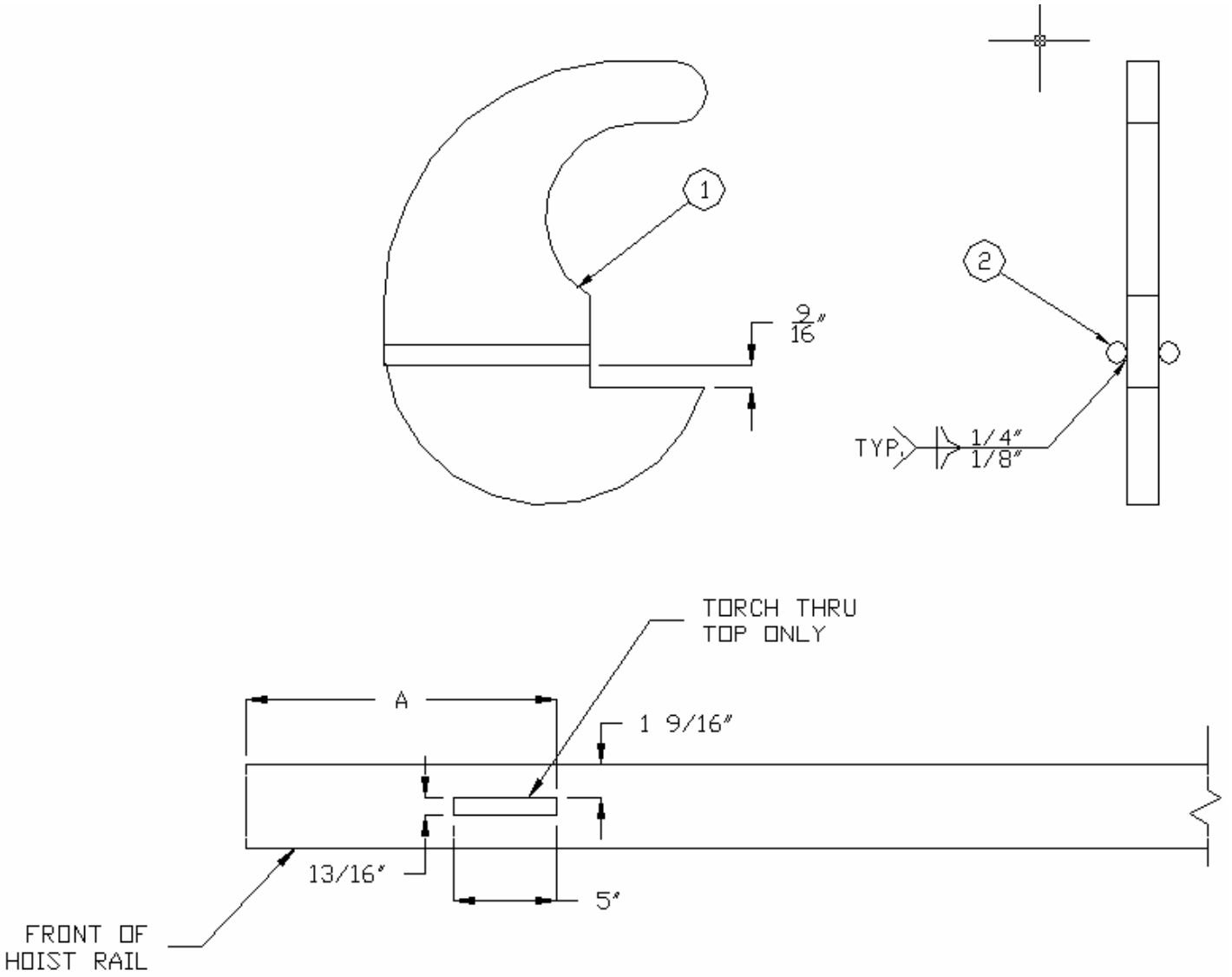
The Electrical Winch Installation consists of the following parts:

| Item # | Part # | Description | Qty |
|---|---|---|---|
| 1 | E1391 | Superwinch | 1 |
| 2 | E1049 | Junction Box | 1 |
| 3 | E1378 | Single Pin Receptacle | 1 |
| 4 | E1379 | Single Pin Plug | 1 |
| 5 | E1392 | Loom | 50’ |
| 6 | | 6 Gauge Black Wire | 50’ |
| 7 | E1174 | Clamp Strap | 4 |
| 8 | F1001 | Bolt | 6 |
| 9 | F1217 | Locknut | 6 |
| 10 | F1011 | Bolt | 2 |
| 11 | F1074 | Locknut | 2 |
| 12 | F1060 | Flat Washer | 2 |



The Drop-in Stops Installation consists of the following parts:

| Item # | Part # | Description | Qty |
|---|---|---|---|
| | D19172 | Hook Front Stop | 1 |
| | D18461 | Hook Rest | 2 |

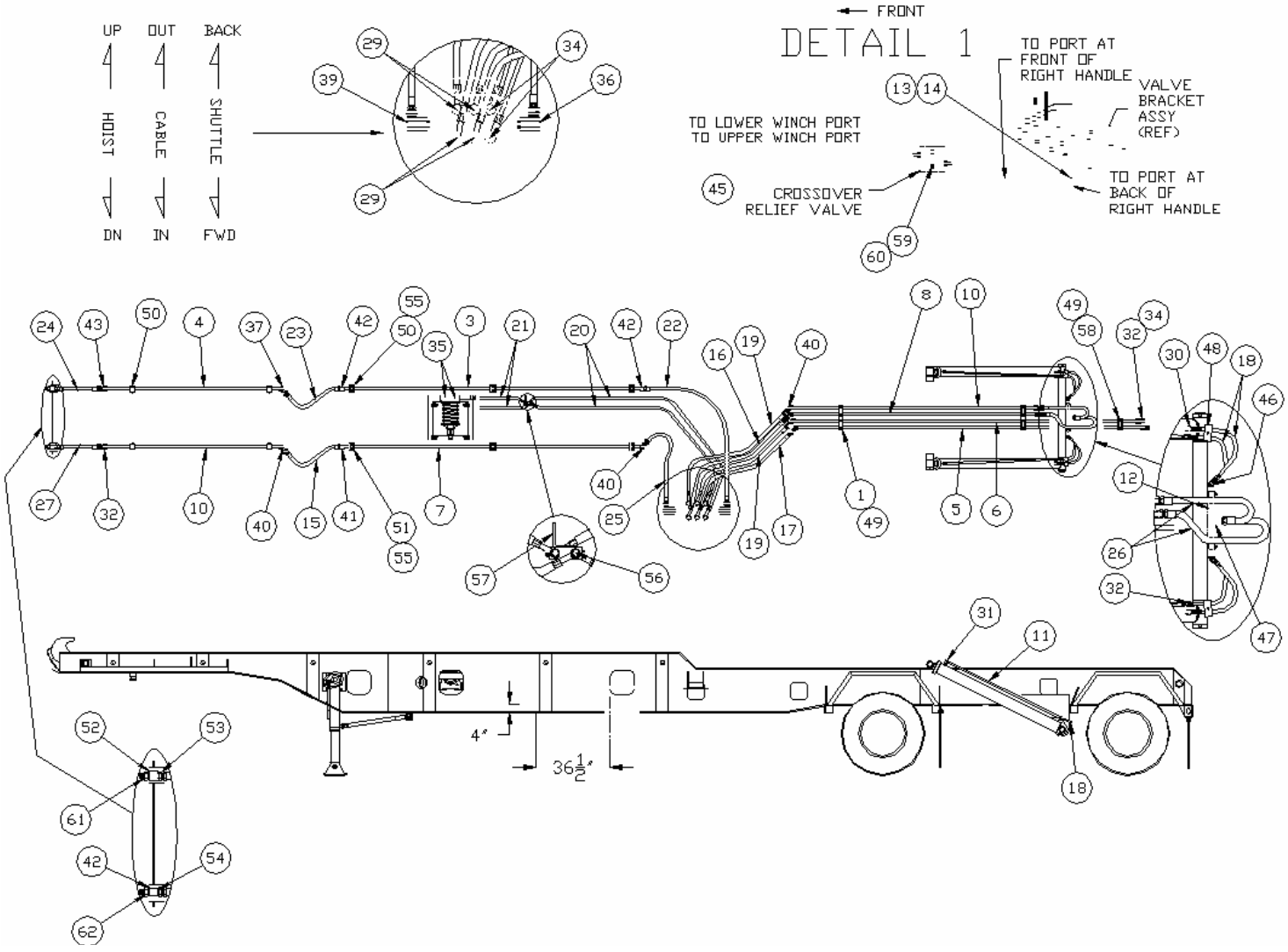


The Trailer Hydraulic Installation consists of the following parts:

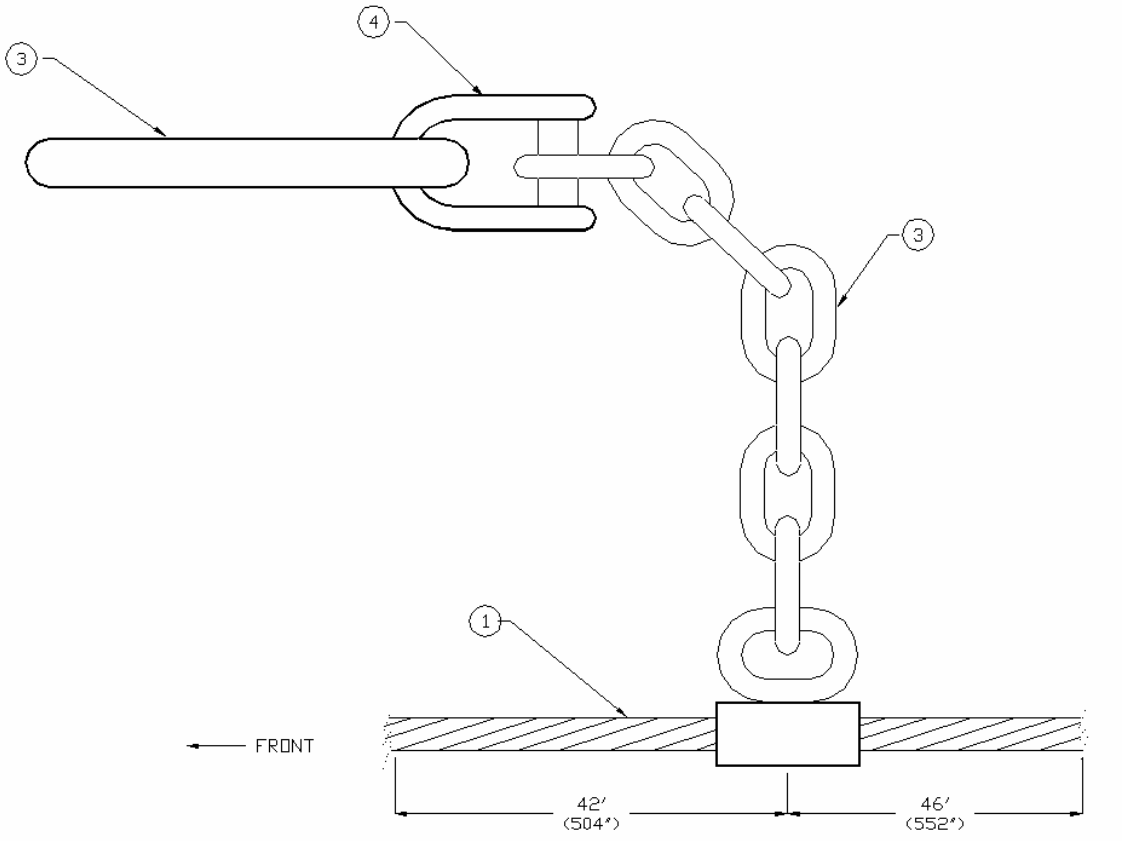
| Item # | Part # | Description | Qty |
|---|---|---|---|
| 1 | D18531 | Clamp Bracket | 2 |
| 2 | D18531 | Angle | 1 |
| 3 | D21098 | Nipple | 1 |
| 4 | D21062 | Nipple | 1 |
| 5 | D19460 | Nipple | 1 |
| 6 | D21097 | Nipple | 1 |
| 7 | D21097 | Nipple | 1 |
| 8 | D19462 | Nipple | 1 |
| 9 | | | |
| 10 | D19463 | Nipple | 2 |
| 11 | D16921 | Nipple | 2 |
| 12 | D19466 | Nipple | 4 |
| 13 | D21901 | Modified Male Adapter | 1 |
| 14 | D19482 | Modified Hollow Hex Plug | 1 |
| 15 | H1391 | Hose | 1 |
| 16 | H2691 | Hose | 1 |
| 17 | H3344 | Hose | 1 |
| 18 | H1119 | Hose | 4 |
| 19 | H1607 | Hose | 2 |
| 20 | H3882 | Hose | 2 |
| 21 | H3883 | Hose | 2 |
| 22 | H1134 | Hose | 1 |
| 23 | H1133 | Hose | 1 |
| 24 | H1132 | Hose | 1 |
| 25 | H1402 | Hose | 1 |
| 26 | H1393 | Hose | 2 |
| 27 | H2815 | Hose | 1 |
| 28 | | | |
| 29 | H3857 | Fitting | 4 |
| 30 | H2153 | Fitting | 2 |
| 31 | H3858 | Fitting | 2 |
| 32 | H1064 | Fitting | 11 |

| | | | |
|---|---|---|---|
| 33 | H1082 | Fitting | 2 |
| 34 | H1262 | Fitting | 2 |
| 35 | H2819 | Fitting | 2 |
| 36 | H3430 | Fitting | 1 |
| 37 | H1067 | Fitting | 1 |
| 38 | H1051 | Fitting | 1 |
| 39 | H2366 | Fitting | 1 |
| 40 | H1066 | Fitting | 6 |
| 41 | H1009 | Coupling | 2 |
| 42 | H1005 | Coupling | 2 |
| 43 | H1319 | Fitting | 1 |
| 44 | | Valve | 1 |
| 45 | H3845 | Crossover Relief Valve | 1 |
| 46 | H1027 | Elbow 45 Degree | 4 |
| 47 | H1192 | Tee | 2 |
| 48 | M1010 | Clamp, Stauff | 2 |
| 49 | M1585 | Clamp. Stauff | 7 |
| 50 | M1579 | Clamp, Stauff | 5 |
| 51 | M1586 | Clamp, Stauff | 5 |
| 52 | H1006 | Coupling | 1 |
| 53 | H2261 | Bushing | 1 |
| 54 | H2260 | Bushing | 1 |
| 55 | D20745 | Clamp Bracket | 6 |
| 56 | H1057 | Fitting | 4 |
| 57 | D20746 | Crossover Bracket | 1 |
| 59 | F1131 | Bolt | 2 |
| 60 | F1072 | Locknut | 2 |
| 61 | H3206 | Fitting | 1 |
| 62 | H2108 | Fitting | 1 |

# Trailer Hydraulic Installation (W/O Rings) TBX50L Diagram



| Item # | Part # | Description | Qty. |
|---|---|---|---|
| 1 | M1594 | Cable | 1 |
| 2 | M1595 | Chain | 1 |
| 3 | M1597 | Master Ring | 1 |
| 4 | M1596 | Coupler | 1 |



# Appendix: Maintenance

# A

## Introduction

For years of trouble-free service, it is important to properly maintain your equipment. Failure to do so could be costly and may void your Manufacturer's warranty. This appendix will help you to maintain your TBX-Two Box Trailer by providing a regular maintenance checklist, troubleshooting guide, diagrams, and schematics for its maintenance.

The following regular maintenance checklist, troubleshooting guide, diagrams, and schematics are located within this appendix:

The following are the minimum maintenance recommendations:

| | |
|---|---|
| **Each Day** | Inspect the cable for:<br>• Broken wires.<br>• Severe twists or kinks.<br>• Crushing of the cables.<br>Inspect the sheave for:<br>• Excessive wear or damage.<br>• Cable to run straight off the sheaves.<br>Inspect the drum to make sure the cable is rolling on evenly with no crossing of the cable.<br>Inspect all hardware on the cable for excessive wear or damage.<br>Inspect the cable on the Electric Hoist Cable Winch for:<br>• Broken wires.<br>• Severe twists or kinks.<br>• Crushing of the cable.<br>Inspect all hardware on the cable for the Electric Hoist Cable Winch for excessive wear or damage.<br>Replace or repair any part that is in need of repair. |
| **Each Week** | Lubricate grease points.<br>• Rollers<br>• Sheaves<br>• Rear Hinge<br>• Lift Cylinders |
| For Stinger | Lubricate the two extra Rear Rollers on the stinger attachment.. |
| For Dead Lifts | Lubricate the Rear Center Sheave and two extra Rear Rollers. |
| **Every Two (2) Months After** | Inspect oil for any discoloration:<br>• Milky color indicates water or condensate.<br>• Darkened color indicates oxidation or dirt.<br>Listen carefully for any abnormal pump noise. |

Inspect the hydraulic hose assembly every 400-600 hours or every three months depending on the following factors:

- Critical Nature of Equipment
- Operating Temperatures
- Operating Pressures
- Environmental Factors
- Type of Usage (rugged, abusive, shock, vibration, operating time)
- Accessibility of Equipment

Pay closer attention to high heat source areas, tight abrasion areas, and routing. These areas may need their hoses to be replaced more often.

**Caution:** Before inspecting your hydraulic hose assembly be aware of the following safety precautions.

- **Pressure** - Hydraulic fluid under pressure is dangerous and can cause serious injury. Never touch a pressurized hydraulic hose assembly with any part of your body. Instead use a piece of cardboard to locate a pressurized leak. If by accident hydraulic fluid should puncture the skin seek immediate medical attention or risk losing the injured body part or death.
- **Temperature** - Hot fluid can cause severe burns.
- **Flammability** - When ignited some hydraulic fluids can explode and/or cause fires.
- **Mechanical** - Hydraulic fluid creates movement, which causes parts of your equipment to move or rotate at high speeds.
- **Electricity** - Electricity can create the spark that causes a fire, explosion, or electrocution. Shut it down.

**To Inspect Hydraulic Hose Assemblies:**

1. Turn off equipment power. We suggest taking the key, placing it in a safe place, and disconnecting the battery.
2. Place equipment and components in a safe or neutral position. Make sure components are not in mid-stroke, mid-cycle, or holding a load.
3. Inspect hose and fittings for damage or leaks. Pay close attention to the following areas:

**Hose Cover**

Visually inspect the cover for signs of:

- Abrasion.
- Blisters.
- Nicks, cracks, or cuts.

Squeeze with your hands to test for hardness. Be careful, the hose could be hot.

**Leakage**

The signs of leakage are :

- Puddles of fluid in or around the equipment.
- Low fluid reservoir.
- Greasy\dirty hose.

**Routing**

Check to make sure the hoses are not:

- Rubbing against each other.
- Located next to a high heat source.
- Twisting or kinking.

4. Repair or replace as needed.
5. Inspect other hydraulic components. Take the time to inspect valves, pumps, cylinders, and other hydraulic components for leaks and damage.
6. Turn on the power.

If any step in this inspection indicates a problem or even a potential problem, have it checked out and repaired immediately. Also keep a detailed record of all inspection and service information. Use this record to identify problem areas and trends.

Be aware of your equipment. You know your equipment better than anyone else. If you feel something is not right, check it out to avoid the unwanted result of a hose assembly rupture.

Because the hydraulic oil is in constant contact with precision-machined surfaces, the oil should be kept as clean as possible to prevent unnecessary wear. Dirt particles in the hydraulic oil could cause pump failure. In such instances, the entire hydraulic system must be drained, flushed clean, the filter changed, and the entire system filled with new oil.

Maintain the hydraulic oil level by observing the sight gauge on the reservoir when all cylinders are in the retracted position. The hydraulic oil must be kept between the high and low mark on the sight gauge.

The recommended hydraulic oil for use in this system will meet the following specifications:

**Note:** All temperatures are in Fahrenheit.

| | | | |
|---|---|---|---|
| Gravity | 31 | Pour Maximum Degrees Fahrenheit | |
| Flash Point Min | 360° | Color Max | 35 |
| Viscosity | 100° to 210° | SAE | 2 |
| Fire Min | 415° | Carbon Residue – Max % | 10 |
| Viscosity 210° | 48 | Neutral # | 0.05 |
| V.I. Min | 95 | Sulfur | 0.02 |

**Note:** Oil operating temperatures should not exceed 180° F.

**Caution:** Use only oil which contains anti-foam and anti-oxidizing additives. Do not use oils with low viscosity, naptha base, aircraft hydraulic oil, or hydraulic brake fluid. Oil with a low pour-point must be used for low temperature operation.

**Important Note**

Hydraulic System Pressure…….1900 PSI at 1500 RPM

Operating this system in excess of the Manufacturer's recommendations will void warranty

Use the following table to help you diagnose and resolve problems with the operation of the unit.

| Problem | Probable Cause and/or Solution |
|---|---|
| Unit operates with jerky motion. | • Be sure oil is at the proper level.<br>• Check for possible leaks and repair if necessary.<br>• After any work on the hydraulic system:<br>1) Fill tank with hydraulic oil.<br>2) Replace filter cartridge.<br>3) Operate cylinders to remove air from the system. |
| Oil is cold | • Use the following procedure to warm the oil:<br>1) Operate the hoist control to bottom out the cylinder keeping the lever pushed for approximately five (5) minutes to warm up the oil.<br>2) If the problem reoccurs, check the type of oil being used. It is highly likely that the wrong type of oil is being used. |
| Air in the System<br>(Oil is a milky color) | • Check for a leak in the suction line. |
| Unit does not lift loaded container | • Hydraulic pressure is set too low. Reset the pressure to 1900 PSI with engine at 1500 RPM. If pressure cannot reach 1900 PSI, check pump and replace if necessary.<br>• Hydraulic cylinder may have an internal leak. Determine which cylinder is leaking and repack. |
| Control problems - hesitation noted | • Air is present in the system. Be sure oil is at the proper level. Look for any possible air leaks at hose clamps on the suction hose.<br>• Determine oil type: use only anti-foam hydraulic oil. |
| Pump is noisy and faltering when lifting load | • Possible damage to pump: check and replace if necessary. |
| Vibrations, particularly at high speed | • Suction line is clogged. |
| Oil leaks noticed | • If oil is noticed:<br>1) Change the seal on the pump shaft.<br>2) Repack the cylinders.<br>3) Properly tighten fittings.<br>4) Check hydraulic oil for foaming. |
| Reservoir is overflowing from top | • Reservoir is too full.<br>• Hoist is being lowered without engaging the pump.<br>• Air is present in the system. |

# Appendix: Optional Features

# B

## Introduction

This appendix contains information on the TBX-Two Box Trailer's optional feature. The following option is covered:

**Caution:** Pull the free wheel lever up before connecting to the hoist cable or the winch will be damaged during container loading. Remember to push the free wheel lever down to engage the winch before pulling the hoist cable back to the rear.

The electric hoist cable winch pulls the hoist cable to the rear of the hoist for loading containers. The controls for the electric winch are located on the electric winch at the rear of the hoist.

**To Use the Electric Cable Winch:**

1. Pull the free wheel lever up.
2. Fasten the electric winch cable to the rectangular cable end.
3. Hook the rectangular cable end onto the container hook.
4. Load the container onto the hoist.
5. Unhook the rectangular cable end from the container.
6. Push the free wheel lever down.
7. Turn the black rubber cap on the side of the winch to bring the electric winch cable and hoist cable to the rear of the hoist.