TEREX
LIGHT CONSTRUCTION

SERIES AL4000D1 LIGHT TOWER

OPERATION/SERVICE & PARTS MANUAL

After Serial Number:

FKF-13923

PART NUMBER SFMAL4D1
REVISION B
SEPTEMBER 2006

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SAFETY ALERT SYMBOLS



MEANS:
ATTENTION! BE ALERT!
YOUR SAFETY IS INVOLVED

THIS SAFETY SYMBOL IS USED FOR IMPORTANT SAFETY MESSAGES. WHEN YOU SEE THIS SYMBOL, FOLLOW THE SAFETY MESSAGE TO AVOID PERSONAL INJURY OR PROPERTY DAMAGE.

UNDERSTANDING SIGNAL WORDS

A signal word - **DANGER, WARNING** or **CAUTION** is used with the safety alert symbol.

⚠ DANGER **DANGER** Identifies the hazard or unsafe practice that will result in severe injury or death.

⚠ WARNING **WARNING** Identifies the hazard or unsafe practice that could result in severe injury or death.

⚠ CAUTION **CAUTION** Identifies the hazard or unsafe practice that could result in minor injury or property damage.

NOTICE **NOTICE** Identifies important installation, operation or maintenance information.

GENERAL SAFETY

⚠WARNING DO NOT OPERATE THE AL4000 LIGHT TOWER WITHOUT READING THIS OPERATOR'S MANUAL.



SAFETY ALERT SYMBOL

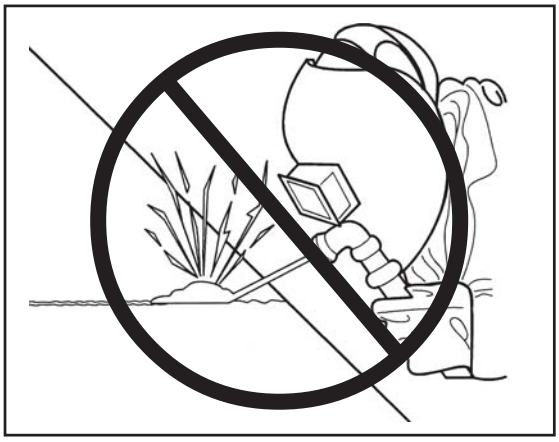
Stop and take time to read ALL Safety alert messages. Follow the safety messages to avoid personal injury or property damage.



ACCIDENT PREVENTION

Use protective clothing and safety equipment. Always wear approved safety equipment such as gloves, safety boots, safety hard hat, goggles, ear protection, and dust masks when necessary.

Wear protective clothing that is snug and belted where required.



UNAUTHORIZED WELDING

⚠WARNING UNAUTHORIZED WELDING CAN CAUSE STRUCTURAL FAILURE OR PERSONAL INJURY.

DO NOT weld on any structural member.

Any unauthorized welding or repair procedure will void the warranty.

GENERAL SAFETY



⚠WARNING FUELING

ALWAYS handle fuel with care. It is highly flammable.

ALWAYS stop engine before refueling. Fill fuel tank outdoors.

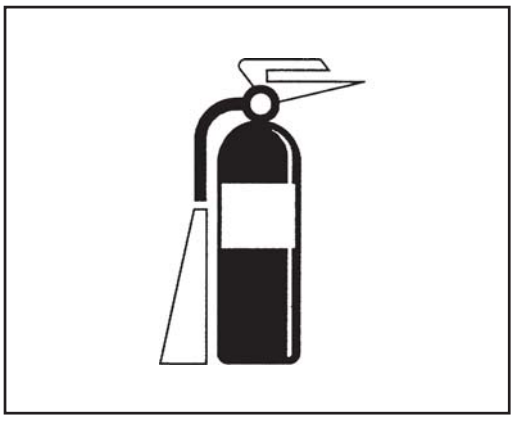
Be sure the fuel supply has a positive shut-off valve**.**

DO NOT replace fuel lines with materials different from those supplied as original equipment.

⚠WARNING FIRES CAN CAUSE SEVERE PERSONAL INJURY OR MACHINE DAMAGE.

Prevent fires by keeping the light tower and its surrounding area clean.

DO NOT refuel while smoking or when near open flame or sparks.



DO NOT refuel the engine when it is hot. Allow to cool for several minutes before refueling.

DO NOT spill fuel inside the engine compartment.

If fuel has leaked, wipe it up and have leak repaired before next use.

Have a fire extinguisher nearby. Be sure the extinguisher is properly maintained and be familiar with its use. Extinguishers rated ABC by the NFPA are appropriate for all applications.

GENERAL SAFETY

⚠WARNING **Guard Against Electrical Shock**

Equipment produces high voltage electricity (up to 480 volts) that can produce a fatal shock to a person who accidentally places their self in the electrical circuit. Use every precaution to avoid contact with the high voltage electrical circuit.

Beware of a cut or damaged power cord. Have a qualified electrician replace immediately.

Take extra precautions when troubleshooting electrical problems. When troubleshooting indicates a malfunction in the high voltage AC system, pass the troubleshooting task on to a qualified and trained electrician.

Disconnect electrical power and turn off engine before removing protective covers on high voltage enclosures.

Understand that the electrical circuits in this light tower complete their paths back to the generator within the equipment. The neutral conductor at the generator is bonded to the equipment frame.

Ground wires within the system are also bonded to the equipment frame.
Only use a multimeter (or voltmeter) with two well-insulated probes rated for 750 volts each.

Keep one hand in your pocket when touching the multimeter probe to hot conductors. This will prevent electricity from passing into one hand and out the other, a path that takes the electricity across the heart.

Always disconnect power from the circuit being measured before connecting test leads to high voltage points.

Do not try to position both probes at once. Instead, clamp the common insulated alligator clip to a neutral wire and then probe for voltages with the other probe.

Never clamp to a hot wire since a severe shock could be received by contact with the other probe.

Inspect the ground cable between the generator set and the frame. If damaged, replace immediately.

Treat all conductors as potentially hot, especially when troubleshooting malfunctioning equipment. Jewelry should be removed before working around live conductors.

Proceed through the circuitry systematically, operating only one section at a time.

Use tools with insulated handles when working within the reach of live conductors.

Maintain a good footing. If you slip, or a tool drops, do not grab for it if live conductors are within reach.

Concentrate on the task until the danger from high voltage is removed.

⚠WARNING **Guard Against Battery Hazards**

Lead acid batteries can be dangerous. The sulfuric acid in the battery can cause severe skin and eye burns. The hydrogen gas emitted during charging can explode if an arc or flame is present near the battery. Use precautions to prevent acid burns or explosive conditions.

Do not smoke while servicing batteries.

Do not allow tools to touch battery terminals and create an arc. Do not test battery voltage by setting up a brief arc at the terminals. Use a multimeter instead.

Disconnect the negative terminal of the battery when working on the engine or other parts to prevent accidental arcing. Disconnect the negative cable at the end away from the battery.

Always wear eye protection when servicing the battery.

When charging the battery, do not remove the vent caps.

If acid does get on skin or in eyes, immediately flush under running water, and then obtain medical help as soon as possible.

⚠WARNING **Guard Against Fire Hazard**

Use caution with diesel fuel and motor oil because of fire hazards.

Do not fill fuel tank while engine is running.

Do not smoke or use open flame near the unit or the fuel tank.

Be sure the fuel supply has a positive shut-off valve.

Do not replace fuel lines with materials different from those supplied as original equipment.

⚠WARNING **Protect The Environment And Practice Good Industrial Hygiene**

Exhaust Gases Are Toxic. Do not use indoors unless properly ventilated. Provide an adequate exhaust system to properly expel discharged gases. Check exhaust system regularly for leaks. Ensure periodically that the exhaust manifolds are secure and not warped. Make sure the unit is well ventilated.

Prevent pollution by catching used oil in a container for proper disposal.

Wash hands to remove oil and fuel. Practice good industrial hygiene.

⚠CAUTION **Do Not Touch Hot Parts**

The exhaust manifold and tailpipe are very hot. Parts of the engine are also hot. Avoid touching hot parts of the engine or tailpipe. Use protective gloves when handling hot parts.

⚠WARNING **Be Alert And Attentive To The Task**

Read the safety instructions and operating procedures before attempting to troubleshoot or work on this unit. Also read the engine manual, which is a separate booklet that is provided with this manual.

Do not work on this equipment when mentally or physically fatigued.

Do not work on this equipment when under the influence of performance impairing drugs or alcohol.

If this manual becomes lost, order a new one from TEREX-Amida so future operation and maintenance personnel may read these instructions.

⚠CAUTION **Beware of Moving Parts**

Avoid being hit or pinched by the moving parts of this unit.

Loose jackets, shirts, neckties, or sleeves should not be worn while working on or running a unit.

Only remove guards or protective devices from unit temporarily to gain access for maintenance. Always replace guards and protective devices promptly (Prior to Operation).

Keep your hands away from moving parts. Particularly, be sure to keep hands clear of the blower and alternator belts when the engine is running.

⚠WARNING **Beware of Traffic Hazards**

Stand clear of traffic when starting or checking the unit along the road.

Check the fuel tank, oil pan, and fuel and oil lines for leaks that would spill fuel or oil on the road.

Check fasteners and mounting brackets periodically to ensure all are tight and nothing is in danger of falling off during transit.

NOTICE **Use Only Equal Replacement Parts**

When a part fails and needs to be replaced only use equivalent size, length, thread, grade, and material. Replace stainless steel fasteners with stainless steel fasteners. The engine may use metric or SAE bolts, but all other bolts are generally SAE thread. Be sure to use Grade 8 bolts and nuts to mount the genset to the trailer.

Replace the fuel and oil hoses with items of equal material, diameter and length.

Contact the manufacturer, TEREX Light Construction, regarding replacement parts to ensure a correct repair.

⚠CAUTION **Use Caution Working Near Lamps**

Metal halide lamps produce short wave ultra-violet radiation and **can cause serious skin burn, or eye inflammation if the outer envelope of the lamp is broken or punctured**. Do not use where people will remain for more than a few minutes unless adequate shielding or other safety precautions are used.

TEREX LIGHT CONSTRUCTION
P.O. Box 3147
Rock Hill, S.C. 29732

MANUFACTURER'S LIMITED WARRANTY

TEREX LIGHT CONSTRUCTION ("TLC") warrants to the original purchaser that such equipment, accessories, parts and other products manufactured by TLC will be free from defects in workmanship and material for a period of one (1) year after the date of first delivery or for one thousand (1,000) hours of use, whichever comes first; provided that Buyer sends TLC notice of such defect within thirty (30) days of its discovery. Should defects be discovered, the Buyer must clearly establish that (I) the equipment, parts, etc. have been properly installed and set up, maintained and operated within the limits of rated and normal usage and (II) the defect did not result in any manner from the intentional or negligent action or inaction of Buyer. Buyer must also return the defective item or items to TLC, Rock Hill, SC for inspection at TLC's request. If Buyer cannot establish that conditions (I) and (II) have been met, then this warranty shall not cover the alleged defect. Failure to give notice of defect within such period shall be a waiver of this Warranty and any assistance rendered thereafter shall not extend or revive it. THIS WARRANTY IS LIMITED TO THE BUYER AND IS NOT ASSIGNABLE OR OTHERWISE TRANSFERABLE.

TLC MAKES NO WARRANTY WITH RESPECT TO PARTS, COMPONENTS, EQUIPMENT AND ACCESSORIES NOT MANUFACTURED BY TLC SUCH AS FIXTURES, BALLASTS, ENGINES, HYDRAULIC PUMPS, FUEL PUMPS, ALTERNATORS, GENERATORS, WINCHES, TIRES AND ELECTRICAL COMPONENTS. Accessories, assemblies and components included in products of TLC, which are not manufactured by TLC, are subject only to the warranty of their respective manufacturers. TLC makes no other warranty, express or implied, and makes no warranty of merchantability or fitness for any particular purpose. This warranty shall not cover misuse, alteration, abuse, negligence, accident, acts of God, sabotage or any item in which serial numbers have been altered, defaced or removed, but shall be limited to repair or replacement of those parts which, upon inspection by TLC, appear to have been defective in material or workmanship.

TLC's liability and Buyer's sole and exclusive remedy for a failure of goods to perform as warranted and/or for any and all other claims arising out of the purchase and use of the goods, including negligence on the part of TLC, shall be limited to the repair or replacement of defective parts returned, transportation prepaid to TLC. TLC shall in no event be liable for incidental or consequential or other damages or losses resulting from a breach of warranty such as, but not by way of limitation, labor costs, loss of profits, loss of use of other than equipment, third party repairs, personal injury, emotional or mental distress, improper performance of work, penalties of any kind, loss of service of personnel, or any other damages or losses which may be experienced by the Buyer.

A product warranty certificate must be filled out in its entirety and returned to TLC in order to process any warranty claims submitted.

THIS WARRANTY IS EXPRESSLY IN LIEU OF AND EXCLUDES ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED (INCLUDING ANY WARRANTY OF MERCHANTABILITY AND FITNESS OF ANY PRODUCT OR GOODS FOR A PARTICULAR PURPOSE) AND ALL OTHER OBLIGATIONS OR LIABILITIES ON TLC'S PART, AND TLC NEITHER ASSUMES NOR AUTHORIZES ANY OTHER PERSON TO ASSUME FOR TLC ANY OTHER LIABILITY IN CONNECTION WITH THE SALE OF TLC'S PRODUCTS. THERE ARE NO WARRANTIES WHICH EXTEND BEYOND THE DESCRIPTION ON THE FACE HEREOF.

WARRANTY PROCEDURE

The specific language of this warranty will determine TEREX LIGHT CONSTRUCTION's obligation in connection with its product. The information presented below should be used as a general guide for implementation of policy. In the event of a component failure during the warranty period it should be repaired as soon as possible, preferably at an authorized TEREX LIGHT CONSTRUCTION service center. If component is manufactured by a company other than TEREX LIGHT CONSTRUCTION, such as Deutz, Honda, Isuzu, Leroy Somer, Lister Petter, Lombardini, Wisconsin, etc., the applicant should pursue repair and/or reimbursement through that manufacturer, and its dealer/distributor network.

To file a claim with TEREX LIGHT CONSTRUCTION, an **APPLICATION FOR WARRANTY ADJUSTMENT (AWA)** form must be completed in it's entirety. Return the completed form within fourteen days of the repair to:

ATTENTION: WARRANTY
TEREX LIGHT CONSTRUCTION
590 Huey Road
Rock Hill Industrial Park
Rock Hill, SC 29730

TEREX LIGHT CONSTRUCTION will review the AWA form. Should we desire to inspect the defective parts, we will issue you a return authorization for the defective parts. After inspecting the defective part(s), and it is determined that warranty is due, we will then, at the discretion of TEREX LIGHT CONSTRUCTION , credit the applicants account or send replacement parts.

TEREX LIGHT CONSTRUCTION **warranty reimbursements:**

1. $40.00 for each hour's labor we allow toward a repair.
2. Distributors cost of parts not more than the price currently available from TEREX LIGHT CONSTRUCTION.
3. One way surface freight charges on parts returned to TEREX LIGHT CONSTRUCTION.

Many repairs are assigned a predetermined labor schedule which is an average time in which a skilled technician should be able to make a repair. TEREX LIGHT CONSTRUCTION will reimburse not to exceed the predetermined number of hours for a particular repair.

TEREX LIGHT CONSTRUCTION **does not reimburse for:**

1. Travel, travel time, nor travel labor.
2. Mileage.
3. Excessive diagnostic time.
4. Repairs of defects, malfunctions, or failures resulting from accidents, abuse, misuse, modifications, alterations, improper servicing or lack of performance of required maintenance service.
5. Repairs where defective parts were not shipped back when requested by TEREX LIGHT CONSTRUCTION.
6. Regular maintenance such as parts or labor for oil changes, filter changes or filters.
7. Repairs where defective parts were not received by TEREX LIGHT CONSTRUCTION after TEREX LIGHT CONSTRUCTION issued a return authorization.

TEREX-AMIDA, INC.

CHECK OUT ON RECEIPT OF DELIVERY:

The tower will be serviced, tested and ready for operation when received except for export units and skid mount units which are knocked down for shipping (export units are sometimes shipped with dry batteries). TEREX-Amida recommends the following checks:

A. INSURE THERE IS NO FREIGHT HANDLING DAMAGE which should be charged against the carrier.

B. INSURE THE MANUALS ARE IN THE POCKET PROVIDED INSIDE THE UNIT.

C. REVIEW THE MANUALS FOR SAFETY AND OPERATING PROCEDURES.

D. CHECK THE ENGINE OIL, COOLANT (IF LIQUID COOLED) AND FUEL LEVELS.

E. OPERATE THE TOWER IN ACCORDANCE WITH OPERATING INSTRUCTIONS.

EXPORT: Assemble according to the instructions enclosed.

TEREX LIGHT CONSTRUCTION

PORTABLE LIGHT TOWER
OPERATION AND SERVICE MANUAL

This Operation and Service Manual contains information pertaining to the operation and maintenance of your Terex Light Tower. We suggest that you read this manual carefully prior to operating the tower. This manual should be retained and referred to for operation, maintenance, and ordering parts When ordering parts, **PLEASE INCLUDE THE MODEL AND SERIAL NUMBER** located on the nameplate of the tower.

For major repair and service or other information, contact your local Terex dealer or write to:

Terex Light Construction
P.O. Box 3147
590 Huey Road
Rock Hill, SC 29730
Telephone: (803) 324-3011
FAX: (803) 366-1101

When returning parts for credit please contact the factory for Return of Goods Authorization.

Terex Model Number _____ Serial Number _____

Engine Model Number _____ Serial Number _____

Generator Model Number _____ Serial Number _____

Sold to: _____ Ship to: _____

_____ _____

_____ _____

Options: _____ Production Date: _____

_____ Work Order Number _____

_____ Shipping Date _____

_____ In Service Date _____

_____

_____

When this unit left the factory the engine was filled with engine oil grade _____

IMPORTANT

WHEN REQUESTING TECHNICAL HELP AND ORDERING REPLACEMENT PARTS THE MODEL AND SERIAL NUMBER ARE NECESSARY.

REFER TO THE TEREX SERIAL NUMBER TAG ON THE UNIT FOR CORRECT MODEL NUMBER AND SERIAL NUMBER.

MODEL NUMBER IDENTIFICATION

Sample:

Light Tower Product Line — AL4 080 D 4 MH CE

Tower Series

AL4000 (AL4) = 30 Foot Basic Tower with winch in cabinet

AL5000 (AL5) = 30 Foot Basic Tower with in-cabinet light storage and door insulation

LT7000 (LT7) = 30 Foot Deluxe Hydraulic Tower w/optional Acoustic Enclosure and Complete Instrumentation

kW Rating
(080 is 8.0 kW)

Diesel (D)

Number of Lights

Type of Lights
HPS = High Pressure Sodium
MH = Metal Halide
TH = Tungsten Halogen

European Version (AL4000 Only)

RECOMMENDED ENGINE OIL & FUEL

KUBOTA D905 DIESEL ENGINE

Engine oil should be MIL-L-2104C or have properties of API classification of CD grades or higher.
Change the type of engine oil according to the ambient operating temperature:

Above 77°F (25°C)	SAE 30
32°F to 77°F (0 to 25°C)	SAE 20
Below 32°F (0°)	SAE 10W SAE 10W-30

Use #2 diesel fuel.

NOTES:

1. The temperatures in the table are the ambient temperatures at the time when the engine is started. If the running ambient temperatures are much higher than the starting temperatures, a compromise must be struck and a higher viscosity oil used. Multi-grade oils overcome the problem, provided they possess a suitable specification.

2. MIL-L-2104B or MIL-L-2104C or API CD must also be used if the sulfur content of the fuel exceeds 0.5%.

3. Always use a reputable brand of diesel fuel. The sulfur content should be below 0.5% (higher sulfur content would require more frequent oil changes). Observe strict cleanliness when filling the fuel tank.

4. Check the engine oil level before starting the engine or more than five minutes after it has been stopped. Remove the dipstick, wipe clean, reinsert it, take it out again, and check the oil level. If the oil level is too low, remove the oil filler cap and add new oil until the FULL line on the dipstick is reached.

MODEL AL4000

OPERATING INSTRUCTIONS

⚠WARNING **READ ALL DIRECTIONS IN MANUAL CAREFULLY BEFORE OPERATING EQUIPMENT**

⚠WARNING **DO NOT RAISE TOWER IN THE VICINITY OF OVERHEAD POWER LINES!**

O P E R A T I N G I N S T R U C T I O N S

I. MOVE LIGHT TOWER TO DESIRED LOCATION KEEPING THE FOLLOWING IN MIND:

A. The light tower should not be placed where those working under the light are either:

1) Forced to look into the light regularly.
2) Forced to work with their backs to the light (shadows will block the light from the work area).

B. The area where the tower is positioned should be relatively level.

C. The light tower should be located on the same level or on ground higher than the area being lighted (higher light mounting heights reduce the shadow length).

D. Unit should be level to ensure smooth trouble-free tower telescoping. Tower may not telescope down properly when unit is not level.

II. UNHITCH FROM THE TOWING VEHICLE AS FOLLOWS:

A. Engage the trailer braking system, especially if trailer is not on level ground. **CAUTION:** If electrical or manual braking system is not supplied, chock the wheels instead.

B. Swing the tongue jack into position and raise the tongue off the towing vehicle.

III. LEVEL THE TRAILER, USING THE JACKS AS FOLLOWS:

A. Extend the rear outriggers until the springs lock into place. Swing the jack on each outrigger into vertical position.

B. Start at the highest jack position. Rotate the jack handle until the jack foot touches the ground.

C. Raise the other jacks to level trailer... **⚠WARNING** ...insure that the rear jacks are down to prevent the tower from tipping over backwards when raised.

IV. DRIVE GROUNDING ROD INTO EARTH

V. INSTALL THE FLOODLIGHTS ON THE CROSSBEAM

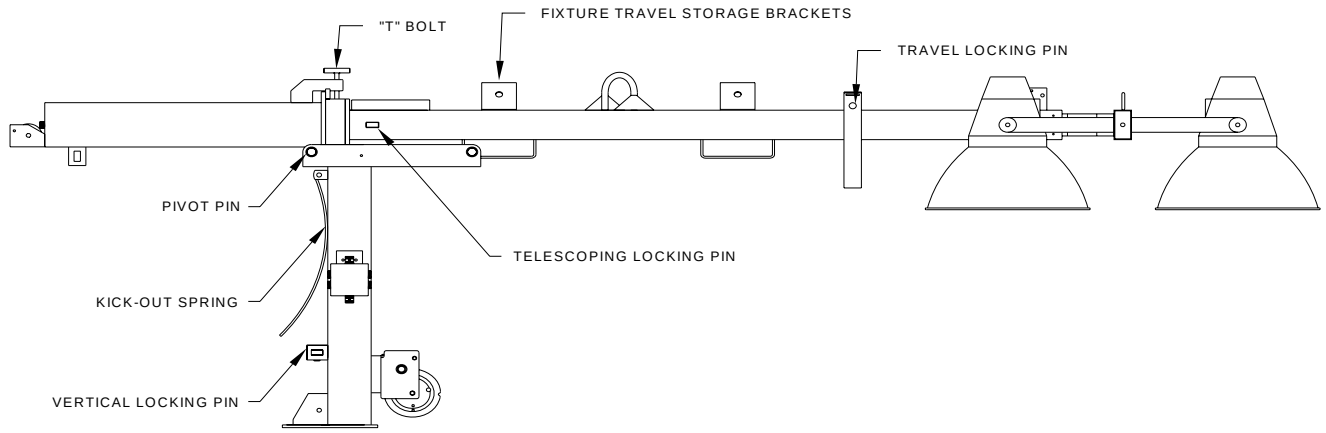
A. Remove the light fixtures from the tower by removing detent pin and rotating the clamp to free the lights. Install them on the cross arm studs with the lens facing the ground.

B. The cord on the fixture should be on the side closest to the trailer so the cord entry is beneath the fixture when the tower is raised (this reduces moisture problems and ensures the water weep hole in the fixture is down).

C. Set the vertical aim for each light fixture by adjusting the light fixtures and tightening the lower bolt.

D. Set the spread between the light fixtures horizontal aiming by adjusting the fixtures and tightening the wing nut.

E. The unit may be transported with the light fixtures mounted on the cross-arm if they are pointed toward the ground.



VI. RAISING THE TOWER (refer to drawing above)

A. Remove the tower travel-locking pin from the cradle at the rear of the cabinet.

B. Aim the fixture, both horizontally and vertically, to the estimated angles that will light the work area.

C. Using the winch, raise the tower to the vertical position. The tower-locking pin at the base of the pivot post will lock automatically and you will hear it “snap” into place. Insert manual pin into locking device.

D. Release the tension on the cable by backing the winch off slightly and pull the telescoping locking pin on the galvanized tower section. Hold this out while turning the winch to raise the tower. After the tower has telescoped slightly, the locking pin can be released. Raise the tower to the desired height.

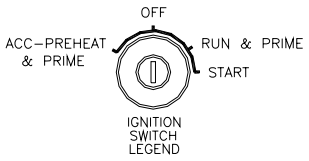
⚠CAUTION DO NOT ATTEMPT TO LEAN THE TOWER DOWN BELOW 45° WHEN IT IS EXTENDED-SERIOUS DAMAGE MAY OCCUR!

VII. START THE ENGINE / GENERATOR SET

A. **⚠CAUTION** Ensure the circuit breakers are turned "OFF". This prevents the engine from starting under load and prevents electrical equipment from being subjected to improper voltage and frequency.

B. Check the oil, fuel, and coolant (if liquid cooled) levels. If the fuel tank is empty, it may be necessary to bleed the fuel line after filling the tank (see engine instruction book for procedure).

C. Turn the ignition switch to the "ACC" position (see diagram below). Press the preheat push-button for a **maximum of 20 SECONDS**. Do not engage the preheat button longer than the time specified or damage may occur.



D. Turn the ignition switch to the "START" position to engage the engine. After the engine starts, release the switch so that it returns to the "RUN" position. Let the engine come up to speed and stabilize (review the engine operating procedures in the manufacturers handbook). Note: If engine will not start, leave switch in run position for additional 10-20 seconds to completely prime the fuel system. Then repeat step "C" and start engine.

E. Turn on the main circuit breaker.

VIII. TURN ON THE FLOODLIGHTS

A. Turn the circuit breakers "ON" and check to ensure that all lamps come on. Allow a minimum of two (2) minutes for lamps to reach full luminance.

B. If required, rotate the tower to aim the lights as desired. Tighten the tower rotating locking bolt.

C. Adjust the tower vertically and adjust lighting direction of individual fixtures if required.

IX. TURN OFF THE FLOODLIGHTS

A. If operating, turn light circuit breakers off.

B. Turn engine switch to "OFF" to shut down the engine.
⚠CAUTION **Do not shut down engine prior to turning lights off**.

C. **⚠CAUTION** Allow lamps to cool at least ten (10) minutes before moving the tower to avoid breaking lamps.

X. LOWERING THE TOWER TO TRAVELING POSITION

A. Using the winch, telescope the tower down to its fully retracted position until the telescoping locking pin snaps into place.

B. **⚠CAUTION** Ensure that the telescoping locking pin locks before pulling the vertical lock pin at the bottom of the pivot post. This ensures the tower is completely lowered and cannot be damaged by telescoping out while in the travel position.

C. Loosen rotating lock.

D. Rotate the tower so that the groove in the galvanized ring at the pivot is pointing to the rear of the trailer to enable the tower to be lowered into the travel position.

E. Tighten rotating l ock.

F. Pull the vertical locking-pin at the base of the pivot post (the kick-out spring should provide sufficient pressure to start the tower pivoting over).

G. Let out on the winch cable to lower the tower into the cradle.

H. Insert the rear tower horizontal travel-locking pin into the cradle.

XI. RELOCATING LIGHT TOWER TO NEW LOCATION

A. Insure that tower has been properly lowered (see section VII) and locking pins are engaged.

B. Insure all fixtures are pointed toward the ground, or mounted on the fixture storage brackets on the lower tower section.

C. **⚠CAUTION** All jacks must be raised and all outriggers locked into travel position.

D. Insure that the coupler is properly secured to the towing vehicle and safety chains are attached (if supplied). Release any manual braking mechanism (if supplied).

E. Do not tow at excessive speeds (60 mph – 100-kmh maximum) as the weight of the light tower can cause loss of vehicle control, especially under emergency stopping conditions. The standard trailer has no towing brakes; therefore allow extra distance for stopping.

XII. USE OF LIGHT TOWER AUXILIARY POWER

A. One (1) 30amp/240v Twist-Lock and (1) 15 amp/120v receptacles are provided for auxiliary power.

B. Total auxiliary power cannot exceed main circuit breaker rating. Each lamp operating consumes 10 amps of current @ 120 vac.

C. Before plugging in auxiliary power cords, feed them up through the trailer frame and attach to receptacles. Close the cabinet doors to protect control panel and other components from weather (see Miscellaneous Specifications and Routine Maintenance section for power control details).

LIGHT FIXTURE TROUBLESHOOTING

⚠ DANGER Do not open fixtures while light circuit breaker is "ON". Allow lamp to cool before touching.

TAKE EXTRA PRECAUTIONS WHEN TROUBLESHOOTING ELECTRICAL PROBLEMS

A. Only use a voltmeter with two well-insulated pin probes rated for 600 volts.
B. Treat all conductors as potentially hot.
C. Proceed through circuits systematically, operating only one section at a time.
D. Before disconnecting ballast, turn off circuit breaker and wait 30 seconds for capacitor to discharge.
E. If all the lights are out and all the ballasts are receiving power, suspect burned out power cable.

SYMPTOM	CAUSES	CORRECTIVE ACTION
LAMP WILL NOT START	Check Ballast Status Light	a.Input lights should be on. This confirms power is going to the ballast. b.Output lights should be on. This confirms power is coming from ballasts. c.Output lights should be normal brightness. If one or moreof the output lights stay extra-bright, then the lamp is notstriking. d.Use this knowledge to diagnose problem. e.If ballast status light is out, but the floodlight lamp is working, suspect burned out ballast status lamp and replace
	Lamp loose in socket	Inspect lamp base to see if there is arcing at center contact button. Tighten lamp snugly. Check socket for damage. Replace if defective.
	Floodlight Plugs not tight	Check plug and receptacle. Tighten if loose.
	Defective Ballast	Interchange ballast plugs in generator enclosure. If lamp starts, replace ballast. Check ballast wiring diagram. Check for swollen capacitors, charred wiring, core and coil, or other signs of excessive heat.
	Low Voltage	Check line voltage at ballast input. Voltage should be within 10% of nameplate rating when operating at normal load. Increase supply voltage or remove external load.
	Improper ballast	Proper HID lamps will perform erratically or fail to start on an improper ballast. The ballast nameplate data should agree with the line voltage and lamp used. Improper ballast will cause lamp to fail.
	Improper lamp operating position	Operating position should agree with lamp etch. A BUHOR lamp can be operated base up vertical to and including the horizontal and BD can be operated base down and vertical to, approaching, but not including the horizontal. A lamp operated beyond the specified position may not start.
	Lamp has been operating; cool down time insufficient	HID lamps require 4 to 8 minutes cool-down time before restarting. Switch off breaker and allow lamp to cool.

LIGHT FIXTURE TROUBLESHOOTING (cont'd)

SYMPTOM	CAUSES	CORRECTIVE ACTION
LAMP STARTS SLOWLY (ARC DOES NOT STRIKE WHEN SWITCH IS FIRST TURNED ON)	Defective Lamp	Lamp may glow for extended period of time. Replace after checking voltage and ballast.
CIRCUIT BREAKER TRIPS ON LAMP START-UP	Short circuit	Checking wiring against diagram. Check for shorts.
LAMP LIGHT OUTPUT LOW	Normal lamp depreciation	Replace lamp
	Dirty lamp or fixture	Clean lamp and fixture (Let cool sufficiently before cleaning)
	Defective ballast	Interchange ballast plugs in generator enclosure. If lamp returns to normal light output, replace ballast. Check for swollen capacitors, charred wiring, core and coil, or other signs of excessive heat.
	Wrong Voltage	Check voltage at ballast input. Voltage should be within 10% of nameplate rating. Check wiring connections for voltage loss. Check socket contact point.
	Improper ballast	Check ballast nameplate against lamp data.
LAMP COLORS DIFFERENT	Normal lamp depreciation	Lamp color and brightness decreases and colors change slightly as lamps age. Spot replacement with new lamps may cause noticeable differences in lamp colors. Group replacement minimizes color differences.
	Dirty fixture	Dirty fixtures will cause lamps to appear different in color. Clean fixture.
	Wrong lamp	Check data on lamps, which appear different in color. Replace with correct color lamp.
ARC TUBE DISCOLORED OR SWOLLEN	Over voltage from power supply	Check voltage at ballast. Check for current or voltage surges. Check for shorted capacitors and replace if defective.
	Improper ballast	Lamp operated on ballast designed for higher wattage lamp. Check ballast nameplate against lamp data.

LIGHT FIXTURE TROUBLESHOOTING (cont'd)

SYMPTOM	CAUSES	CORRECTIVE ACTIONS
SHORT LAMP LIFE	Lamp damaged	Check for outer bulb cracks. If air enters outer bulb, arc tube may continue to burn for 100 hours before failure. Check for bulb cracks where glass meets the base due to tightening lamp too firmly in socket. Look for broken arc tube or loose metal parts. Replace lamp.
	Improper ballast	Ballast nameplate data should agree with lamp line voltage and lamp use. If improper ballast is used, the lamp life will be shortened. A mismatch may also cause the ballast to fail.
LAMP FLICKERS AND GOES OUT INTERMITTET	Improper ballast	Improper ballasting can cause flickering or erratic operation. In the start-up period the lamp may ignite, start to warm-up and then extinguish (cycle).
	New lamp	Under certain conditions new lamps may "cycle". Usually after three (3) tries to start at 30 to 60 second intervals, lamps will stabilize and operate satisfactorily.
	Defective lamp	Replace lamp.
	High spike ballast	Ballast produce high spike current. Measure with oscilloscope. Replace ballast as required.

TRACEABLE NUMBERED WIRING SYSTEM

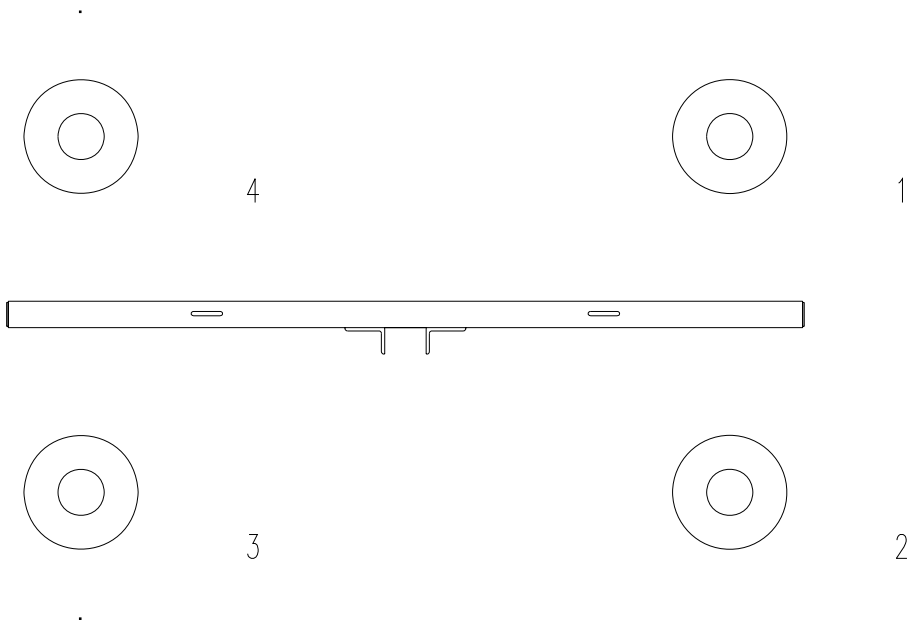
(Using plug in ballasts to troubleshoot)

When troubleshooting the preceeding problems, minimize down time by following the traceable numbered wiring system, always follow these steps:

STEP1: Insure all ballasts, which are numbered, are plugged into lead wires with corresponding numbers.

STEP 2: Looking at the lights from the glass side and following the diagram below, plug each fixture into the appropriately numbered plug at the top of the tower.

By adhering to the traceable numbered wiring system, troubleshooting, fixture aiming, and fixture control will follow a standard predictable pattern.



TEREX Amida Model AL4000
Light Tower – General Specifications
And Routine Maintenance

TEREX Amida model AL4000 series light tower provides mobile; trailer mounted floodlighting for nighttime maintenance, construction, mining, and emergency work. It consists of a trailer with a diesel powered 6 kW 60Hz (50 Hz units available) generator, and a 30 foot cable actuated tower with four (4) 1000 watt floodlight fixtures. It is ideally suited for heavy-duty use and is built to meet the following specification:

DIMENSIONS

Overall length, travel position w/fixtures & tongue	179”	(4547 mm)
Overall length, tower vertical w/tongue & jacks	124”	(3150 mm)
Trailer frame length	70”	(1778 mm)
Overall height, floodlighting position	30’	(9.14 mm)
Overall height, travel position	68”	(1727 mm)
Overall width with fenders	61”	(1549 mm)
Overall width with outriggers pulled out	102”	(2591 mm)
Trailer frame width	41”	(1041 mm)
Tongue length	44”	(1118 mm)
Wheel size	15”	(381mm)
Axle Rating	3500 lb.	(1588 kg)
Tongue weight travel position	100 lb.	(45.4 kg)
Total weight no fuel	2050 lb.	(930 kg)
Fuel Capacity	30 gal.	(114 l)
Unit weight with full fuel tank	2250 lb.	(1020 kg)

This section details specifications and maintenance not covered in the operators and trouble-shooting sections of this manual and the AL4000 specification sheets.

OIL / AIR SERVICE

The engine oil should initially be changed after the first 50 hours of use and then every 200 hours thereafter. The oil filter should be replaced after every 400 hours of use. The air filter element should be replaced once every year, or after six cleanings (see manufacturer’s operation manual for details).

BRAKE SYSTEM

Electrical or mechanical brakes are not standard equipment on the AL4000. Contact your dealer or the factory for option information.

MANUAL WINCH

Maintain a light film of automotive-type grease on the pinion, drum gear, and the O.D. of the drum bearing at all times. Keep the ratchet pawl pivot, pinion shaft bushings, and pinion threads lubricated with automotive engine oil at all times. Before each use, check the brake friction discs for wear. If less than 1/16" thick, cracked, or broken, replace **IMMEDIATELY.** Ratchet pawl should "click" when tower is raised, and not when it is lowered. Always be alert for any fraying of cables, and replace any damaged cables **IMMEDIATELY.** Never stand under any object lifted by the winch.

ELECTRIC WINCH

The electric winch is permanently sealed and does not need any periodic lubrication.
Always be alert for any fraying of cables, and replace any damaged cables **IMMEDIATELY.**
Never stand under any object lifted by the winch.

RECETACLE POWER TABLE

METAL HALIDE/ HIGH PRESSURE SODIUM

STATUS	RECEPTACLE POWER AVAILABLE 120/240 VAC	
LIGHTS ON	DUPLEX W/FI	240V- 30A REC.
ALL OFF	15 AMPS*	30 AMPS*
1 OR 3	15 AMPS*	16.6 AMPS
2 OR 4	15 AMPS*	16.6 AMPS
1 AND 3	15 AMPS*	8.3 AMPS
2 AND 4	8.3 AMPS	8.3 AMPS

TUNGSTEN HALOGEN

STATUS	RECEPTACLE POWER AVAILABLE 120/240 VAC	
LIGHTS ON	DUPLEX W/FGI	240V- 30A REC.
ALL OFF	15 AMPS*	30 AMPS*
1 OR 3	15 AMPS*	17 AMPS
2 OR 4	15 AMPS*	17 AMPS
1 AND 3	15 AMPS*	10 AMPS
2 AND 4	15 AMPS*	10 AMPS

- There is more current available than listed. The rating of the duplex receptacle is 15 amps.

NOISE LEVEL

Mean SPL (sound pressure level) hemispherically at 7 meters: **62.01dBA**
Sound Power Level (62.01dBA + 20 log d + 7.8): **90.0 LWA re 1 pW**
D = 7 meters

MISCELLANEOUS SPECIFICATIONS

The Amida AL4000 light tower is built to NEC standards.

FASTENER TORQUE SPECIFICATIONS

All fasteners should be torqued to the following specifications in lb-ft (lb-in):

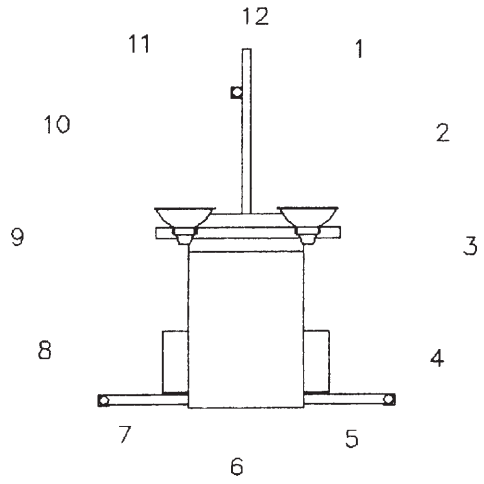
FASTENER SIZE UNF & UNC	STAINLESS STEEL*	STAINLESS STEEL* NYLOK NUT	SAE GRADE 5 PLATED (METRIC 8.8)	SAE GRADE 5 PLATED NYLOK NUT	SAE GRADE 8 PLATED (METRIC 10.9)	SAE GRADE 8 PLATED NYLOK NUT
#6	(10-12)	(8.5-10)	(14-16)			
#8	(20-22)	(17-19)	(25-28)			
#10	(26-32)	(22-27)	(40-45)			
1/4"	(75-94)	(64-80)	7-9		12-14	
5/16"	12-Nov	14-Dec	15-17		23-26	
3/8"	20-22	22-24	28-34		45-50	
7/16"	31-33	32-35	40-45		70-75	
1/2"	43-45	45-50	75-85	70-80	100-110	95-105
9/16"	57-63	60-65	80-100	75-95	145-160	135-150
5/8"	92-104	100-105	130-170	125-165	175-205	165-195
3/4"	128-135	140-150	220-240	205-225	380-420	365-405
4mm	(22-26)	(19-22)	(23-27)			
6mm	(45-50)	(38-43)	(72-78)			
8mm	12-Nov	9-10	14-16			
10mm	18-20	15-17	45-50	40-45	70-75	
12mm	42-44	36-38	56-60	50-55	95-105	
16mm			140-148			
18mm			185-200			
20mm			280-290			

* An anti-seize lubricant MUST be used on all stainless steel hardware.

WIND LOADING CHARACTERISTICS

All wind load calculations were performed with the tongue at 12 o'clock, the wind coming from the direction shown with the lights flat-facing into the wind.

WIND DIRECTION	SPEED
FROM 12 O'CLOCK	78 MPH
FROM 1 & 11 O'CLOCK	83.8 MPH
FROM 2 & 10 O'CLOCK	92 MPH
FROM 3 & 9 O'CLOCK	66 MPH
FROM 4 & 8 O'CLOCK	62 MPH
FROM 5 & 7 O'CLOCK	84 MPH
FROM 6 O'CLOCK	90 MPH



NOTE:

If optional front outriggers are used, the allowable wind loading in the 3 and 9 o'clock directions is 79 mph. In the 4 and 8 o'clock directions, the allowable wind velocity would be 94 mph.

CRITERIA FOR REPLACEMENT OF WIRE ROPE – TEREX-AMIDA LIGHT TOWERS

The wire ropes used to raise and lower the masts on a TEREX-Amida Light Tower are probably some of the most important mechanical parts used in day-to-day operation of the machinery. It is therefore very important that the cables be inspected on a frequent basis (once a month) for wear and tear, and immediately in the event of possible damage due to operator error in using the winch, or possible damage from other equipment.

NORMAL WEAR AND TEAR

When used properly, the wire ropes should give years of trouble-free service, depending on how often the masts are raised and lowered. The rule of thumb at TEREX-Amida is that if the tower is **raised and lowered an average of once per day**, that the cables **should be replaced every two years of service**.

NORMAL INSPECTION

The wire ropes are constructed of 7 strands of 19 plow steel wires each twisted together, and then the assembly galvanized to resist corrosion. Using a wadded-up cloth or heavy leather gloves (to avoid being pricked by a broken wire), run a hand up and down a length of the cable. If any exterior wires are broken, they will lift up from main body of the cable and become visible. For any given 1 foot of cable length; if there are 4 or more wires each, on any 2 or more strands broken, the suspect rope **should be replaced immediately**.

OPERATOR ERROR – OTHER MACHINERY DAMAGE

One of the most common reasons for failure of a Light Tower wire rope is due to operator error in using the winch, or damage to the cable by tools or other machinery. The most common operator error happens when the mast is telescoping down. **When the upper telescoping lock engages, the operator does not pull the lower pivot lock out (located on the tower base) and keeps on cranking the winch. This results in the cable becoming loose around the drum due to the tower not pivoting down**. This can result in three problems: the loose cable can get trapped underneath itself, resulting in a sudden or partial "drop" of the mast when the loose section releases at a later time, thus damaging the cable; or the cable can jump off the winch drum and be damaged by the gears of the winch. The loose cable can also cause the drum to spin to take up the slack cable. If there is enough friction in the threaded parts of the winch, the drum can cause the crank handle to start spinning. This can cause the tower to "freefall" and the results can be catastrophic for anyone standing underneath the tower. A spinning crank handle can also break bones. Other reasons damage can occur are due to some outside force such as forklift blade nicking or crushing a cable when moving a unit, or an accidental blow or damage by a hand tool, etc.

DAMAGE INSPECTION

If any nicks (partial strand cut through), kinks (permanent bends), or weld spatter on the cable (from field service) are observed, the suspect wire rope **should be changed immediately.** If there is a crushed spot somewhere on the wire rope, it should be **replaced only** if the width of the crushed spot exceeds 1-1/4 times the nominal diameter of the cable (5/16" on a 1/4" cable, and 7/32" on a 3/16" cable), or if there are broken wires at the point of damage.

BROKEN CABLE REPLACEMENT PROCEDURE

1. PREPARATION

    1.1 Collapse tower to where mast is retracted, then pivot tower to horizontal position.
    1.2 Remove the tower from the trailer and place it on a work surface such as two saw horses.

2. REMOVING TOP CABLE AND TOP MAST SECTION

    2.1 Tie middle section and large section together by wrapping band, cable, chain, or rope around the sheave brackets on these two sections. This insures that the middle section stays inside the large section during removal of the small section.
    2.2 Remove or lock the telescope lock pin open. This is the pin that locks the three sections together during travel.
    2.3 Drill out the aluminum pop rivets holding the plastic guides at the top of the middle section. Using a screwdriver, remove these guides.
    2.4 Remove the clevis pin anchoring the cable to the top of the middle section and remove the clevis pin and the sheave from the middle section.
    2.5 Pass the free end of the cable through the sheave slot between the middle and small section, and out of the top of the tower. Pull the cable and the small section completely out of the middle section together. Be sure to keep the cable tight; if slack accumulates it is most difficult to remove.
    2.6 Unfasten the cable by removing the bolt at the base of the small section.

3. REINSTALLING THE SMALL SECTION

    3.1 Fasten new cable to the base of the small section.
    3.2 Reversing the procedure described in steps 2.1 through 2.5, reinstall the small section.
    3.3 Reinstall the plastic guides with new pop rivets. New plastic guides should be used, but the old guides can be used if their mounting position is shifted to the point where new holes can be drilled in the tower section to provide a good fit when installing new pop rivets.

4. REMOVING THE LOWER CABLE AND MIDDLE TOWER SECTION

    4.1 Remove or lock open the telescope lock pin if not previously done in step 2.2.
    4.2 Drill out the aluminum pop rivets holding the plastic guides at the top of the large section. Using a screwdriver, remove these guides.
    4.3 Remove the cable from winch drum.
    4.4 Remove the sheave clevis pin and the sheave from the top of the large section.
    4.5 If the old cable is not frayed between the winch and the bottom mast pulley, attach a flexible “fish wire” or “snake” (wire, rope cord, etc.) to the end of the cable to be used to thread the new cable through the lower tower and pulleys. This can be done by “untwisting” the cable and inserting the wire or cord into the middle of the cable and thus letting the cable twist back tightly around the fish wire. If the old cable is frayed, cut off the frayed portion and proceed as above and then remove tower and cable as instructed in section 4.6.

4.6 Pass the free end of the cable through the sheave slot between the large and middle sections and out of the top of the tower. Pull the cable and the middle section completely out of the large section altogether. Be sure to keep the cable tight, if slack accumulates it is most difficult to remove.

4.7 If the fish wire doesn't work, it is necessary to remove the square mast section from the round mast section. Remove the pivot pin from the pivot post and lift the mast from the pivot post and place the assembly on a work surface. Remove the hex nut from the bottom of the round section, remove the "T" bolt at the top of the round section, and pull the square mast assembly out of the round section, and proceed as instructed in section 4.6.

4.8 Unfasten the cable by removing the bolt at the base of the middle section.

5. REINSTALLING THE LOWER CABLE AND MIDDLE SECTION

5.1 If the "fish wire" worked, attach the cable to the fish wire and pull through the pulleys and the round section.

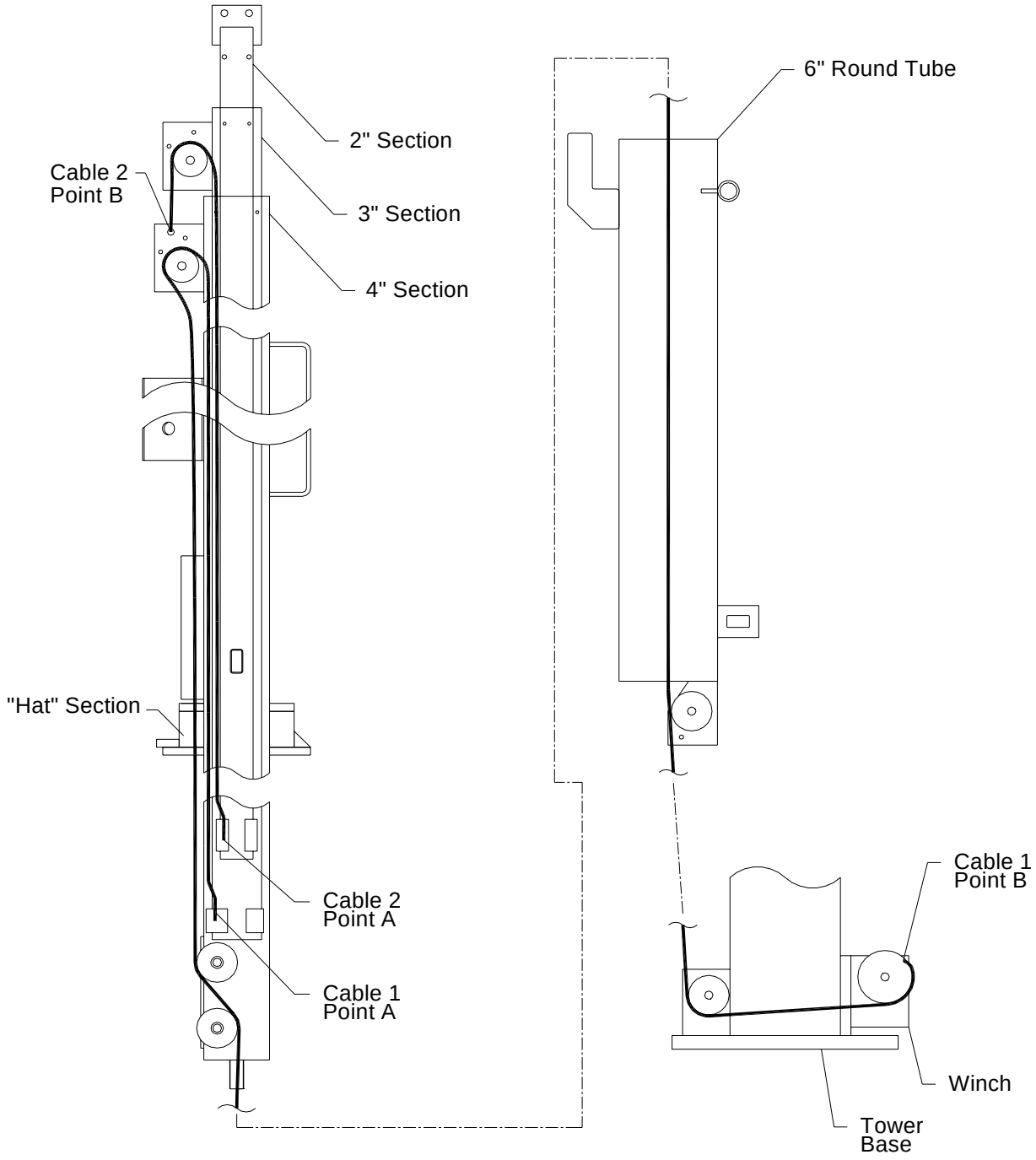
5.2 If the square tower section was removed from the round section, thread the cable through the pulleys at the bottom of the large section and out of the tubular stud. Reinstall the large square section into the round section. Install the "T" locking bolt, and the hex nut on the bottom of the round section. The hex-locking nut should be tightened and then backed off approximately one-half turn or until the tower rotates freely.

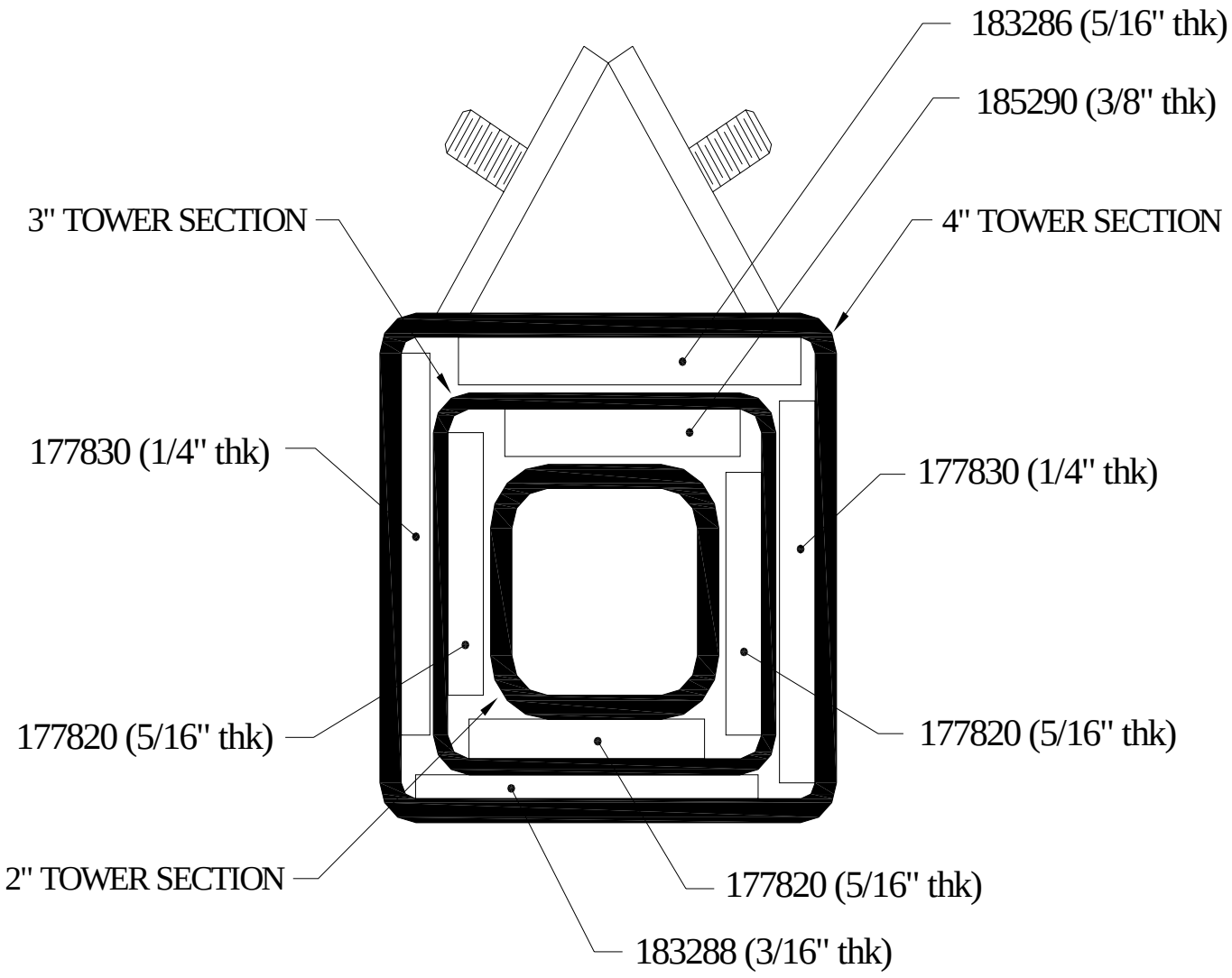
5.3 Fasten the new cable to the base of the middle section.

5.4 Reversing the procedures detailed in sections 4.4 through 4.7, reinstall the middle section.

5.5 Fasten the new cable to the winch drum.

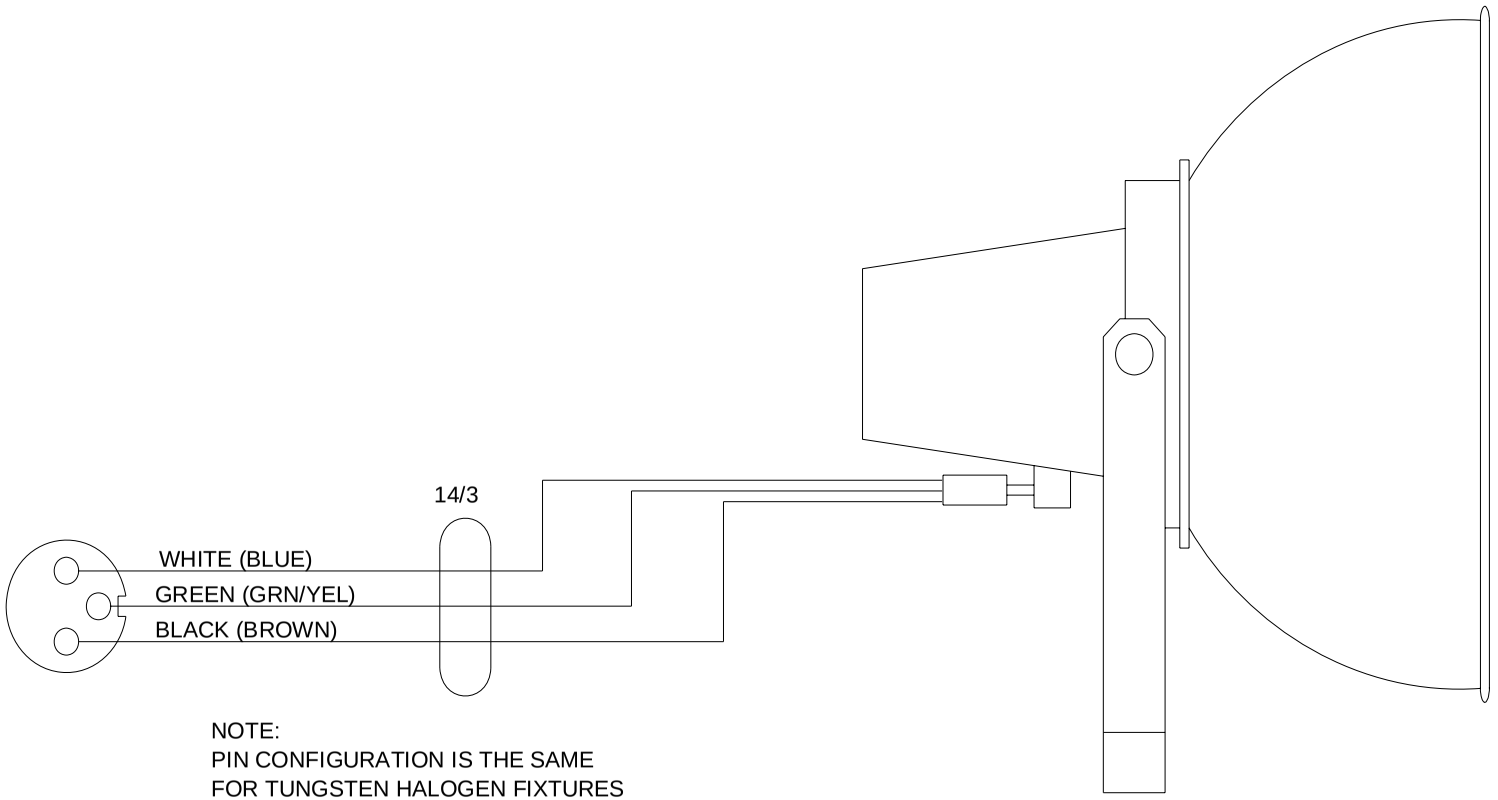
5.6 Reinstall the plastic shims as described in section 3.3.


2" Section
Cable 2
Point B
3" Section
4" Section
"Hat" Section
Cable 2
Point A
Cable 1
Point A
6" Round Tube
Cable 1
Point B
Winch
Tower
Base



SHIM PLACEMENT(as viewed from crossarm end)

PART# WD2985			DWG.# 2985A
ITEM#	PART#	DESCRIPTION	#REQ



NOTE:
PIN CONFIGURATION IS THE SAME
FOR TUNGSTEN HALOGEN FIXTURES

DOMESTIC COLOR CODE	EUROPEAN COLOR CODE	CIRCUIT
WHITE	LIGHT BLUE	COMMON FROM BALLAST
BLACK	BROWN	HOT FROM BALLAST (LIVE)
GREEN	GREEN W/YELLOW	GROUND (EARTH)

REV.	DATE	ECO #	CHANGE
A	3/15/00		ADDED EUROPEAN (CE) WIRING DATA

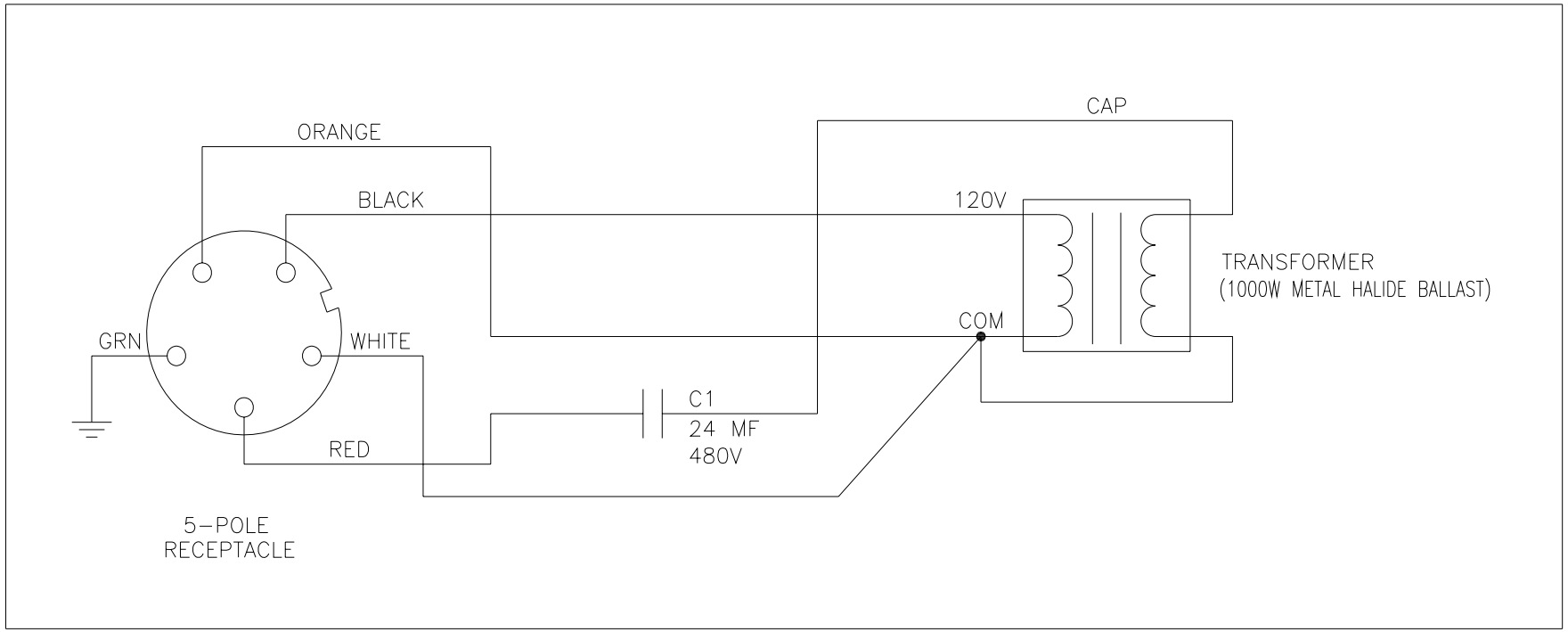
TOLERANCES UNLESS OTHERWISE SPECIFIED:
Fractions ±1/16
Decimals .XX=±.030 .XXX=±.010
.XXXX=±.005
Degrees ±1/2°
REMOVE ALL BURRS & SHARP EDGES

Terex–amida
590 HUEY Rd, ROCK HILL, S.C.
Ph. (803) 324-3011 FAX 366-1101

WIRING DIAGRAM, MH OR HPS FIXTURE

MATL.		W/JOY CONNECTOR	BORDER "B"
MAT P/N		DR BY	SCALE NONE
PLOT 4/30/91	DATE 4/30/91	PART# WD2985	DWG.# 2985A

PART# WD2986			DWG.# 2986
ITEM#	PART#	DESCRIPTION	#REQ

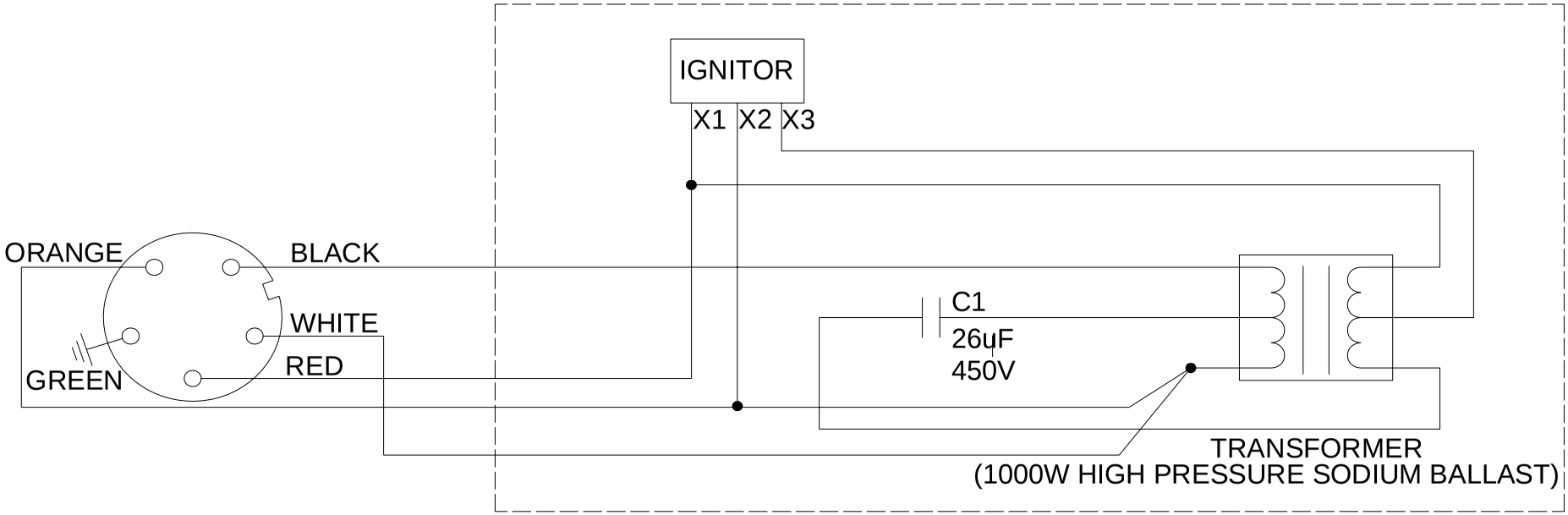


COLOR	CIRCUIT
BLACK	INPUT 120V
WHITE	INPUT COMMON
RED	LAMP HOT
ORANGE	LAMP COMMON
GREEN	GROUND

REV.	DATE	ECO #	CHANGE

TOLERANCES UNLESS OTHERWISE SPECIFIED: Fractions ±1/16 Decimals .XX=±.030 .XXX=±.010 .XXXX=±.005 Degrees ±1/2° REMOVE ALL BURRS & SHARP EDGES		Terex 590 HUEY Rd, ROCK HILL, S.C. Ph. (803) 324–3011 FAX 366–1101	
		WIRING DIAGRAM–1000MH BALLAST	
MATL.		W/JOY CONNECTOR	BORDER "B"
MAT P/N	USAGE	DR BY CNM / APP BY	SCALE NONE
PLOT 4/30/91	DATE 4/30/91	PART# WD2986	DWG.# 2986

PART#	WD2987		DWG.# 2987
ITEM#	PART#	DESCRIPTION	#REQ



5-POLE
RECEPTACLE

COLOR	CIRCUIT
BLACK	INPUT 120V
WHITE	INPUT COMMON
RED	LAMP HOT
ORANGE	LAMP COMMON
GREEN	GROUND

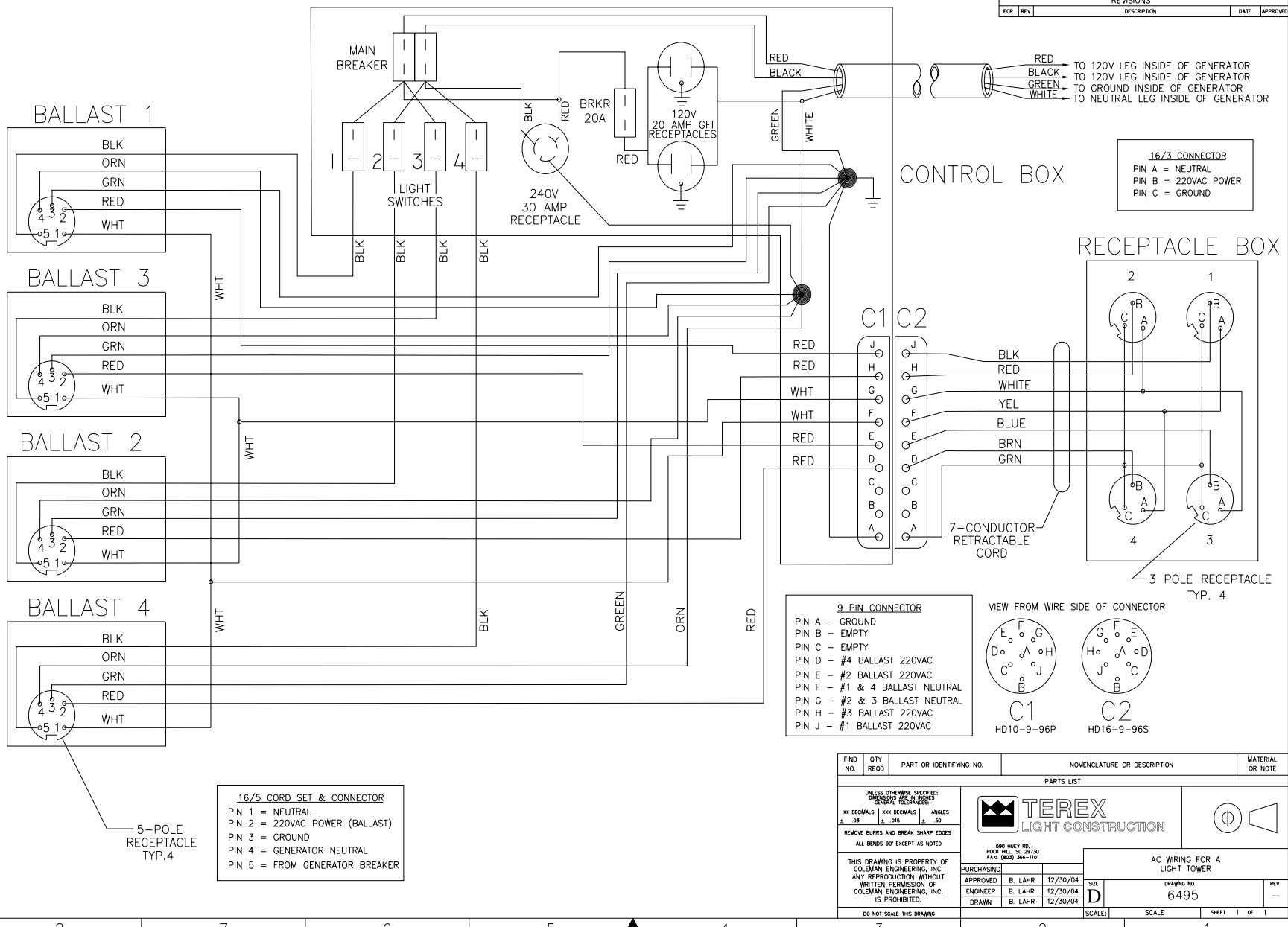
REV.	DATE	ECO #	CHANGE

TOLERANCES UNLESS OTHERWISE SPECIFIED:
Fractions ±1/16
Decimals .XX=±.030 .XXX=±.010
.XXXX=±.005
Degrees ±1/2°
REMOVE ALL BURRS & SHARP EDGES

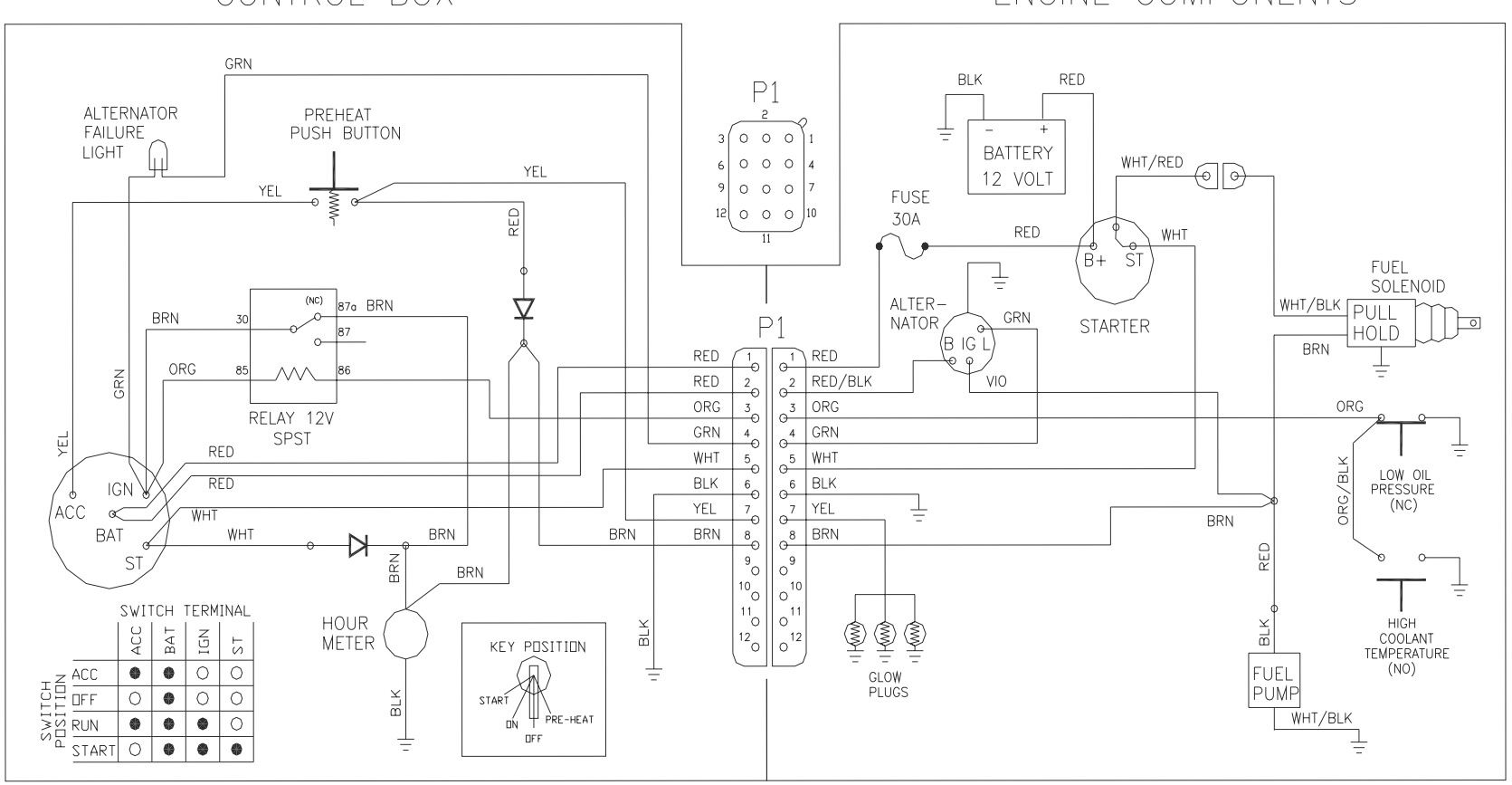
Terex–amida
590 HUEY Rd, ROCK HILL, S.C.
Ph. (803) 324-3011 FAX 366-1101

WIRING DIAGRAM - 1000HPS BALLAST

MATL. MATL		W / JOY CONNECTOR	BORDER "A"
MAT P/N	USAGE	DR BY:CNM	SCALE: NONE
PLOT: 4/30/91	DATE: 4/30/91	PART# WD2987	DWG.# 2987


DRAWING NO. 6495
SHT 1
REV —
REVISIONS
ECR REV DESCRIPTION DATE APPROVED
MAIN BREAKER
BRKR 20A
120V 20 AMP GFI RECEPTACLES
LIGHT SWITCHES
240V 30 AMP RECEPTACLE
CONTROL BOX
RED TO 120V LEG INSIDE OF GENERATOR
BLACK TO 120V LEG INSIDE OF GENERATOR
GREEN TO GROUND INSIDE OF GENERATOR
WHITE TO NEUTRAL LEG INSIDE OF GENERATOR
16/3 CONNECTOR
PIN A = NEUTRAL
PIN B = 220VAC POWER
PIN C = GROUND
BALLAST 1
BALLAST 2
BALLAST 3
BALLAST 4
BLK
ORN
GRN
RED
WHT
C1 C2
RECEPTACLE BOX
7-CONDUCTOR RETRACTABLE CORD
3 POLE RECEPTACLE TYP. 4
9 PIN CONNECTOR
PIN A – GROUND
PIN B – EMPTY
PIN C – EMPTY
PIN D – #4 BALLAST 220VAC
PIN E – #2 BALLAST 220VAC
PIN F – #1 & 4 BALLAST NEUTRAL
PIN G – #2 & 3 BALLAST NEUTRAL
PIN H – #3 BALLAST 220VAC
PIN J – #1 BALLAST 220VAC
VIEW FROM WIRE SIDE OF CONNECTOR
C1 HD10-9-96P
C2 HD16-9-96S
16/5 CORD SET & CONNECTOR
PIN 1 = NEUTRAL
PIN 2 = 220VAC POWER (BALLAST)
PIN 3 = GROUND
PIN 4 = GENERATOR NEUTRAL
PIN 5 = FROM GENERATOR BREAKER
5-POLE RECEPTACLE TYP.4
FIND NO. QTY REQD PART OR IDENTIFYING NO. NOMENCLATURE OR DESCRIPTION MATERIAL OR NOTE
PARTS LIST
TEREX LIGHT CONSTRUCTION
590 HUEY RD. ROCK HILL, SC 29730 FAX: (803) 366-1101
AC WIRING FOR A LIGHT TOWER
PURCHASING
APPROVED B. LAHR 12/30/04
ENGINEER B. LAHR 12/30/04
DRAWN B. LAHR 12/30/04
SIZE D
DRAWING NO. 6495
REV —
SCALE: SCALE
SHEET 1 OF 1
THIS DRAWING IS PROPERTY OF COLEMAN ENGINEERING, INC. ANY REPRODUCTION WITHOUT WRITTEN PERMISSION OF COLEMAN ENGINEERING, INC. IS PROHIBITED.
DO NOT SCALE THIS DRAWING

PART# WD4730	DWG.# 4730G



REV.	DATE	ECO #	CHANGE
G	12/22/04	–	REVISED TO MATCH PRODUCTION MODELS
F	9/12/02	–	ADDED CIRCUIT AND DIODES FOR NEW KUBOTA SOLENOID
E	1/12/01	–	ADDED DIODE FOR FUEL PUMP/ PRIME

TOLERANCES UNLESS OTHERWISE SPECIFIED:
Fractions ±1/16
Decimals .XX=±.030 .XXX=±.010
.XXXX=±.005
Degrees ±1/2°
REMOVE ALL BURRS & SHARP EDGES

MATL.

MAT. P/N	USAGE
PLOT B 3/23/00	DATE 3/23/00

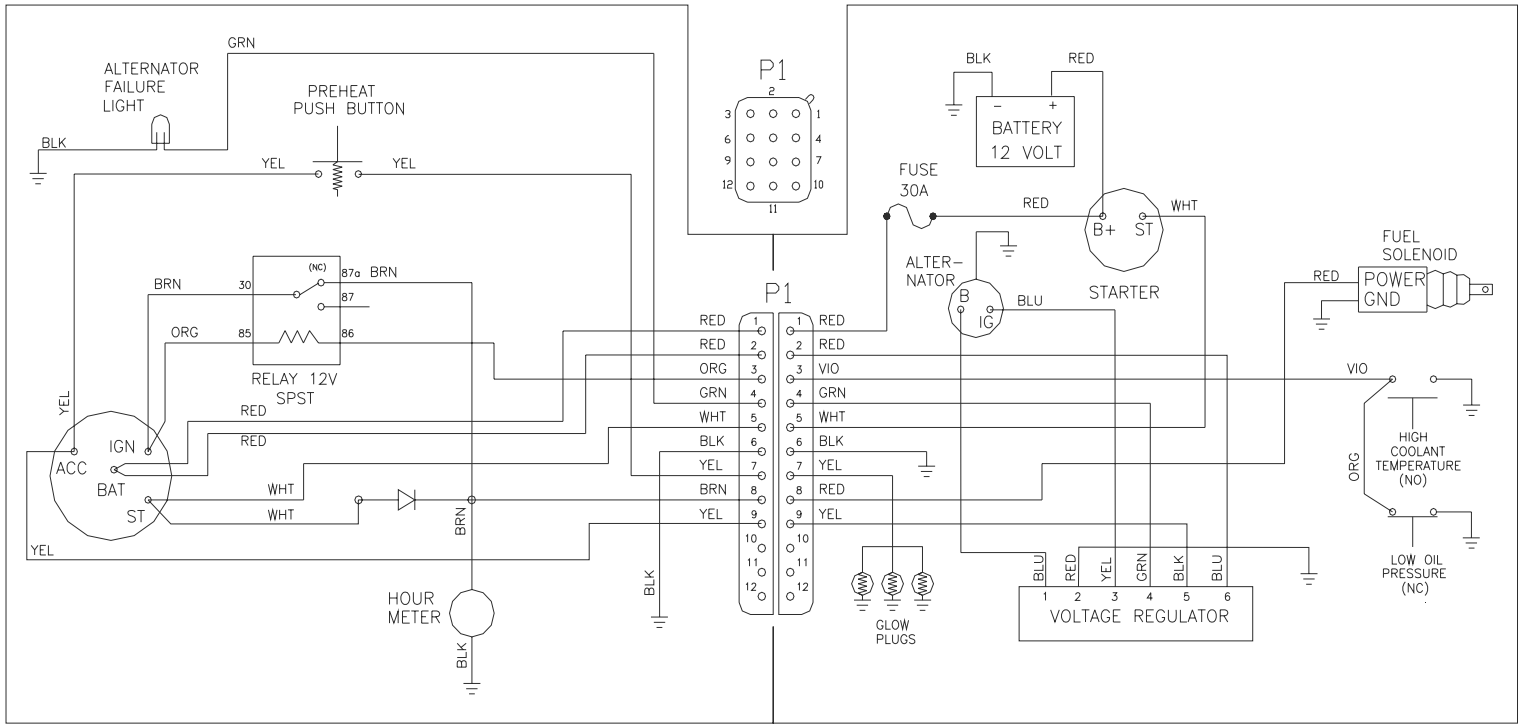
Terex–amida
590 HUEY Rd, ROCK HILL, S.C.
Ph. (803) 324–3011 FAX 366–1101

WD – DC ENGINE WIRING, KUBOTA
D905, AL4, AL5, TX3 | BORDER "B"
DR BY JCS | APP BY | SCALE N/A
PART# WD4730 | DWG.# 4730G

DRAWING NO.	SHT	REV
6549	1	—

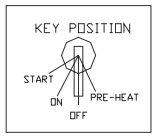
REVISIONS

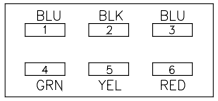
ECR	REV	DESCRIPTION	DATE	APPROVED



SWITCH TERMINAL

SWITCH POSITION	ACC	BAT	IGN	ST
ACC	○	○	○	○
OFF	○	○	○	○
RUN	○	○	○	○
START	○	○	○	○





VOLTAGE REGULATOR CONNECTOR
(VIEW FROM WIRE ENTRY SIDE)

FIND NO.	QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	MATERIAL OR NOTE

PARTS LIST

UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES
GENERAL TOLERANCES:
xx DECIMALS ± .03 | xxx DECIMALS ± .015 | ANGLES ± .50

REMOVE BURRS AND BREAK SHARP EDGES
ALL BENDS 90° EXCEPT AS NOTED

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DO NOT SCALE THIS DRAWING

TEREX LIGHT CONSTRUCTION

590 HUEY RD.
ROCK HILL, SC 29730
FAX: (803) 366-1101

AL LIGHT TOWER WIRING SCHEMATIC – PERKINS

PURCHASING		
APPROVED	BAL	06/15/05
ENGINEER	BAL	06/15/05
DRAWN	BAL	06/15/05

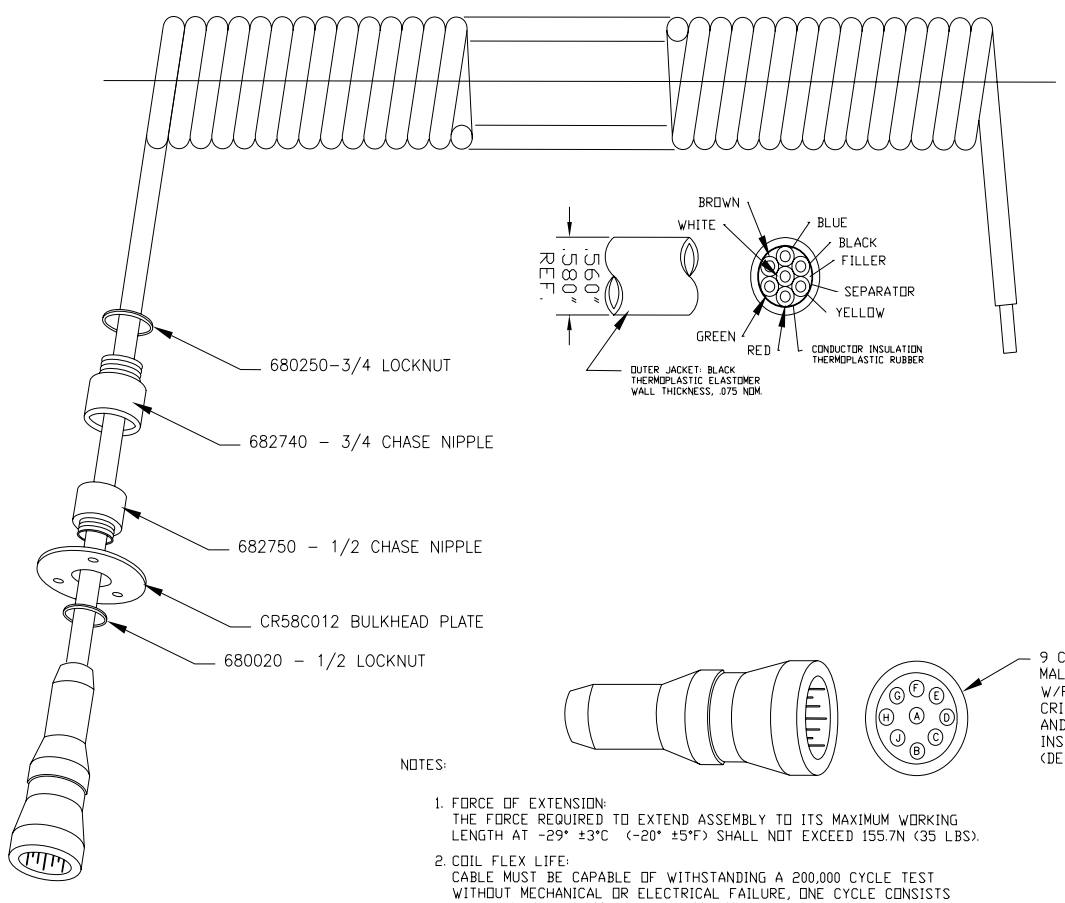
SIZE D | DRAWING NO. 6549 | REV —

SCALE: | SCALE | SHEET 1 OF 1

DRAWING NO. 6496 SPECIAL | SHT 1 | REV –

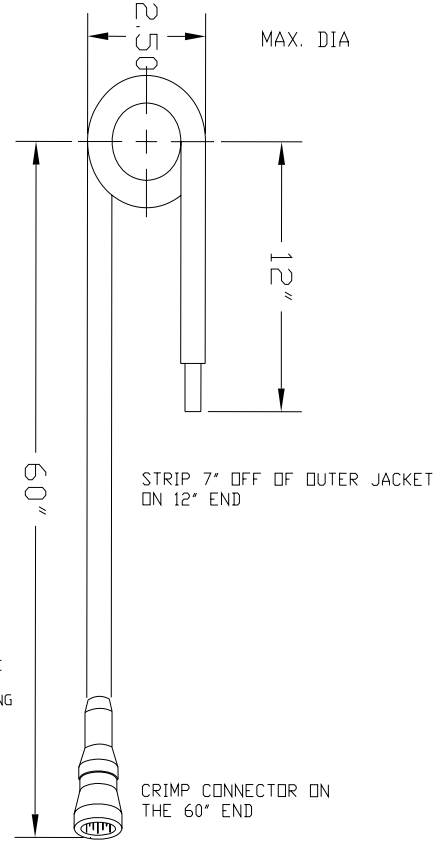
REVISIONS

ECR	REV	DESCRIPTION	DATE	APPROVED
–	–	ADDED MOUNTING COMPONENTS FOR SPECIAL BUILD	3/31/05	JCS



9 CONDUCTOR 14 GAUGE MALE CONNECTOR PLUG W/PLASTIC THREAD RING CRIMP CONNECTIONS AND MUST BE FIELD INSTALLABLE (DEUTSCH) HD16-9-96S

9 PIN CONNECTOR
PIN A – GREEN
PIN B – EMPTY
PIN C – EMPTY
PIN D – BROWN
PIN E – BLUE
PIN F – YELLOW
PIN G – WHITE
PIN H – RED
PIN J – BLACK



NOTES:

1. FORCE OF EXTENSION:
   THE FORCE REQUIRED TO EXTEND ASSEMBLY TO ITS MAXIMUM WORKING LENGTH AT -29° ±3°C (-20° ±5°F) SHALL NOT EXCEED 155.7N (35 LBS).
2. COIL FLEX LIFE:
   CABLE MUST BE CAPABLE OF WITHSTANDING A 200,000 CYCLE TEST WITHOUT MECHANICAL OR ELECTRICAL FAILURE, ONE CYCLE CONSISTS OF EXTENDING ASSEMBLY TO ITS MAXIMUM WORKING LENGTH, THEN RETRACTING TO ITS FREE LENGTH.
3. CABLE CONSTRUCTION CONFORMS TO APPLICABLE REQUIREMENTS OR THE FOLLOWING WIRE AND CABLE SPECIFICATIONS,
   -SAE J1067 FOR COLD BEND, INSULATION AND JACKET COMPOUND.
   -SAE J1128 FOR ABRASION RESISTANCE, HIGH TEMPERATURE OIL ABSORPTION AND DIELECTRIC
   -CABLE TO BE SUBJECTED TO A 3000 VOLT, 60 HZ SPARK TEST AS OUTLINED BY UL STANDARD NO. 62 OR EQUIVALENT.
   -CABLE TO BE BOTH UL AND CSA APPROVED
   -APPROVAL CUL AWM STYLE 2516 REQUIRED

FIND NO.	QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	MATERIAL OR NOTE

PARTS LIST

UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES GENERAL TOLERANCES: XX DECIMALS ± .03 | XXX DECIMALS ± .015 | ANGLES ± .50

REMOVE BURRS AND BREAK SHARP EDGES

ALL BENDS 90° EXCEPT AS NOTED

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TEREX LIGHT CONSTRUCTION

590 HUEY RD.
ROCK HILL, SC 29730
FAX: (803) 366-1101

PURCHASING		
APPROVED	B. LAHR	01/04/05
ENGINEER	B. LAHR	01/04/05
DRAWN	B. LAHR	01/04/05

CONSOLIDATED COIL CORD W/PLUG END

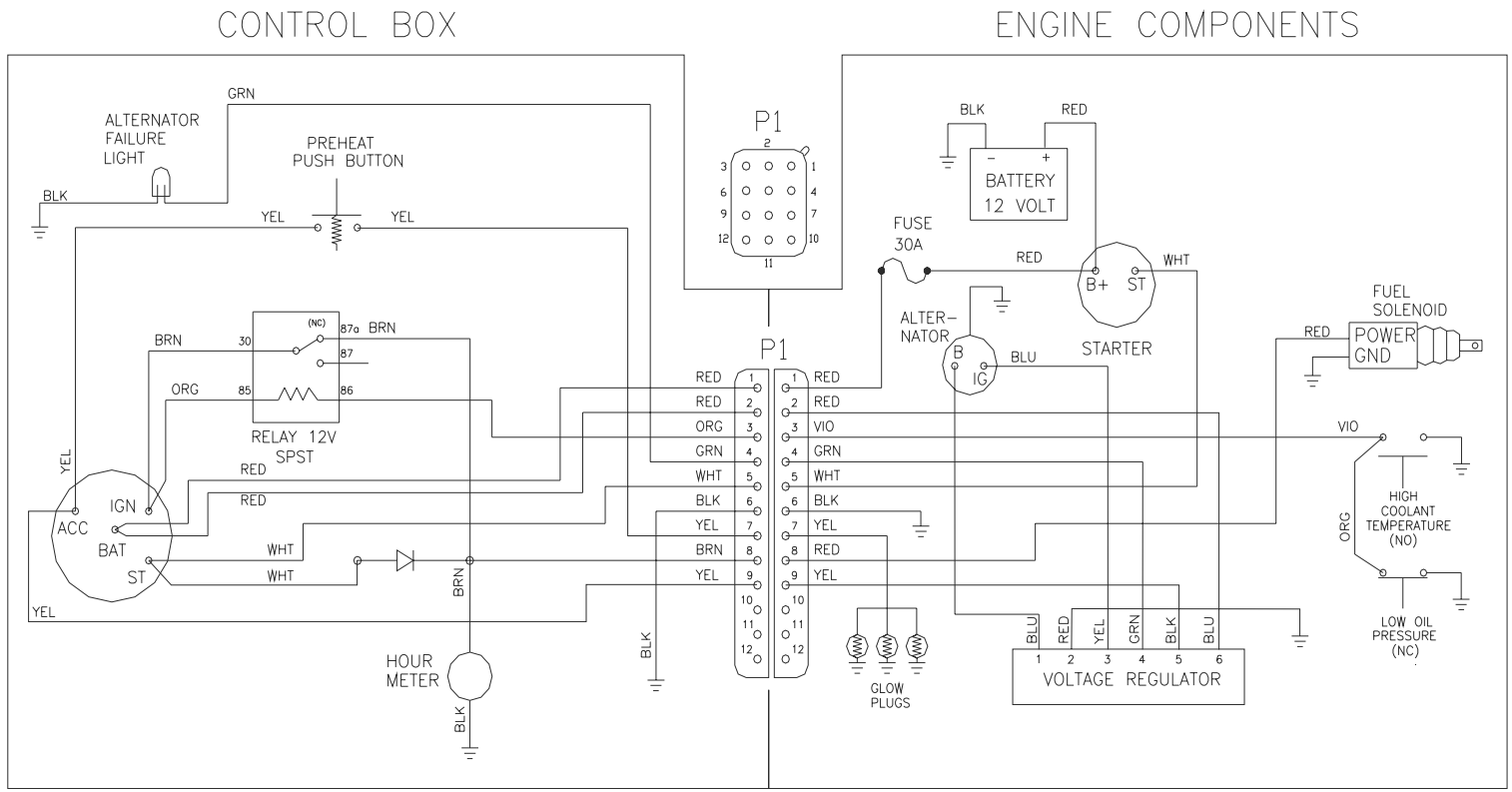
SIZE D | DRAWING NO. 6496 SPECIAL | REV –

SCALE: SCALE | SHEET 1 OF 1

DRAWING NO.	SHT	REV
6549	1	—

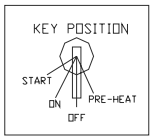
REVISIONS

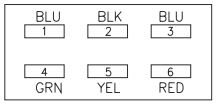
ECR	REV	DESCRIPTION	DATE	APPROVED



SWITCH TERMINAL

SWITCH POSITION	ACC	BAT	IGN	ST
ACC	o	o	○	○
OFF	○	o	○	○
RUN	o	o	o	○
START	○	o	o	o





VOLTAGE REGULATOR CONNECTOR (VIEW FROM WIRE ENTRY SIDE)

FIND NO.	QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	MATERIAL OR NOTE

PARTS LIST

UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES
GENERAL TOLERANCES:
XX DECIMALS ± .03 | XXX DECIMALS ± .015 | ANGLES ± .50
REMOVE BURRS AND BREAK SHARP EDGES
ALL BENDS 90° EXCEPT AS NOTED

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DO NOT SCALE THIS DRAWING

TEREX LIGHT CONSTRUCTION

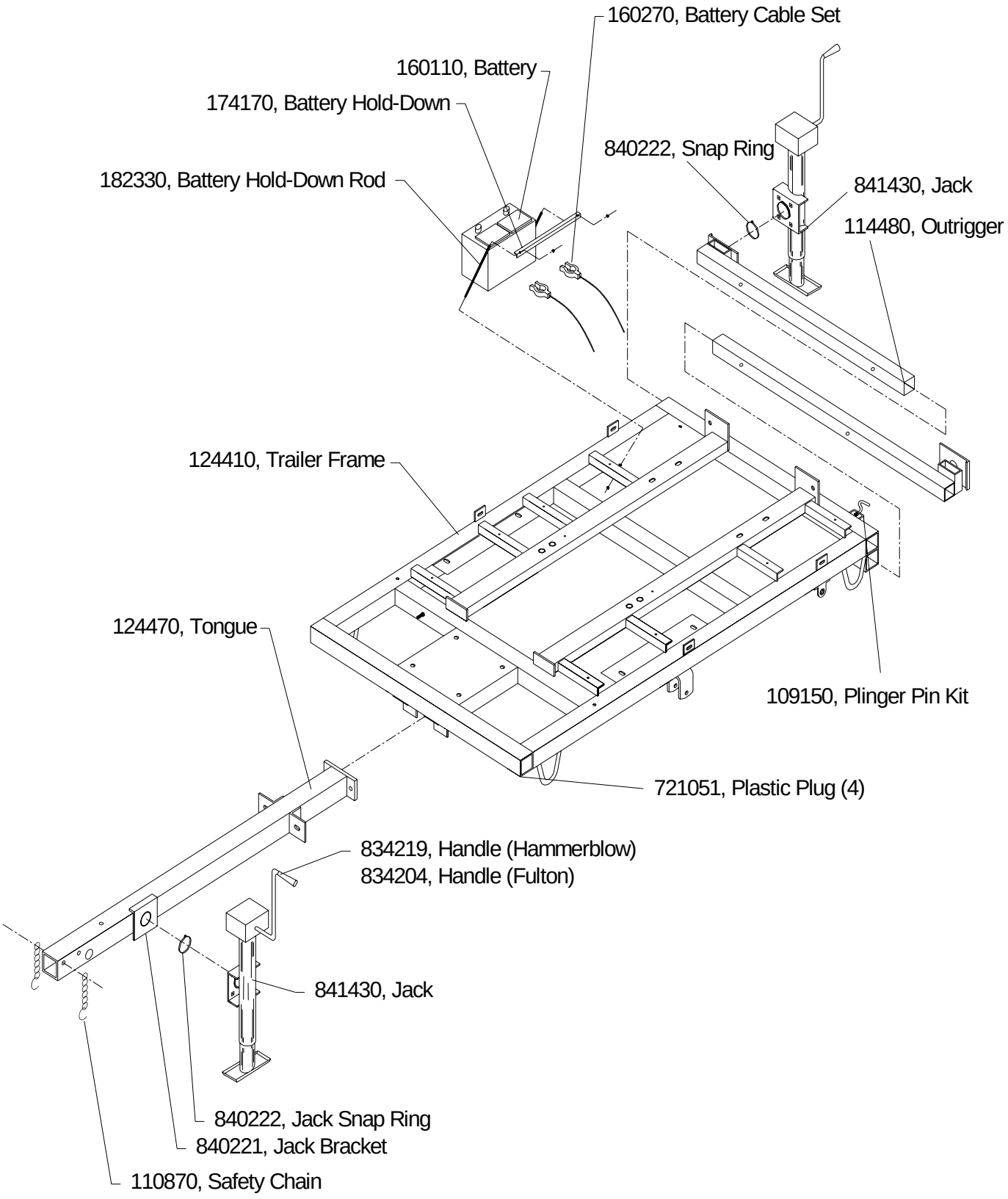
590 HUEY RD.
ROCK HILL, SC 29730
FAX: (803) 366-1101

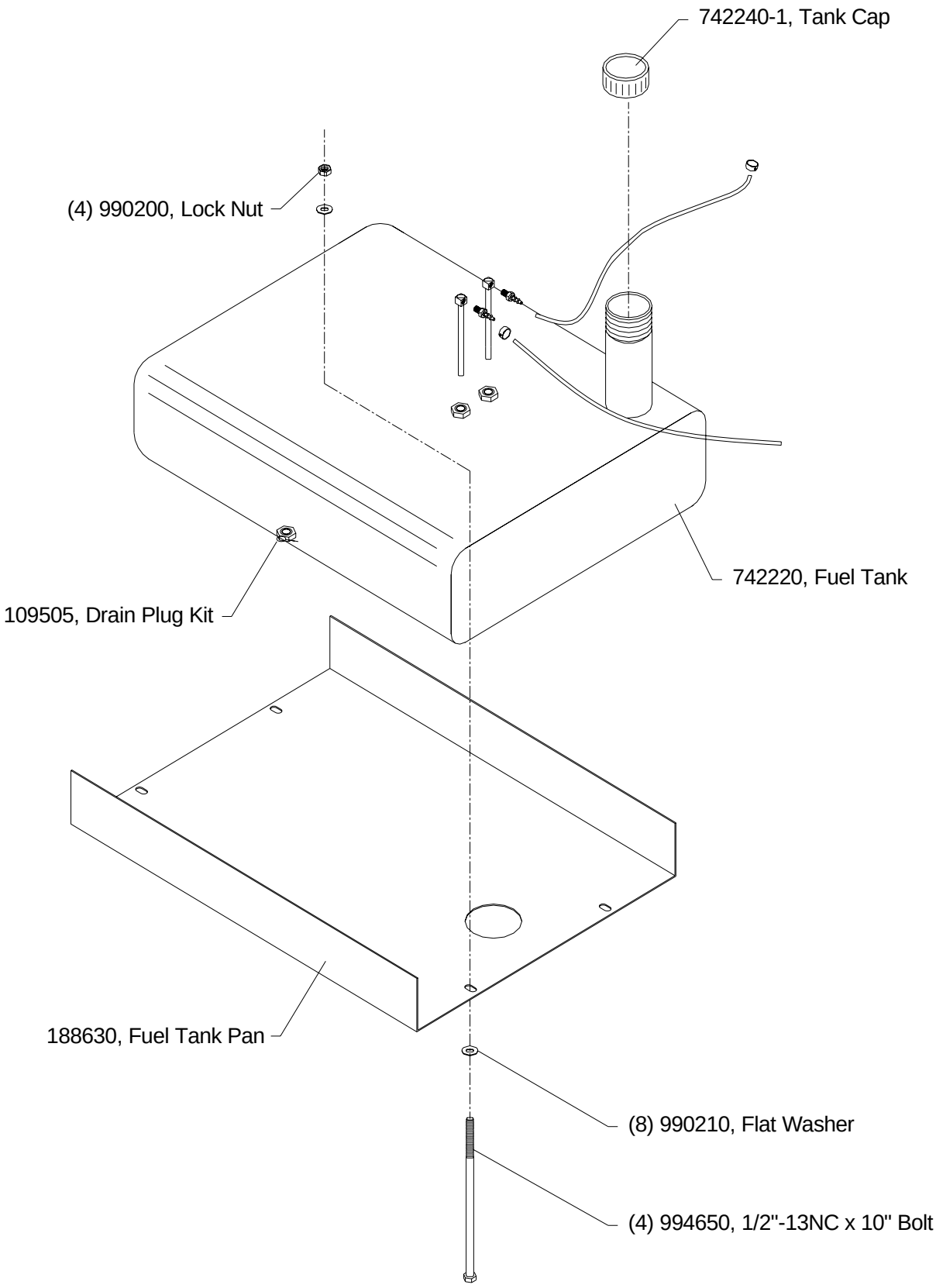
PURCHASING		
APPROVED	BAL	06/15/05
ENGINEER	BAL	06/15/05
DRAWN	BAL	06/15/05

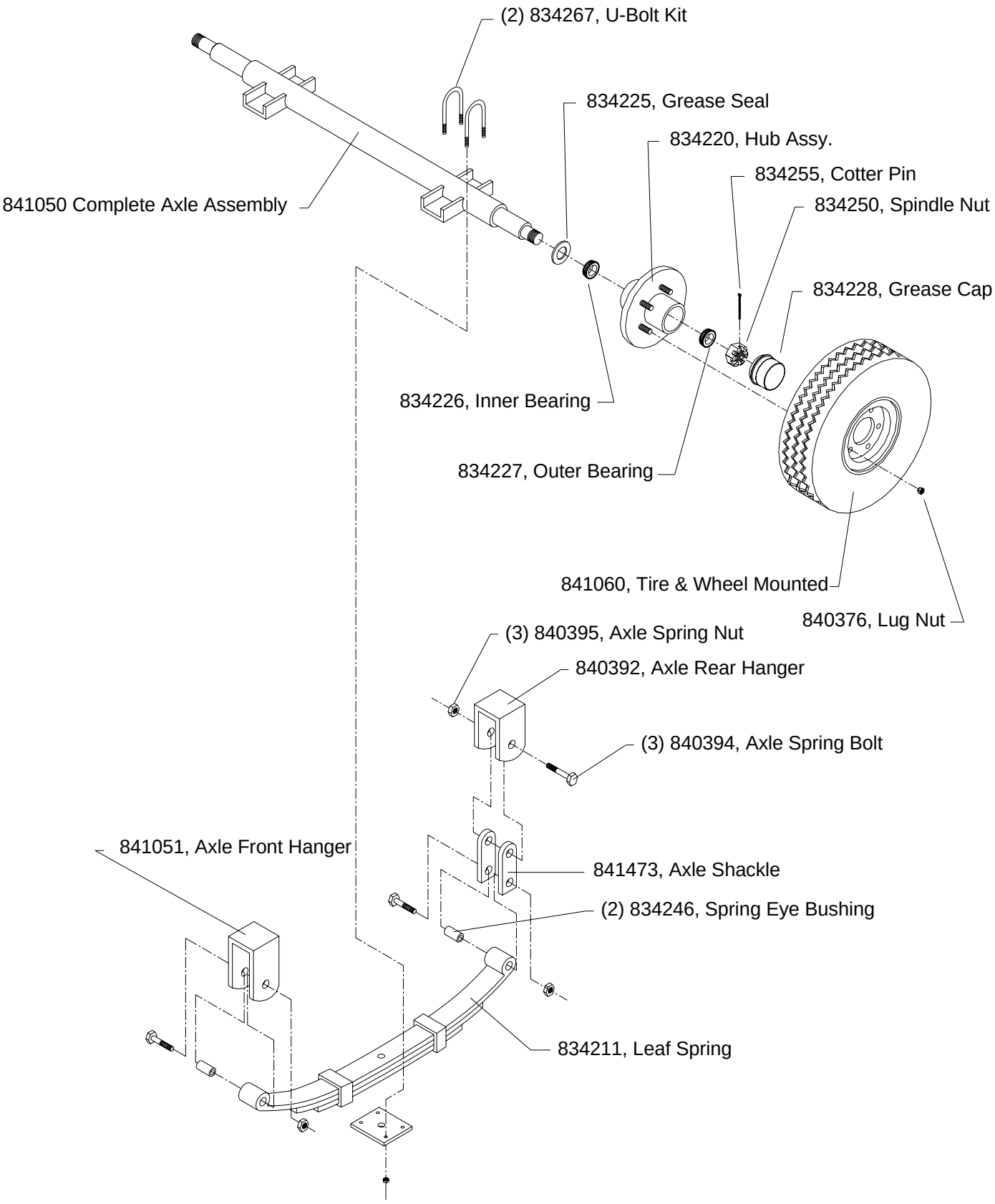
AL LIGHT TOWER WIRING SCHEMATIC – PERKINS

SIZE	DRAWING NO.	REV
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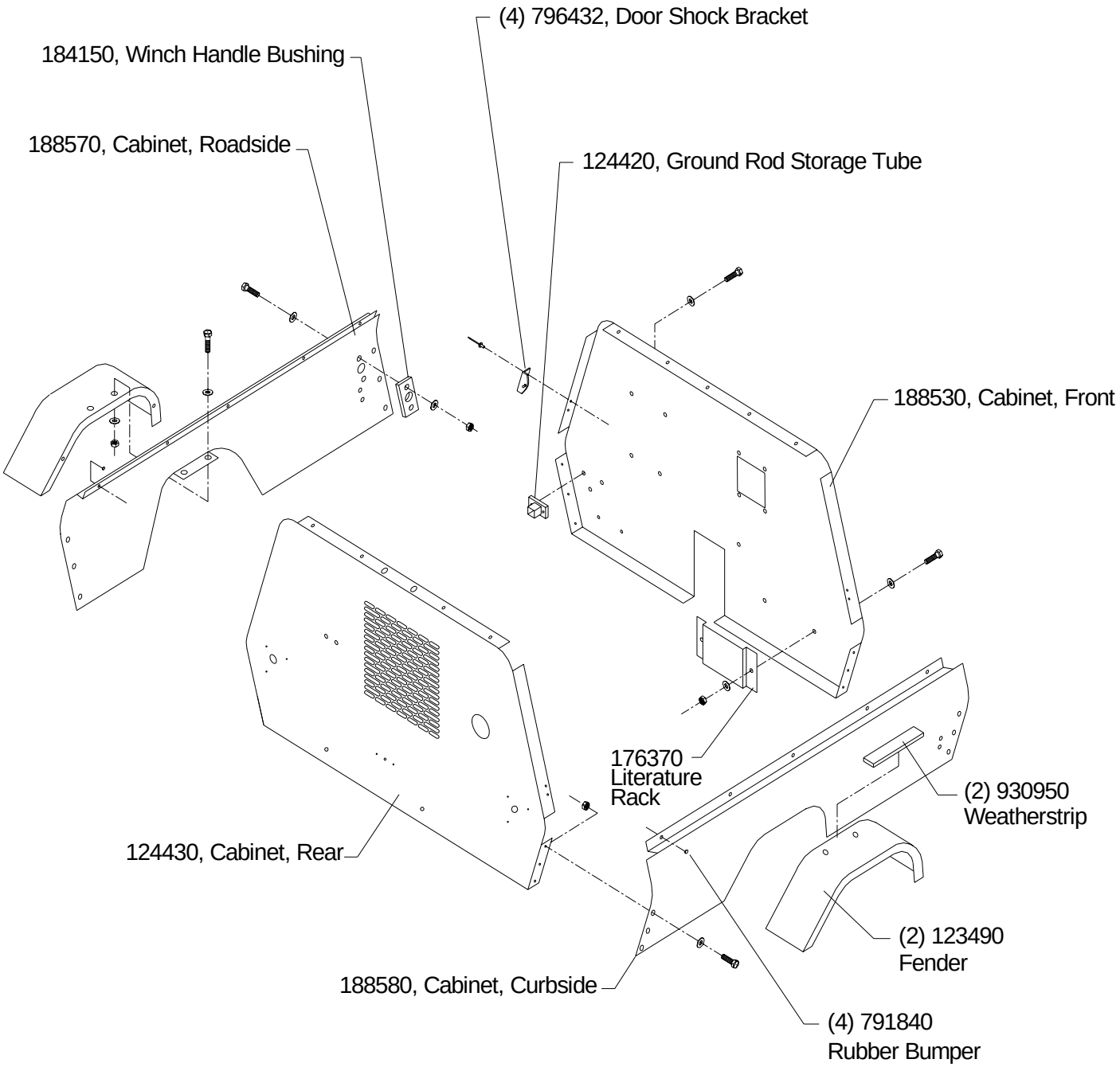
SCALE: SCALE SHEET 1 OF 1

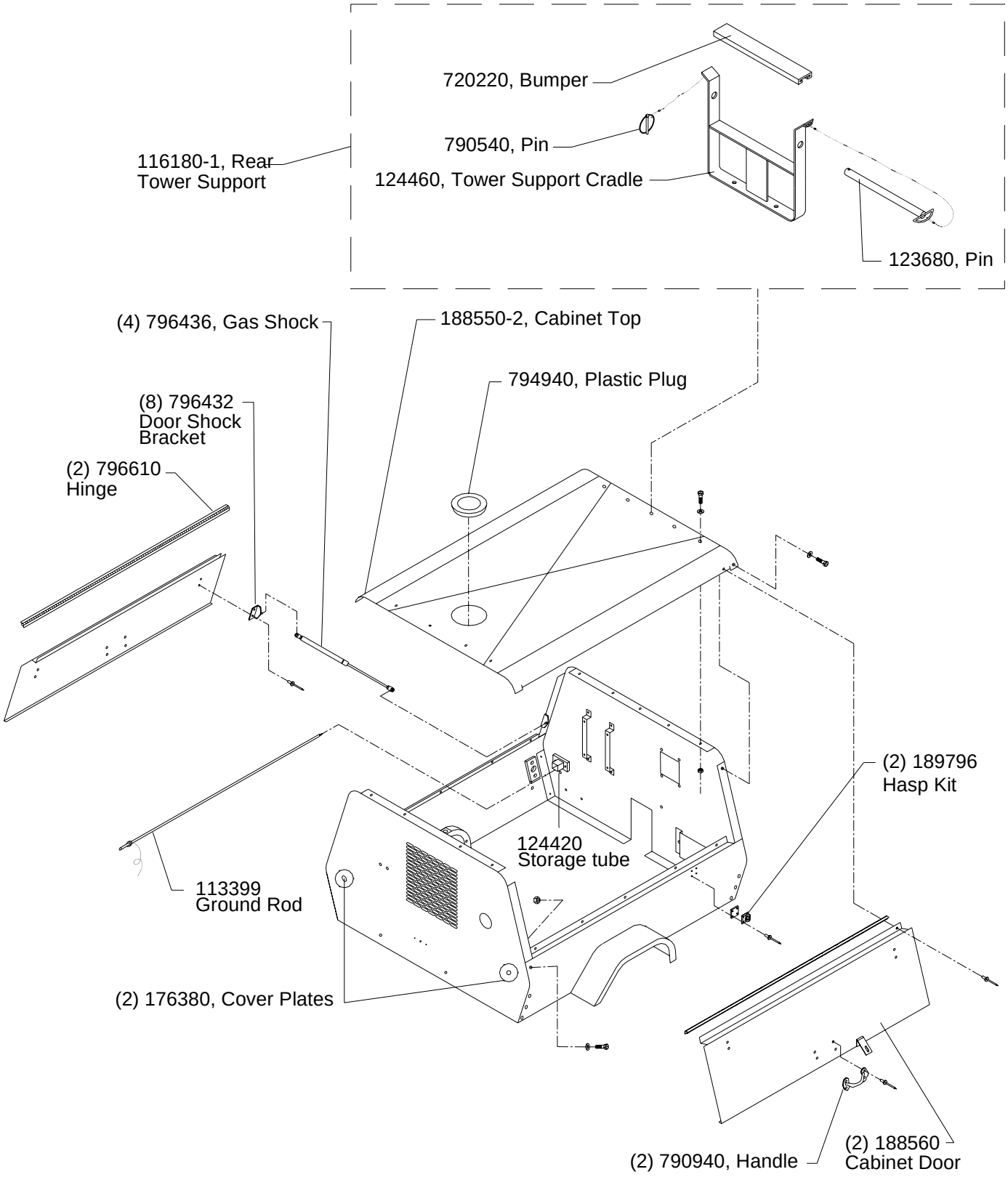

160270, Battery Cable Set
160110, Battery
174170, Battery Hold-Down
840222, Snap Ring
182330, Battery Hold-Down Rod
841430, Jack
114480, Outrigger
124410, Trailer Frame
124470, Tongue
109150, Plinger Pin Kit
721051, Plastic Plug (4)
834219, Handle (Hammerblow)
834204, Handle (Fulton)
841430, Jack
840222, Jack Snap Ring
840221, Jack Bracket
110870, Safety Chain


742240-1, Tank Cap
(4) 990200, Lock Nut
742220, Fuel Tank
109505, Drain Plug Kit
188630, Fuel Tank Pan
(8) 990210, Flat Washer
(4) 994650, 1/2"-13NC x 10" Bolt

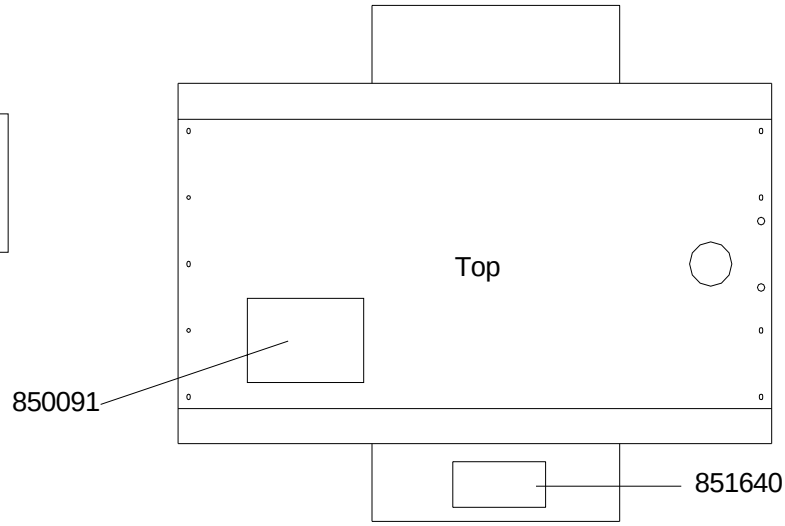

(2) 834267, U-Bolt Kit
834225, Grease Seal
834220, Hub Assy.
834255, Cotter Pin
841050 Complete Axle Assembly
834250, Spindle Nut
834228, Grease Cap
834226, Inner Bearing
834227, Outer Bearing
841060, Tire & Wheel Mounted
840376, Lug Nut
(3) 840395, Axle Spring Nut
840392, Axle Rear Hanger
(3) 840394, Axle Spring Bolt
841051, Axle Front Hanger
841473, Axle Shackle
(2) 834246, Spring Eye Bushing
834211, Leaf Spring

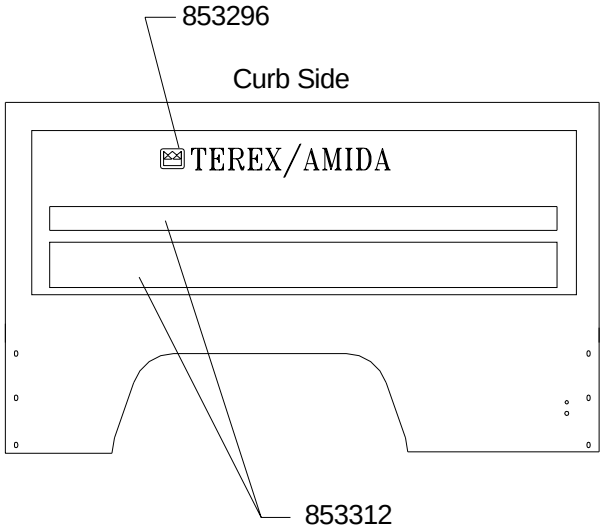
116203-1, Cabinet Assembly Complete

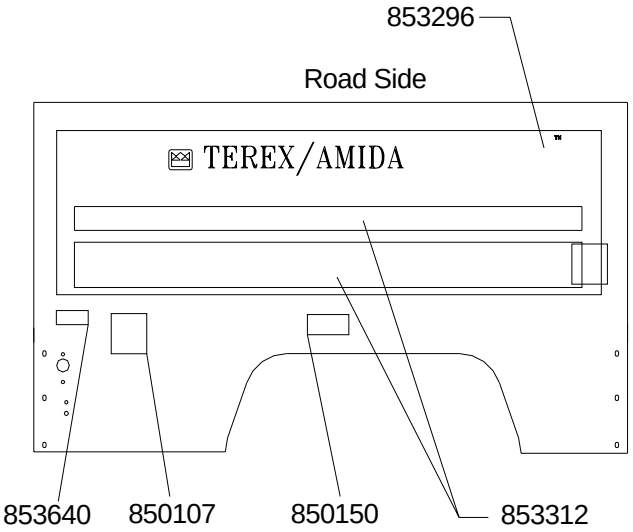


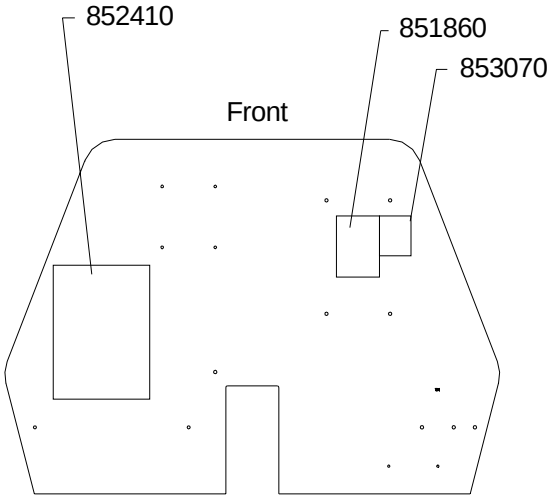

720220, Bumper
790540, Pin
116180-1, Rear Tower Support
124460, Tower Support Cradle
123680, Pin
(4) 796436, Gas Shock
188550-2, Cabinet Top
794940, Plastic Plug
(8) 796432 Door Shock Bracket
(2) 796610 Hinge
(2) 189796 Hasp Kit
124420 Storage tube
113399 Ground Rod
(2) 176380, Cover Plates
(2) 790940, Handle
(2) 188560 Cabinet Door

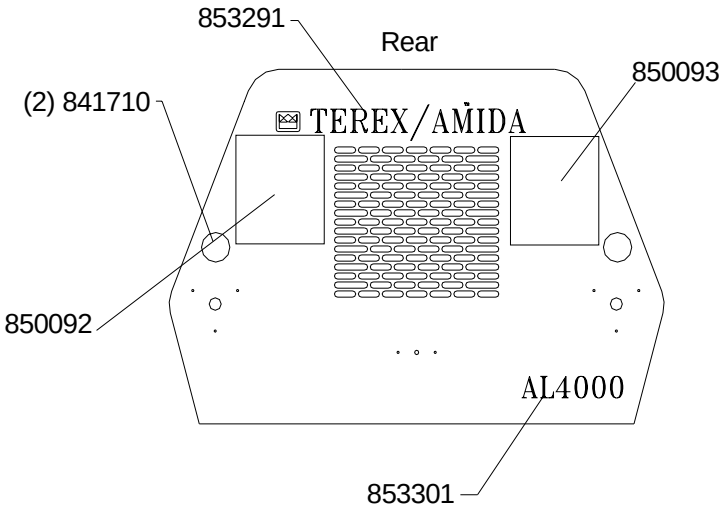
109471
DECAL KIT,
COMPLETE

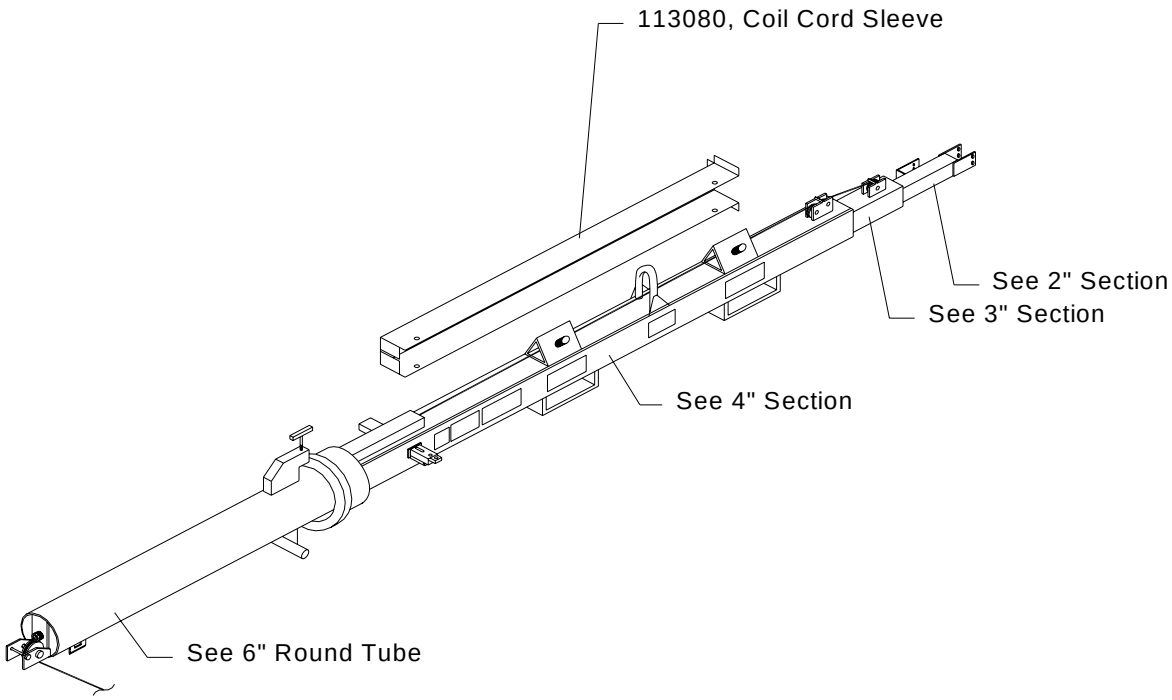


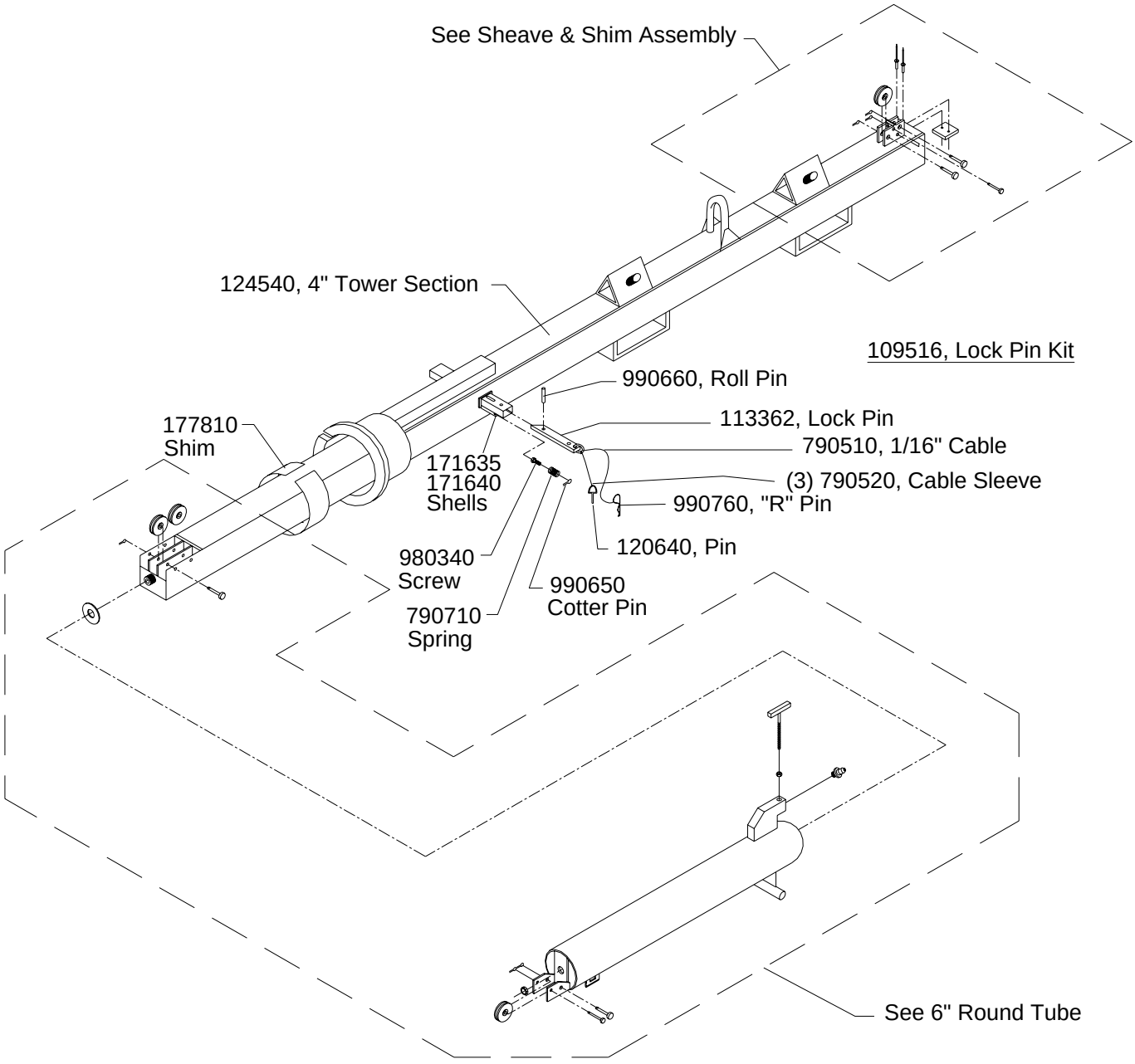


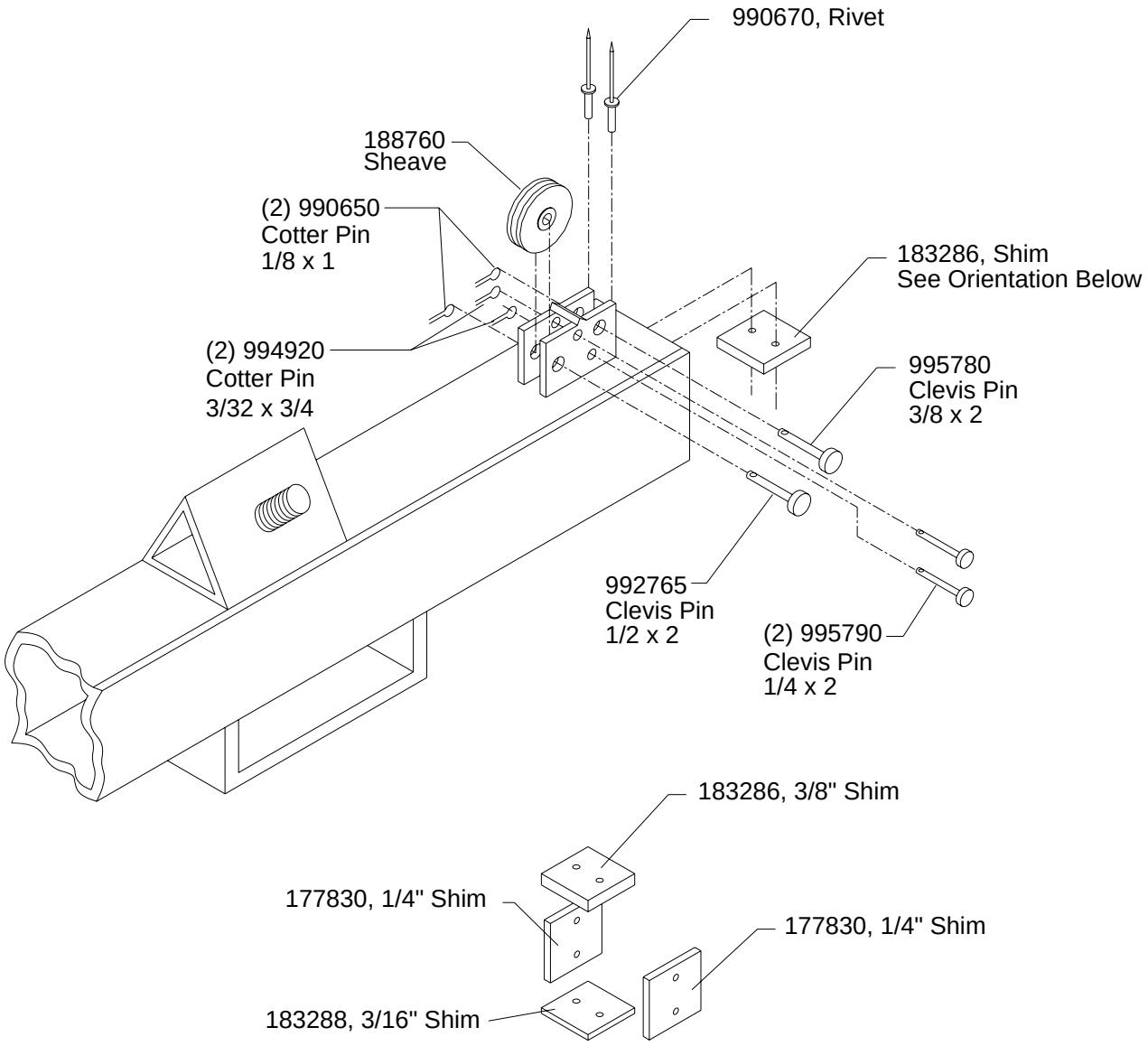




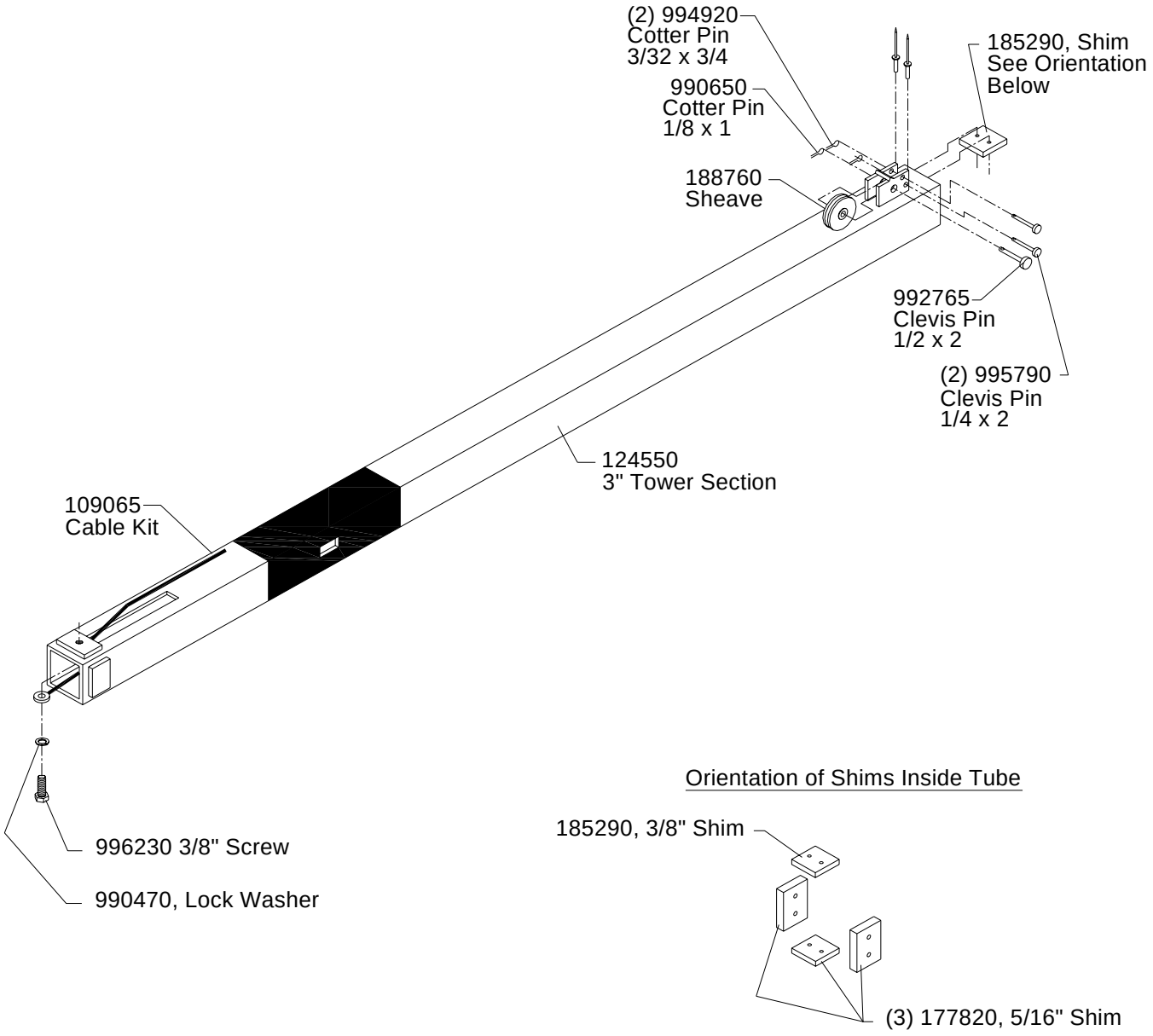


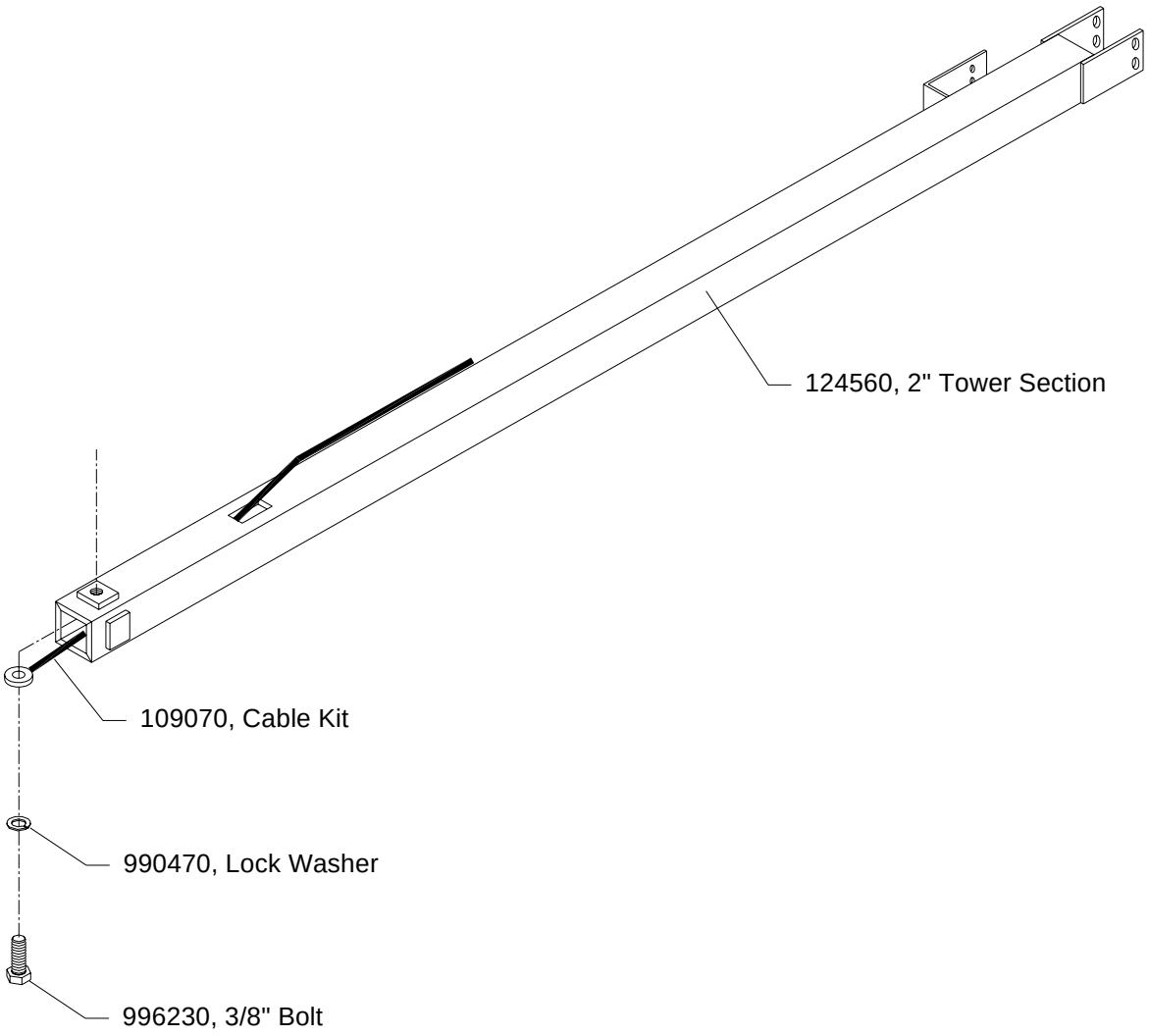

113080, Coil Cord Sleeve
See 2" Section
See 3" Section
See 4" Section
See 6" Round Tube

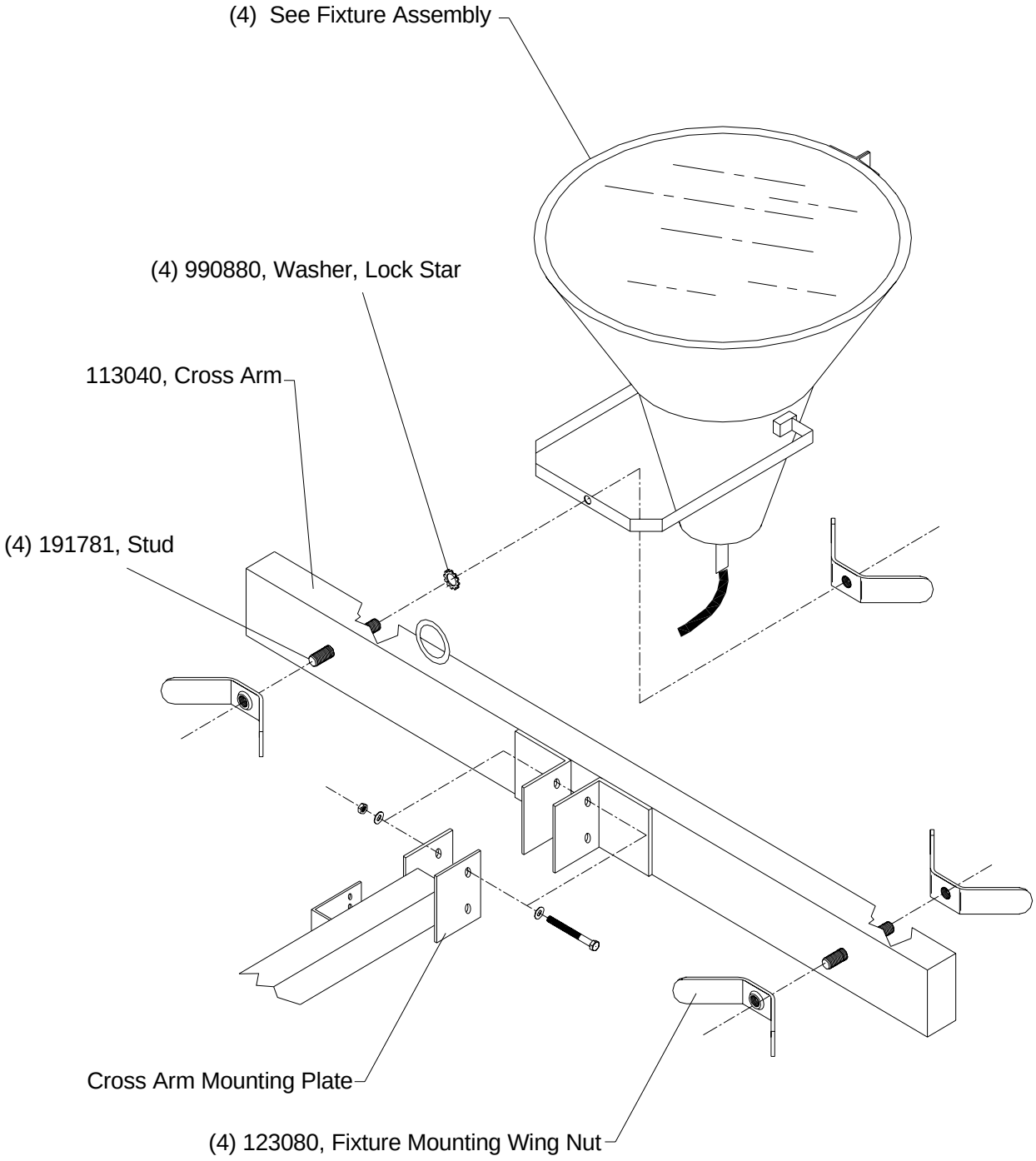

See Sheave & Shim Assembly
124540, 4" Tower Section
109516, Lock Pin Kit
990660, Roll Pin
113362, Lock Pin
790510, 1/16" Cable
(3) 790520, Cable Sleeve
990760, "R" Pin
120640, Pin
990650
Cotter Pin
177810
Shim
171635
171640
Shells
980340
Screw
790710
Spring
See 6" Round Tube

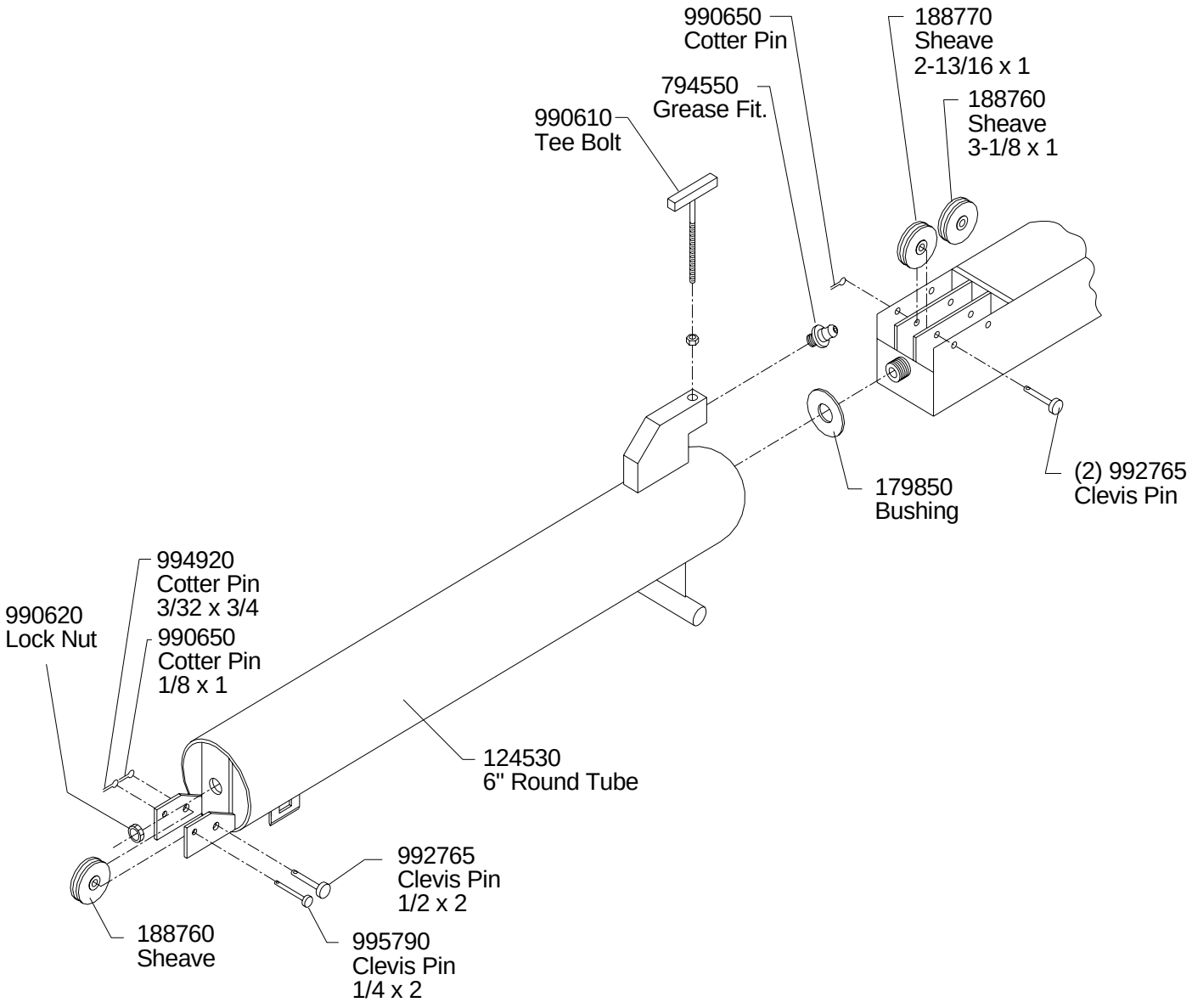


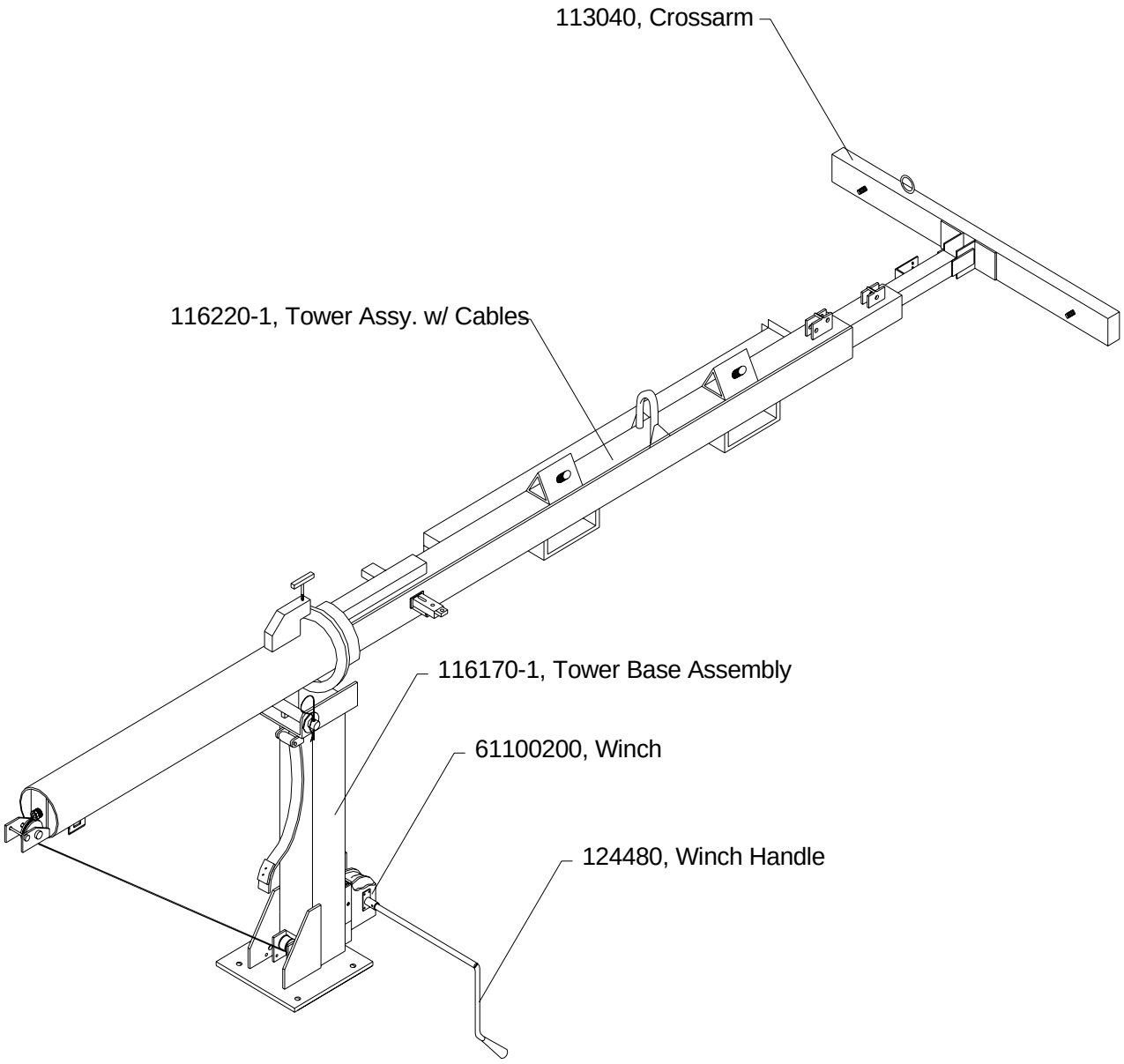
Orientation of Shims Inside Tube

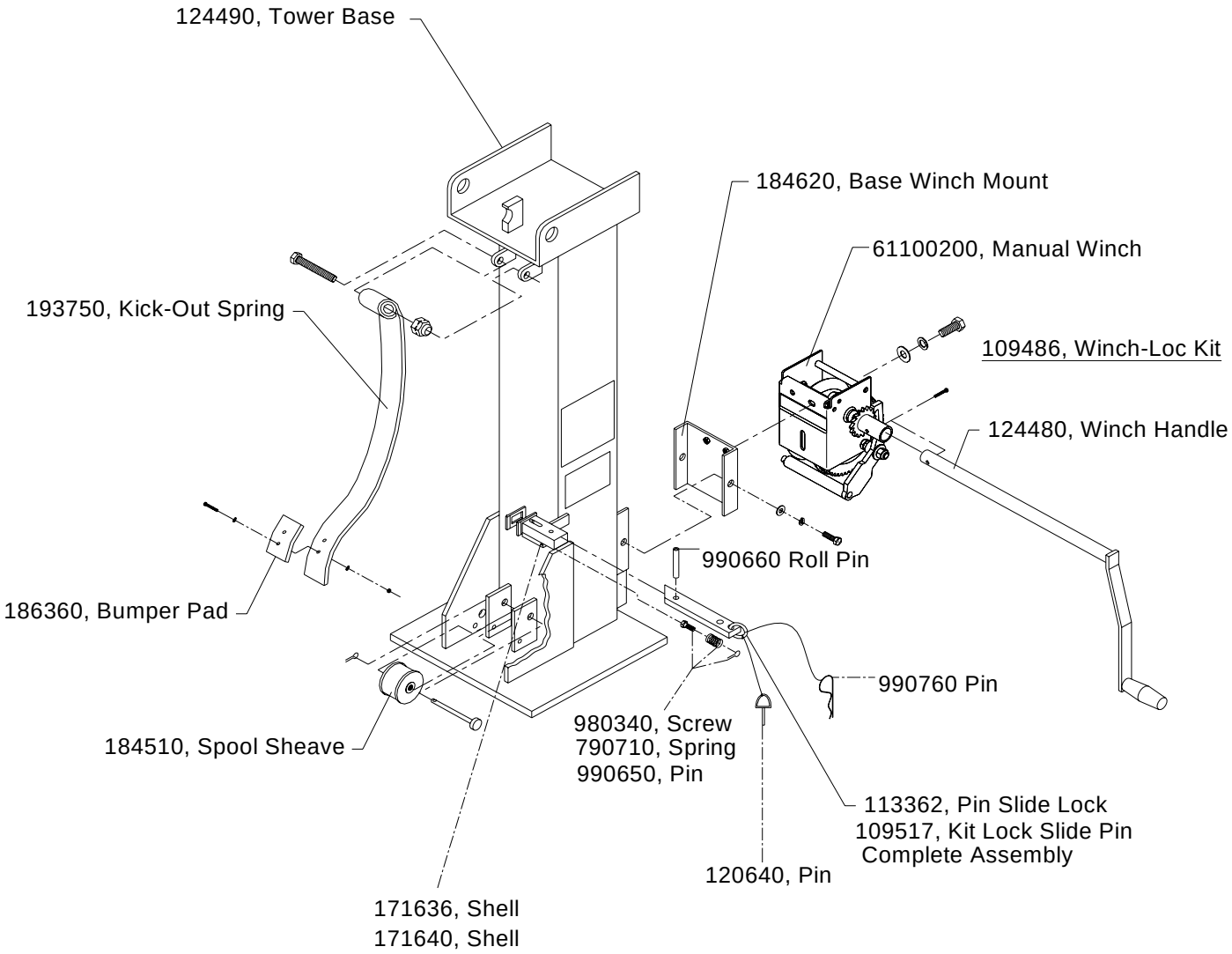

(2) 994920
Cotter Pin
3/32 x 3/4
990650
Cotter Pin
1/8 x 1
185290, Shim
See Orientation
Below
188760
Sheave
992765
Clevis Pin
1/2 x 2
(2) 995790
Clevis Pin
1/4 x 2
124550
3" Tower Section
109065
Cable Kit
996230 3/8" Screw
990470, Lock Washer
Orientation of Shims Inside Tube
185290, 3/8" Shim
(3) 177820, 5/16" Shim

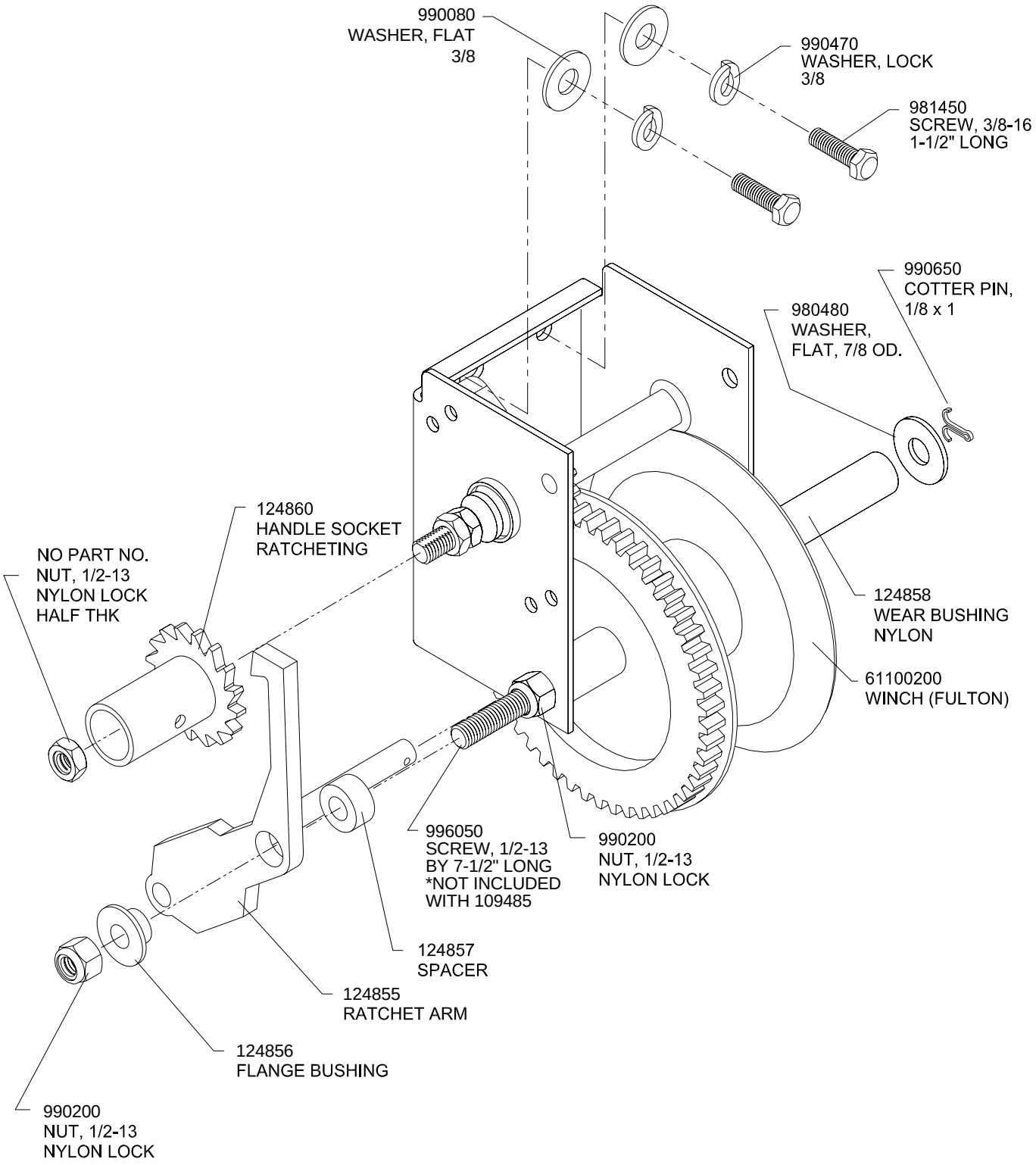

124560, 2" Tower Section
109070, Cable Kit
990470, Lock Washer
996230, 3/8" Bolt


(4) See Fixture Assembly
(4) 990880, Washer, Lock Star
113040, Cross Arm
(4) 191781, Stud
Cross Arm Mounting Plate
(4) 123080, Fixture Mounting Wing Nut


990650
Cotter Pin
188770
Sheave
2-13/16 x 1
794550
Grease Fit.
188760
Sheave
3-1/8 x 1
990610
Tee Bolt
179850
Bushing
(2) 992765
Clevis Pin
994920
Cotter Pin
3/32 x 3/4
990620
Lock Nut
990650
Cotter Pin
1/8 x 1
124530
6" Round Tube
992765
Clevis Pin
1/2 x 2
188760
Sheave
995790
Clevis Pin
1/4 x 2

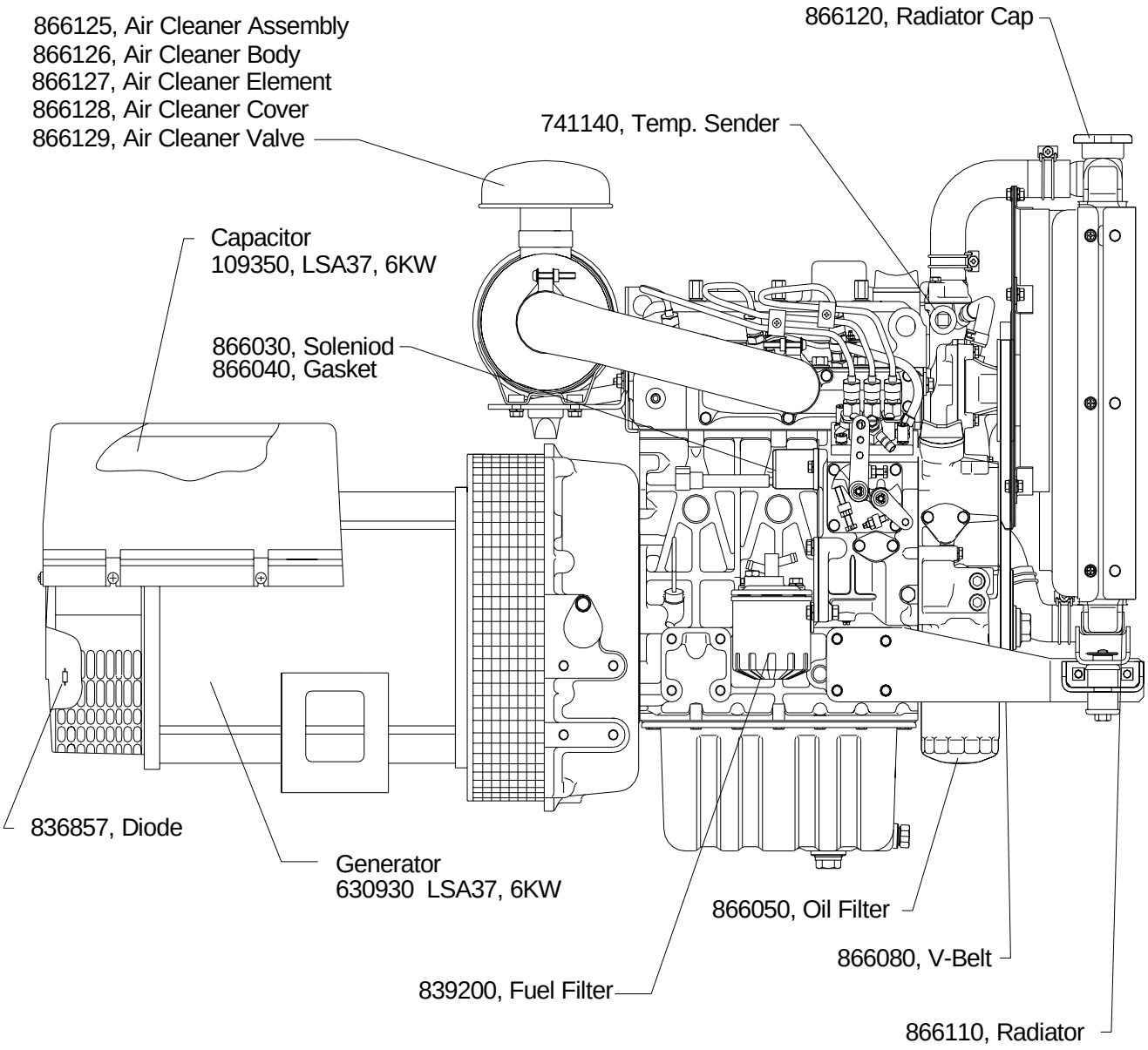

113040, Crossarm
116220-1, Tower Assy. w/ Cables
116170-1, Tower Base Assembly
61100200, Winch
124480, Winch Handle


124490, Tower Base
184620, Base Winch Mount
61100200, Manual Winch
193750, Kick-Out Spring
109486, Winch-Loc Kit
124480, Winch Handle
990660 Roll Pin
186360, Bumper Pad
990760 Pin
980340, Screw
790710, Spring
990650, Pin
184510, Spool Sheave
113362, Pin Slide Lock
109517, Kit Lock Slide Pin
Complete Assembly
120640, Pin
171636, Shell
171640, Shell



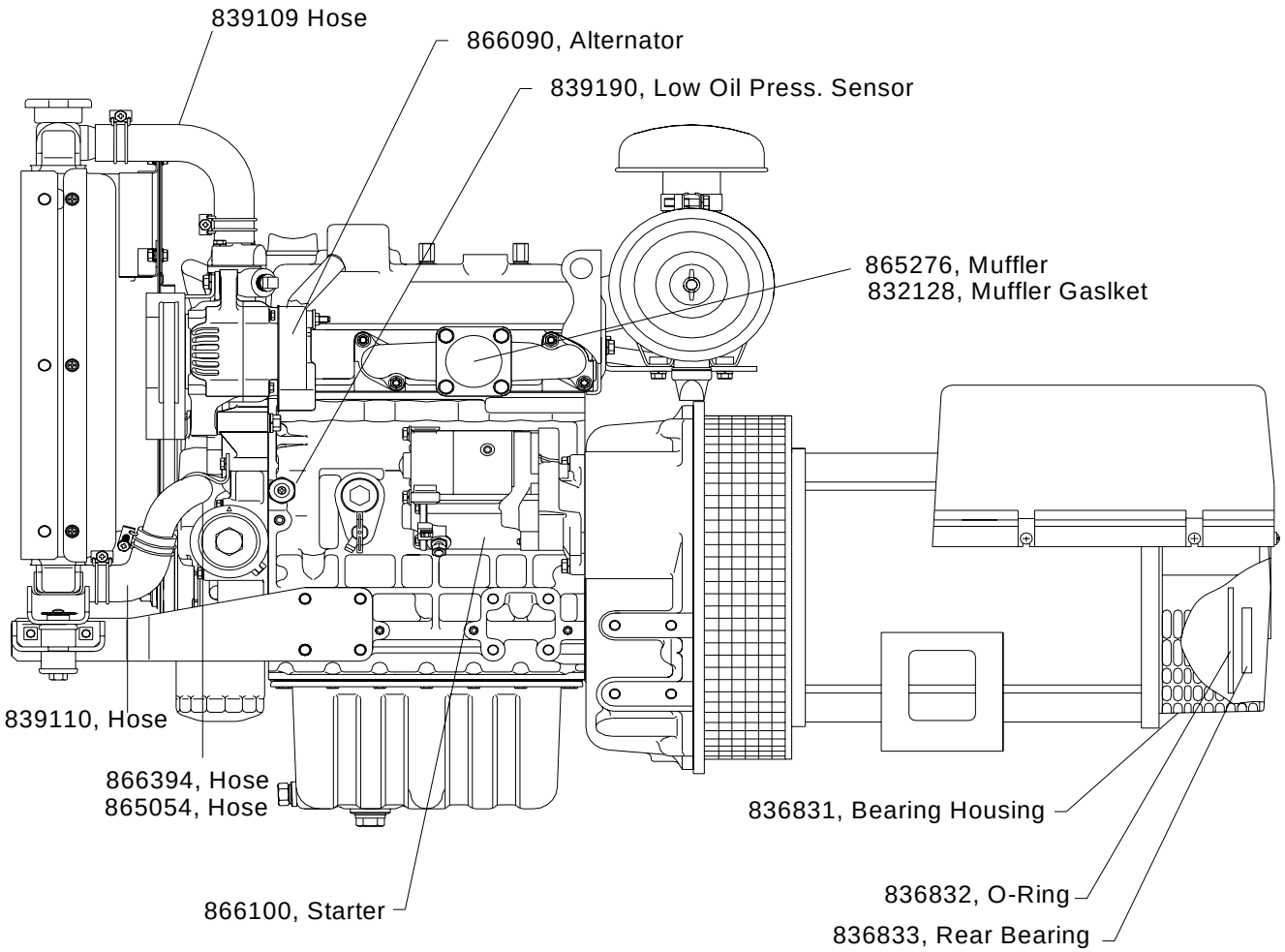
109485 WINCH SAFETY-LOC SYSTEM (INCLUDES NEW WINCH)
109486 WINCH SAFETY-LOC SYSTEM (DOES NOT INCLUDE NEW WINCH)

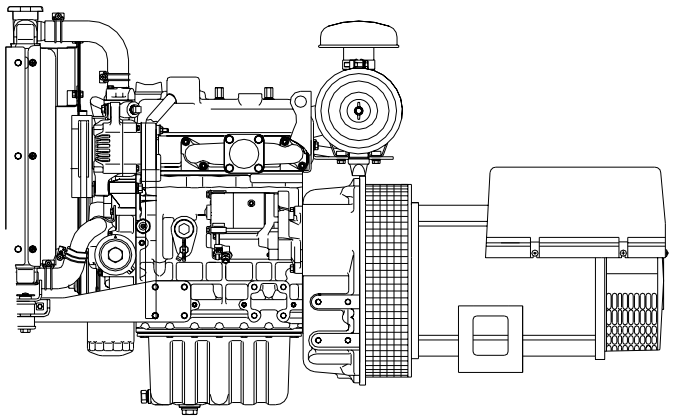
850107 SAFETY DECAL

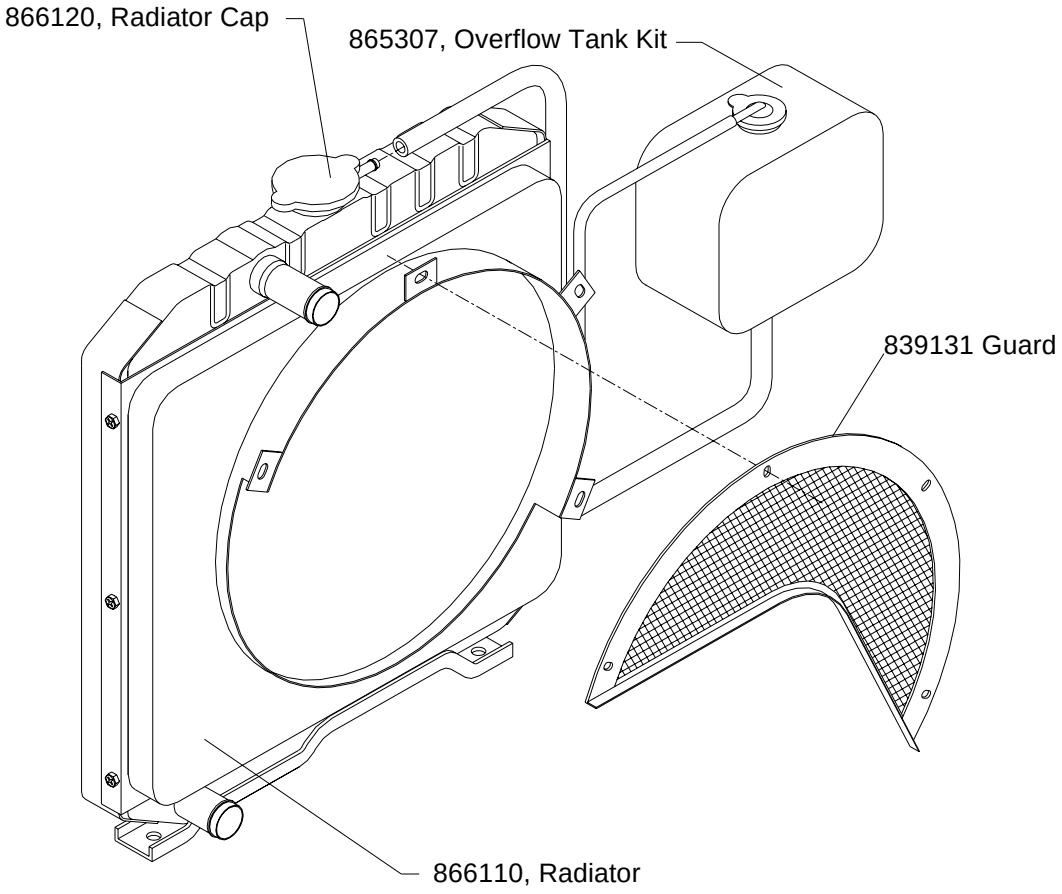


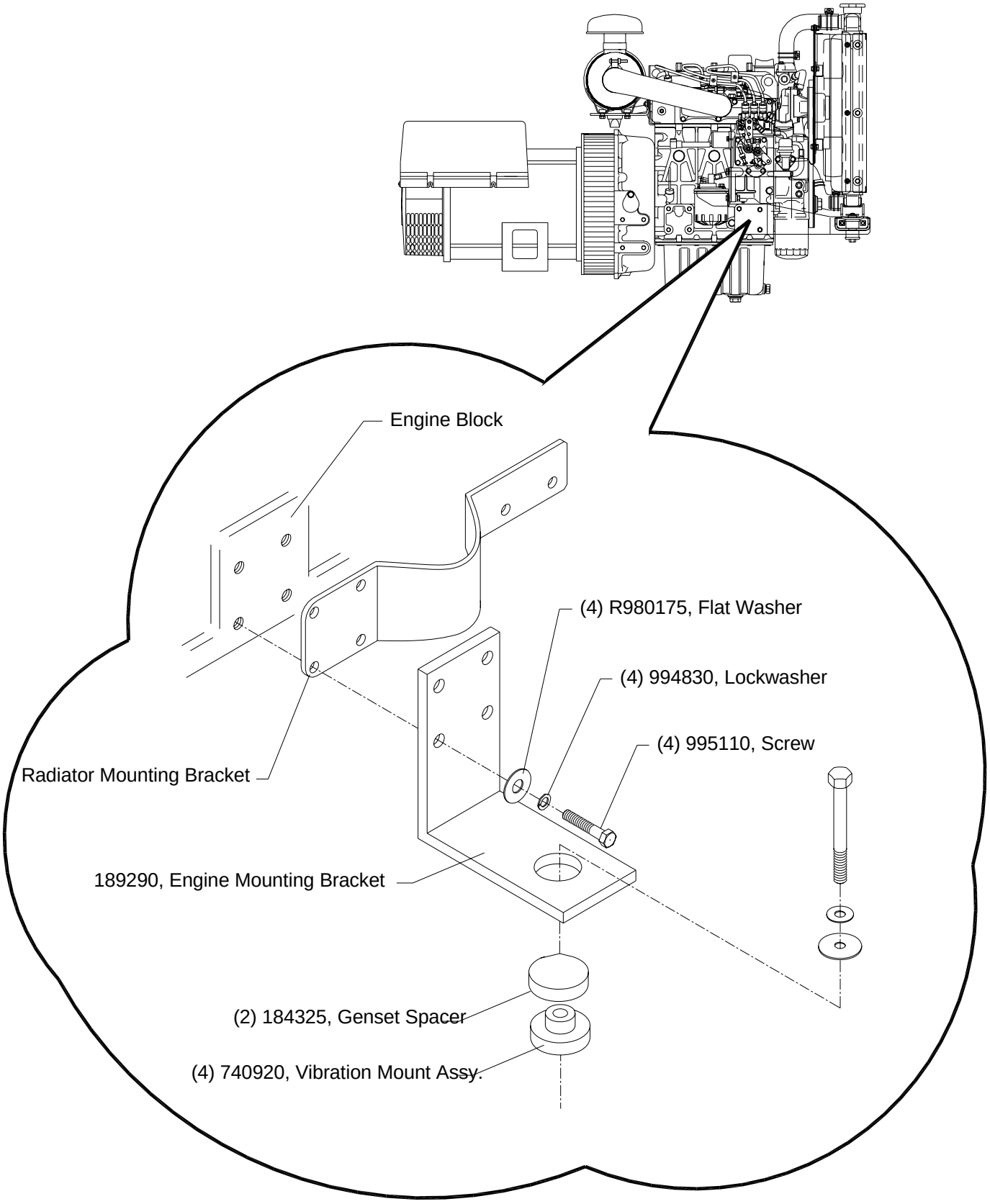
865223, Electric Fuel Pump
Mounted to Trailer Frame

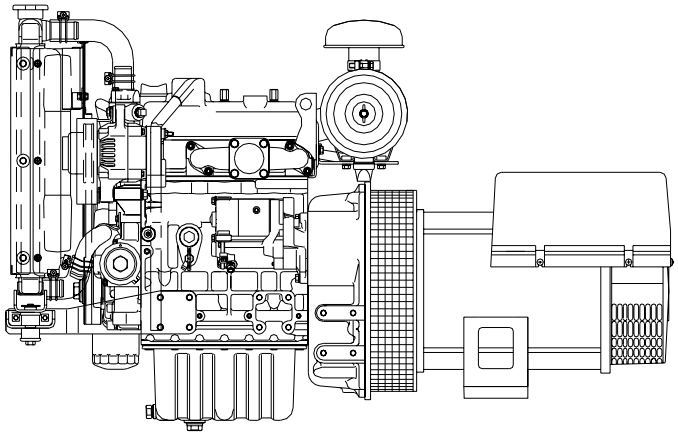
740620, In-line
Fuel Filter

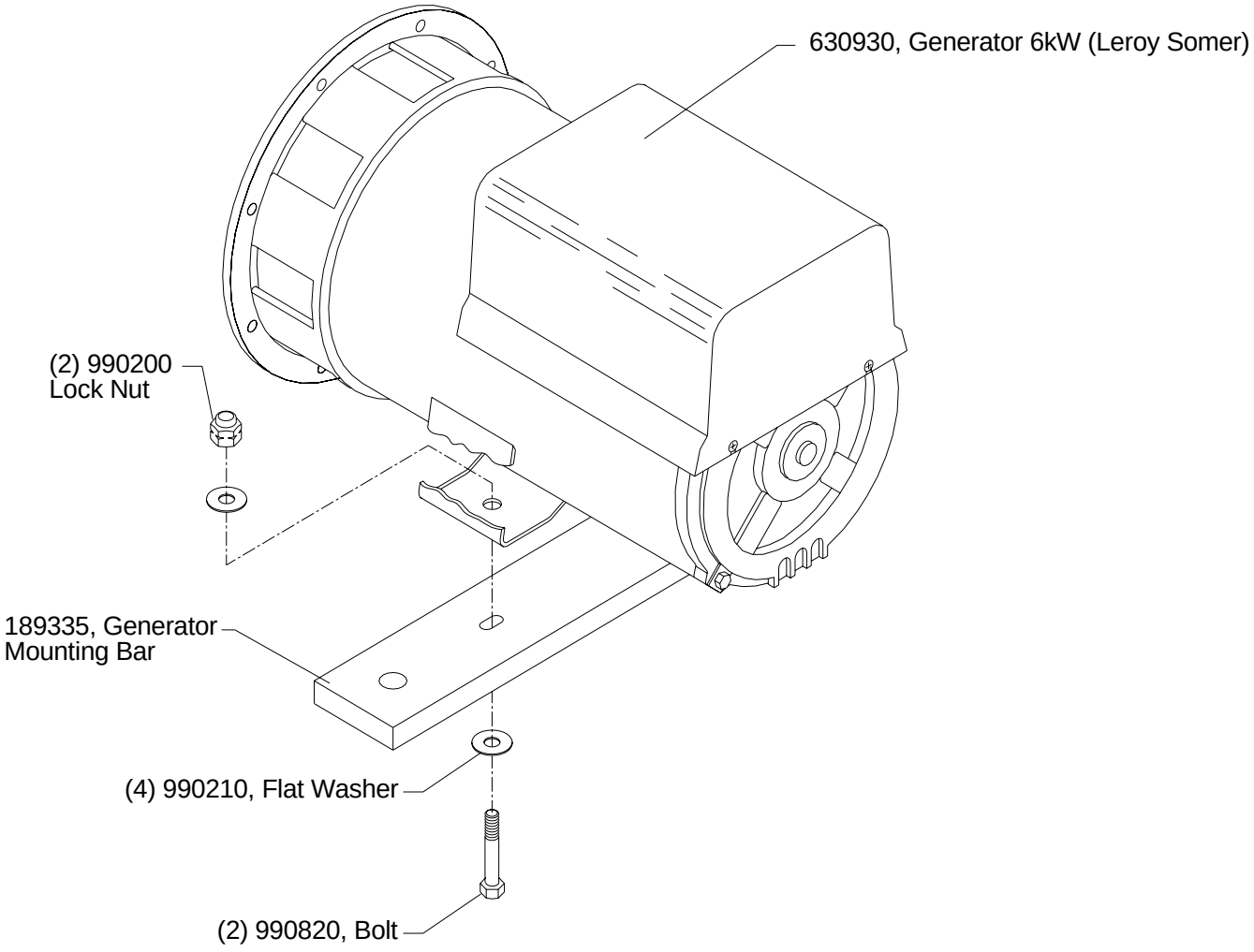

839109 Hose
866090, Alternator
839190, Low Oil Press. Sensor
865276, Muffler
832128, Muffler Gaslket
839110, Hose
866394, Hose
865054, Hose
836831, Bearing Housing
866100, Starter
836832, O-Ring
836833, Rear Bearing

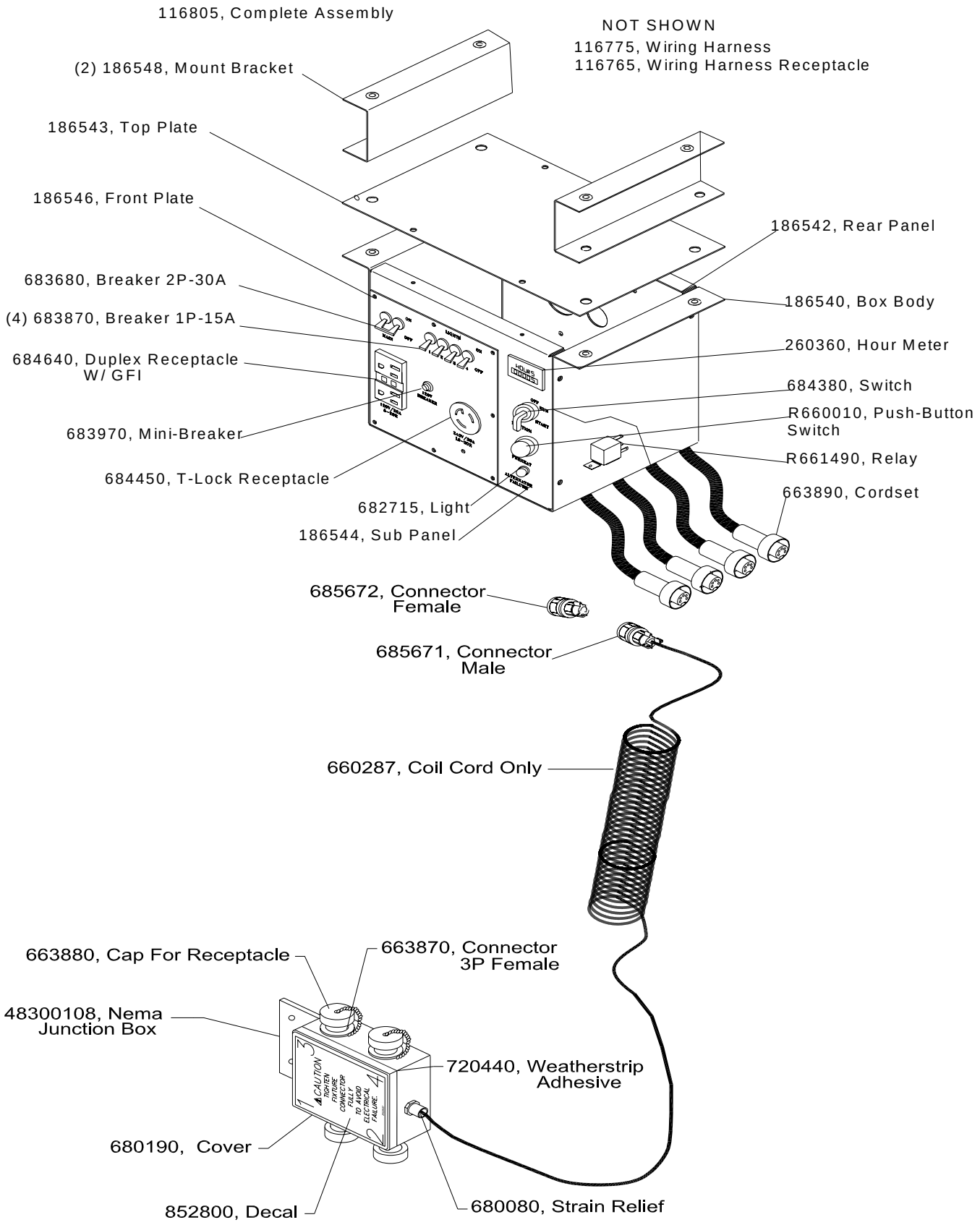



866120, Radiator Cap
865307, Overflow Tank Kit
839131 Guard
866110, Radiator

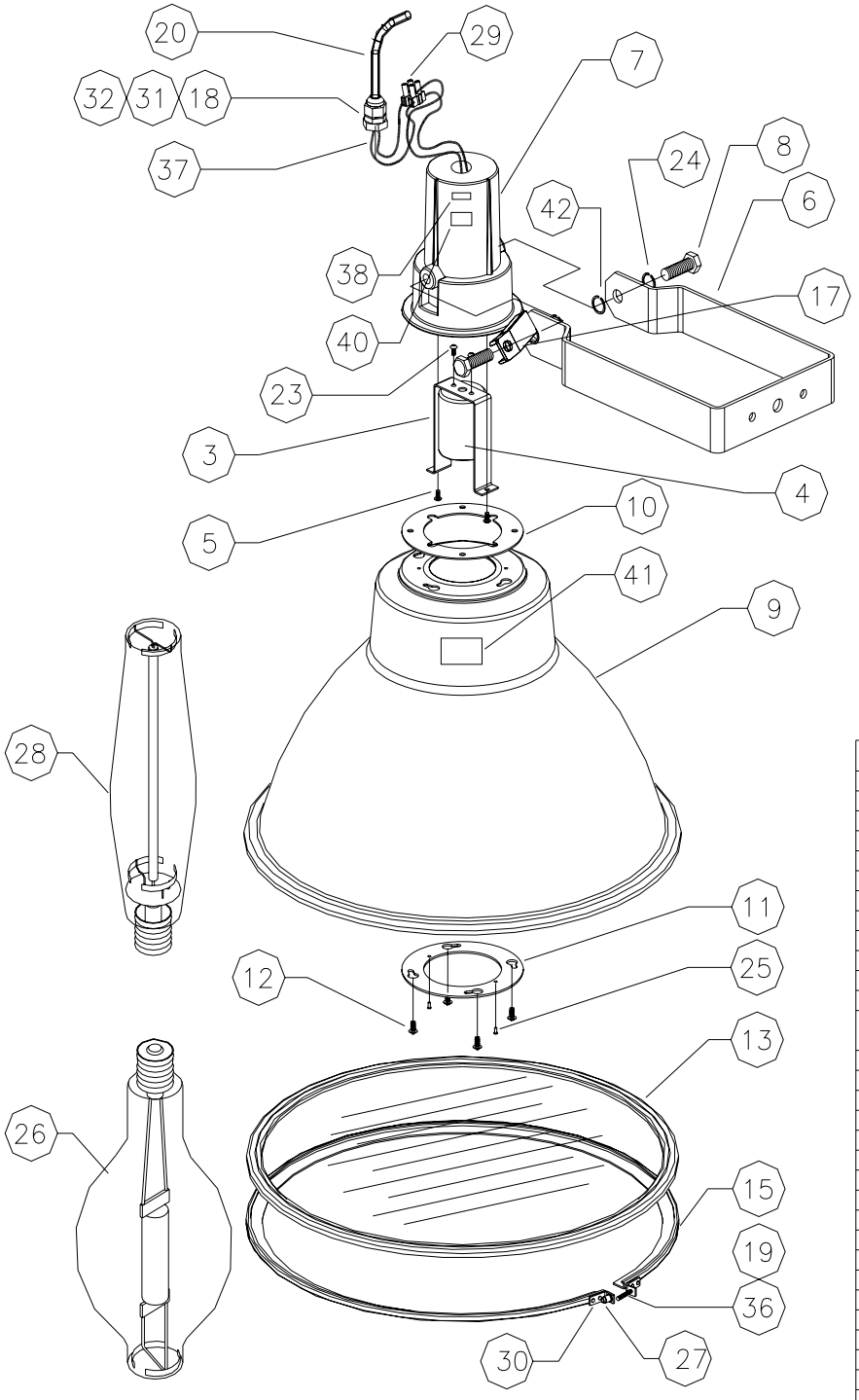

Engine Block
(4) R980175, Flat Washer
(4) 994830, Lockwasher
(4) 995110, Screw
Radiator Mounting Bracket
189290, Engine Mounting Bracket
(2) 184325, Genset Spacer
(4) 740920, Vibration Mount Assy.



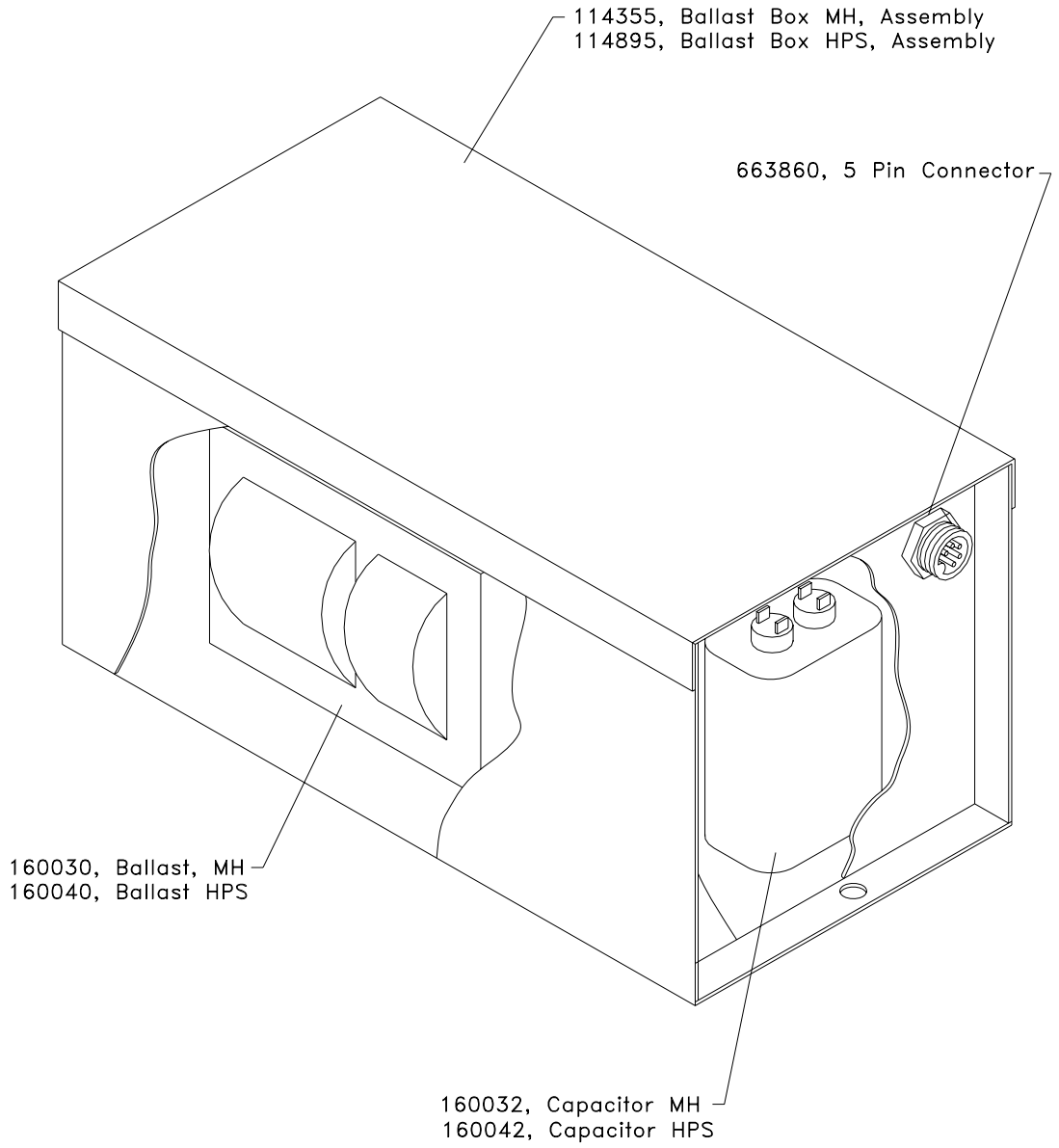

630930, Generator 6kW (Leroy Somer)
(2) 990200
Lock Nut
189335, Generator
Mounting Bar
(4) 990210, Flat Washer
(2) 990820, Bolt

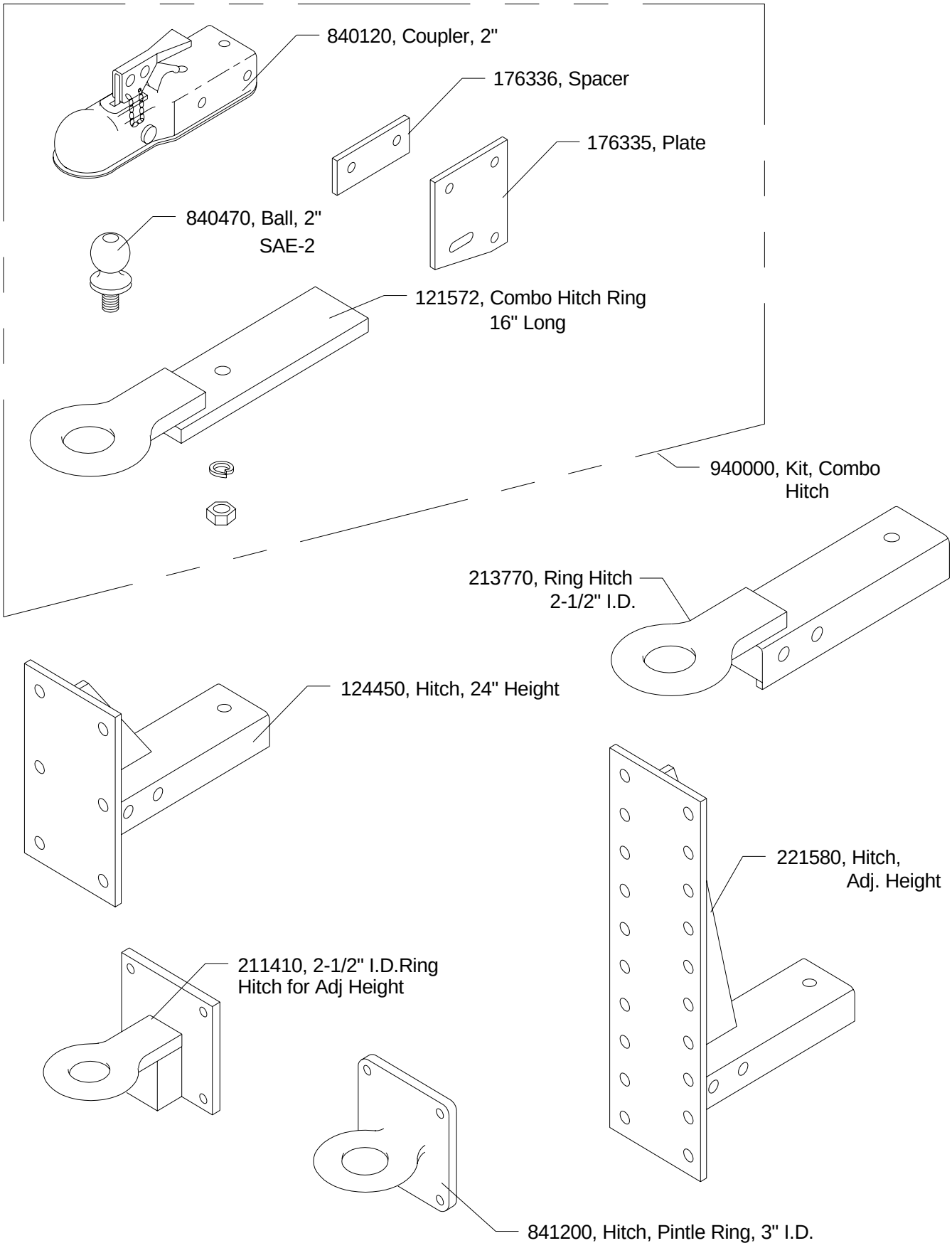

116805, Complete Assembly
NOT SHOWN
116775, Wiring Harness
116765, Wiring Harness Receptacle
(2) 186548, Mount Bracket
186543, Top Plate
186546, Front Plate
186542, Rear Panel
683680, Breaker 2P-30A
186540, Box Body
(4) 683870, Breaker 1P-15A
260360, Hour Meter
684640, Duplex Receptacle W/ GFI
684380, Switch
R660010, Push-Button Switch
683970, Mini-Breaker
R661490, Relay
684450, T-Lock Receptacle
663890, Cordset
682715, Light
186544, Sub Panel
685672, Connector Female
685671, Connector Male
660287, Coil Cord Only
663880, Cap For Receptacle
663870, Connector 3P Female
48300108, Nema Junction Box
720440, Weatherstrip Adhesive
680190, Cover
852800, Decal
680080, Strain Relief

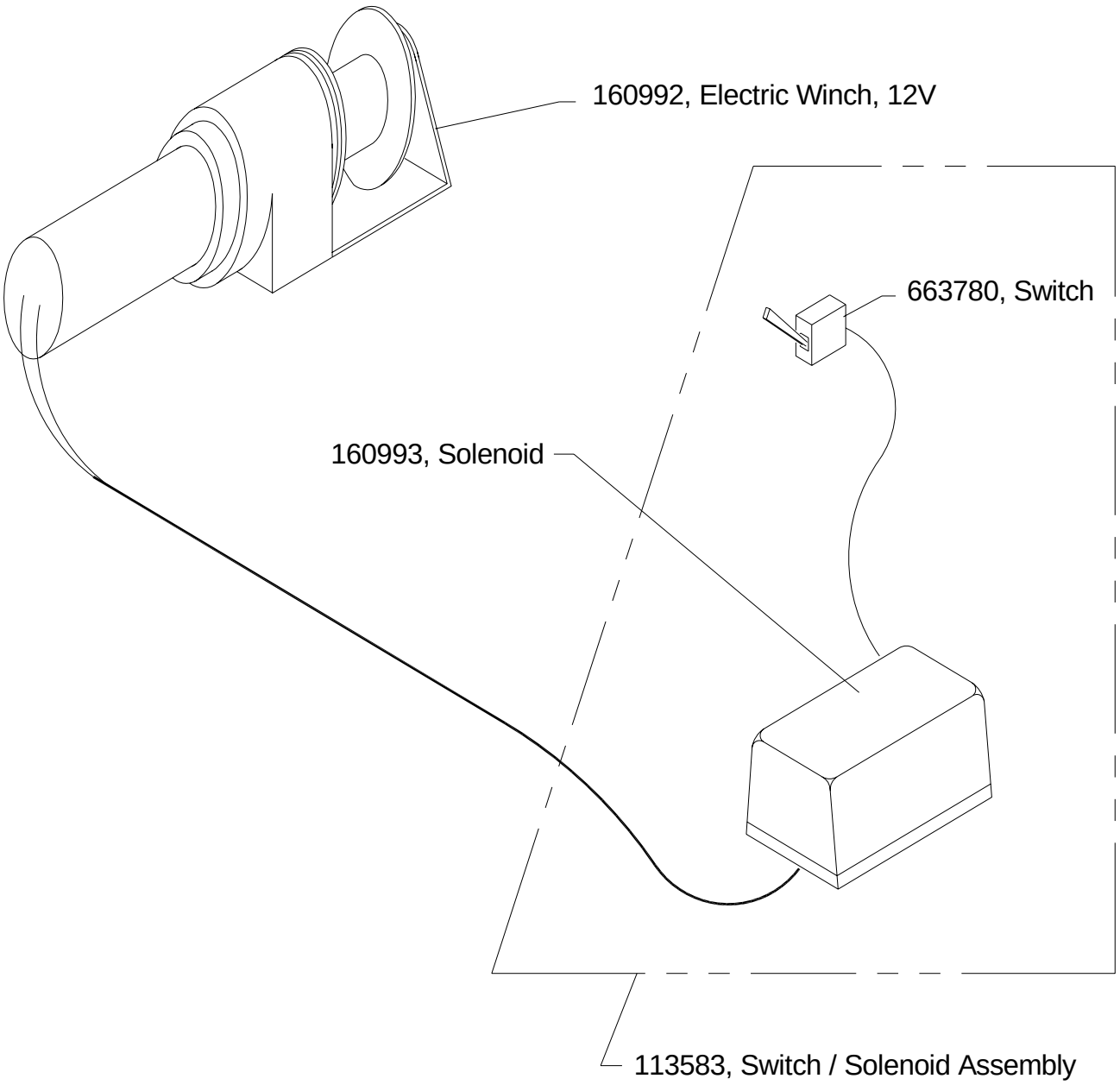
NOTE:
FOR COMPLETE MH ASSEMBLY
ORDER PART# 41100720

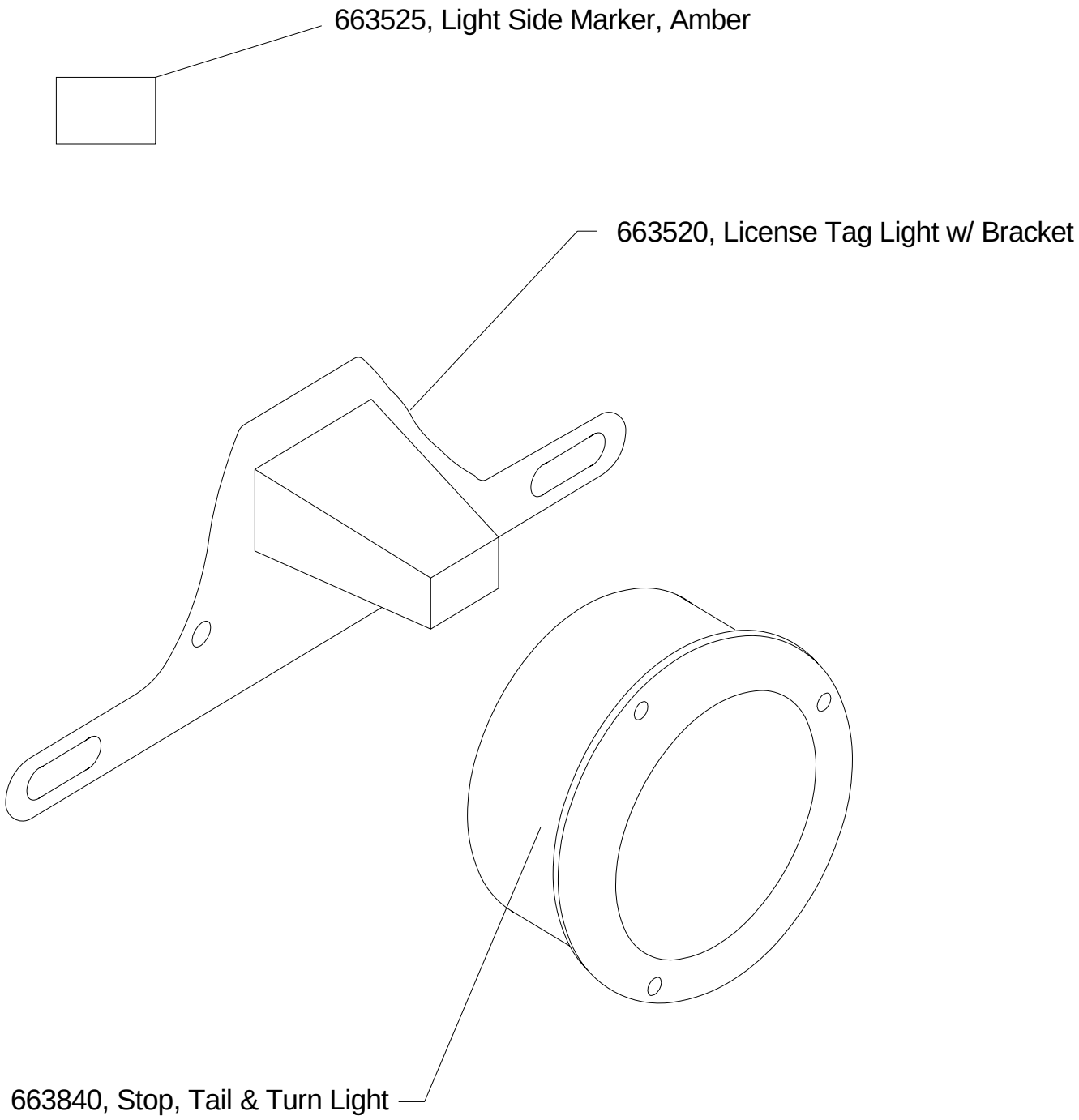


TEREX PART#	#	DESCRIPTION	QTY.
833563	3	SOCKET BRACKET (T&B 057-05-80643)	1
833564	4	SOCKET MOGUL BASE W/ WIRES	1
833565	5	SCREW 8-32 x 3/8" PH PH TT ZC	2
833566	6	TRUNNION FOR GENERATOR	1
833567	7	HOUSING ALUM. CST. FOR GENERATOR	1
990810	8	BOLT 1/2-13 x 1-1/2" HH MS SS	2
833568	9	REFLECTOR 18" ALUM. PEENED	1
833569	10	GASKET HIF (T&B - B61178)	1
833570	11	REINFORCING RING (T&B - B60198)	1
833571	12	SCREW 10-24 x 5/8 HW SL TT	4
833524	13	VULCANIZED GASKET SILICONE - 1/8" LENS COMBINATION	1
833543	15	CLAMP BAND ø19.5" ALUMINUM	1
833573	17	HANDLE FOR 1/2-13 BOLT (DWG) (OPTIONAL)	1
682470	18	STRAIN RELIEF #2521 T&B	1
833574	19	SCREW 8-32 X 1 HH SL MS SS	1
663850	20	CORD #16-3 SIOW 105°C + 2 TERM. RING	1
833577	23	SCREW 8-32 x 5/8" FH PH MS ZC	2
991650	24	SPLIT WASHER 1/2 SS	2
990675	25	RIVETS ø1/8" ALUM. 3/16" LENGHT	2
160071	26	LAMP, 1000 WATT METAL HALIDE	1
833578	27	NUTSERT 8-32 X ø1/4" X 13/32" LENGHT	1
160140	28	LAMP, 1000 WATT HP SODIUM (OPT.)	1
709034	29	EURO CONNECTOR TERMINAL STRIP	2
683950	31	SEAL RING .755" ID - EPDM	1
680020	32	LOCKNUT 1/2	1
833581	36	FIBER WASHER	1
833582	37	FIBERGLASS SLEEVE 2-1/2"	.5
833583	38	LBL WET LOCATION/EXTERIEUR	1
	39		
833584	40	LBL 105C SUPPLY COND.	1
833585	41	LBL FIXTURE CSA - NRTL/C	1
995970	42	WASHER 1/2 EXTER. TOOTH LOCK SS	2

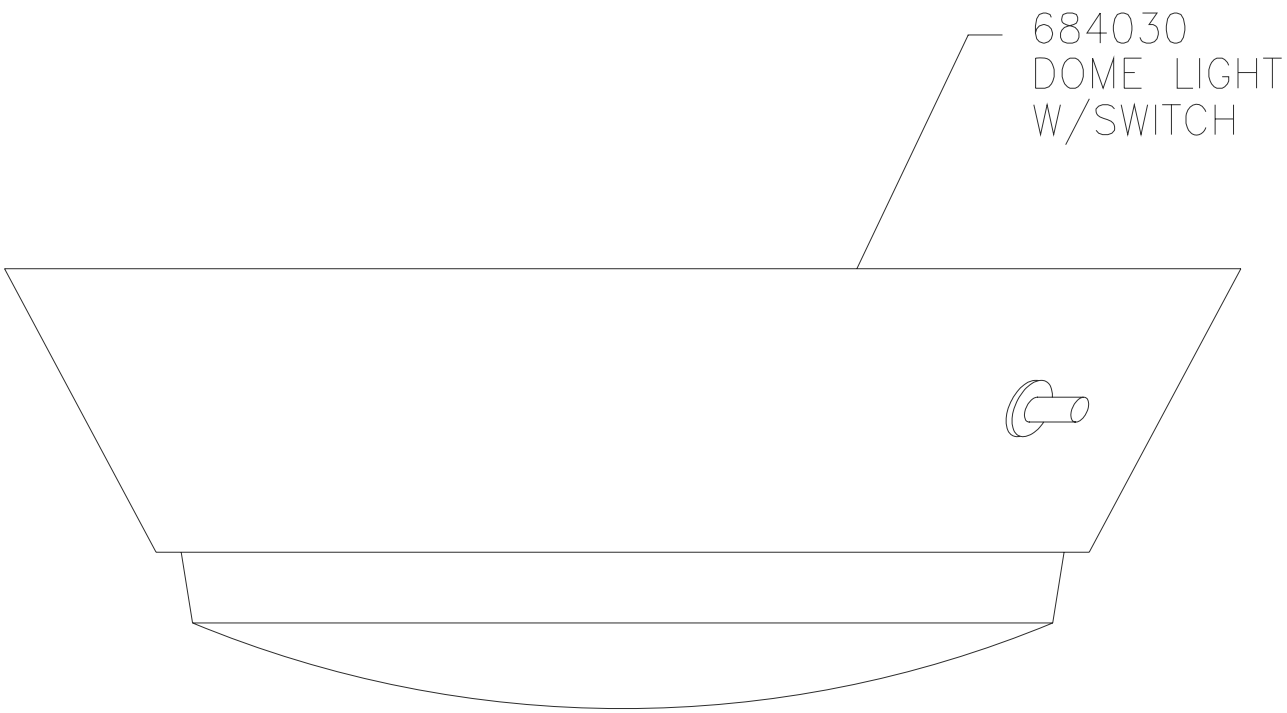

114355, Ballast Box MH, Assembly
114895, Ballast Box HPS, Assembly
663860, 5 Pin Connector
160030, Ballast, MH
160040, Ballast HPS
160032, Capacitor MH
160042, Capacitor HPS


840120, Coupler, 2"
176336, Spacer
176335, Plate
840470, Ball, 2"
SAE-2
121572, Combo Hitch Ring
16" Long
940000, Kit, Combo
Hitch
213770, Ring Hitch
2-1/2" I.D.
124450, Hitch, 24" Height
221580, Hitch,
Adj. Height
211410, 2-1/2" I.D.Ring
Hitch for Adj Height
841200, Hitch, Pintle Ring, 3" I.D.

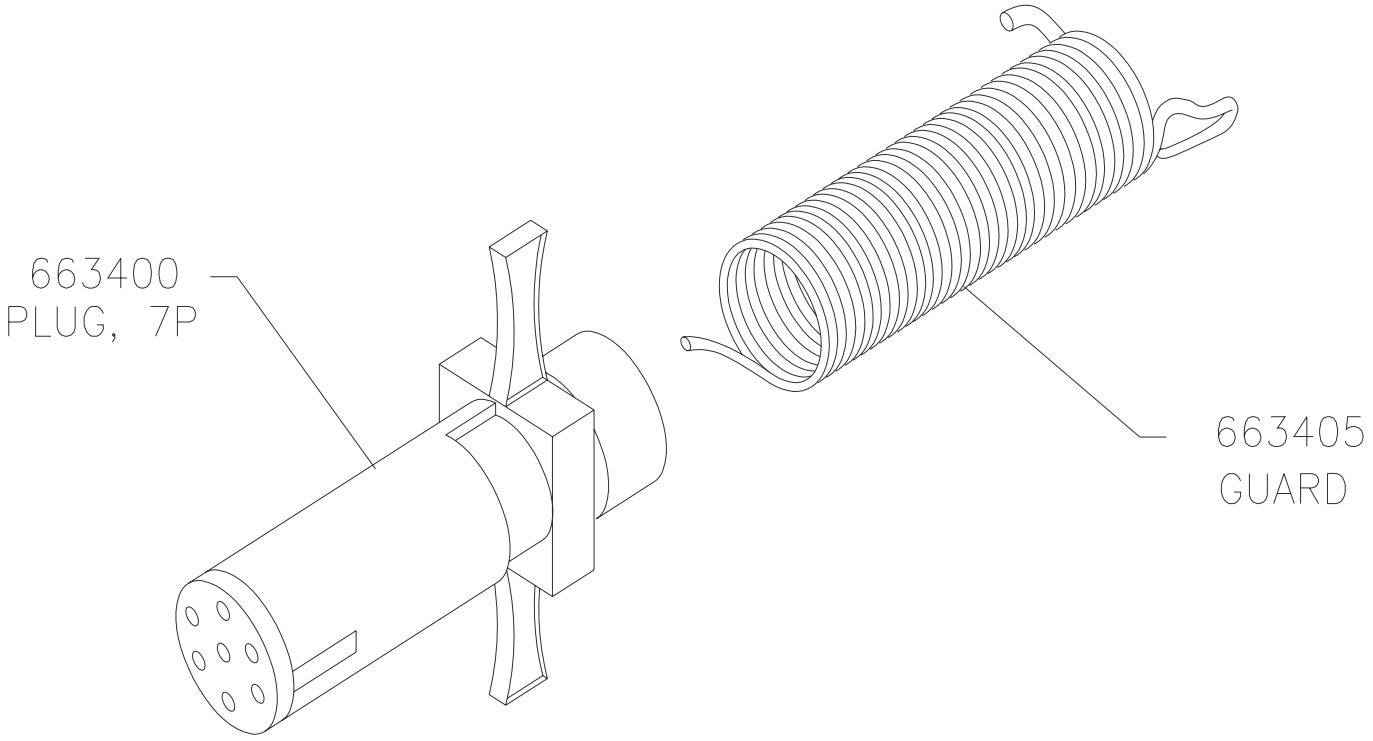

160992, Electric Winch, 12V
663780, Switch
160993, Solenoid
113583, Switch / Solenoid Assembly


663525, Light Side Marker, Amber
663520, License Tag Light w/ Bracket
663840, Stop, Tail & Turn Light

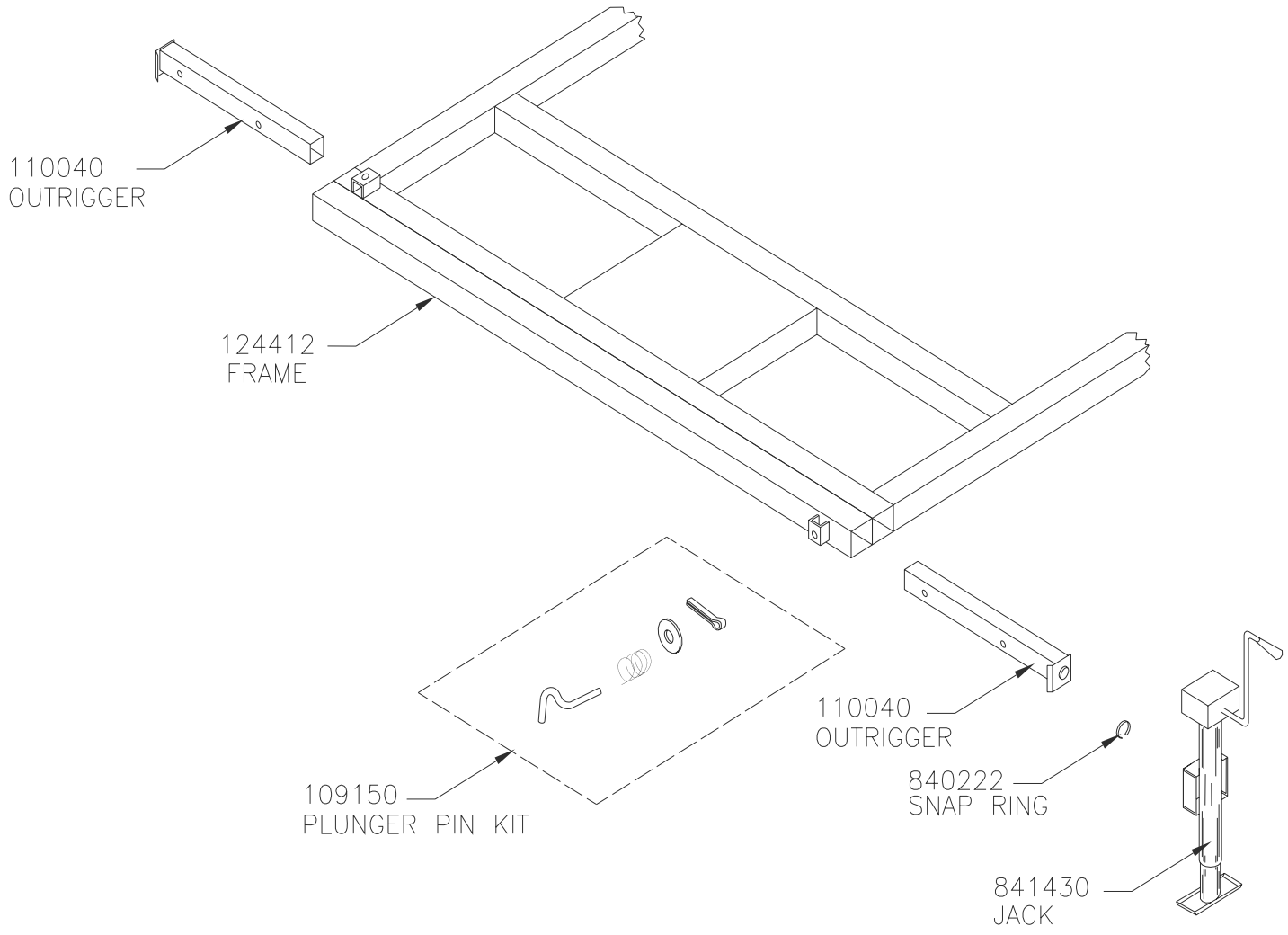
TEREX LIGHT CONSTRUCTION	Model: AL4000 LIGHT TOWER	Option: OLTX0270
	Title: 12V DOME LIGHT WITH SWITCH	



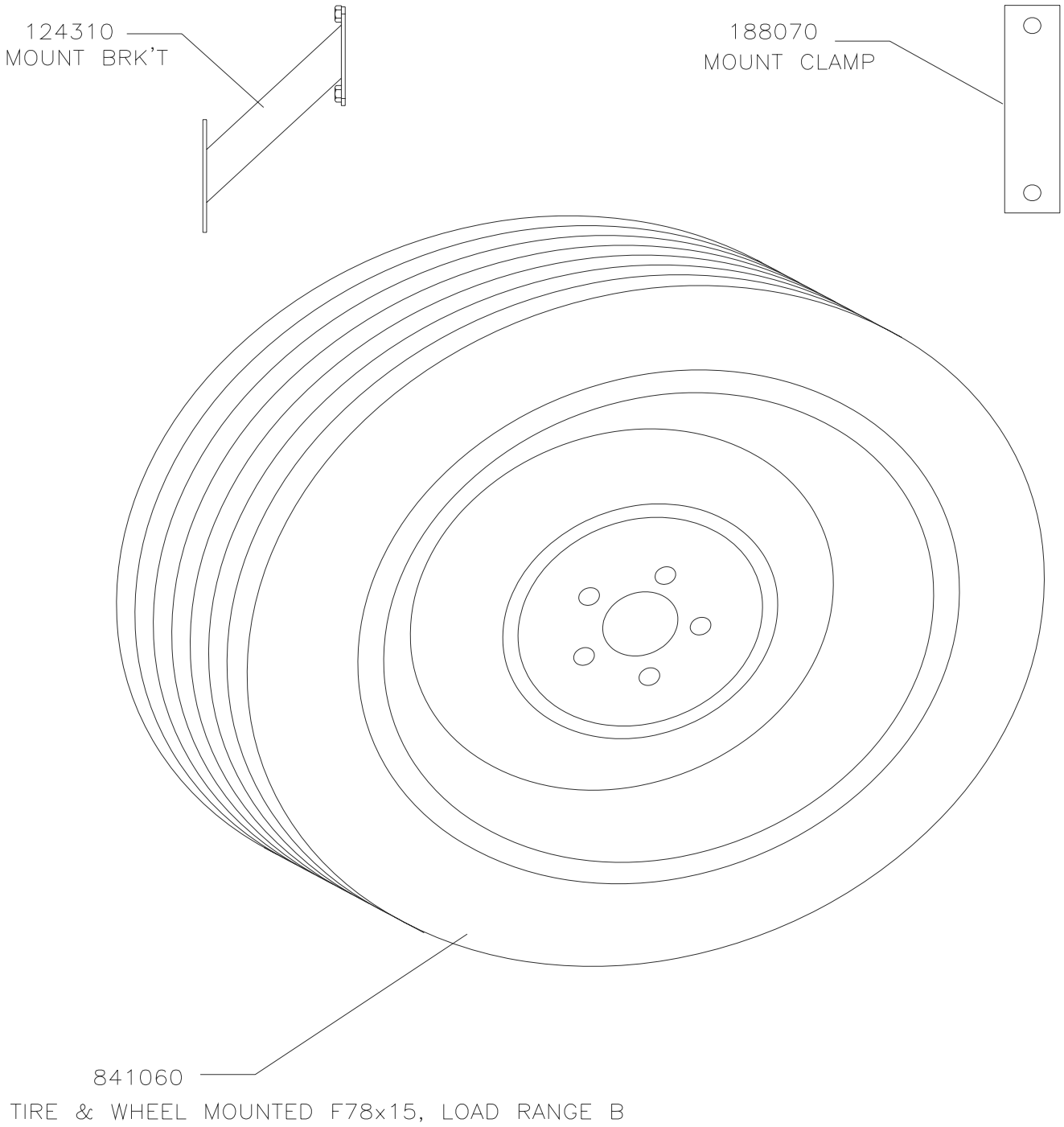
TEREX LIGHT CONSTRUCTION	Model: AL4000 LIGHT TOWER	Option: OLTX0180
	Title: 7 POLE CONNECTOR FOR LIGHTS	



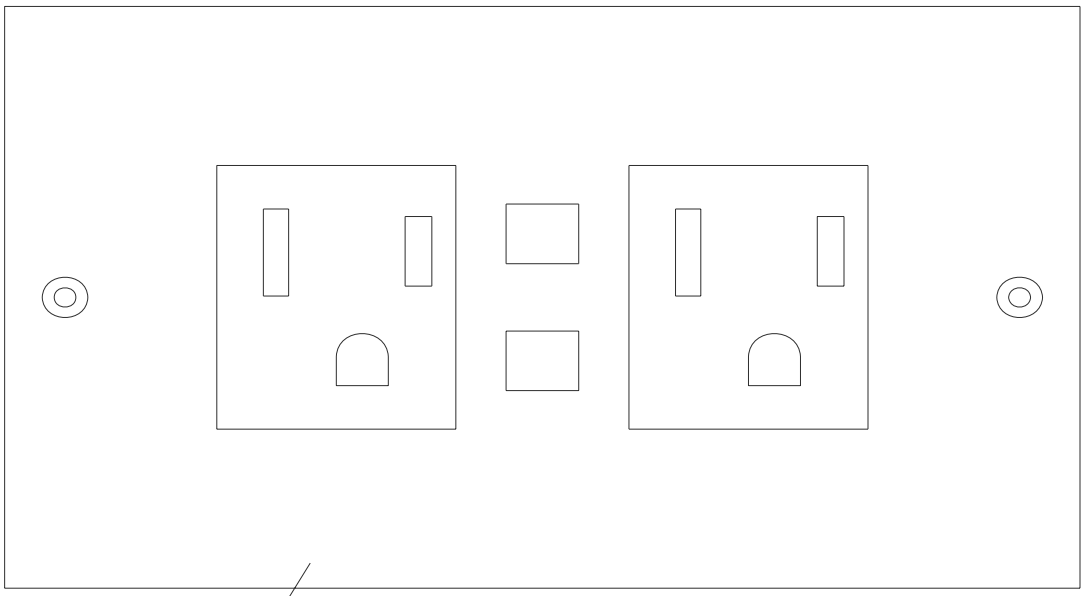
TEREX LIGHT CONSTRUCTION	Model: AL4000 LIGHT TOWER	Option: OLTX0540
	Title: FOUR OUTRIGGERS AND JACKS	



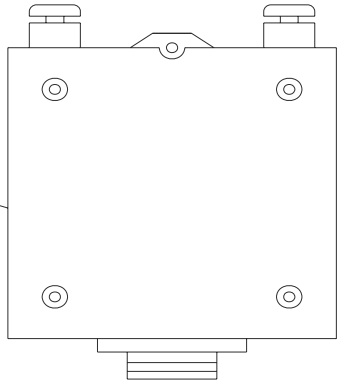
TEREX LIGHT CONSTRUCTION	Model: AL4000 LIGHT TOWER	Option: OLTX0261
	Title: SPARE TIRE AND WHEEL	



TEREX LIGHT CONSTRUCTION	Model: AL4000 LIGHT TOWER	Option: 0LTX0210
	Title: EXTRA GFI DUPLEX RECEPTACLE	

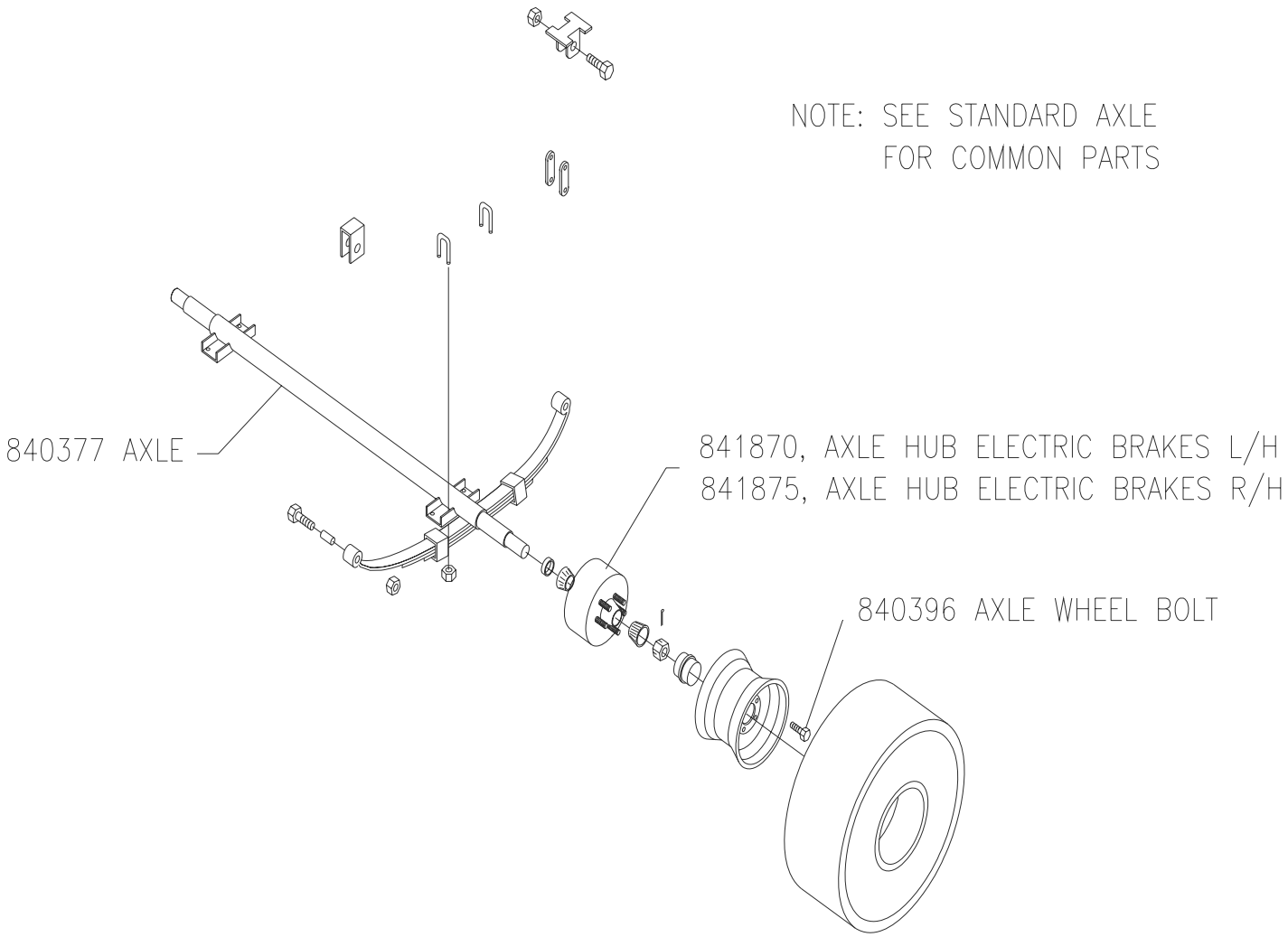


684640
RECEPTACLE, 20A, 120V DUPLEX W/ GFI



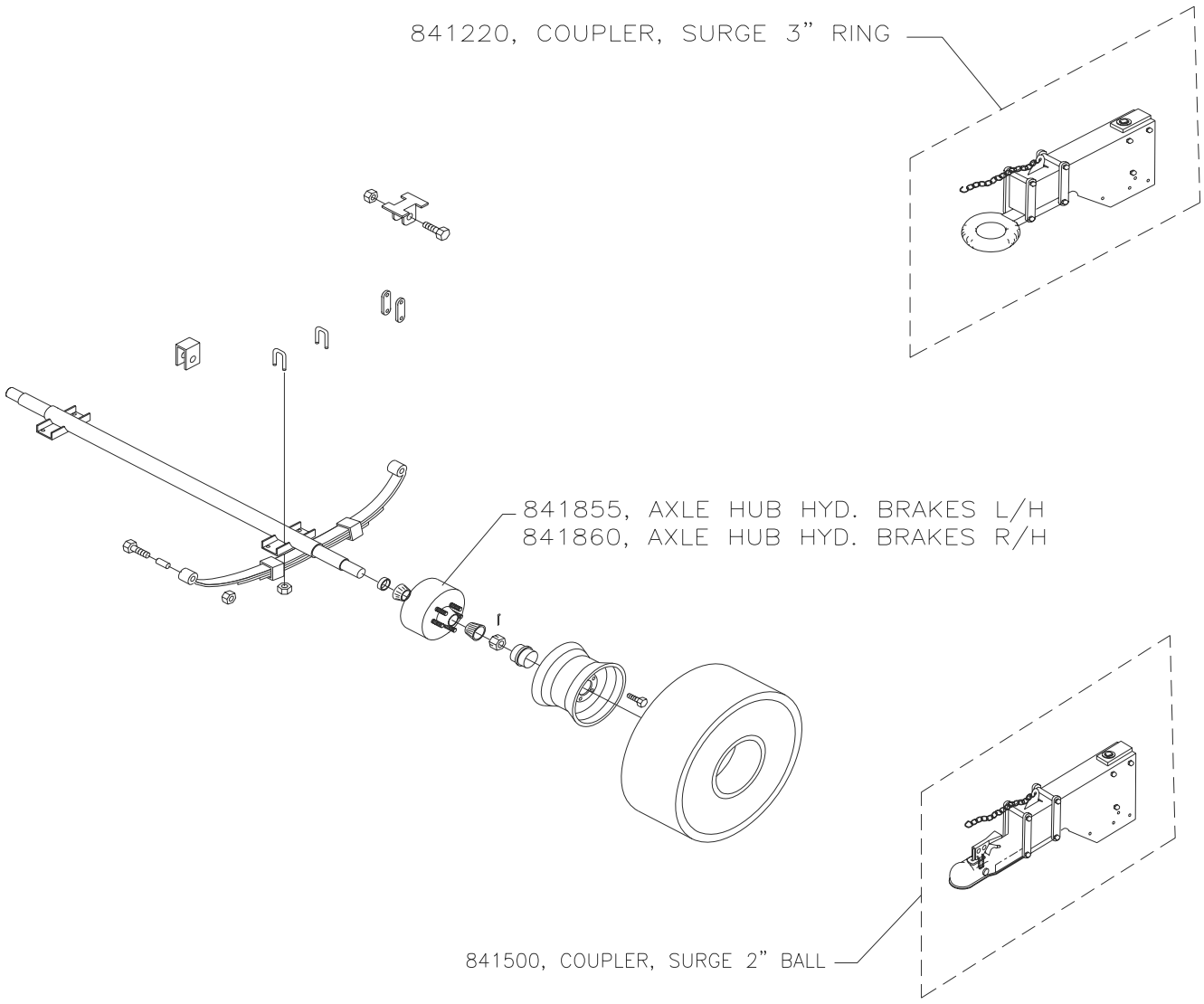
683970
BREAKER, MINI, IP/20A

TEREX LIGHT CONSTRUCTION	Model: AL4000 LIGHT TOWER	Option: 0LTY0315
	Title: ELECTRIC TRAILER BRAKES	

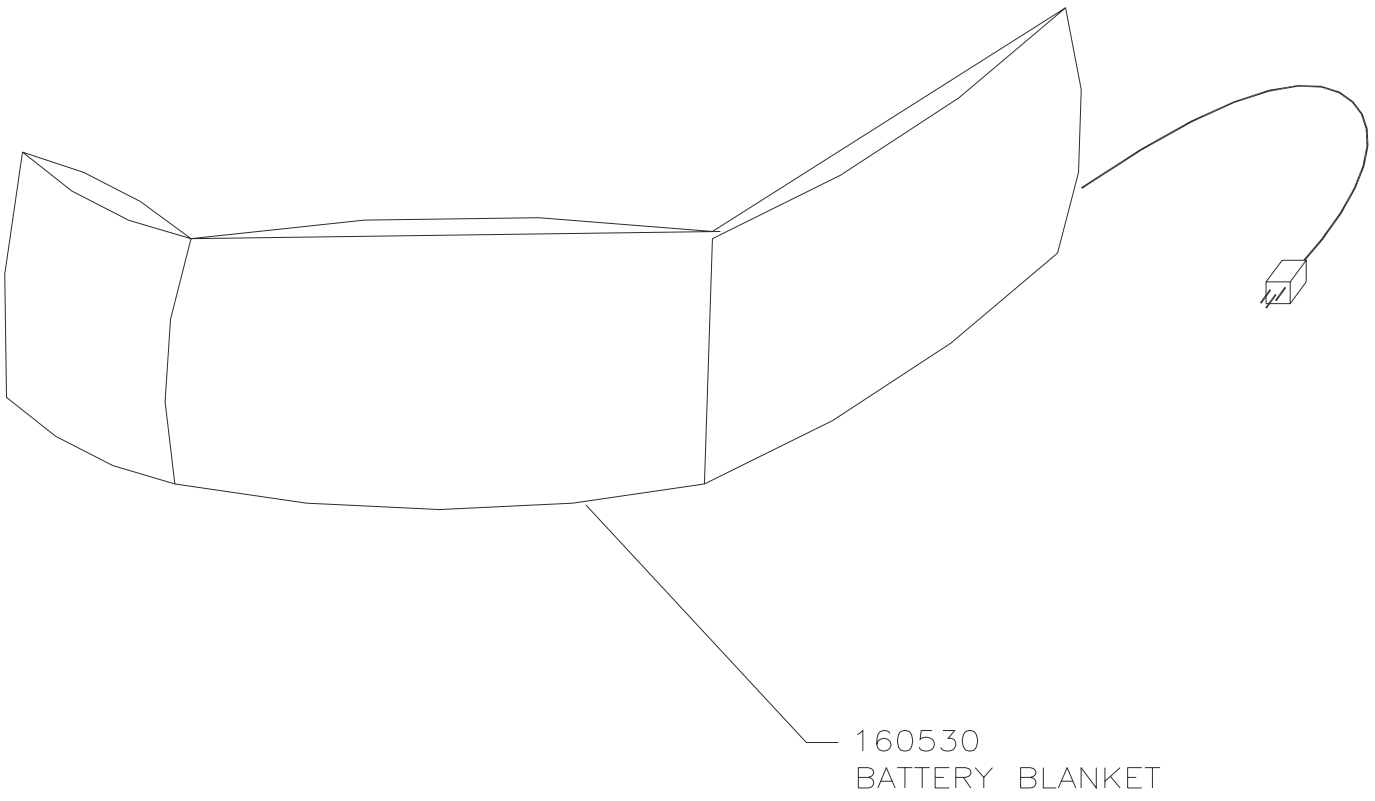


NOTE: SEE STANDARD AXLE FOR COMMON PARTS

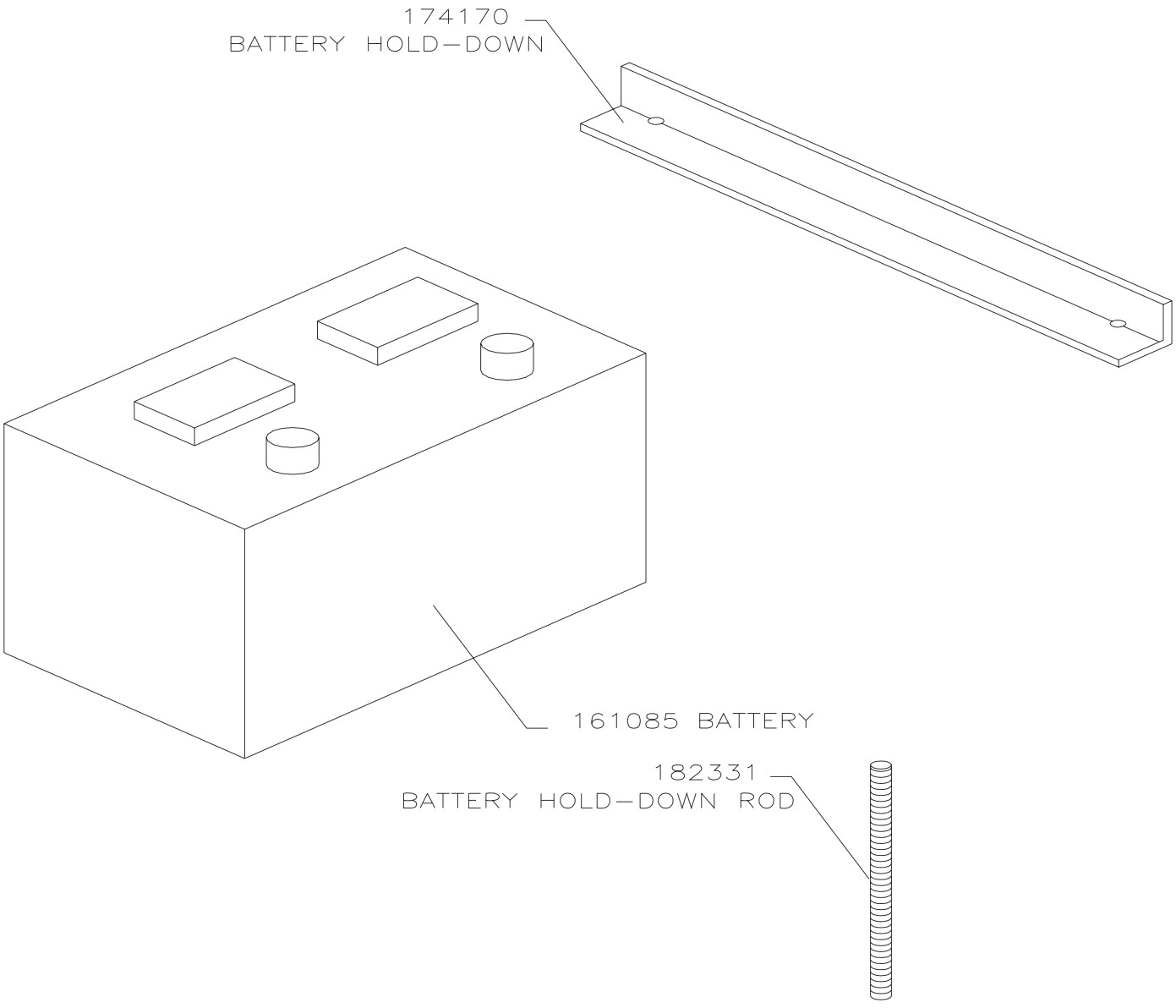
841480, KIT: BRAKE LINES AND FITTINGS (NOT SHOWN)



TEREX LIGHT CONSTRUCTION	Model: AL4000 LIGHT TOWER	Option: 0LTX0130
	Title: BATTERY BLANKET	



TEREX LIGHT CONSTRUCTION	Model: AL4000 LIGHT TOWER	Option: OLTX0222
	Title: BATTERY 700 AMP	



TEREX LIGHT CONSTRUCTION	Model: AL4000 LIGHT TOWER	Option: 0LTX0140
	Title: FUEL LINE HEATER	

