ILLUSTRATION ONLY

OWNER'S MANUAL

SERIES 16 LCG
CHAIN DRIVE CONTAINER CARRIER

INSTALLATION, OPERATION, MAINTENANCE & PARTS

NOTE: MANUAL including SPECIFICATIONS, subject to change without notice
All ratings specified are based on structural factors only,
not vehicle capacities or capabilities.

Miller Industries Towing Equipment Inc.
PA Carrier Operations
Hermitage, PA 16148

FORM NO. 05004326
06/2025
PRICE $25.00

LIMITED WARRANTY

MILLER, IND., ("Miller"), warrants to the original purchaser that each new Miller product will be free from defects in material and workmanship for a period of twelve (12) months from date placed in service. The purchaser must promptly notify Miller in writing of any failure in material or workmanship. In no event shall Miller accept such notification later than twelve (12) months from date placed in service.

Miller's obligation under this warranty, statutory or otherwise, is limited to the repair or replacement at the Miller factory, or at a point designated by Miller, of such part or parts as shall appear upon inspection by Miller to be defective in material or workmanship. New or re-manufactured parts will be used for any replacement at Miller's option. This warranty is not transferable. This warranty does not obligate Miller to bear the cost of labor or transportation charges in connection with the repair or replacement of any parts found to be defective, nor shall it apply to a product upon which repairs or alterations have been made unless authorized by Miller.

EXCEPT AS EXPRESSLY SET FORTH IN THIS WARRANTY, MILLER MAKES NO OTHER WARRANTY, EXPRESS OR IMPLIED, AND HEREBY DISCLAIMS ALL OTHER WARRANTIES INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. Miller shall in no event be liable for claimed downtime, claimed loss of profits or good will, or any other special, incidental, indirect, or consequential damages concerning or relating to any product or parts, whether based on negligence, strict liability, breach of contract, breach of warranty, misrepresentation or any other legal theory, regardless of whether the loss resulted from any general or particular requirement which Miller knew or had reason to know about at the time of sale.

MILLER MAKES NO WARRANTY, EXPRESS OR IMPLIED, AS TO THE FINISHED PRODUCTS MANUFACTURED OR SUPPLIED BY ANOTHER MANUFACTURER AND SUPPLIED BY MILLER TO PURCHASER, including, but not limited to, any vehicle to which a Miller product may be affixed or any accessories or wire rope, and MILLER EXPRESSLY DISCLAIMS ANY IMPLIED WARRANTIES OR MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE AS TO SUCH EQUIPMENT OR PRODUCTS. This language shall in no way affect or diminish the rights of the purchaser to rely on such warranties as are extended by such manufacturers or suppliers. Miller shall, to the extent permitted under applicable law, pass on to the purchaser such manufacturer's or seller's warranty.

Miller, whose policy is one of continuous improvement, reserves the right to improve its products through changes in design or materials as it may deem desirable without being obligated to incorporate such changes in products previously sold. This warranty is not intended to cover or include the following items, which are set forth by way of example and not limitation:

A. Normal deterioration of trim, paint, lettering, and appearance items due to wear or exposure to weather, road conditions, road treatments, etc.
B. Any damage or defect due to accident, misuse, abuse, operation exceeding rated loads, improper or unauthorized repairs, failure to provide reasonable and necessary maintenance, or uses of which the equipment was not designed or intended.
C. Alterations or modifications that affect performance, operations or reliability.
D. Normal maintenance parts including, but not limited to, wear pads, bushings, wire rope, mudflaps, fenderettes, light bulbs, hydraulic oil, filters, and tow sling belts.

IT IS EXPRESSLY UNDERSTOOD THAT MILLER MAKES NO IMPLIED WARRANTY THAT MILLER PRODUCTS SHALL BE FIT FOR THE PURPOSE OF LIFTING OR MOVING PEOPLE OR FOR ANY OTHER IMPROPER USE.

Miller Industries Towing Equipment Inc.
PA Carrier Operations
Hermitage, PA

SERIAL NUMBER

OWNER, USER AND OPERATORS:

MILLER appreciates your choice of our carrier for your application. Our number one priority is user safety which is best achieved by our joint efforts. We feel that you can make a major contribution to safety if you, as the equipment owner and operators:

1. Comply with federal, state and local regulations.

2. Read, understand and follow the Instructions in the manual.

3. Use good, safe work practices in a common sense way.

4. Only have authorized and trained operators running the carrier.

Also contained in this manual is a Parts Section for your carrier. Use of other than factory or factory authorized parts will render the warranty void.

WARNING

Owner's manual MUST be kept with vehicle at all times. Manual must be read before operating carrier unit.

This manual is supplied to you with your MILLER unit to better familiarize the owner/operator with the proper operation and maintenance of their unit.

The information contained in this manual should be thoroughly understood by all operating and maintenance personnel to prolong the operating life of this unit.

Field modification of this unit without the advice and consent of our Engineering Department will void all guarantees pertaining to both purchased components used in the manufacture of this unit, as well as structurally fabricated parts supplied by us.

TABLE OF CONTENTS

Section I - SAFETY PRECAUTIONS

Presented in the interest of safety for all carrier operators.

NOTICE

You are obligated to operate your carrier safely. You can be held legally responsible for injuries or damages resulting from unsafe operating practices.

The manufacturer's recommendations for operating this carrier can help you avoid unsafe practices and their bad consequences. These recommendations are contained in this manual.

Miller Industries is not responsible for the results of any unsafe practice of carrier operators. Furthermore, the division is not responsible for the failure of the carrier or its accessories resulting from improper maintenance.

The danger from a vehicle does not cease when it is disabled or wrecked. Recovering and towing vehicles can be dangerous, too! The danger threatens carrier operators and everyone close at hand. As a carrier operator you must develop an awareness of the hazards involved. You must use every safeguard within reason to prevent injuries.

For each step in operating your carrier, develop the habit of asking yourself if it is safe to proceed. Carefully check all rigging (especially snatch blocks) before starting a heavy lift or pull.

We cannot warn you of all the possible dangers you will encounter. But we will tell you of the most common hazards we know about. Learn them well.

Section I - SAFETY PRECAUTIONS

1.1 Improper use of this equipment can be dangerous! Incorrect operation can result in bodily injury to the operator and bystanders. Therefore, a thorough understanding of the "operating principles" and "operating instructions" as found in this manual is essential.

1.2 Study each job to be done. Apply common sense judgment to assure safety to yourself and bystanders.

1.3 Plan ahead. Work safely. Avoid accidental damage and injury. If an accident or fire does occur, react quickly with the tools and skills at hand. Know how to use a first aid kit and a fire extinguisher - and where to get assistance.

1.4 Read and understand the following instructions.

1. READ THE MOUNTING/OPERATING/MAINTENANCE MANUAL FOR WARNINGS AND PRECAUTIONS.

2. NEVER TAKE ANYTHING FOR GRANTED. DON'T ASSUME THAT EVERYTHING IS ALL RIGHT AT THE START OF WORK TODAY JUST BECAUSE EVERYTHING SEEMED ALL RIGHT AT THE END OF WORK YESTERDAY. BEFORE BEGINNING OPERATION, THOROUGHLY INSPECT THE ENTIRE CARRIER TO BE SURE IT IS IN GOOD OPERATING CONDITION.

3. VISUALLY INSPECT THE CARRIER FOR EVIDENCE OF PHYSICAL DAMAGE, SUCH AS CRACKING, BENDING, OR DEFORMATION OF PLATES OR WELDS. INSPECT CAREFULLY FOR CRACKING OR FLAKING OF PAINT, WHICH MAY INDICATE A DANGEROUS CRACK IN THE STRUCTURE BENEATH. DO NOT OPERATE UNTIL REPAIRS ARE MADE.

4. LOOSE OR MISSING HARDWARE, BOLTS, NUTS, AND PINS SHOULD BE PROPERLY TIGHTENED OR REPLACED WITH MANUFACTURER'S SPECIFIED HARDWARE.

5. CHECK FOR FLUID LEAKS. HYDRAULIC SYSTEM LEAKS MUST BE CORRECTED BEFORE THE CARRIER IS OPERATED. INSPECT ALL HYDRAULIC HOSES, ESPECIALLY THOSE WHICH FLEX OR MOVE IN SERVICE. AND REPLACE IF NECESSARY. SECURE ALL CAPS AND FILLER PLUGS FOR ALL SYSTEMS.

6. YOUR CLOTHING SHOULD BE RELATIVELY CLOSE FITTING.

7. ALWAYS WEAR PROTECTIVE ITEMS SUCH AS SAFETY GLASSES, GLOVES, REFLECTIVE CLOTHING AND SAFETY SHOES.

8. BEFORE OPERATING THE CARRIERS, REFER TO THE CARRIER'S CAPACITY LABELS ON THE BED SILL AND INSIDE THE DOOR OF THE CAB AND IN THE SPECIFICATIONS SECTION OF YOUR OPERATING MANUAL. FOR CHASSIS CAPACITY, CONSULT YOUR TRUCK DEALER. NEVER EXCEED MANUFACTURER'S LOAD RATING. THE STIPULATIONS PERTINENT TO THESE RATINGS SHALL ALWAYS BE CAREFULLY OBSERVED. RATINGS SHOWN ARE BASED ON THE HYDRAULIC, MECHANICAL, OR STRUCTURAL DESIGN OF THE CARRIER RATHER THAN STABILITY. IT IS ALWAYS UNSAFE TO APPLY ANY LOAD WHICH IS GREATER THAN RATED LOAD SHOWN ON THE DATA PLATE.

9. DO NOT USE THIS EQUIPMENT EXCEPT ON SOLID, LEVEL SURFACE WITH THE TRUCK BRAKES LOCKED.

10. OPERATE ALL CONTROLS SLOWLY AND SMOOTHLY TO AVOID DAMAGE TO THE CARRIER OR INJURY TO PERSONNEL.

11. DO NOT OPERATE, WALK, OR STAND BEHIND A CARRIER BED OR CRAWL UNDER A SUSPENDED BED.

12. NEVER EXTEND THE CARRIER BED OVER ANYONE.

13. DO NOT USE THE CARRIER TO TRANSPORT PEOPLE.

14. WHEN THE WHEEL LIFT IS TOWING A VEHICLE, KEEP THE WHEEL RETAINERS AT LEAST 18 INCHES ABOVE LEVEL GROUND. THIS CLEARANCE IS NECESSARY TO PREVENT THE WHEEL RETAINERS FROM COLLIDING WITH THE GROUND WHEN DRIVING UP AN ABRUPT INCLINE.

15. FOR TRAVEL, THE BED AND WHEEL LIFT MUST BE IN STOWED POSITION AND THE PTO DISENGAGED.

WARNING

ONLY AUTHORIZED AND TRAINED PERSONNEL SHOULD BE PERMITTED TO OPERATE THIS CARRIER UNSUPERVISED.

TRAINED PERSONNEL ARE THOSE WHO HAVE WORKED UNDER EXPERIENCED SUPERVISION AND HAVE PERFORMED ALL CARRIER MANEUVERS, HAVE READ THE MOUNTING, OPERATING AND MAINTENANCE MANUAL, WARNINGS AND PRECAUTIONS, AND UNDERSTAND AND HAVE HAD EXPLAINED TO THEM BY THEIR EMPLOYER THE HAZARDS OF OPERATING THE CARRIER. THEY MUST BE FAMILIAR WITH THE HAZARDS OF OPERATING AT A SITE WHERE ELECTRIC POWER LINES, IRREGULAR GROUND CONTOUR, WATER, ICE, MUD, OR OTHER CONDITIONS CAN INTERFERE WITH ORDINARY CAREFUL OPERATION OF THIS CARRIER.

AN UNTRAINED OPERATOR SUBJECTS HIMSELF AND OTHERS TO DEATH OR SERIOUS INJURY.

WARNING

MAKE CERTAIN THE CARRIER BED IS CLEAR OF THE BED LOCK BEFORE ATTEMPTING TO TILT BED.

WARNING

USE SAFETY CHAINS ON ALL TOWING AND LIFTING APPLICATIONS.

Section II - SPECIFICATIONS

2.1 CERTIFICATION LABEL

Federal law requires that the final stage manufacturer, ie., that person or company installing new equipment on a new chassis, must certify the completed vehicle by obtaining, completing and affixing to the door post on the driver's side of the vehicle, a Certification Label similar to the one shown. See Figure 2.1.

MANUFACTURED BY:

DATE OF MANUFACTURE _____ mo _____ yr

INCOMPLETE VEHICLE MANUFACTURED BY:

DATE INC. VEH. MFD. _____ mo _____ yr

GVWR _____

GAWR FRONT _____ with

_____ tires,

_____ rims, @ _____ psi cold _____

GAWR INTERMEDIATE (1) _____ with

_____ tires,

_____ rims, @ _____ psi cold _____

GAWR INTERMEDIATE (2) _____ with

_____ tires,

_____ rims, @ _____ psi cold _____

GAWR Rear _____ with

_____ tires,

_____ rims, @ _____ psi cold _____

THIS VEHICLE CONFORMS TO ALL
APPLICABLE FEDERAL MOTOR VEHICLE
SAFETY STANDARDS IN EFFECT IN:

_____ mo _____ yr

VEHICLE IDENTIFICATION NUMBER:

VEHICLE TYPE: _____

Figure 2.1

Section II - SPECIFICATIONS

2.2 SERIAL NUMBERS/SPECIFICATION LABELS

Each carrier will have a Serial Number/Specification Label mounted to the carrier. This label will display the Model Number, Serial Number, Lift/Tow and Cable Ratings.

2.3 RATINGS

The Series 16 LCG carrier can be mounted on a variety of chassis ranging from light duty to medium duty. Certain light duty chassis may not perform properly at the carrier's rated capacities. Be aware of the ratings on the carrier and the chassis on which it is mounted. Operate your carrier safely and do not exceed any ratings.

SERIES 16 LCG CARRIER

BED RATING 16000

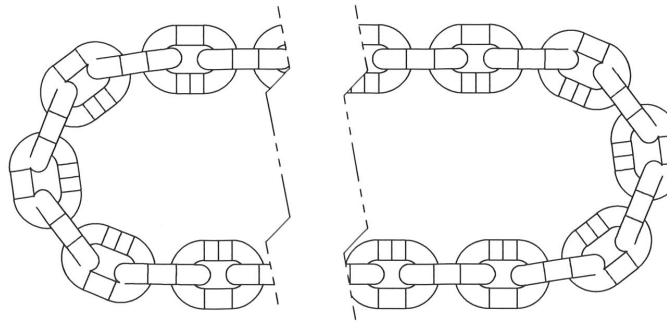
All ratings are based on structural factors and not vehicle capacities or capabilities..

4K UNDERLIFT RATING (LBS)

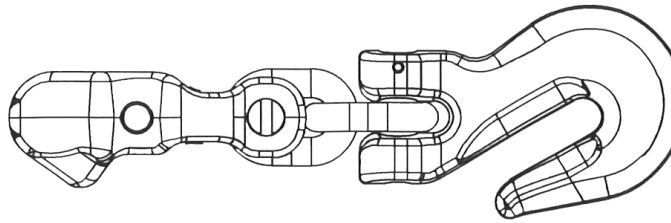
	L-arms	Forks	Pintle Ball Hitch	Pintle Hook
Lift Rating	4,000	4,000	3,000	4,000
Tow Rating	10,000	10,000	10,000	10,000

Section II - SPECIFICATIONS

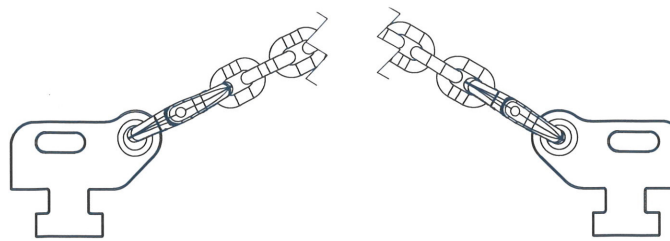
2.4 CHAIN APPLICATIONS



Continuous Chain
13mm Grade 70 Chain
Part Number : 03021328



Shortener Link & Grab Hook Assembly
Chain Shortener Link, Crosby 131N 1/2 in. or 13mm Machined and Clevis Grab Hook, Crosby 1358 1/2 in. or 13mm
Part Number : 09021958



Shortener Link & Grab Hook Assembly
1/2 in. Grade 100 Chain and Container Chain T-Hook
Part Number : 03021261

Section II - SPECIFICATIONS

2.5 STANDARD EQUIPMENT

- Steel Body
  Steel Body:
  - 3/16 smooth floor or 3/16 deck plate
  - front left and right chain trays
  - 4 x 2.tube crossmembers - 8 inches O.C.
  - 4 rear and 2 front chain locks
  - black body paint
  - 102 in. wide body
- Mechanical anti-tilt
- Inboard tilt cylinders
- Illuminated dual controls
- 2 side body marker lights per side
- Body lock with nylatron roller bearings
- Mudflaps
- Federal standard 108 L.E.D. lighting
- Tow light plug
- Water resistant junction boxes for wire harness connection
- Lubrication fittings on all pivot points
- 30,000 in. • lb. winch
- Pilot operated holding valves on tilting and lifting functions
- Back up alarm
- Direct mount pump
- Container push angle
- Four safety chains

2.6 OPTIONAL EQUIPMENT

- Hydraulic dock stabilizer
- Stabilizer rollers
- Additional chain locks
- Frame mount narrow base pylon
- PTO
- Retractable ladder
- Factory installation
- Steel body paint (other than black)
- Galvanized subframe
- Wireless remote control

Note: Some option selections may not be compatible in certain configurations.

Section II - SPECIFICATIONS

2.7 ACCESSORIES

- Bar light
- Work lights
- Switch panel
- Magnetic tow lights
- J-hook chains
- V-chain
- Trailer ball plate
- Trailer hitch for AutoGrip™ II
- L.E.D. lights
- Aluminum tool box (33L x 18H x 18D)
- Aluminum tool box (49L x 18H x 18D)
- Aluminum tool box (65L x 18H x 18D)
- Steel tool box (36L x 18H x 18D)
- Steel tool box (48L x 18H x 18D)
- Steel tool box (60L x 18H x 18D)

2.8 CHASSIS RECOMMENDATIONS

Fuel tanks must be under cab, not extending behind the cab. Chassis components behind cab must be at least 2 inches below top of truck frame. The preferred location for the battery box is under the passenger seat or under the cab. Battery boxes in other locations may require relocation.

Minimum Frame Length Behind Center of Rear Axle.....36"
Wheel and Tire Size.....275/70R22.5
Minimum Frame Height.....36"
Maximum Frame Height.....40"
GVWR.....26,000 lbs. - 33,000 lbs.
Minimum Cab to Axle (Clear)* with Bed Mounted Cab Protector

CARRIER LENGTH (FT.)	CA (INCHES)	MIN. FRAME RBM (EACH RAIL INCH • LBS.)
26	182 or 190	1,600,000 in. • lbs.

Add 6" to CA with frame mounted pylon.
* The outside frame rails of the chassis extending behind the cab must be free of fuel tanks, air tanks, exhaust stacks, etc.

2.9 SPECIFICATIONS

Steel Body Width	102 O.D.
Body Extension	120 inches
Control Valve	Sectional, 20 GPM, 2400 PSI
Oil Reservoir	12 gallons
Oil Filter	250 PSI, 25 Microns
Pump	18 GPM
Body Rating*	16,000 lbs. evenly distributed

* Load ratings are based on structural factors - not chassis capability or capacity.

Miller reserves the right to improve or upgrade its products without obligation to modify previously manufactured units.

Section II - SPECIFICATIONS
HYDRAULIC COMPONENTS

HYDRAULIC PUMP

The pump used on your unit is a gear type pump. Pump sizes may vary, depending upon the engine, transmission, and exhaust configuration of the chassis. The pump should be operated at between 700 and 1200 RPM. The pump flow capacity is rated at 1200 RPM. Carriers are equipped with either 18 GPM or 24 GPM pumps as follows.

CARRIER MODEL	18 GPM	24 GPM	TANK SIZE (Gal.)	SYSTEM PRESSURE
Series 12 LCG	STD	OPTIONAL	12 or 14	2400
Series 16 LCG	STD	OPTIONAL	12 or 14	2400
Series 20 LCG	STD	OPTIONAL	14 or 24	2400
Series 30 LCG		STD	24	2400
Series 40 LCG		STD	24	2400

Carriers equipped with an 18 GPM pump are supplied with 3/4 inch pressure and return lines along with a "low pressure" in-tank filter with a flow capacity of 30 GPM.

Carriers equipped with a 24 GPM pump must be equipped with 3/4 inch pressure and 1 inch return line along with a "low pressure" in-tank filter with a flow capacity of at least 30 GPM. 24 GPM pumps also require the 24 gallon oil tank.

HYDRAULIC CYLINDERS

All cylinders are of the double-acting type. Tilt and lift cylinders are equipped with a counter balance valve. It prevents the cylinders from creeping or moving at any time unless activated by the hydraulic control valve. It also prevents cavitation and chattering in the cylinders.

CONTROL VALVE

An open center 4-way Sectional control valve is used to govern the hydraulic system. It's flow capacity through each Section is 20 GPM. It's bypass pressure setting is listed in the chart above. Any or all work Sections can be equipped with electric solenoids for remote operation.

LOAD HOLDING VALVES

Load holding counterbalance valves are used on the body tilt, underlift lift, hydraulic stabilizers and AutoGrip wheel lift arm functions to provide smooth operation under load as well as load holding capabilities when the hydraulic system is not active. Units equipped with the AutoGrip wheel lift system employ a gear type flow divider to keep the wheel arms synchronized while closing

Section II - SPECIFICATIONS
HYDRAULIC COMPONENTS

RESERVOIR

The hydraulic oil tank has a reserve capacity of either 12, 14 or 24 gallons. The 24 gallon tank is used in combination with 24 GPM pump or 20,000 lb. and 30,000 lb. winches that generate a lot of heat. Hydraulic oil in the tank must be changed when it becomes dirty or contaminated. Under extreme cold weather conditions, moisture may accumulate in the tank and may be drained off by removing the bottom plug.

FILTER

The carriers are equipped with an in-tank 30 GPM 25 micron filter. The filter element should be changed every 6 months.

Section III - OPERATING INSTRUCTIONS
CARRIER

3.1 POWER TAKE-OFF

(a) This control is mounted inside the cab. To operate the PTO, put the transmission in neutral, disengage the emergency brake, pull out the PTO control, and apply the emergency brake securely.

(b) Engaging this control transmits engine power through the PTO which turns a hydraulic pump by means of a connecting drive shaft. The proper engine speed to operate the unit is from 700-1200 RPM.

! CAUTION

NEVER travel with the PTO engaged. Refer to the PTO identification label located near the driver's seat inside the cab for more information.

! WARNING

Make sure transmission is in neutral or park with the parking brake applied before engaging PTO to operate carrier controls. **Failure to do so could cause serious injury to yourself or others.**

Section III - OPERATING INSTRUCTIONS
CARRIER

3.2 The controls are mounted directly behind the rear wheels on both sides of the carrier. Each function of your carrier can be controlled from either of the dual control stations.

3.3 BODY BACK CONTROL

Lifting the "Body Back" control slides the body back on the subframe. When operating this unit, this procedure must be performed **first** after engaging the PTO. Slide the body back at least 12 inches to clear the mechanical body lock located directly behind the cab. The body is capable of traveling up to 9.5 feet along the subframe. Pushing down on the control will move the body forward toward the cab. See Figure 3.1.

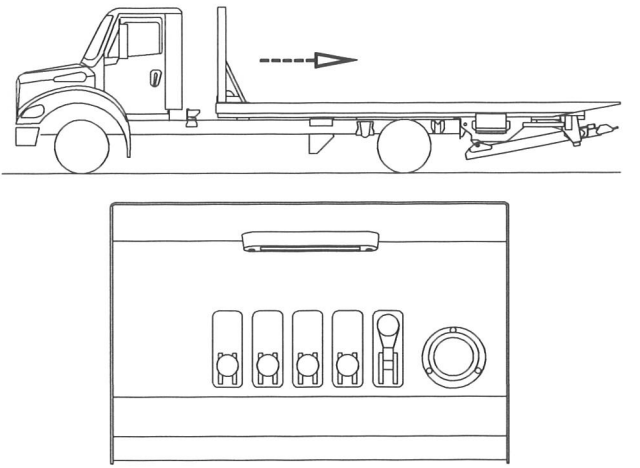


Figure 3.1

Section III - OPERATING INSTRUCTIONS
CARRIERS

3.4 BODY TILT CONTROL

(a) Lifting the "Body Tilt" control raises the front of the carrier up directly off the chassis and positions the unit on an incline. It may be adjusted to any position within its extremities. This part of the hydraulic system is equipped with a hydraulic lock valve as a safety feature. It locks the tilt cylinders in position when the hydraulic system is disengaged. See Figure 3.2.

(b) Pushing down on the control lowers the carrier to its seated position.

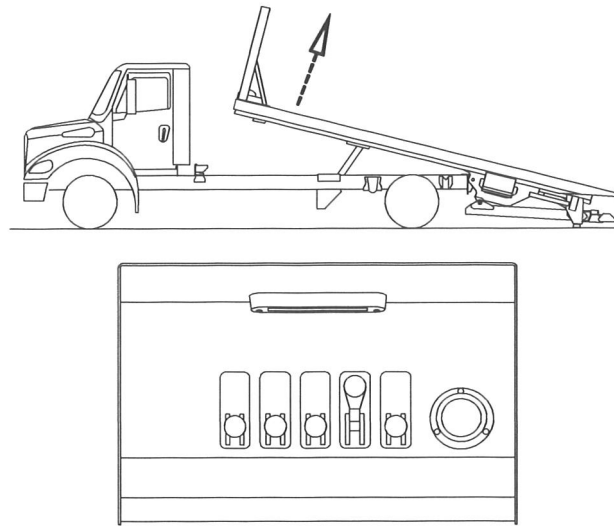


Figure 3.2

WARNING

DO NOT tilt the carrier unless the body is forward as shown especially when loaded. Tilting the carrier with the body extended is dangerous and can cause truck frame and subframe damage. Sliding the bed while horizontal transfers thousands of pounds behind the rear axle which applies unnecessary extra stress to the slide-rail slide-pads and slideback cylinder seals. The bed should be slid forward and rearward while the carrier is inclined with the subframe stabilizer on the ground.

DO NOT tilt the carrier unless the body is slid back 12 inches to clear mechanical body lock.

3.5 WINCH CONTROL

The winch controls the direction that the continuous chain travels. The winch is capable of holding its position when hydraulic power is not being activated. The hydraulic winch is to be used only for loading and unloading the carrier bed.

To run the continuous chain one way lift up on the control handle. To run the continuous chain the other way push down on the control handle. See Figure 3.3.

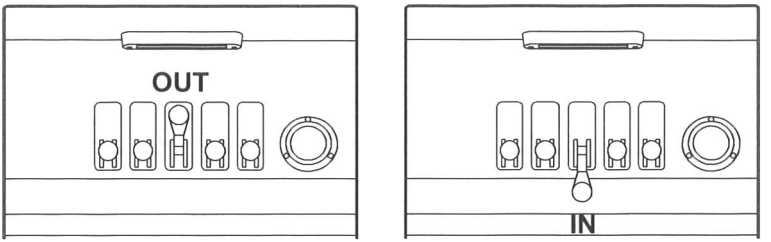


Figure 3.3

3.6 UNDERLIFT CONTROL - IN/OUT

Lifting the "Underlift In-Out" control extends the underlift. See Figure 3.4.

When the underlift is extended, caution must be exercised when sliding the body back. Sliding the body back more than 4 feet may put the slideback cylinder in contact with the underlift, damaging the cylinder shaft or the underlift.

MILLER IND. WILL NOT ACCEPT LIABILITY FOR DAMAGE TO THE UNIT RESULTING FROM THIS TYPE OF IMPROPER OPERATION.

Pushing down on the control retracts the underlift to its seated position.

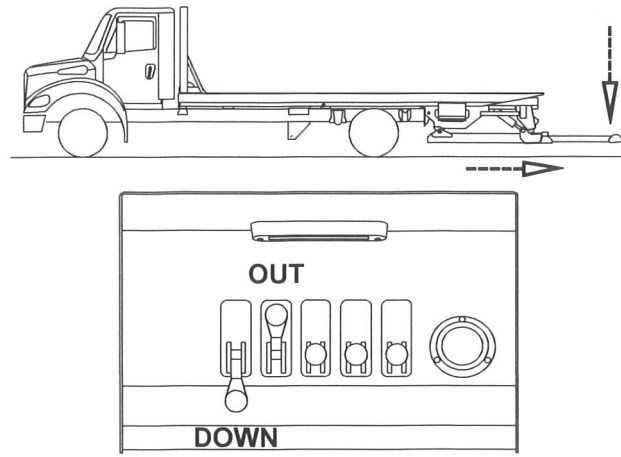


Figure 3.4

3.7 UNDERLIFT CONTROL - UP/DOWN

Lifting the "Underlift Up-Down" control raises and lowers the underlift. Carriers equipped with this feature can hydraulically adjust the tow height without tilting the whole carrier. See Figure 3.5.

Pushing down on this control will lower the underlift toward the ground.

This part of the hydraulic system is equipped with a hydraulic load holding valve as a safety feature. It locks the lift cylinders in position when the hydraulic system is disengaged.

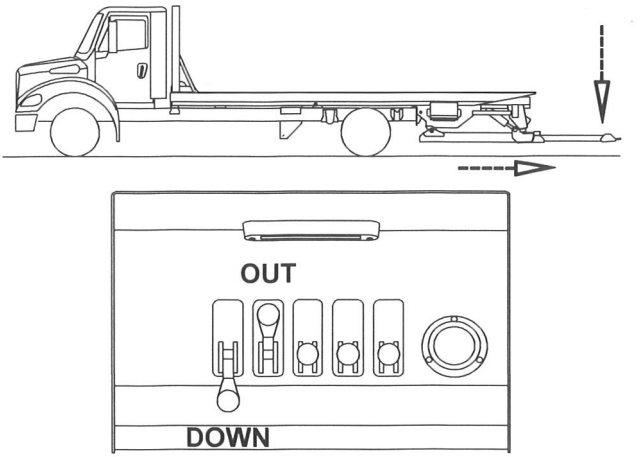


Figure 3.5

3.8 CONTAINER LOADING

(a) Engage the PTO.
(b) Apply the emergency brake securely.
(c) Slide the body rearward 12 inches to clear the body lock. See Figure 3.6

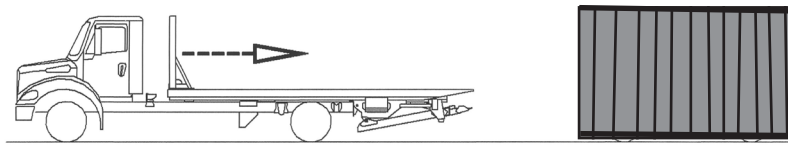


Figure 3.6

(d) Tilt the carrier until the rear stabilizer contacts the ground. See Figure 3.7.

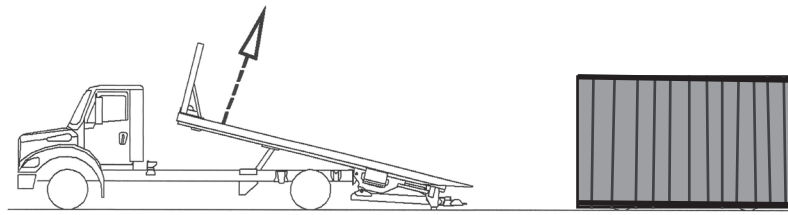


Figure 3.7

(e) Slide the body rearward until it contacts the ground. See Figure 3.8.

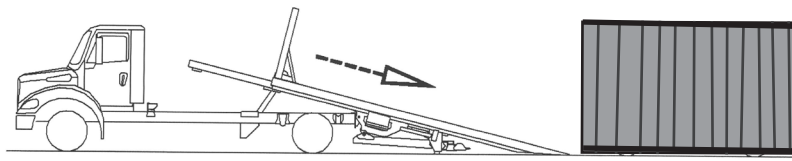


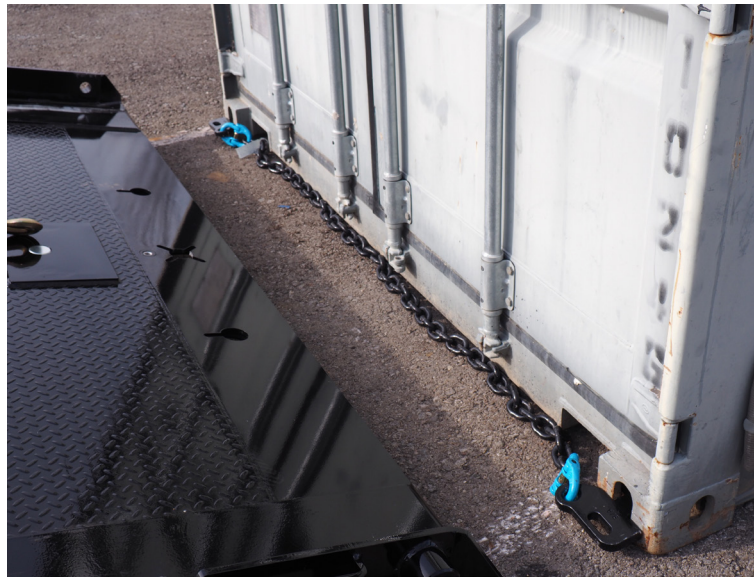
Figure 3.8

3.8 CONTAINER LOADING (cont'd)

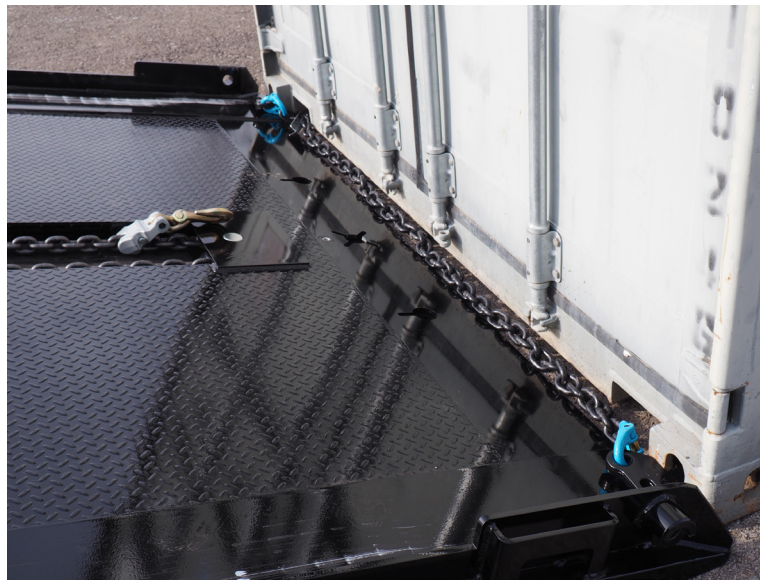
Engage the hook-up chain into the container castings as shown.

3.8 CONTAINER LOADING (cont'd)

Align the carrier with the container and position the bed to go under the hook-up-chain plates



Extend the bed under the hook-up chain plates.



3.8 CONTAINER LOADING (cont'd)

Raise the front end of the container about 6 inches and position a wood block under the container as shown.

Set the container on the wood block. Attach the grab hook to the bed's continuous chain and attach the container hook-up chain to the grab hook as shown.

3.8 CONTAINER LOADING (cont'd)

Slide the approach plate under the container. Remove the wood blocks.

Winch the container up the bed.

3.8 CONTAINER LOADING (cont'd)

Winch the container up the bed until it contacts the front stop pin.

Insert and engage the container lock pin.

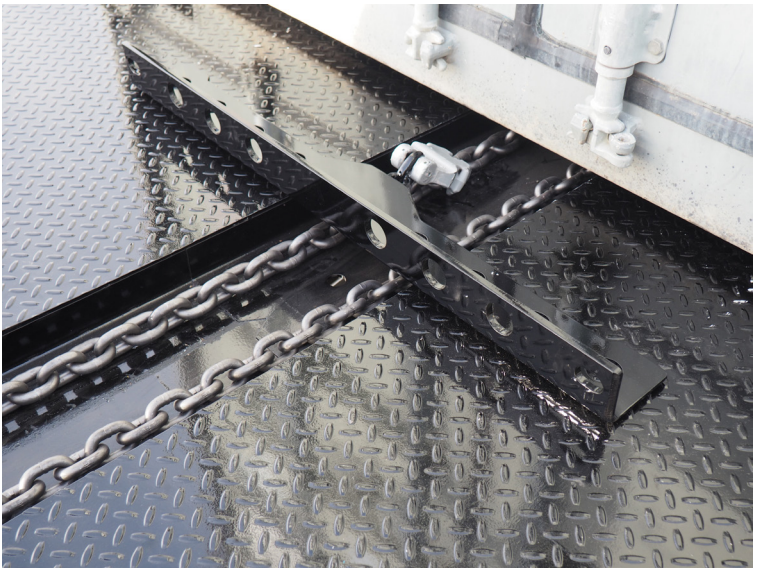
3.8 CONTAINER LOADING (cont'd)

Rotate the lock pin downward into the locked position. Do this at all four corners of the container.

Slide the bed substantially up the inclined subframe. Lower the subframe onto the truck frame. Slide the bed into the bed lock.

3.9 CONTAINER UNLOADING

Attach the container push angle hook to the bed's continuous chain in close proximity to the front of the container.



3.9 CONTAINER UNLOADING (cont'd)

Winch the container push angle toward the container. Do not push the container against the lock pins or it will be difficult to remove them. Remove the rear lock pins.

Slide the bed rearward approximately 18 inches to clear the bed lock. Tilt the carrier until the subframe stabilizer contacts the ground. Slide the bed rearward down the inclined subframe until the bed is close to the ground. Remove the front lock pins. Winch the container rearward until it contacts the ground.

3.9 CONTAINER UNLOADING (cont'd)

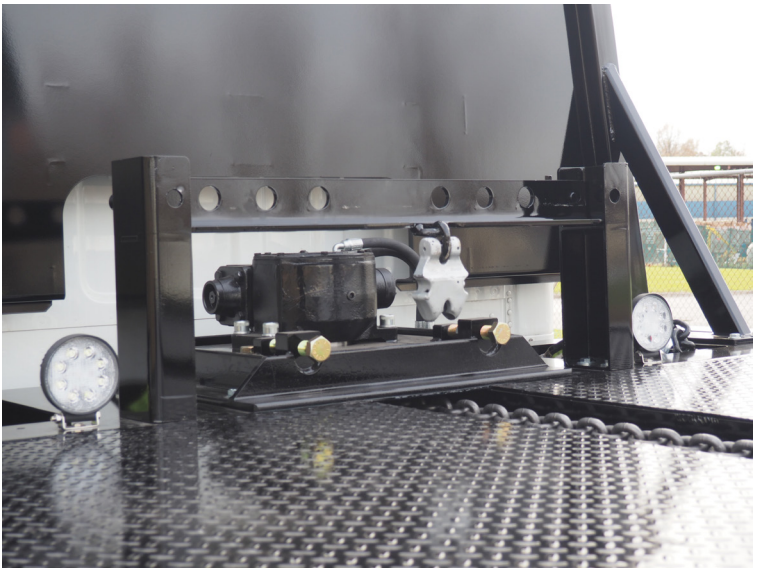
Disengage the PTO. Slowly drive the truck forward until the container is completely on the ground.

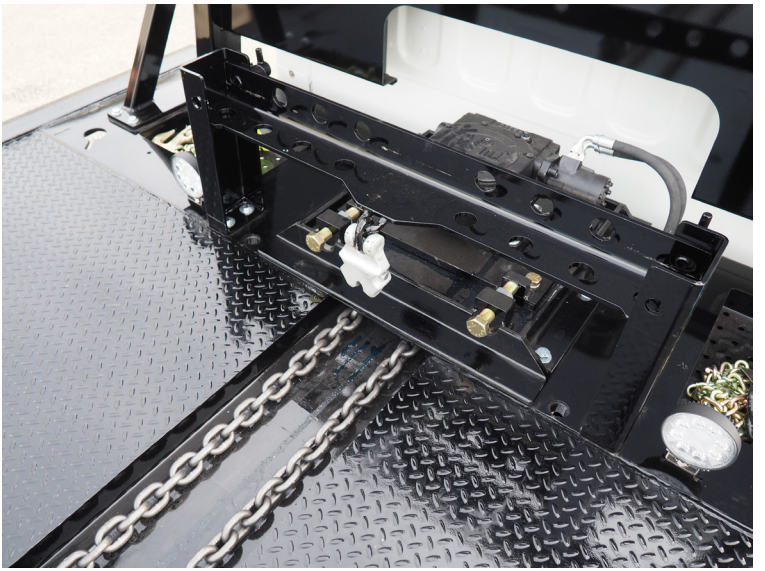
Re-engage the PTO and put the carrier in the stowed position. Disengage the PTO.

3.9 CONTAINER UNLOADING (cont'd)

3.9 CONTAINER UNLOADING (cont'd)

Place the container push angle in the storage brackets and engage the cam lock pins to secure the push angle.





Section IV - MAINTENANCE

Inspect your unit regularly for worn, corroded, or damaged parts. Working parts in this condition must be replaced immediately.

Liability on your part may arise by operating your unit in a defective condition.

⚠ WARNING

Before attempting any adjustments or repairs to this vehicle; turn off the engine, secure the emergency brake, and insert appropriate safety blocking. Failure to comply with these recommendations can result in bodily injury.

HYDRAULIC OIL: Change oil in the reservoir when it is dirty or contaminated. The oil level is to be 3 inches from top of the tank. Over-filling the tank will cause the oil to spill out of the filler vent while on uneven ground or from air build-up in the tank. Factory installed units are supplied with a high quality multi-purpose ATF.

⚠ CAUTION

Do Not mix dissimilar oils in the system.

FILTER: Replace the filter every six months. The filter should be rated at least 30 GPM, 250 PSI and 25 Microns. Filters that do not meet these specifications may blow off.

Section IV - MAINTENANCE

4.1 The continued operation of your carrier is largely dependent upon adherence to a properly scheduled maintenance program. For this reason, we have provided the following information regarding lubrication, preventative maintenance and hydraulic system care.

4.2 HYDRAULIC SYSTEM

The importance of absolute cleanliness of the hydraulic system cannot be over stressed. The smallest amount of grit, metal flake or other foreign material in the system can cause extensive damage to pumps, motors and valves. Miller Industries has taken every measure to assure that each component and fitting was thoroughly cleaned before your carrier was shipped to you. Therefore, servicing of the system should be done with extreme care.

(a) Before checking oil level in reservoir, wipe away all dirt, grease and grime around filter cap before removing it. Make certain that all containers, funnels and pouring spouts are absolutely clean before filling reservoir.

(b) When replacing hoses, fittings or other components, clean thoroughly, dismantle and reassemble carefully.

(c) Failure to observe these precautions, and failure to change the filter elements at regular intervals could result in loss of your warranty in the event of failure to certain components.

4.3 LUBRICATION & PREVENTIVE MAINTENANCE

The following general lubrication and preventive maintenance should be performed at least once per month for moderate usage, or more often as required, for heavy usage.

(a) Inspect, repair or replace any worn, cracked, leaking, otherwise damaged components including, but not limited to, the following:

1. **Hydraulic Oil Filter**
2. **Oil Reservoir**
3. **Controls**
4. **Cables and Fittings**

4.3 LUBRICATION & PREVENTIVE MAINTENANCE

5. **Hydraulic Hoses and Fittings**
6. **Lights and Wiring**
7. **Winch**
8. **Pivot Bearing Surfaces and Pins**

(b) Check hydraulic oil level in reservoir and fill to within 1" of the bottom of the filler neck with high quality multi-purpose ATF.

(c) Replace hydraulic filter after the first week of operation, then every six (6) months thereafter.

(d) Tighten all bolts. Vibration and stress may loosen even properly torqued bolts.

(e) Lubricate all grease fittings on the carrier including:

(1) Control Rods and Control Handle Shafts
(2) Cable
(3) Winch
(4) Cylinder Pivot Bearings
(5) Crossbar Pivot
(6) Wheel Lift Slide Pads and Pivots
(7) Subframe Slide Pads
(8) Subframe Hinge Pin

(f) Oil all bearing surfaces which are not equipped with grease fittings. Use pump can with SAE 30 oil.

(g) Grease both frame slide pads located inside main frame housing with Megaplex 2 Synthetic Fortified Grease or equivalent.

(h) **WORM GEAR WINCH**:
Check oil level in winch and fill to level of oil plug located on the side-plate of the gear housing. Use EP 140 gear oil.

4.3 LUBRICATION & PREVENTIVE MAINTENANCE (cont'd)

(i) Lubricate cable with oily rag while re-spooling the cable onto the drum. Special cable lubricants are also available which have better penetrating qualities. Consult your local oil company for a list of them.

4.4 SUMMARY OF REQUIRED LUBRICANTS

(a) **Worm Gear Oil** - EP140 gear oil.

(b) **Grease** - Lithium extreme pressure lubricating grease NLGI 2.

(c) **Oil for miscellaneous bearing surfaces** - SAE 30.

(d) **Grease for subframe slide pads** - Megaplex 2 Synthetic Fortified Grease or equivalent.

NOTE

THERE IS NO PRACTICAL WAY TO DETERMINE THE LIFE EXPECTANCY OF HYDRAULIC HOSES AND OTHER RUBBER COMPONENTS.

WHILE APPEARING TO BE IN EXCELLENT CONDITION, THESE COMPONENTS MAY BE ADVERSELY AFFECTED BY USAGE, WEATHER OR THE PASSING OF TIME.

THEREFORE, IT IS RECOMMENDED THAT ALL RUBBER COMPONENTS, ESPECIALLY HOSES, BE REPLACED EVERY FIVE (5) YEARS REGARDLESS OF APPEARANCE.

4.5 SLIDE PAD INSPECTION

NOTE
SLIDE PADS MUST BE INSPECTED FOR WEAR MONTHLY.

(a) Start truck engine and engage PTO.

(b) Lift "BED TRAVEL" control and allow bed to fully extend, exposing slide pads.

(c) Wipe away all grease from slide pads and sills for proper inspection of slide pad wear.

(d) After wiping away all grease, inspect slide pads for wear.

CAUTION

NEVER ALLOW SLIDE PADS TO WEAR TO TOP OF SCREW HEADS

(e) If slide pads do not require replacement, re-grease liberally with fresh Megaplex 2 Synthetic Fortified Grease or equivalent.

(f) If replacement is required, use the following procedures for proper replacement of slide pads.

4.6 SUBFRAME SLIDE PAD REPLACEMENT

(a) Remove the bed to extend cylinder pin from the rod end of the bed extend cylinder.

(b) Using an approved lifting device, and the key hole shaped anchoring holes, located at the front and rear of the carrier bed, slide bed back until the eighth rib from front of bed is even with rear of hose tray.

(c) Disconnect the winch hoses from the bed.

(d) Disconnect all bed wiring from junction box bed and pull wires out from the rear.

(e) With lifting devices, slide bed completely off tilt frame.

(f) Remove worn slide pads and replace with new slide pads.

(g) After replacing slide pads, re-install the bed, winch hoses and wires.

4.7 CARE OF STEEL CARRIER DECK

The Steel Carrier Deck is constructed of high grade steel with painted finish. Care for the deck as follows:

1. **Never** leave the deck dirty. It should be cleaned, washed and cared for in the same manner as the truck it is mounted on.

2. Periodically use an automotive wax to protect the deck from environmental corrosion.

3. **DO NOT** use any solvent or petroleum distillate cleaners on the steel deck.

4. **DO NOT** use engine cleaning or whitewall cleaning compounds on the deck.

Section IV - MAINTENANCE

LUBRICATION: Lubricate the unit every 30 days or less if conditions warrant.

Grease fittings are installed at all pivot points needing lubrication. Failure to lubricate these points can allow the grease fittings to corrode. Miller will not accept liability as a result of damage caused by grease fittings that will not take grease. See Lubrication Chart.

SUBFRAME SLIDE PADS: Carriers equipped with steel beds have slide pads that are mounted with recessed screws to the top of the subframe slide rails. In order to maximize the life of these slide pads, it is important to keep them slippery preferably with grease. They will wear prematurely if the bed is slid on these pads when they are dry or if these pads are subjected to abrasives. Although these slide pads are made of high performance plastic, plastics do not like friction combined with abrasives of any kind which can be sand, gravel, grit or rust. Sliding friction on plastic must be smooth and slippery for maximum performance.

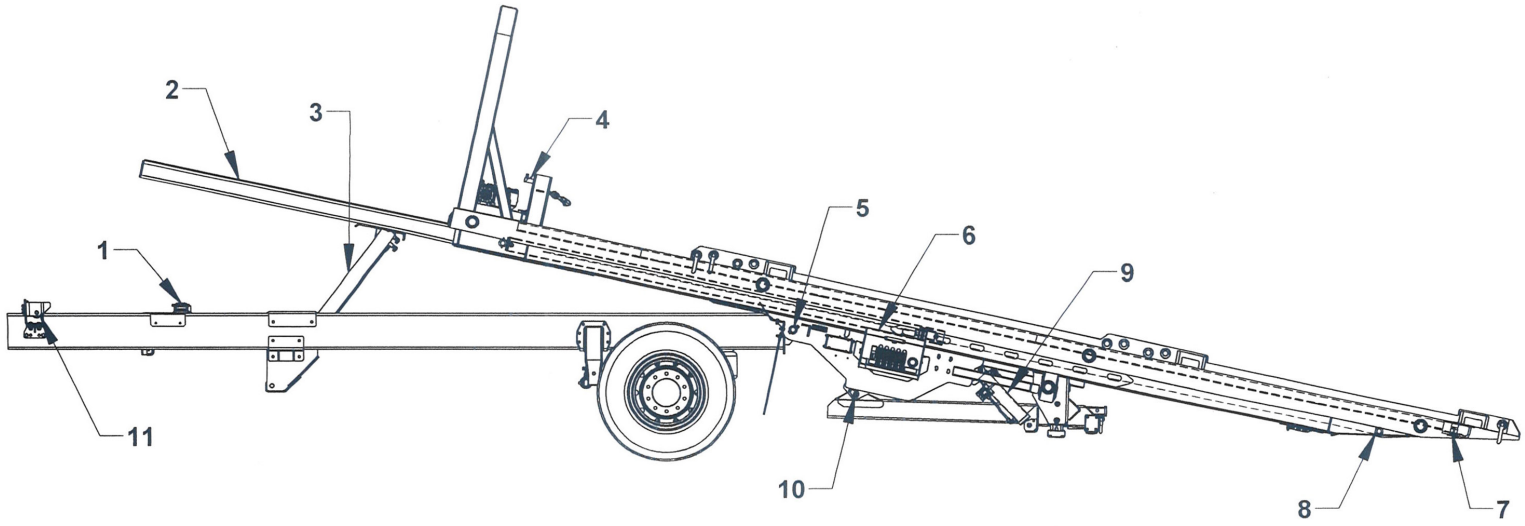
WINCH: Consult the winch manufacturer's manual.

WIRE ROPE: The wire rope should be cleaned and oiled every six months or less if conditions warrant.

PTO: Within the first week of use, recheck the installation of the PTO. Check for leaks and loose routing hardware (studs, cap screws, nuts). Periodically check for transmission fluid leaks where the PTO joins the transmission. If the transmission is leaking fluid at the PTO, the leak must be corrected immediately to prevent substantial fluid loss and damage to the transmission. Consult the transmission manufacturer's recommendations for the transmission service schedule.

BOLTS: Make sure all bolts are properly tightened. Vibration and stress may loosen even properly torqued bolts.

SERIES 16 CHAIN DRIVE CARRIER LUBRICATION CHART



REF NO.	DESCRIPTION	SERVICE	LUBRICANT	NUMBER OF POINTS	FREQUENCY (HOURS)
1	OIL TANK	CHANGE OIL	MULTI-PURPOSE ATF	1	1000
1	OIL TANK	CHANGE FILTER	P/N 76271	1	250 OR 6 MONTHS
2	SLIDE RAILS	LUBE	EP OR MOLY GREASE NLGI 2	4	20 OR 1 MONTH
3	TILT CYLINDERS	LUBE	EXTREME PRESSURE GREASE NLGI 2	4	100 OR 2 MONTHS
4	CAM LOCK PIN	LUBE	EXTREME PRESSURE GREASE NLGI 2	2	100 OR 2 MONTHS
5	SUBFRAME HINGE PIN	LUBE	EXTREME PRESSURE GREASE NLGI 2	2	100 OR 2 MONTHS
7	CHAIN IDLER PULLEY	LUBE	EXTREME PRESSURE GREASE NLGI 2	2	20 OR 1 MONTH
8	SLIDEBACK CYLINDER	LUBE	EXTREME PRESSURE GREASE NLGI 2	2	100 OR 2 MONTHS
9	UNDERLIFT LIFT CYLINDERS	LUBE	EXTREME PRESSURE GREASE NLGI 2	4	100 OR 2 MONTHS
10	UNDERLIFT HINGE PIN	LUBE	EXTREME PRESSURE GREASE NLGI 2	2	100 OR 2 MONTHS
11	BED HOLD DOWN	LUBE	EXTREME PRESSURE GREASE NLGI 2	2	50 OR 1 MONTH

Section V - PARTS

This Section is provided by the manufacturer for the purpose of ordering any component part of the **Series 16 LCG Carrier** that may be required when part replacement is necessary. Be certain to use only original equipment replacement parts for warranty purposes as well as for keeping your **Series 16 LCG Carrier** in its original state and optimum operating capacities.

When ordering replacement or spare parts be sure to provide the following information to your carrier manufacturer authorized representative.

1. **Manual Number & Date of Publication**
2. **Manual Page Number**
3. **Page Title**
4. **Reference Number of Part Desired**
5. **Part Number**
6. **Part Description**
7. **Quantity of Part Desired**

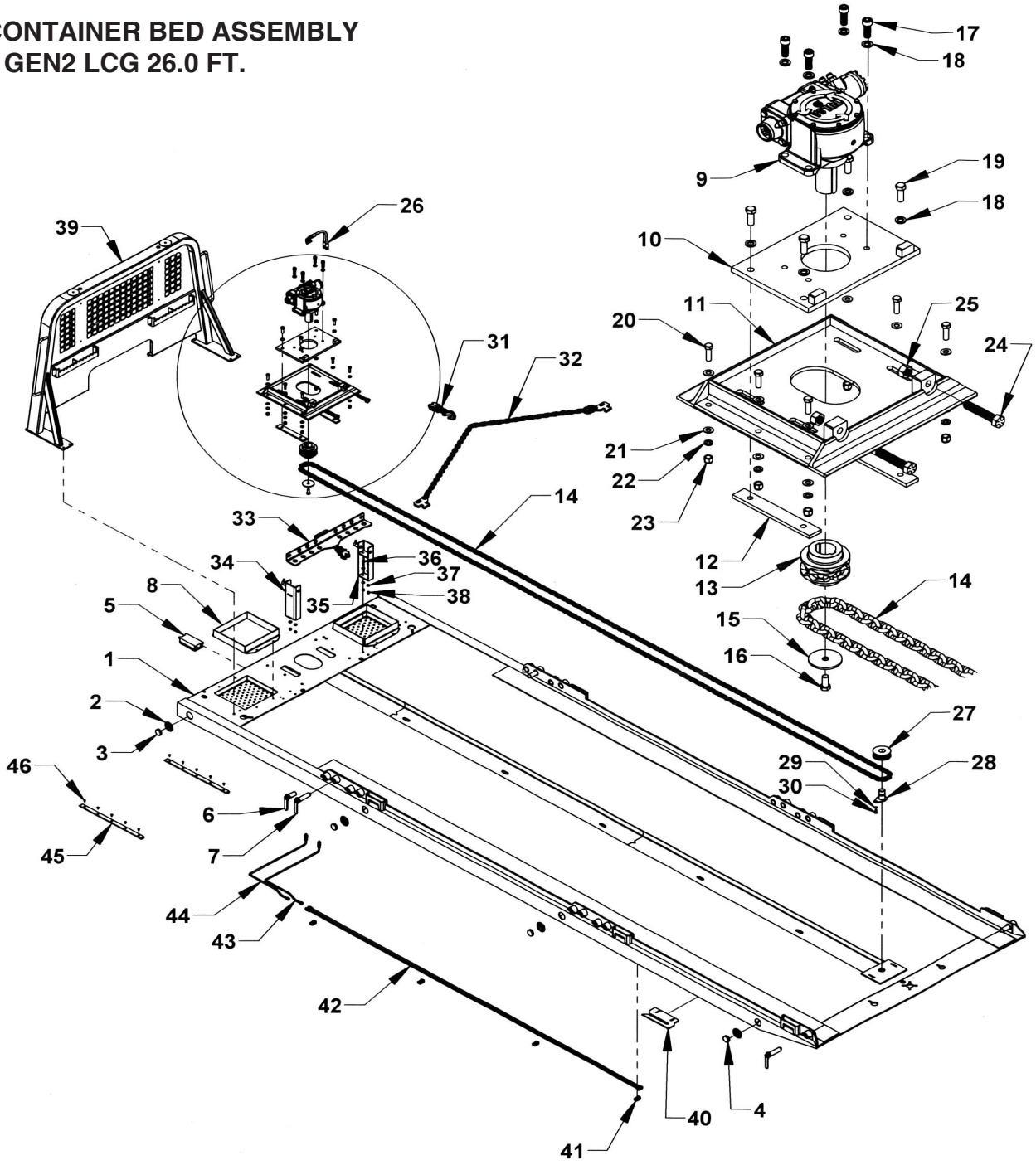
Providing this information will help ensure that the correct parts will be delivered to you in an expedient manner without delay. Should additional information be required for repair or replacement of certain components, contact **Miller Industries PA Carrier, Hermitage PA 16148.**

The Manufacturer reserves the right, without notice or obligation, to improve or modify their products, which may change the specifications, models and feature availability.

Section V - PARTS

CHAIN DRIVE CONTAINER BED ASSEMBLY

SERIES 16 GEN2 LCG 26.0 FT.



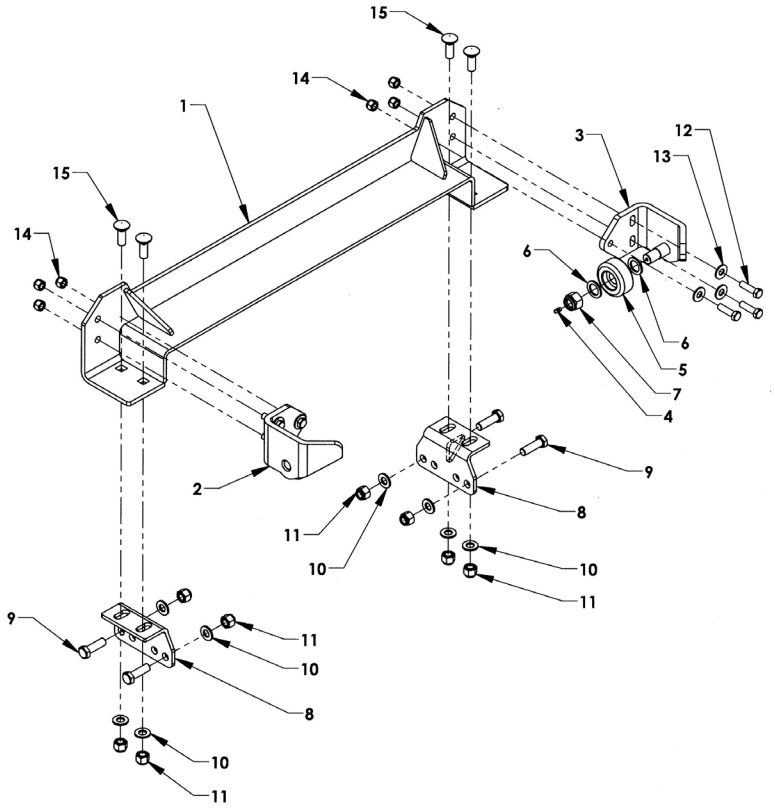
Section V - PARTS

CONTAINER BED ASSEMBLY GEN2
CHAIN DRIVE

REF	PART #	QTY	DESCRIPTION
1	30284162260-FW1DSR	1	S16 LCG G2 26.0 FT STEEL BED, CHAIN DRIVE
2	0311516	10	2-1/2" MARKER LIGHT GROMMET
3	0311513	8	2-1/2" AMBER MARKER LIGHT
4	0311512	2	2-1/2" RED MARKER LIGHT
5	0303385	1	10 POST JUNCTION BOX
6	08016512	2	CONTAINER STOP PIN
7	0811111	4	CONTAINER LOCK PIN
8	08002814	2	CHAIN TRAY EXTENSION
9	03021326	1	DP WORM GEAR SPEED REDUCER - 30K LBS.
10	08016292	1	DP SPEED REDUCER MOUNTING PLATE
11	08016291	1	DP SPEED REDUCER MOUNTING FRAME
12	07025185	1	DP SPEED REDUCER THREADED PLATE
13	03031541	1	CONTAINER DRIVE CHAIN 6-LINK SPROCKET
14	03021328	1	CONTINUOUS CHAIN - 1/2" OR 13MM GR70 -408 LINKS
15	07025385	1	SPROCKET RETAINING PLATE
16	04005508	1	BOLT HHCS 3/4-10 UNC x 1-1/2 GR5
17	04006808	4	BOLT SHCS 3/4-10 UNC x 2 GR8
18	0403082	8	LOCK WASHER 3/4
19	0401021	8	BOLT HHCS 3/4-10 UNC x 2 GR8
20	0400274	6	BOLT HHCS 5/8-11 UNC x 2 GR8
21	0400505	12	FLAT WASHER 5/8
22	0400508	6	LOCK WASHER 5/8
23	0400421	6	NYLON LOCK NUT 5/8-11 UNC
24	04005768	2	BOLT HHCS 1-8 UNC x 5 GR8 FULLY THREADED
25	04001807	2	HEX NUT 1-8 UNC GR5
26	03022024-016	2	HOSE - 1/2 x 16 8F J 90° x 8F J
27	07025387	1	CHAIN DRIVE IDLER PULLEY
28	08016296	1	CHAIN DRIVE IDLER PULLEY PIN
29	0400491	1	LOCK WASHER 1/2
30	0400176	1	BOLT HHCS 1/2-13 x 1 UNC GR5
31	09021958	1	SHORTENER LINK AND GRAB HOOK (OPTIONAL)
32	03021261	1	CONTAINER HOOK-UP CHAIN (OPTIONAL)
33	09021938	1	CONTAINER PUSHER ANGLE
34	08016298L	1	CONTAINER PUSHER STORAGE CHANNEL - LH
35	08016298R	1	CONTAINER PUSHER STORAGE CHANNEL - RH
36	0400181	4	BOLT HHCS 1/2-13 UNC x 1-1/2 GR5
37	0403040	8	FLAT WASHER 1/2
38	0403100	4	NYLON LOCK NUT 1/2-13 UNC
39	35FL0XX	1	CAB PROTECTOR XX = 48, 50, 52, 54, 57, 60, 63, 66, 68, 73, 78
40	33813	1	ANTI-TILT PLATE
41	0751188	4	FLUID TUBE MOUNTING BLOCK-LOWER
42	383S2-260	2	SERIES 20/30/40 UNDER BODY FLUID TUBE - 26 FT.
43	0702511	1	MOTOR FLUID TUBE - GEAR BOX - SHORT
44	07025212	1	MOTOR FLUID TUBE - GEAR BOX - LONG
45	07005597	2	I-BEAM WEAR PAD
46	04000844	10	FHSCS 5/16-18 x 5/8 UNC

Section V - PARTS

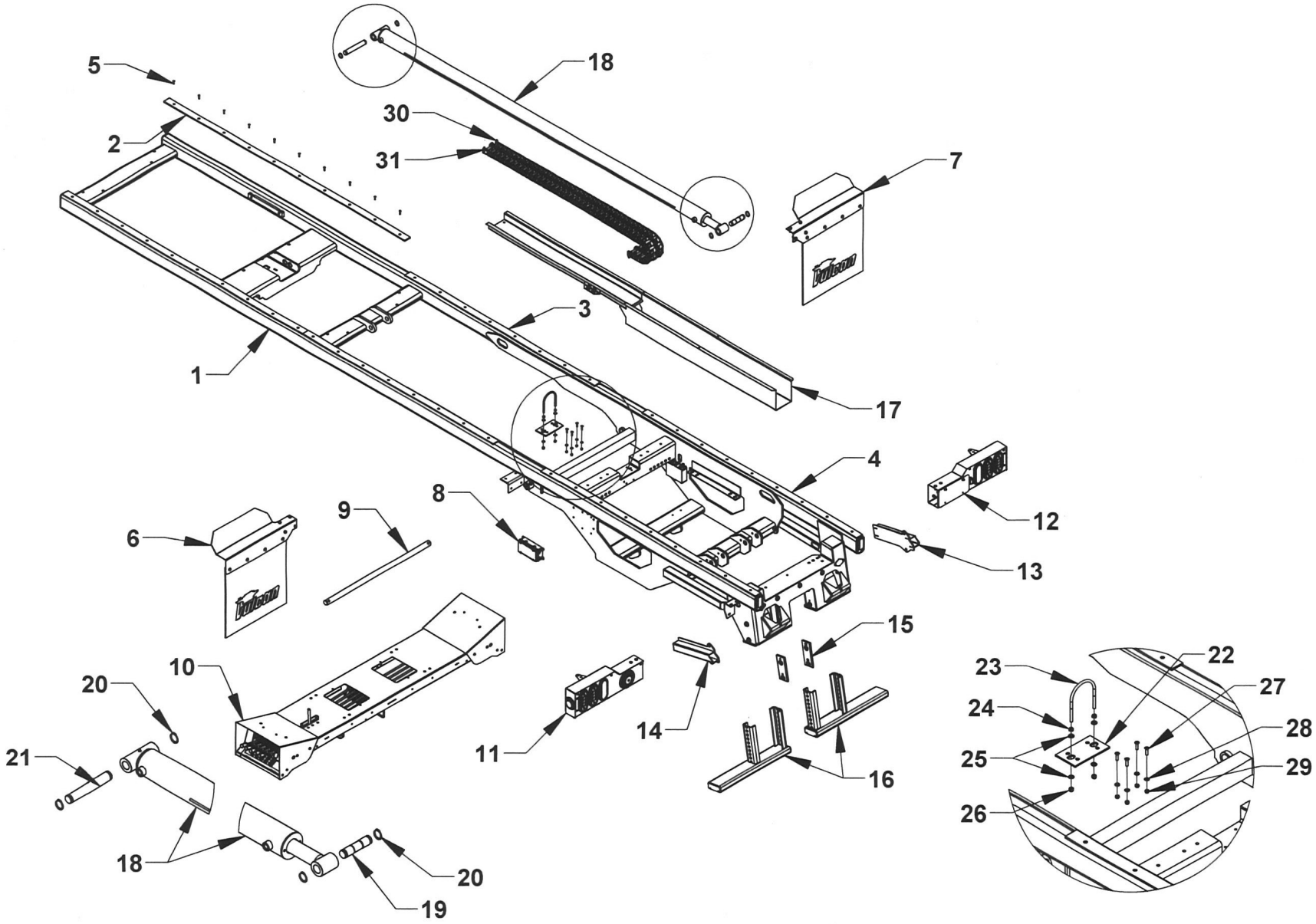
BODY LOCK ASSEMBLY - 364220K



REF	PART #	QTY	DESCRIPTION
1	364220	1	LCG BODY LOCK WELDMENT-SETBACK CAPABLE
2	36215L	1	BODY LOCK HOLD-DOWN - LEFT
3	36315R	1	BODY LOCK HOLD-DOWN - RIGHT
4	0306382	2	GREASE FITTING 1/4-28
5	36310	2	ROLLER WHEEL
6	0400470	4	FLAT WASHER 1
7	04001225	2	NYLON LOCK NUT, 7/8-14 UNF
8	0809183	2	MOUNTING BRACKET
9	0400260	4	BOLT, 5/8-11 HHCS UNC x 2 GRADE 5
10	0400505	8	FLAT WASHER 5/8
11	0400421	8	NYLON LOCK NUT, 5/8-11 UNC
12	0400218	6	BOLT, HHCS 1/2-20 UNF x 1-1/4
13	0400492	6	FLAT WASHER, 1/2 IN.
14	0400413	6	NYLON LOCK NUT, 1/2-20 UNF
15	0403068	4	CARRIAGE BOLT 5/8-11 x 1-3/4

Section V - PARTS

SERIES 16 LCG SUBFRAME COMPONENTS - 26 FT.

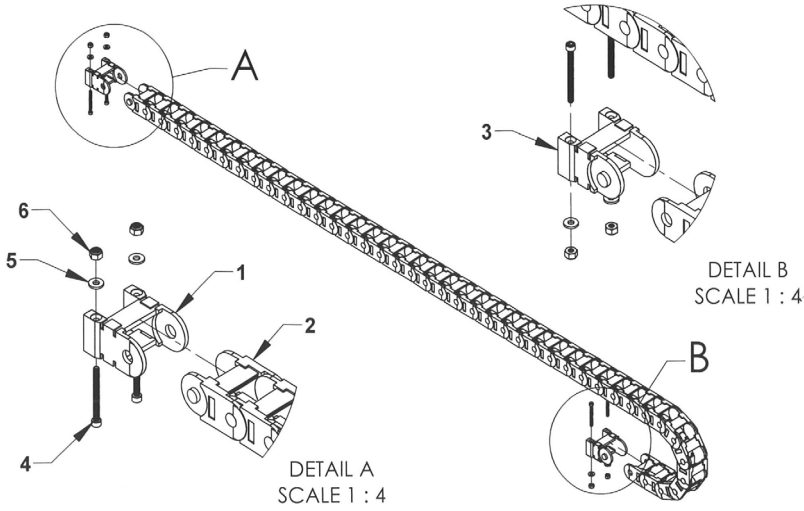


Section V - PARTS
SERIES 16 LCG 26 FT. SUBFRAME ASSEMBLY

REF.	PART #	QTY	DESCRIPTION
1	0809796-26	1	G2 SUBFRAME WELDMENT
2	0308927-96	2	SUBFRAME BEARING PAD 5/16 x 2-1/4 x 96
3	0308927-76	2	SUBFRAME BEARING PAD 5/16 x 2-1/4 x 76
4	0308927-96	2	SUBFRAME BEARING PAD 5/16 x 2-1/4 x 96
5	04000321	54	BOLT 5/16-18 UNC x 1-1/4 COUNTERSUNK TORX ST
6	0751024L	1	ALUM SPLASH GUARD LH REAR RH FRONT
7	0751024R	1	ALUM SPLASH GUARD RH REAR LH FRONT
8	0303385	1	10 POST JUNCTION BOX
9	0750952	1	S12 LCG HINGE PIN
10	183126	1	6 SPOOL CONTROL STATION
11	0940326L	1	VULCAN TAIL LIGHT HOUSING GROUP - LH
12	0940326R	1	VULCAN TAIL LIGHT HOUSING GROUP - RH
13	0809287R	1	L-ARM STORAGE TUBE SLIDE-IN 4K RH (STANDARD)
	160540R		L-ARM STORAGE TUBE SCOOP 4K RH (OPTIONAL)
	160535R		L-ARM STORAGE TUBE DROP-IN 4K RH (OPTIONAL)
14	0809287L	1	L-ARM STORAGE TUBE SLIDE-IN 4K LH (STANDARD)
	160540L		L-ARM STORAGE TUBE SCOOP 4K LH (OPTIONAL)
	160535L		L-ARM STORAGE TUBE DROP-IN 4K LH (OPTIONAL)
15	0750409	2	STABILIZER WHEEL LIFT GUIDE PAD
16	160525	2	STABILIZER EXTENSION STAND
17	080982422	1	DUAL BAY HOSE TRAY
18	72A35120	1	SLIDEBACK CYLINDER 3.5 BORE x 120 STROKE
19	32117	1	SLIDEBACK CYLINDER MOUNTING PIN 1.230
20	86125E	4	1-1/4 SNAP RING - EXTERNAL
21	13302010	1	SLIDEBACK CYLINDER MOUNTING PIN
22	0751223	1	LCG 12/16/20 S/B CYLINDER SUPPORT PAD
23	81286	1	U-BOLT 3/8-16 UNC
24	04001267	2	3/8-16 HEX NUT
25	0400480	4	3/8 FLAT WASHER
26	0400392	2	NYLON LOCK NUT 3/8-16 UNC
27	0400108	4	BOLT 5/16-18 UNC - ALLEN COUNTERSUNK
28	0403081	4	5/16 FLAT WASHER
29	0400382	4	NYLON LOCK NUT 5/16-18 UNC
30	09020735	1	IGUS 200.03.055 41 LINK TRACK AND BOLT KIT
31	09020734	1	IGUS 200.05.055 41 LINK TRACK AND BOLT KIT

Section V - PARTS

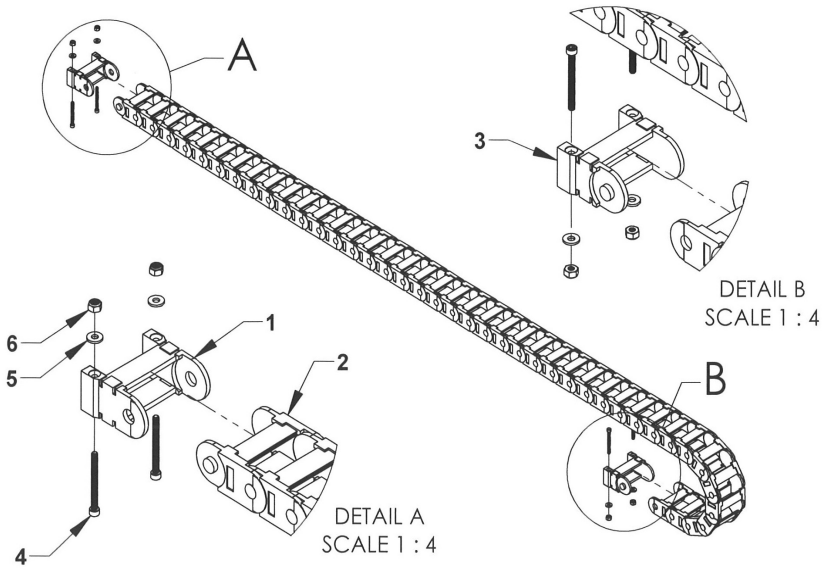
IGUS TRACK AND BOLT KIT - 09020735
120" SLIDEBACK CYLINDER STROKE



REF	PART #	QTY	DESCRIPTION
	09020735	1	IGUS 200.03.055 41 LINK TRACK & BOLT KIT
1	03017004	1	IGUS 2000.03.1 END LINK - FEMALE
2	03005615	45	IGUS 200.03.055 LINK
3	03017005	1	IGUS 2100.03.2 END LINK - MALE
4	0403165	4	BOLT SHCS #10-24 UNC x 2 ZP
5	0400450	4	FLAT WASHER #10 SAE ZP
6	0400358	4	NUT NYLOK #10-24 UNC ZP

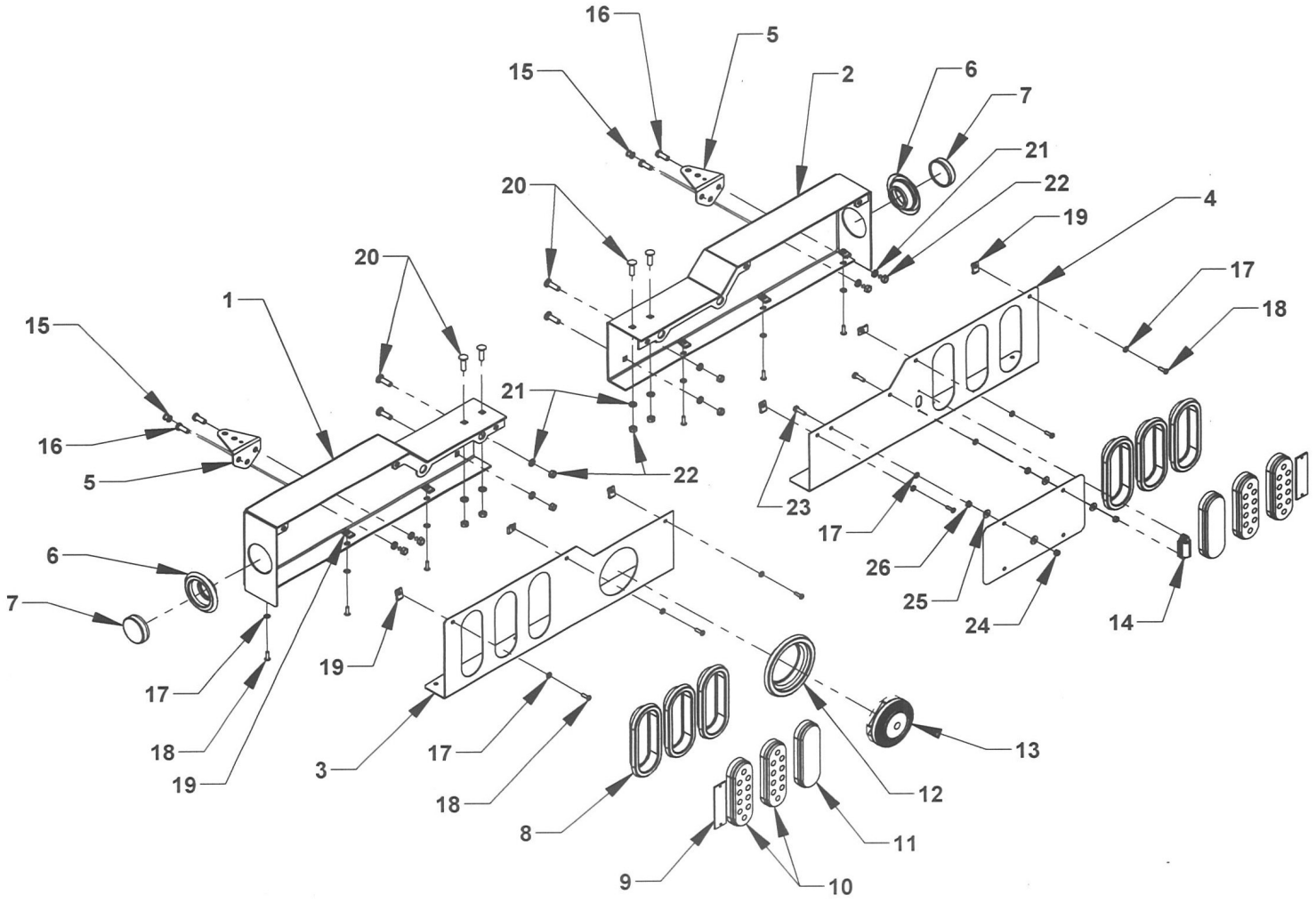
Section V - PARTS

IGUS TRACK AND BOLT KIT - 09020734
120" SLIDEBACK CYLINDER STROKE



REF	PART #	QTY	DESCRIPTION
	09020734	1	IGUS 200.05.055 41 LINK TRACK & BOLT KIT
1	03017002	1	IGUS 2000.05.1 END LINK - FEMALE
2	03011188	41	IGUS 200.05.055 LINK
3	03017003	1	IGUS 2100.05.2 END LINK - MALE
4	0403165	4	BOLT SHCS #10-24 UNC x 2 ZP
5	0400450	4	FLAT WASHER #10 SAE ZP
6	0400358	4	NUT NYLOK #10-24 UNC ZP

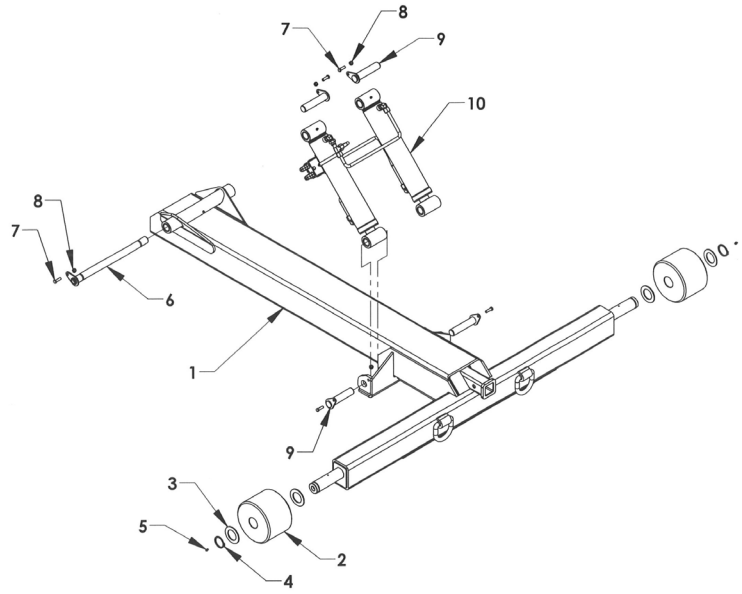
SERIES 16 LCG TAIL LIGHT COMPONENTS



SERIES 16 GEN2 TAIL LIGHT COMPONENTS

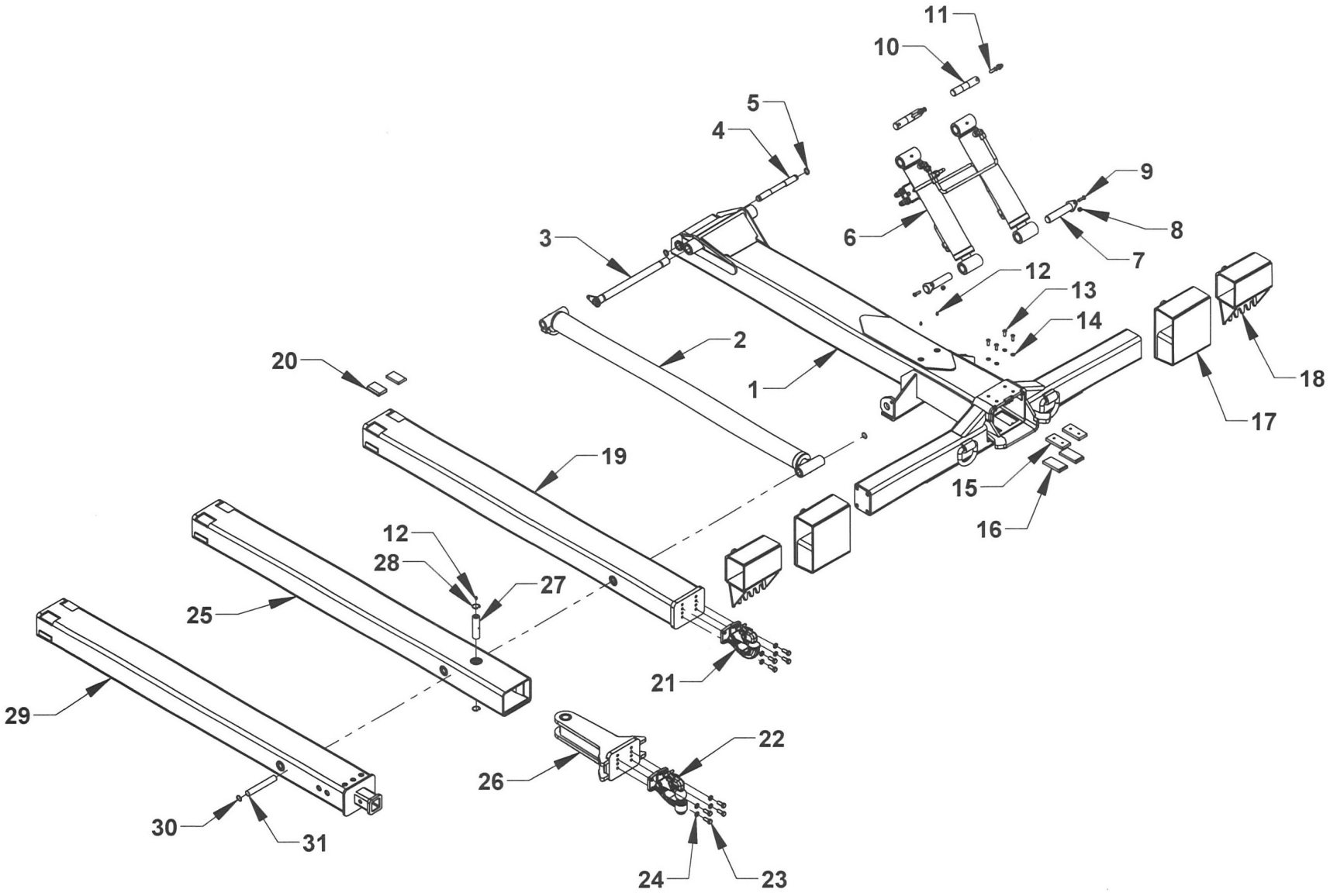
REF	PART #	QTY	DESCRIPTION
1	0809517L	1	TAIL LIGHT HOUSING WELDMENT - LH
2	0809517R	1	TAIL LIGHT HOUSING WELDMENT - RH
3	0751893L	1	12/16/20 LCG TAIL LIGHT BEZEL - LH G2
4	0751893R	1	12/16/20 LCG TAIL LIGHT BEZEL - RH G2
5	0750672	2	WORK LIGHT MOUNTING BRACKET
6	0311516	2	2-1/2 IN. MARKER LIGHT GROMMET
7	0311512	2	2-1/2 IN. RED MARKER LIGHT
8	0311503	6	6 IN. OVAL GROMMET
9	0311529	2	REFLECTOR - RED 4.375 x 1.5
10	0311498	4	6 IN. OVAL RED LIGHT
11	0311500	2	6 IN. OVAL REVERSE LIGHT
12	0311528	1	BACK UP ALARM GROMMET
13	0306385	1	BACK UP ALARM
14	0311525	1	LICENSE PLATE LIGHT
15	0306113	2	TAIL LIGHT WIRE GROMMET
16	0400126	4	BOLT, HHCS 3/8-16 UNC x 1
17	0402111	14	LOCK WASHER - 1/4 SAE SS
18	0400071	12	SCREW, 1/4-20 UNC x 3/4 RD HD PHL SS
19	0400371	12	'U" NUT 1/4-20 UNC
20	0403053	8	BOLT, CARRIAGE 3/8-16 UNC x 1-1/4 SS
21	0402121	12	LOCK WASHER - 3/8 SAE SS
22	0402122	12	HEX NUT 3/8-16 UNC SS
23	0402021	2	BOLT, HHCS 1/4-20 UNC x 1 SS
24	0403052	2	NYLON LOCK NUT 1/4-20 UNC SS
25	0402110	4	FLAT WASHER 1/4 SAE SS
26	0400366	2	JAM NUT 1/4-20 UNC

ROLLER WHEEL DOCK STABILIZER



REF	PART #	QTY	DESCRIPTION
1	0810010-12-RW	1	ROLLER WHEEL DOCK STABILIZER WELDMENT
2	07029021	2	STABILIZER WHEEL - 8" HDPE
3	0751709	4	DOCK STABILIZER ROLLER WHEEL WASHER
4	86200E	2	SNAP RING - 2 INCH EXTERNAL
5	7B130	2	GREASE FITTING 1/4-28
6	0809411U	1	WHEEL LIFT BOOM HINGE PIN
7	0400122	5	BOLT HHCS, 3/8-16 UNC x 1-1/4
8	0400392	5	NYLON LOCK NUT, 3/8-16 UNC
9	14710	4	KEEPER PIN 1.23 x 4.50
10	72A33013	2	UNDERLIFT CYLINDER 3.25 BORE x 13 STROKE
	75FT33013	1	UNDERLIFT CYLINDER FLUID TUBE KIT

4,000 LB. UNDERLIFT
GEN 2 LCG

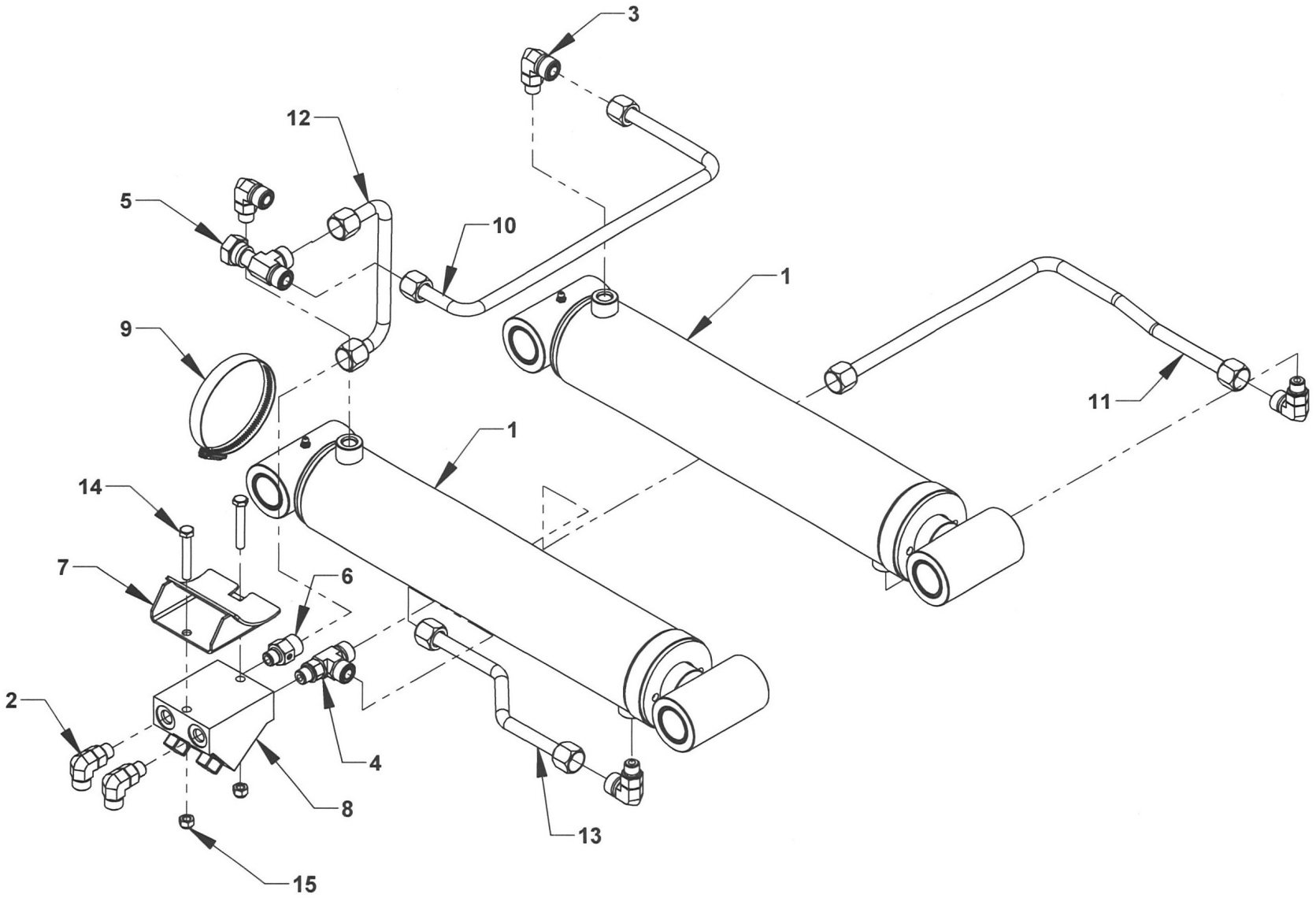


Section V - PARTS

4,000 LB. UNDERLIFT - GEN 2 LCG

REF	PART #	QTY	DESCRIPTION
1	10270408DS	1	WHEEL LIFT OUTER BOOM TUBE
2	72A30054	1	WL EXTEND CYLINDER 3.0 BORE x 54 STROKE
3	0809411U	1	WHEEL LIFT BOOM HINGE PIN
4	729352	1	PIN - WHEEL LIFT EXTEND CYLINDER BASE
5	86100E	2	SNAP RING 1' EXTERNAL
6	72A33013	2	LIFT CYLINDER 3.25 x 1.75 x 13.00
	75FT33013	1	FLUID TUBE KIT
7	14710	2	KEEPER PIN 1.23 x 5.50
8	0400392	4	NYLON LOCK NUT 3/8-16 UNC
9	0400122	4	BOLT, HHCS 3/8-16 UNC x 1-1/4
10	13068	2	PIN - TILT CYLINDER BASE
11	84680	2	KEEPER PIN 3/8 ROD END
12	7B130	3	GREASE FITTING 1/4-28
13	0403139	4	BOLT, BHCS 3/8-16 UNC x 1
14	0400482	4	LOCK WASHER 3/8
15	63595H	2	WEAR PAD NYLATRON NSM 1/2 x 2 x 4 W/HOLES
16	63595	2	WEAR PAD NYLATRON NSM 1/2 x 2 x 4
17	0809898-54	2	DOCK STABILIZER EXTENSION STAND (OPTIONAL)
18	0809646-54	2	DOCK STABILIZER SPADE (OPTIONAL)
19	10244P	1	4K INNER PINTLE BOOM TUBE
20	65613	2	WEAR PAD 1/2 x 2 x 3 NSM BEVELED
21	A3020H	1	PINTLE HOOK ATTACHMENT
22	A3020	1	PINTLE BALL ATTACHMENT
23	0400177	4	BOLT, HEX 1/2-13 UNC x 1-1/4
24	0400491	4	WASHER 1/2 LOCK
25	102404-PP	1	4K INNER BOOM-PIVOTING PINTLE
26	143355	1	PIVOTING PINTLE HEAD WELDMENT - 4K
27	143142PP	1	PIN - PIVOTING PINTLE HEAD 4K
28	86125I	2	SNAP RING 1-1/4 INTERNAL
29	10244R	1	4K INNER BOOM - REESE RECEIVER
30	86100I	2	SNAP RING 1" INTERNAL

UNDERLIFT CYLINDER FLUID TUBE GROUP



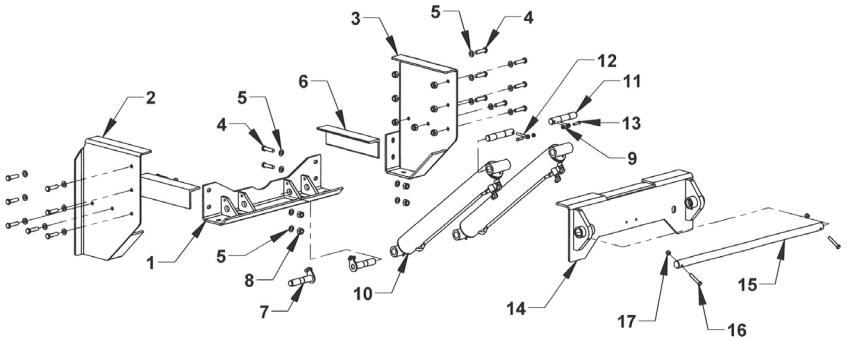
Section V - PARTS

UNDERLIFT CYLINDER FLUID TUBE GROUP

REF.	PART #	QTY	DESCRIPTION
1	72A33013	2	LIFT CYLINDER 3.25 x 1.75 x 13.00
	75FT33013		FLUID TUBE KIT
2	ADPTR-FF1868T0606S	2	ADAPTER 90 ORS/ORB 6 x 6
3	ADPTR-FF1868T0806S	4	ADAPTER 90 ORS/ORB 8 x 6
4	ADPTR-FF1865T0806S	1	ADAPTER TEE ORS/ORS/ORB 8 x 8 x 6
5	ADPTR-FF2114T0808S	1	ADAPTER TEE ORS 8 x 8
6	ADPTR-FF1852T0806	1	ADAPTER STRAIGHT ORS/ORB 8 x 6
7	0809875-325	1	UNDERLIFT VALVE MOUNTING BRACKET
8	74345	1	DUAL COUNTERBALANCE VALVE CBCG-XVN
9	030317065	1	BAND CLAMP #56 4 x 9/16 SS
10	72H33013L2	1	UNDERLIFT FLUID TUBE ASSEMBLY - LH
11	72H33013L1	1	UNDERLIFT FLUID TUBE ASSEMBLY - LH
12	72H33013R2	1	UNDERLIFT FLUID TUBE ASSEMBLY - RH
13	72H33013R1	1	UNDERLIFT FLUID TUBE ASSEMBLY - RH
14	0400824	2	BOLT HHCS 5/16-18 UNC x 1-3/4 GR5 ZINC
15	0400382	2	NYLON LOCK NUT 5/16-18 UNC GR5 ZINC

Section V - PARTS

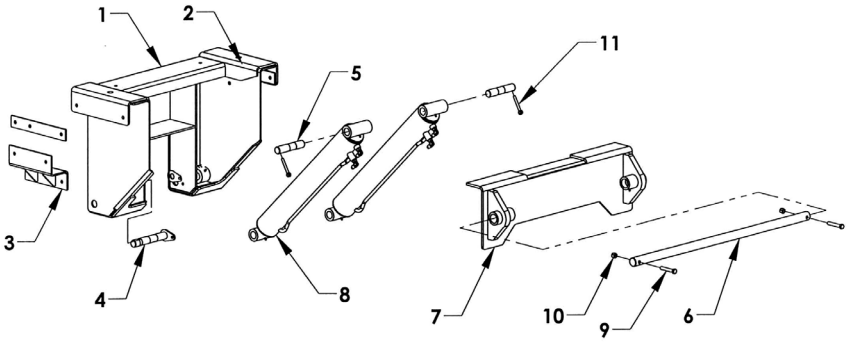
16 LCG INBOARD TILT CYLINDERS
OUTBOARD SADDLES



REF	PART #	QTY	DESCRIPTION
1	1A560	1	SADDLE CONNECTING ANGLE
2	1A510L	1	OUTBOARD SADDLE, LH
3	1A510R	1	OUTBOARD SADDLE, RH
4	0500254	18	BOLT, HHCS 5/8-11 UNC x 2-1/2
5	0400505	22	FLAT WASHER 5/8
6	1A514	2	SADDLE MOUNTING ANGLE
7	1A525	2	OUTBOARD SADDLE TILT PIN
8	0400421	18	5/8-11 NYLOCK NUT Z
9	0400392	4	NYLON LOCK NUT 3/8-16 UNC
10	72A350265	2	TILT CYLINDER 3.5 BORE x 26.5 STROKE
	72A35023	2	TILT CYLINDER 3.5 BORE x 23 STROKE
11	13069	2	PIN - TILT CYLINDER BASE
12	84680	2	PIN EYE
13	0400132	4	BOLT, HHCS 3/8-16 UNC x 1-1/2
14	0809533	1	HINGE ANGLE
15	0750952	1	HINGE PIN - 1-1/2 x 41-3/8
16	0403159	2	BOLT, HHCS 1/2-20 x 3 Z
17	0403160	2	NYLON LOCK NUT 1/2-20 UNC

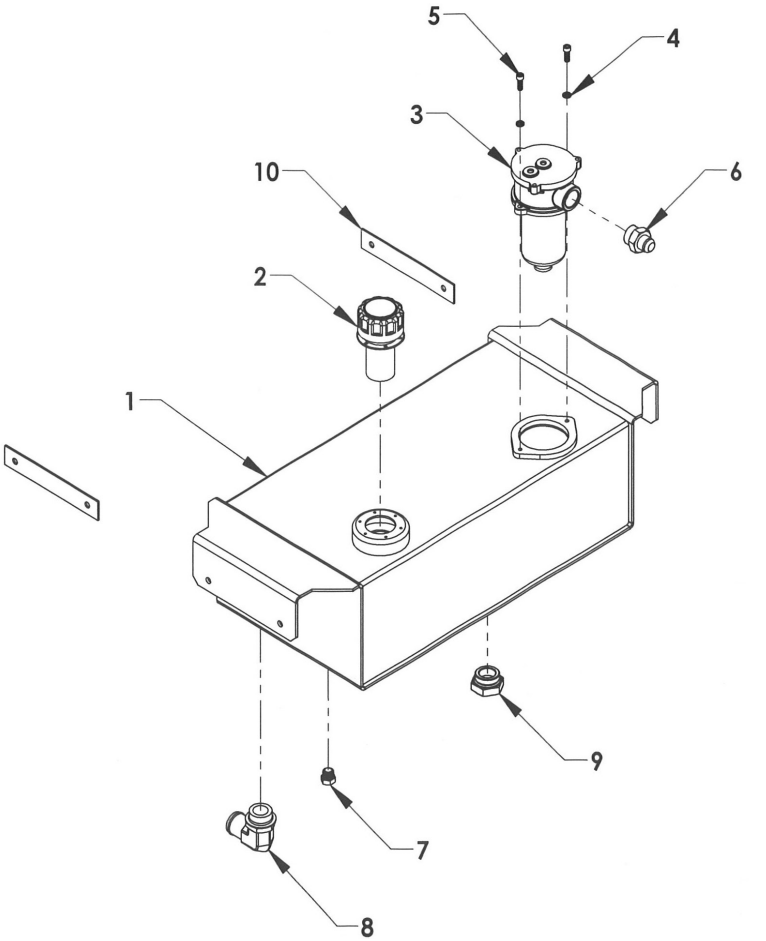
Section V - PARTS

16 LCG INBOARD TILT CYLINDERS
INBOARD SADDLE



REF	PART #	QTY	DESCRIPTION
1	1A9002	1	INTERNAL SADDLE
2	1A821S	2	SADDLE SHIM
3	1A925	2	FRAME MOUNTING BRACKET
4	1A828A	2	INBOARD SADDLE TILT PIN
5	13069	2	PIN - TILT CYLINDER BASE2
6	0750952	1	HINGE PIN - 1-1/2 x 41-3/8
7	0809533	1	HINGE ANGLE
8	72A35023	2	TILT CYLINDER 3.5 BORE x 23 STROKE
	72A350265	2	TILT CYLINDER 3.5 BORE x 26.5 STROKE
9	0403159	2	BOLT 1/2-20 UNF x 3 GRADE 5
10	0403160	2	NYLON LOCK NUT 1/2-20 UNF
11	84680	2	PIN EYE

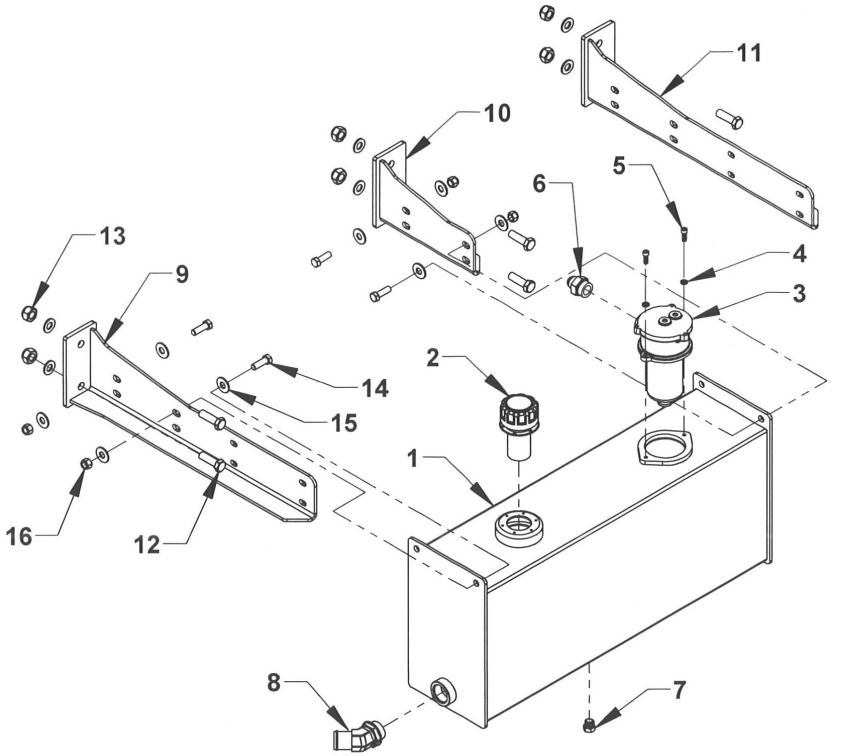
Section V - PARTS
12 GAL. INBOARD OIL RESERVOIR GROUP-763100G



REF	PART #	QTY	DESCRIPTION
1	763100	1	INBOARD OIL RESERVOIR WELDMENT
2	76213	1	FILLER BREATHER CAP
3	76270	1	FILTER ASSEMBLY
4	76271	1	REPLACEMENT FILTER ELEMENT
5	0402118	2	LOCK WASHER 5/16 SS
6	04001427	2	BH CAP SCREW 5/16-18 UNC x 7/8 SS
7	0301368	1	ADAPTOR 202702-16 x 12
8	03006085	1	ADAPTOR 900598-8 (DRAIN PLUG)
9	77C92	1	20 x 24 SUCTION HOSE FITTING 90 °
10	77620	1	ADAPTOR 900598-20 (DRAIN PLUG)
11	763106	2	FRAME WIDTH SHIM

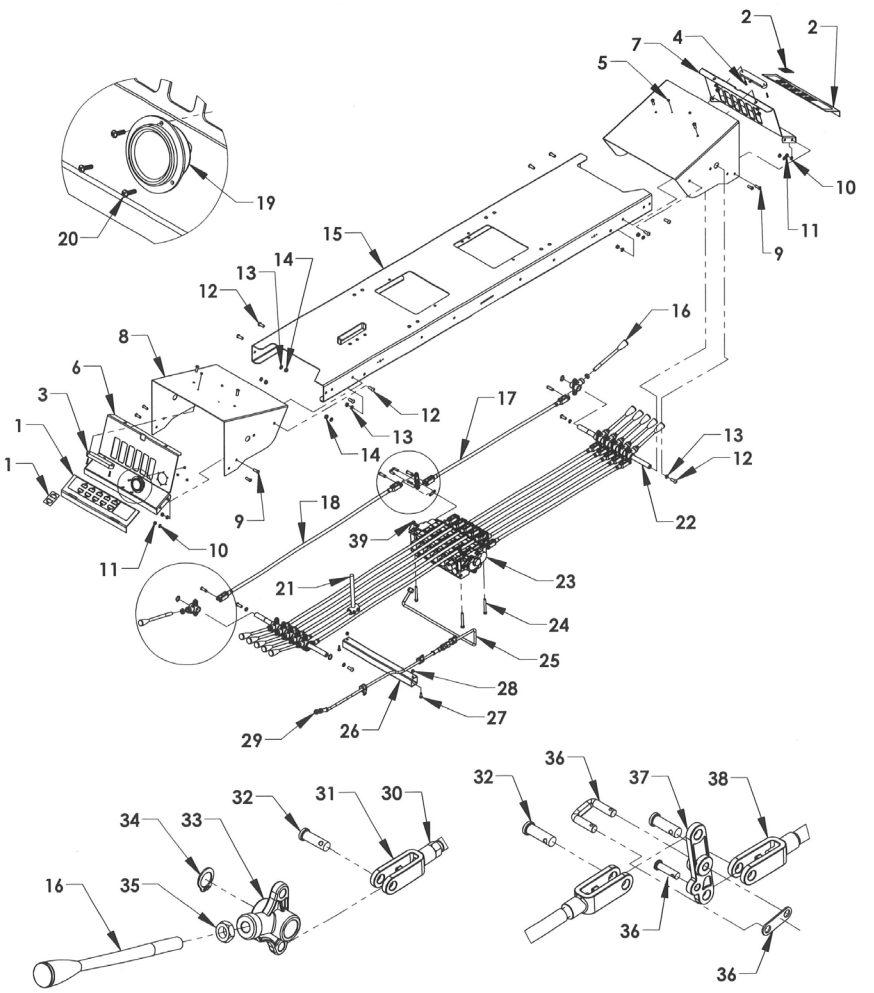
Section V - PARTS

14 GAL. OUTBOARD OIL TANK GROUP



REF	PART#	QTY	DESCRIPTION
1	762110G	1	14 GAL. OUTBOARD OIL TANK WELDMENT
2	76213G	1	FILLER BREATHER CAP ASSEMBLY
3	76270	1	FILTER ASSEMBLY
	76271	1	REPLACEMENT FILTER ELEMENT
4	0402118	2	LOCK WASHER 5/16 SS
5	04001427	2	BHCS SCHS 5/16-18 UNC x 7/8 SS
6	0301368	1	ADAPTOR 202702 16 x 12
7	03006085	1	ADAPTOR 900598-8 (MAGNETIC DRAIN PLUG)
8	03006341	1	20 x 24 SUCTION HOSE FITTING 45°
9	37855R	1	TANK MTG. BRACKET - RH
	37858R	1	TANK MTG. BRACKET (SHORT) - RH
10	37858L	1	TANK MTG. BRACKET (SHORT) -LH
11	37855L	1	TANK MTG. BRACKET - LH
12	0400274	6	BOLT 5/8-11 x 2 UNC GR8
13	0400426	6	NYLON LOCK NUT 5/8-11 UNC ZINC PLATED
14	0400181	6	BOLT 1/2-13 UNC x 1-1/2 GR5
15	0400492	8	FLAT WASHER 1/2 ZINC PLATED
16	0403100	4	NYLON LOCK NUT 1/2-13 UNC ZINC PLATED

Section V - PARTS
6-SPOOL CONTROL STATION

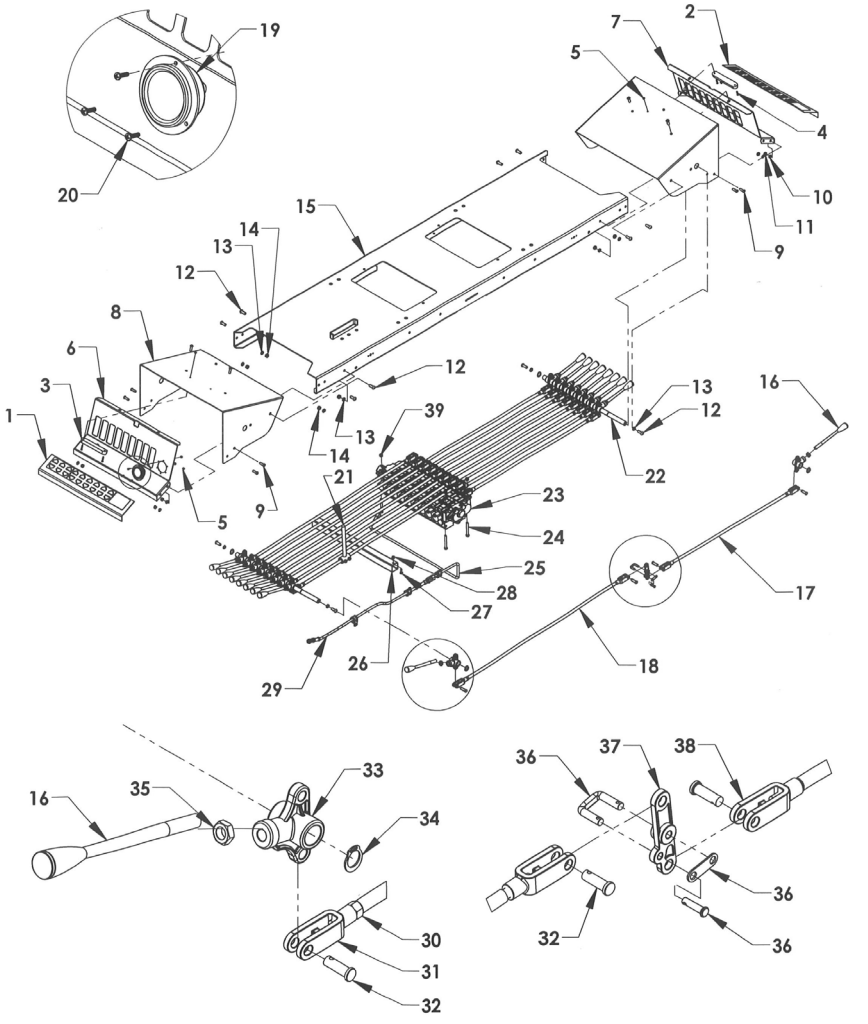


Section V - PARTS

6-SPOOL CONTROL STATION

REF	PART #	QTY	DESCRIPTION
1	18212L	1	5 SPOOL/6 SPOOL CONTROL PLACARD-LH
	18237	1	CONTROL PLACARD AUTOGRIP OVERLAY
2	18212R	1	5 SPOOL/6 SPOOL CONTROL PLACARD-RH
	18237	1	CONTROL PLACARD AUTOGRIP OVERLAY
3	0320162	2	LED CONTROL STATION LIGHT - 6 IN.
4	04000281	4	SCREW, PHILLIPS #6-32 UNC x 7/8
5	04000262	7	NYLON LOCK NUT #6-32 SS
6	0752652L	1	CONTROL PANEL - LH
7	0752652R	1	CONTROL PANEL - RH
8	0752651	2	CONTROL HOOD
9	0403079	12	BHCS 5/16-18 UNC x 5/8
10	0402118	12	LOCK WASHER 5/16 SS
11	0403074	12	HEX NUT 5/16-18 UNC
12	04001085	12	BHCS 3/8-16 UNC x1 SS
13	0402121	12	LOCK WASHER 3/8 SS
14	0402122	8	NYLON LOCK NUT 3/8-16 UNC
15	181286W	1	CONTROL BOX ARM WELDMENT - 79.5 IN
16	0320048-GY	6	CONTROL HANDLE 8" - GRAY
	0320048-RD	2	CONTROL HANDLE 8" - RED
	0320048-BL	4	CONTROL HANDLE 8" - BLUE
17	7A528W	6	CONTROL ROD 28-1/2
18	7A538W	6	CONTROL ROD 37-3/4
19	0320157	1	PRESSURE GAUGE HYDRAULIC - 2 IN.
20	04000282	6	SCREW PHILLIPS #6-32 x 1/2
21	0809904	1	ANTI-TILT CONTROL ROD WELDMENT
22	7A5753-17	2	CONTROL HANDLE CROSS ROD 3/4 x 17
23	74116	1	VALVE BODY GRESEN 6 SPOOL
	74115	1	VALVE BODY GRESEN 5 SPOOL (COMMON)
24	0403169	3	HHCS 5/16-18 UNC x 2-3/4
25	0752718-5	1	CONTROL STATION GAUGE FLUID TUBE - 5 SP
	0752718-6	1	CONTROL STATION GAUGE FLUID TUBE - 6 SP
26	18335	1	CONTROL STATION WIRE TUBE - 6 SP
27	0400066	2	HHCS 1/4-20 UNC x 3/4
28	0400367	2	NYLON LOCK NUT 1/4-40 UNC
29	0320169	1	PRESSURE GAUGE HOSE
30	0403115	12	NUT 3/8-24 UNF RH
31	84530	12	CLEVIS -RH THREAD 3/8-24
32	84620	24	CLEVIS PIN 3/8 x 1-1/8
33	7A1155	12	CONTROL HANDLE PIVOT BASE
34	86075E	4	SNAP RING 3/4 EXTERNAL
35	0400410	12	1/2-13 UNC JAM NUT ZP
36	7A010	6	CLEVIS PIN AND LINK ASSEMBLY
37	7A121	6	BELL CRANK
38	84540	12	CLEVIS - LH THREAD 3/8-24
39	0400382	3	NYLON LOCK NUT 5/16-18 UNC

Section V - PARTS
9-SPOOL CONTROL STATION

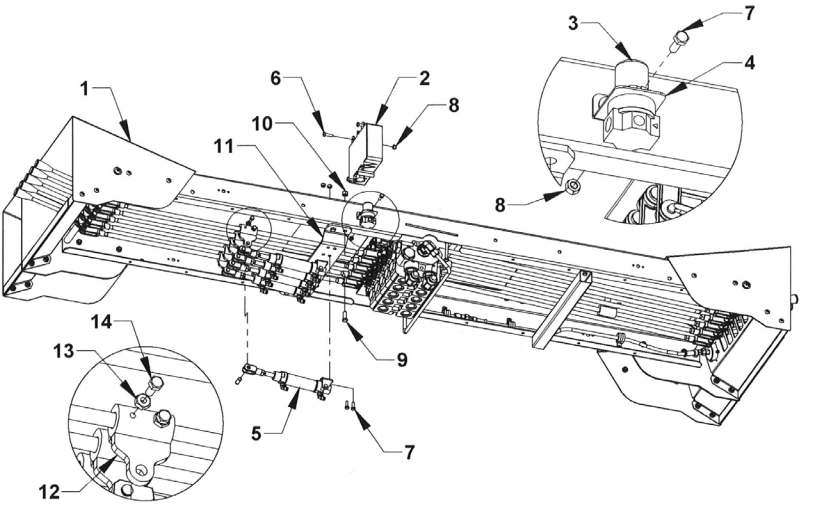


Section V - PARTS
9-SPOOL CONTROL STATION

REF	PART #	QTY	DESCRIPTION
1	18219L	1	CONTROL PLACARD 4-CAR AUTOGRIP - LH
	18218L	1	CONTROL PLACARD 4-CAR CARRIER - LH
	18224L	1	CONTROL PLACARD SIDEPULLER OVERLAY - LH
	18235L	1	CONTROL PLACARD DUAL DECK - LH
	18236L	1	CONTROL PLACARD DUAL DECK AG OVERLAY-LH
2	18219R	1	CONTROL PLACARD 4-CAR AUTOGRIP - RH
	18218R	1	CONTROL PLACARD 4-CAR CARRIER - RH
	18224R	1	CONTROL PLACARD SIDEPULLER OVERLAY-RH
	18235R	1	CONTROL PLACARD DUAL DECK - RH
	18236R	1	CONTROL PLACARD DUAL DECK AG OVERLAY-RH
3	0320162	2	LED CONTROL STATION LIGHT - 6 IN.
4	04000281	4	SCREW, PHILLIPS #6-32 UNC x 7/8
5	04000262	7	NYLON LOCK NUT #6-32 SS
6	0752654L	1	CONTROL PANEL - LH
7	0752654R	1	CONTROL PANEL - RH
8	0752653	2	CONTROL HOOD
9	0403079	12	BHCS 5/16-18 UNC x 5/8
10	0402118	12	LOCK WASHER 5/16, SS
11	0403074	12	HEX NUT 5/16-18 UNC
12	04001085	12	BHCS 3/8-16 UNC x 1, SS
13	0402121	12	LOCK WASHER 3/8 SS
14	0402122	8	NYLON LOCK NUT 3/8-16 UNC
15	181289W	1	CONTROL BOX ARM WELDMENT - 79.5 IN
16	0320048-GY	6	CONTROL HANDLE 8" - GRAY
	0320048-RD	4	CONTROL HANDLE 8" - RED
	0320048-BL	6	CONTROL HANDLE 8" - BLUE
	0320048-GR	2	CONTROL HANDLE 8" - GREEN
17	7A528W	9	CONTROL ROD 28-1/2
18	7A538W	9	CONTROL ROD 37-3/4
19	0320157	1	PRESSURE GAUGE HYDRAULIC - 2 IN.
20	04000282	3	SCREW PHILLIPS #6-32 x 1/2
21	0809904	1	ANTI-TILT CONTROL ROD WELDMENT
22	7A5753-20	2	CONTROL HANDLE CROSS ROD 3/4 x 20-3/4
23	74118	1	VALVE BODY GRESEN 8-SPOOL
	74119	1	VALVE BODY GRESEN 9 SPOOL
24	0403169	3	HHCS 5/16-18 UNC x 2-3/4
25	0752718-8	1	CONTROL STATION GAUGE FLUID TUBE - 8 SP
	0752718-9	1	CONTROL STATION GAUGE FLUID TUBE - 9 SP
26	18336	1	CONTROL STATION WIRE TUBE - 9 SPOOL
27	0400366	2	HHCS 1/4-20 UNC x 3/4
28	0400367	2	NYLON LOCK NUT 1/4-20 UNC
29	0320169	1	PRESSURE GAUGE HOSE
30	0403115	18	NUT 3/8-24 UNF RH
31	84530	18	CLEVIS -RH THREAD 3/8-24
32	84620	36	CLEVIS PIN 3/8 x 1-1/8
33	7A1155	18	CONTROL HANDLE PIVOT BASE
34	86075E	4	SNAP RING 3/4 EXTERNAL
35	0400410	18	1/2-13 UNC JAM NUT ZP
36	7A010	9	CLEVIS PIN AND LINK ASSEMBLY
37	7A121	9	BELL CRANK
38	84540	18	CLEVIS - LH THREAD 3/8-24
39	0400382	3	NYLON LOCK NUT 5/16-18 UNC

Section V - PARTS

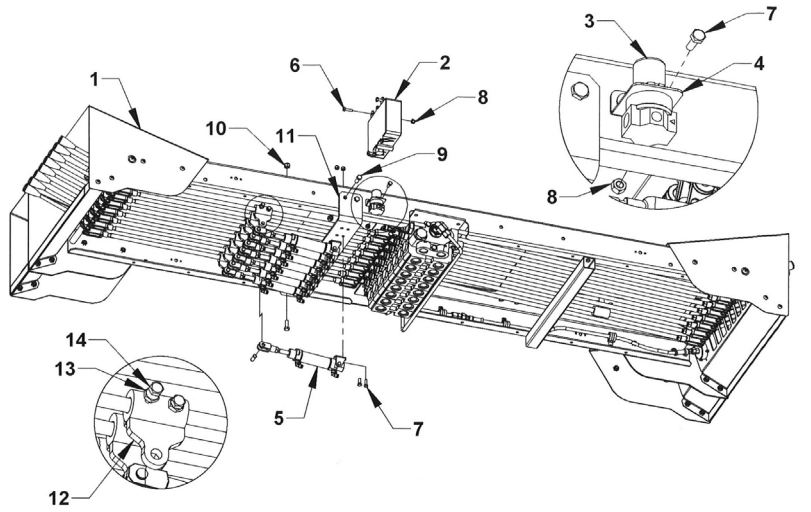
REMOTE AIR CYLINDERS 6-SPOOL



REF	PART #	QTY	DESCRIPTION
1	183126	1	6-SPOOL CONTROL STATION
2	0308726-2	1	RADIO CONTROL RECEIVER BOX 2-FUNCTION
	0308726-4		RADIO CONTROL RECEIVER BOX 4-FUNCTION
	0308726-6		RADIO CONTROL RECEIVER BOX 6-FUNCTION
	0308726-8		RADIO CONTROL RECEIVER BOX 8-FUNCTION
	0308726-10		RADIO CONTROL RECEIVER BOX 10-FUNCTION
	0308726-12		RADIO CONTROL RECEIVER BOX 12-FUNCTION
	0308726-16		RADIO CONTROL RECEIVER BOX 16-FUNCTION
3	71713	1	AIR PRESSURE REGULATOR
4	0752351	1	AIR PRESSURE REGULATOR MTG BRACKET
5	0308711	X	AIR CYLINDER 2 INCH STROKE
6	0403043	3	BOLT HHCS 1/4-20 UNC x 1 GR5
7	0400066	X	BOLT HHCS 1/4-20 UNC x 3/4 GR5
8	0400367	X	NUT NYLOK 1/4-20 UNC
9	0400126	4	BOLT HHCS 3/8-18 UNC x 1 GR5
10	0400392	4	NUT NYLOC 3/8-16 UNC
11	181381	1	AIR CYLINDER MTG BRKT 6-SPOOL GEN2
12	0809905	X	BOLT-ON AIR CYLINDER PLATE WELDMENT
13	0400366	X	NUT HEX 1/4-20 UNC
14	0400059	X	BOLT HHCS 1/4-20 UNC x 5/8 GR5

Section V - PARTS

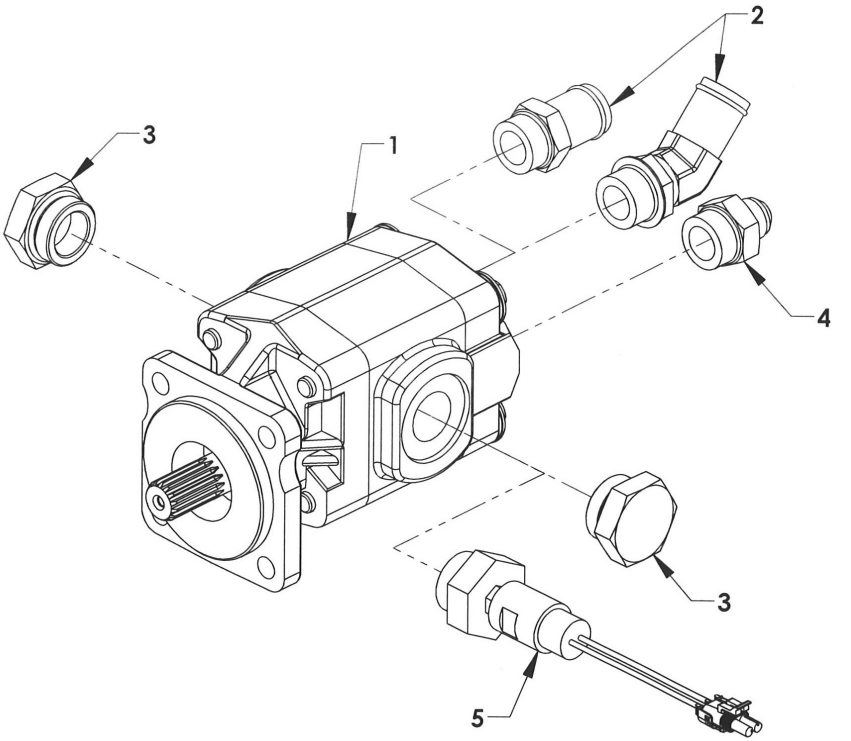
REMOTE AIR CYLINDERS 9-SPOOL



REF	PART #	QTY	DESCRIPTION
1	183129	1	9-SPOOL CONTROL STATION
2	0308726-2	1	RADIO CONTROL RECEIVER BOX 2-FUNCTION
	0308726-4		RADIO CONTROL RECEIVER BOX 4-FUNCTION
	0308726-6		RADIO CONTROL RECEIVER BOX 6-FUNCTION
	03087256-8		RADIO CONTROL RECEIVER BOX 8-FUNCTION
	0308726-10		RADIO CONTROL RECEIVER BOX 10-FUNCTION
	0308726-12		RADIO CONTROL RECEIVER BOX 12-FUNCTION
	0308726-16		RADIO CONTROL RECEIVER BOX 16-FUNCTION
3	71713	1	AIR PRESSURE REGULATOR
4	0752351	1	AIR PRESSURE REGULATOR MTG BRACKET
5	0308711	X	AIR CYLINDER 2 INCH STROKE
6	0403043	3	BOLT HHCS 1/4-20 UNC x 1 GR5
7	0400066	X	BOLT HHCS 1/4-20 UNC x 3/4 GR5
8	0400367	X	NUT NYLOK 1/4-20 UNC
9	0400126	4	BOLT HHCS 3/8-18 UNC x 1 GR5
10	0400392	4	NUT NYLOC 3/8-16 UNC
11	181391	1	AIR CYLINDER MTG BRACKET 9-SPOOL GEN2
12	0809905	X	BOLT-ON AIR CYLINDER PLATE WELDMENT
13	0400366	X	NUT HEX 1/4-20 UNC
14	0400059	X	BOLT HHCS 1/4-20 UNC x 5/8 GR5

Section V - PARTS

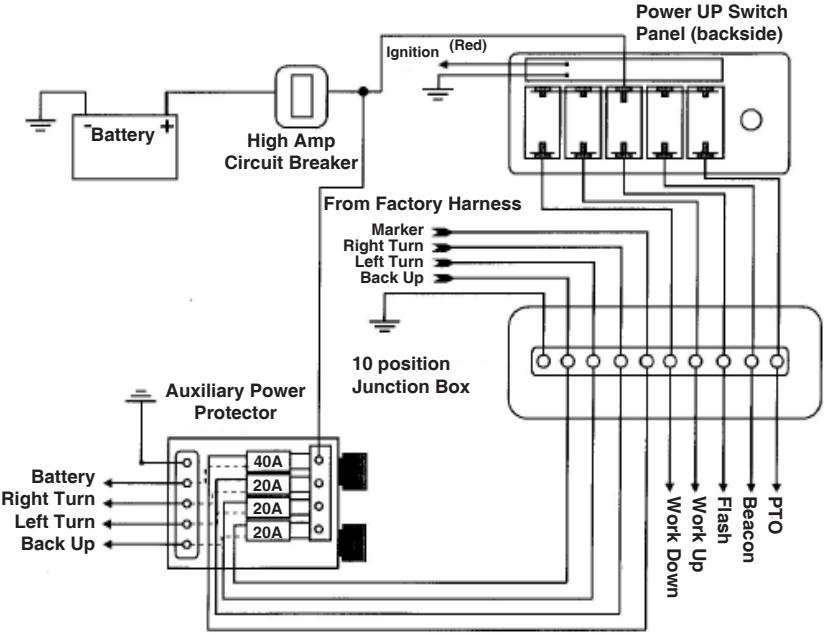
DIRECT MOUNT PUMP - 18 GPM



REF	PART #	QTY	DESCRIPTION
1	0320144	1	18 GPM , 1 IN.15 SPLINE SHAFT, SAE 4-BOLT FLANGE
2	03006339	1	#16-45 M O-RING x 1-1/4 M NIPPLE
	77C82	1	#16 M O-RING x 1-1/4 M NIPPLE
3	77620	2	1-1/4 O-RING PLUG 900598-20
4	0301368	1	#16 M O-RING x 3/4 MJIC
5	0909434	1	PRESSURE TRANSDUCER (OPTIONAL)

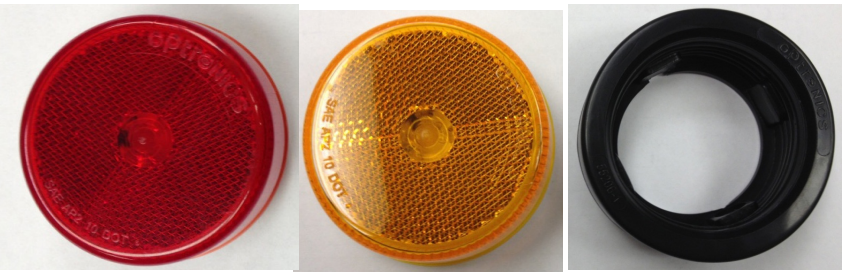
Section V - PARTS

OPTIONAL DASHBOARD PANEL



LIGHT KIT

REF. NO.	PART NUMBER	DESCRIPTION
1	0311498	LIGHT 6" OVAL RED LED - STOP/TURN
2	0311500	LIGHT 6" OVAL REVERSE LED
3	3011503	LIGHT 6" GROMMET



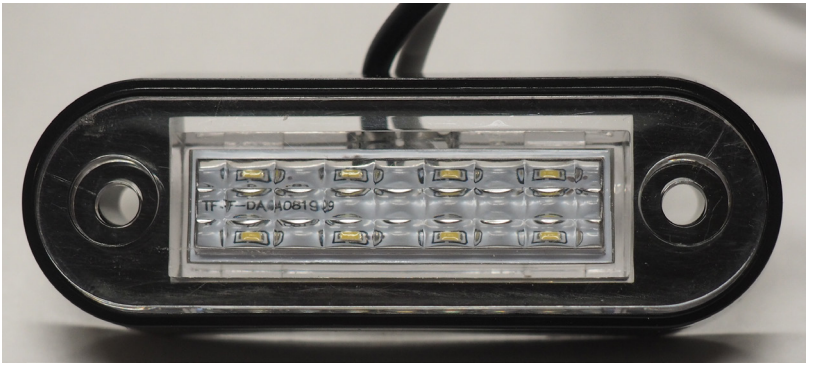
REF. NO.	PART NUMBER	DESCRIPTION
1	0311512	LIGHT 2.5" RED REFLEX LED (MCL59RB)
2	0311513	LIGHT 2.5" AMBER REFLEX LED (MCL59AB)
3	0311516	LIGHT 2.5" GROMMET

LIGHT KIT

REF. NO.	PART NUMBER	DESCRIPTION
1	0311514	LIGHT 2.5" ROUND CLEAR/RED LED MARKER LIGHT
2	0311515	LIGHT 2.5" ROUND CLEAR/AMBER LED MARKER LIGHT
3	3011516	LIGHT 2.5" GROMMET

REF. NO.	PART NUMBER	DESCRIPTION
1	0320162	6 IN. CONTROL STATION LED LIGHT

Section V - PARTS
LIGHT KIT & PRESSURE GAUGE



REF. NO.	PART NUMBER	DESCRIPTION
1	0320161	3 IN. CONTROL STATION LED LIGHT

REF. NO.	PART NUMBER	DESCRIPTION
1	0320157	2 IN. HYDRAULIC PRESSURE GAUGE

LIGHT KIT

REF. NO.	PART NUMBER	DESCRIPTION
1	0311519	RED 3/4 LED ICC LIGHT

REF. NO.	PART NUMBER	DESCRIPTION
1	0311520	RED 3/4 LED LIGHT

LIGHT KIT

REF. NO.	PART NUMBER	DESCRIPTION
1	0311521	AMBER 3/4 ROUND LED LIGHT

REF. NO.	PART NUMBER	DESCRIPTION
1	0311522	CLEAR/RED 3/4 ROUND LED LIGHT

REF. NO.	PART NUMBER	DESCRIPTION
1	0311523	CLEAR/AMBER 3/4 ROUND LED LIGHT

LIGHT KIT

REF. NO.	PART NUMBER	DESCRIPTION
1	0308359	MARKER LIGHT RED REFLEX LED

REF. NO.	PART NUMBER	DESCRIPTION
1	0308360	MARKER LIGHT AMBER REFLEX LED

LIGHT KIT

REF. NO.	PART NUMBER	DESCRIPTION
1	0308969R	MARKER LIGHT RED REFLEX LED

REF. NO.	PART NUMBER	DESCRIPTION
1	0308969A	MARKER LIGHT AMBER REFLEX LED

LIGHT KIT

REF. NO.	PART NUMBER	DESCRIPTION
1	0312578	MILLENNIUM MARKER LIGHT CLEAR/AMBER

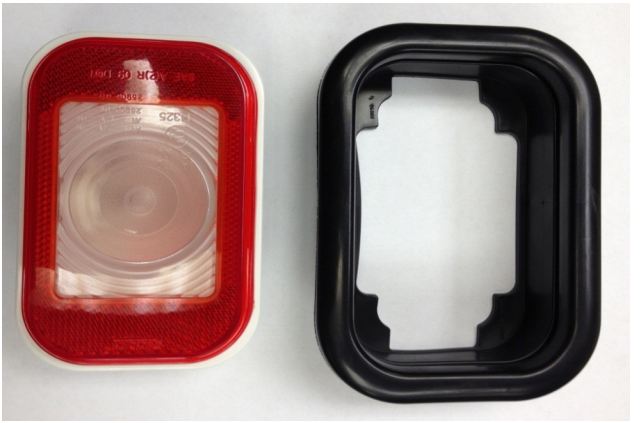
REF. NO.	PART NUMBER	DESCRIPTION
1	0312579	MILLENNIUM MARKER LIGHT CLEAR/RED

LIGHT KIT

REF. NO.	PART NUMBER	DESCRIPTION
1	0308491	REFLECTOR - AMBER

REF. NO.	PART NUMBER	DESCRIPTION
1	0308490	REFLECTOR - RED

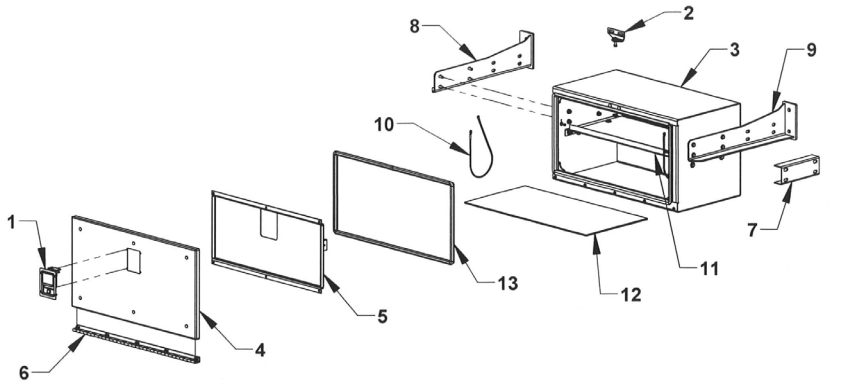
LIGHT KIT



REF. NO.	PART NUMBER	DESCRIPTION
1	0311510	RECTANGULAR REFLEX BACK UP
1	0311511	RECTANGULAR REFLEX BACK UP GROMMET

Section V - PARTS

33" ALUMINUM TOOLBOX - 377000

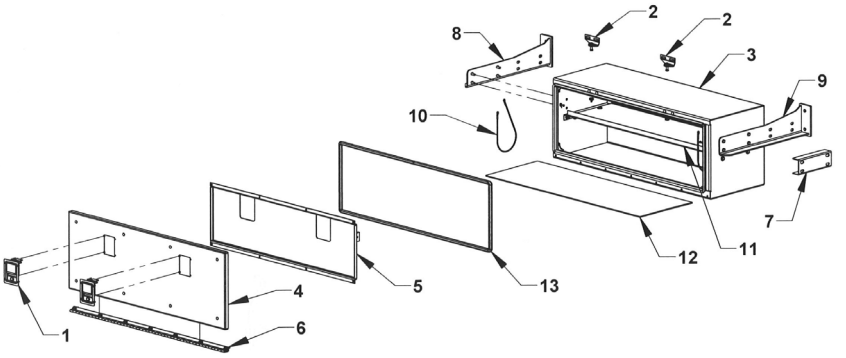


NOTE: 377000 DOES NOT INCLUDE MOUNTING BRACKETS

REF	PART #	QTY	DESCRIPTION
1	54658	1	ROTARY PADDLE LATCH
	54657	1	GASKET FOR PADDLE LATCH
	81111	4	#8-32 x 1/2 STAINLESS ONE WAY SCREW
	83111	4	#8-32 STAINLESS KEPT NUT
2	376182	1	STRIKER PIN MOUNTING PLATE
	54659	1	STRIKER PIN
	0403072	2	STAINLESS CARRIAGE BOLT 5/16-18 x 3/4
	0400465	4	FLAT WASHER 5/16
	0400464	2	LOCK WASHER 5/16
	0403151	2	NUT 5/16-18
	0400382	1	NYLON LOCK NUT 5/16-18
3	377100W	1	BOX WELDMENT
4	37741	1	DOOR WELDMENT
	37740	1	DOOR ASSEMBLY
	81100	6	STAINLESS CARRIAGE BOLT 1/4-20 x 3/4
	0400367	6	NYLON LOCK NUT 1/4-20
5	37744	1	DOOR REINFORCEMENT
6	37735	1	HINGE
	811014	2	SS SOCKET BUTTON HEAD BOLT 1/4-20 x 7/8
	811012	3	SS SOCKET BUTTON HEAD BOLT 1/4-20 x 3/4
	811010	5	SS SOCKET BUTTON HEAD BOLT 1/4-20 x 5/8
	0400367	10	NYLON LOCK NUT 1/4-20
7	37760	1	TANDEM BOX SPACER CHANNEL (OPTIONAL)
8	37855R	1	TANK AND TOOLBOX MTG BRACKET-RH
9	37855L	1	TANK AND TOOLBOX MTG BRACKET-LH
10	5A221	2	LANYARD-21 INCH
11	37770	1	SHELF
12	03002300	1	TOOLBOX MAT 33"
13	18151S	8 FT	TRIM SEAL - 3/8 WITH 5/8 BULB - 96 IN.

Section V - PARTS

49" ALUMINUM TOOLBOX - 378000

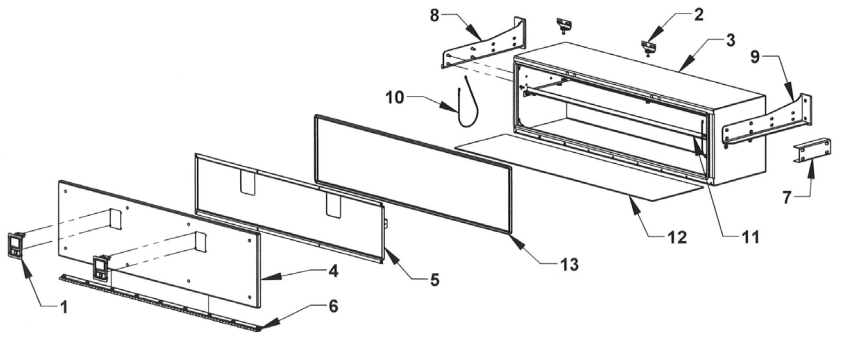


NOTE: 378000 DOES NOT INCLUDE MOUNTING BRACKETS

REF	PART #	QTY	DESCRIPTION
1	54658	2	ROTARY PADDLE LATCH
	54657	2	GASKET FOR PADDLE LATCH
	81111	8	#8-32 x 1/2 STAINLESS ONE WAY SCREW
	83111	8	#8-32 STAINLESS KEPT NUT
2	376182	2	STRIKER PIN MOUNTING PLATE
	54659	2	STRIKER PIN
	0403072	4	STAINLESS CARRIAGE BOLT 5/16-18 x 3/4
	0400465	8	FLAT WASHER 5/16
	0400464	4	LOCK WASHER 5/16
	0403151	4	NUT 5/16-18
	0400382	2	NYLON LOCK NUT 5/16-18
3	378100W	1	BOX WELDMENT
4	37841	1	DOOR WELDMENT
	37840	1	DOOR ASSEMBLY
	81100	8	STAINLESS CARRIAGE BOLT 1/4-20 x 3/4
	0400367	8	NYLON LOCK NUT 1/4-20
5	37844	1	DOOR REINFORCEMENT
6	37835	1	HINGE
	811014	2	SS SOCKET BUTTON HEAD BOLT 1/4-20 x 7/8
	811012	5	SS SOCKET BUTTON HEAD BOLT 1/4-20 x 3/4
	811010	7	SS SOCKET BUTTON HEAD BOLT 1/4-20 x 5/8
	0400367	14	NYLON LOCK NUT 1/4-20
7	37760	1	TANDEM BOX SPACER CHANNEL (OPTIONAL)
8	37855R	1	TANK AND TOOLBOX MTG BRACKET-RH
9	37855L	1	TANK AND TOOLBOX MTG BRACKET-LH
10	5A221	2	LANYARD-21 INCH
11	37670	1	SHELF
12	03002301	1	TOOLBOX MAT 49"
13	18151S	11 FT.	TRIM SEAL - 3/8 WITH 5/8 BULB - 132 IN.

Section V - PARTS

65" ALUMINUM TOOLBOX - 379000

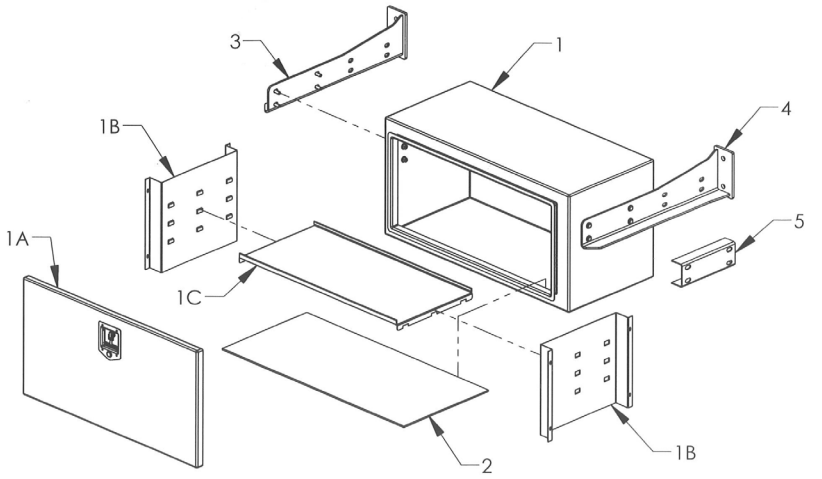


NOTE: 379000 DOES NOT INCLUDE MOUNTING BRACKETS

REF	PART #	QTY	DESCRIPTION
1	54658	2	ROTARY PADDLE LATCH
	54657	2	GASKET FOR PADDLE LATCH
	81111	8	#8-32 x 1/2 STAINLESS ONE WAY SCREW
	83111	8	#8-32 STAINLESS KEPT NUT
2	376182	2	STRIKER PIN MOUNTING PLATE
	54659	2	STRIKER PIN
	0403072	4	STAINLESS CARRIAGE BOLT 5/16-18 x 3/4
	0400465	8	FLAT WASHER 5/16
	0400464	4	LOCK WASHER 5/16
	0403151	4	NUT 5/16-18
	0400382	2	NYLON LOCK NUT 5/16-18
3	379100W	1	BOX WELDMENT
4	37941	1	DOOR WELDMENT
	37940	1	DOOR ASSEMBLY
	81100	8	STAINLESS CARRIAGE BOLT 1/4-20 x 3/4
	0400367	8	NYLON LOCK NUT 1/4-20
5	37944	1	DOOR REINFORCEMENT
6	37935	1	HINGE
	811014	2	SS SOCKET BUTTON HEAD BOLT 1/4-20 x 7/8
	811012	7	SS SOCKET BUTTON HEAD BOLT 1/4-20 x 3/4
	811010	7	SS SOCKET BUTTON HEAD BOLT 1/4-20 x 5/8
	0400367	18	NYLON LOCK NUT 1/4-20
7	37760	1	TANDEM BOX SPACER CHANNEL (OPTIONAL)
8	37855R	1	TANK AND TOOLBOX MTG BRACKET-RH
9	37855L	1	TANK AND TOOLBOX MTG BRACKET-LH
10	5A221	2	LANYARD-21 INCH
11	37970	1	SHELF
12	03002302	1	TOOLBOX MAT 65"
13	18151S	13.5 FT	TRIM SEAL - 3/8 WITH 5/8 BULB - 162 IN.

Section V - PARTS

36" STEEL TOOLBOX LCG - 174016021

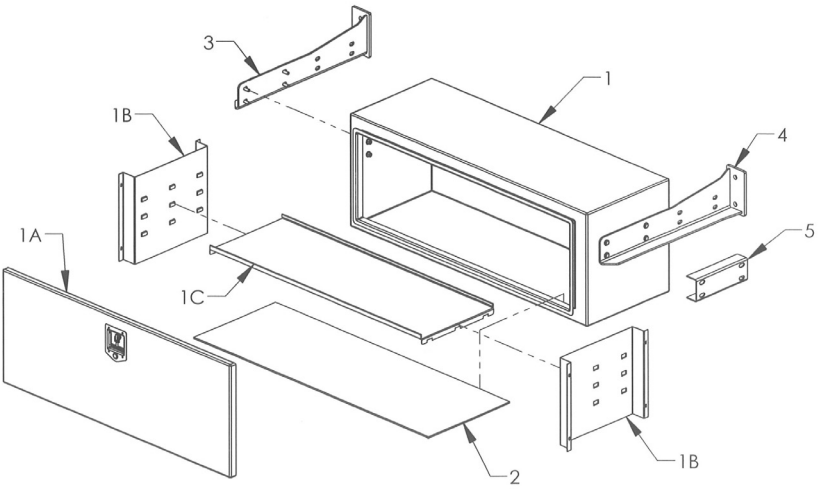


NOTE: 174016021 DOES NOT INCLUDE MOUNTING BRACKETS

REF	PART #	QTY	DESCRIPTION
1	174016021	1	STEEL TOOLBOX 36" WITH STAINLESS STEEL DOOR
1A	174016021D	1	SS DOOR ASSEMBLY
1B	07002918	2	STEEL TOOLBOX INSIDE PANEL
1C	07002919-36	1	STEEL TOOLBOX 36" SHELF
2	0308801	1	TOOLBOX MAT 36"
3	37855R	1	TOOLBOX AND OIL TANK MTG BRACKET-RH
4	37855L	1	TOOLBOX AND OIL TANK MTG BRACKET-LH
5	37760	1	TANDEM BOX SPACER CHANNEL (OPT)

Section V - PARTS

48" STEEL TOOLBOX LCG - 174016022

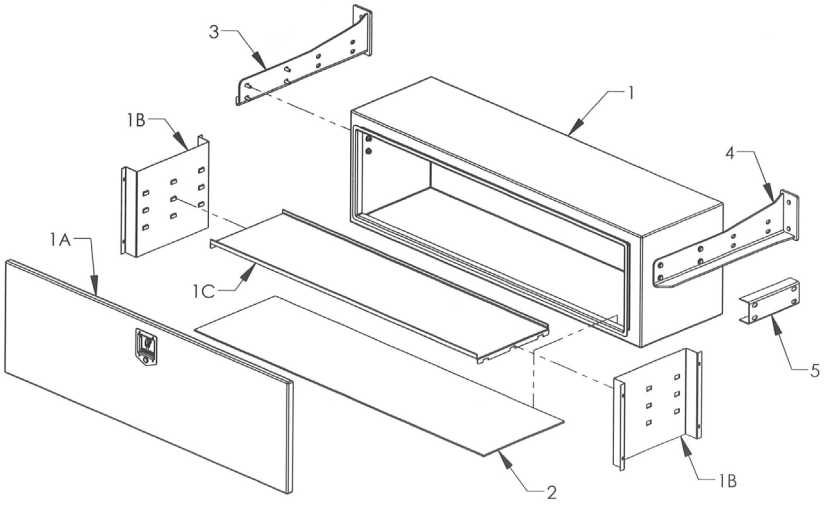


NOTE: 174016022 DOES NOT INCLUDE MOUNTING BRACKETS

REF	PART #	QTY	DESCRIPTION
1	174016022	1	STEEL TOOLBOX 48" WITH STAINLESS STEEL DOOR
1A	174016022D	1	SS DOOR ASSEMBLY
1B	07002918	2	STEEL TOOLBOX INSIDE PANEL
1C	07002919-48	1	STEEL TOOLBOX 48" SHELF
2	0308758	1	TOOLBOX MAT 48"
3	37855R	1	TOOLBOX AND OIL TANK MTG BRACKET-RH
4	37855L	1	TOOLBOX AND OIL TANK MTG BRACKET-LH
5	37760	1	TANDEM BOX SPACER CHANNEL (OPT)

Section V - PARTS

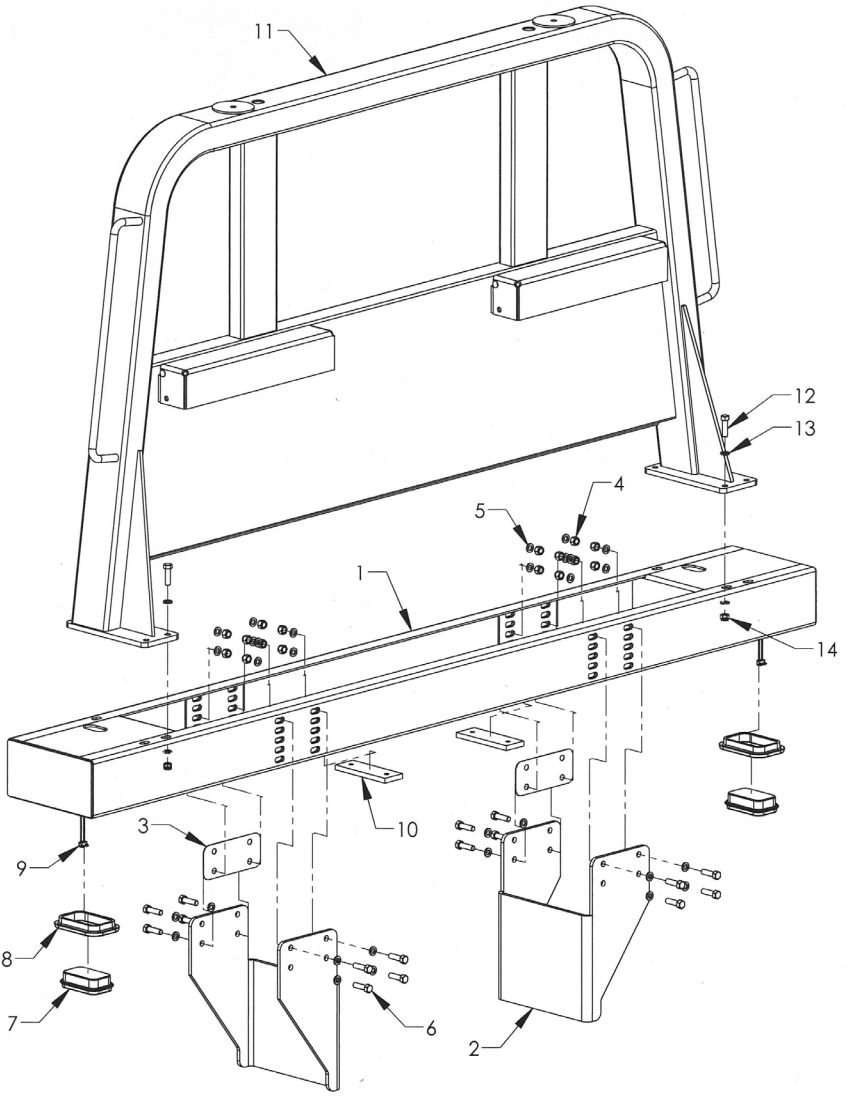
60" STEEL TOOLBOX LCG - 174016023



NOTE: 174016023 DOES NOT INCLUDE MOUNTING BRACKETS

REF	PART #	QTY	DESCRIPTION
1	174016023	1	STEEL TOOLBOX 60" WITH STAINLESS STEEL DOOR
1A	174016023D	1	SS DOOR ASSEMBLY
1B	07002918	2	STEEL TOOLBOX INSIDE PANEL
1C	07002919-60	1	STEEL TOOLBOX 60" SHELF
2	0308837	1	TOOLBOX MAT 60"
3	37855R	1	TOOLBOX AND OIL TANK MTG BRACKET-RH
4	37855L	1	TOOLBOX AND OIL TANK MTG BRACKET-LH
5	37760	1	TANDEM BOX SPACER CHANNEL (OPT)

FRAME MOUNTED PYLON - 0940455-102
LCG BASE ASSEMBLY



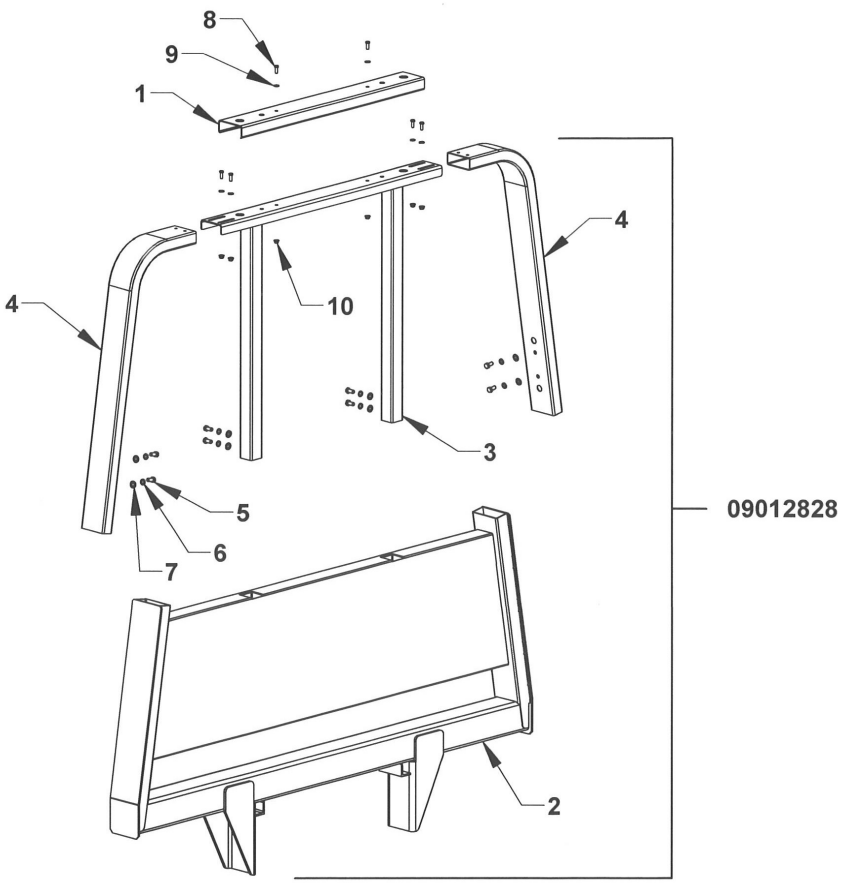
GRAB HANDLES AND CHAIN HANGERS ARE OPTIONAL PYLON EQUIPMENT

Section V - PARTS
FRAME MOUNTED PYLON - 0940455-102

REF	PART #	QTY	DESCRIPTION
1	0811186-102	1	FMP CONVENTIONAL CHAIN TRAY BASE - 102
2	0752751	2	PYLON MTG BRACKET, FMP LCG
3	0752730	2	SHIM, 16 GAGE, FMP BASE
4	0400408	16	NYLON LOCK NUT 1/2-13 UNC
5	0403040	32	FLAT WASHER 1/2 SAE ZP
6	0403058	16	BOLT HHCS 1/2-13 x 1-3/4 GR8 PLAIN
7	0311511	2	CARRIER TAIL LIGHT GROMMET (OPTIONAL)
8	0311509	2	LIGHT RECEPTACLE REVERSE LED (OPTIONAL)
9	0311506	2	LIGHT PIGTAIL 2 PRONG 18 IN. LEAD
10	354614-050	2	FMP 1/2 IN. SPACER SERIES 12 LCG
	354614-100		FMP 1 IN. SPACER SERIES 16 LCG
	354614-150		FMP 1-1/2 IN. SPACER SERIES 20 LCG
	354614-075/175		FMP 2-1/2 IN. SPACER SERIES 20 LCG WOOD
	354614-050/175		FMP 2-1/4 IN. SPACER SERIES 30 LCG
	354614-150/175		FMP 3-1/4 IN. SPACER SERIES 30 LCG WOOD
11	0811185-48	1	FMP 12 PYLON-48
	0811185-50		FMP 12 PYLON-50
	0811185-52		FMP 12 PYLON-52
	0811185-56		FMP 12 PYLON-56
	0811185-60		FMP 12 PYLON-60
	0811185-63		FMP 12 PYLON-63
	0811185-68		FMP 12 PYLON-68
12	0403058	6	BOLT HHCS 1/2-13 x 1-3/4 GR8 PLAIN
13	0403040	12	FLAT WASHER 1/2 SAE ZP
14	0400408	6	NYLON LOCK NUT 1/2-13 UNC

Section V-PARTS

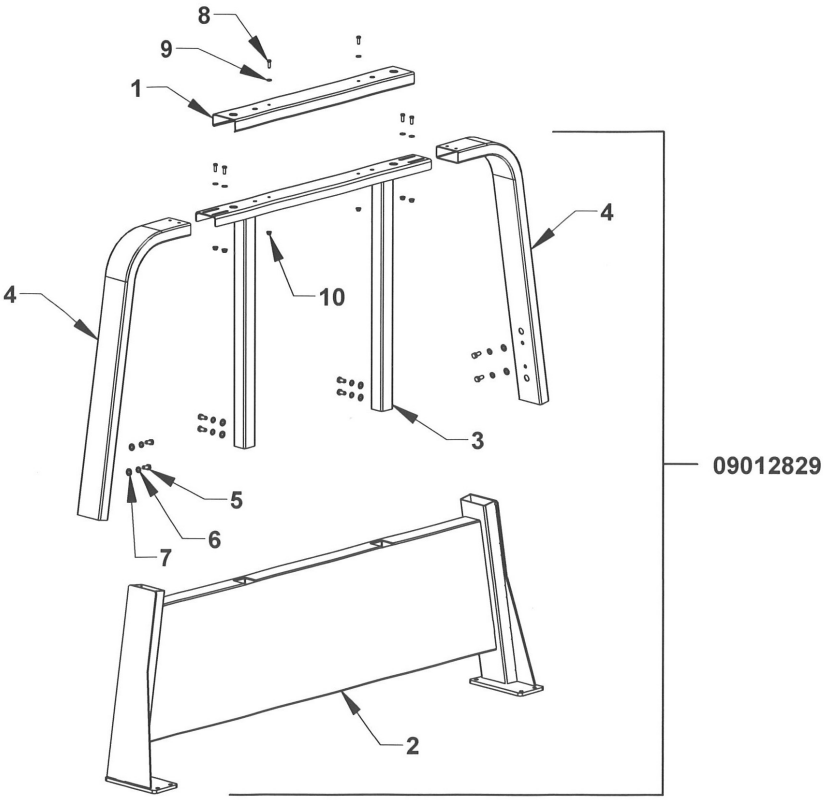
ADJUSTABLE CAB PROTECTOR 09012828-XX (FRAME MOUNTED 5-INCH BASE)



REF	PART #	QTY	DESCRIPTION
1	07011335-46	1	CAB PROTECTOR TRIM CHANNEL
2	08011111	1	ADJUSTABLE CAB PROTECTOR BASE FMP 5" LCG
3	08007570	1	CAB PROTECTOR CENTER SUPPORT
4	08007571	2	ADJUSTABLE SIDE TUBE
5	0400176	8	BOLT HHCS 1/2-13 UNC x GR5
6	0400491	8	LOCK WASHER 1/2-ZP
7	0403128	8	FLAT WASHER 1/2-ZP
8	0400126	6	BOLT HHCS 3/8-16 UNC x 1 GR5
9	0400480	6	FLAT WASHER 3/8 P
10	04002907	6	NUT, FLANGED NYLOK 3/8-16 UNC ZP

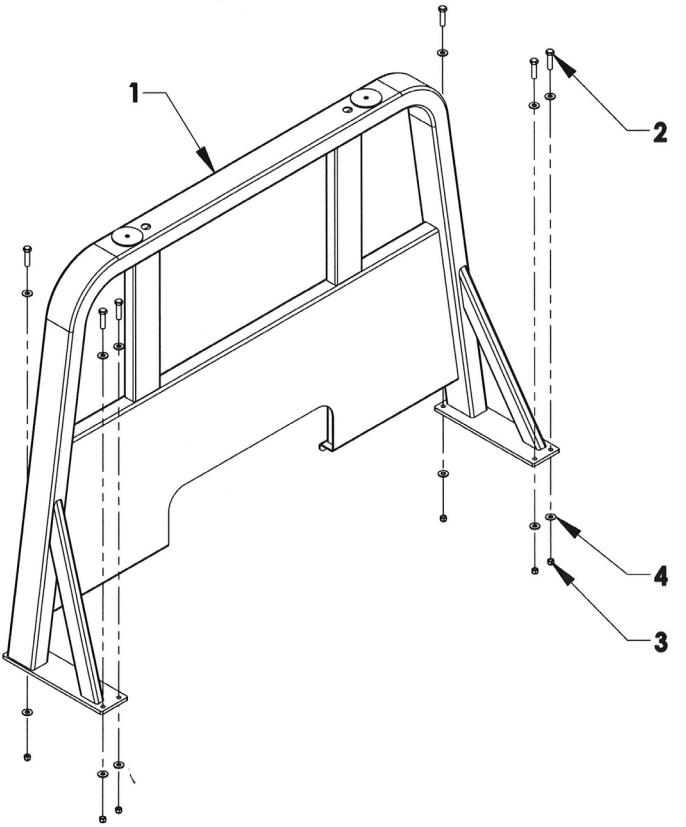
Section V-PARTS

ADJUSTABLE CAB PROTECTOR 09012829-XX (FRAME MOUNTED 12-INCH BASE)



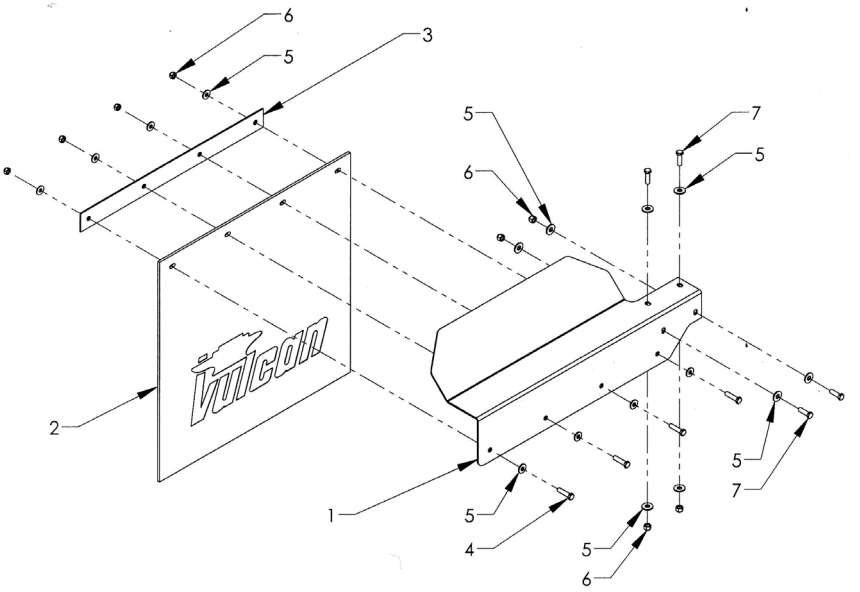
REF	PART #	QTY	DESCRIPTION
1	07011335-46	1	CAB PROTECTOR TRIM CHANNEL
2	08011110	1	ADJUSTABLE CAB PROTECTOR BASE FMP 12"
3	08007570	1	CAB PROTECTOR CENTER SUPPORT
4	08007571	2	ADJUSTABLE SIDE TUBE
5	0400176	8	BOLT HHCS 1/2-13 UNC x GR5
6	0400491	8	LOCK WASHER 1/2-ZP
7	0403128	8	FLAT WASHER 1/2-ZP
8	0400126	6	BOLT HHCS 3/8-16 UNC x 1 GR5
9	0400480	6	FLAT WASHER 3/8 ZP
10	04002907	6	NUT, FLANGED NYLOK 3/8-16 UNC ZP

Section V - PARTS
BED MOUNTED CAB PROTECTOR



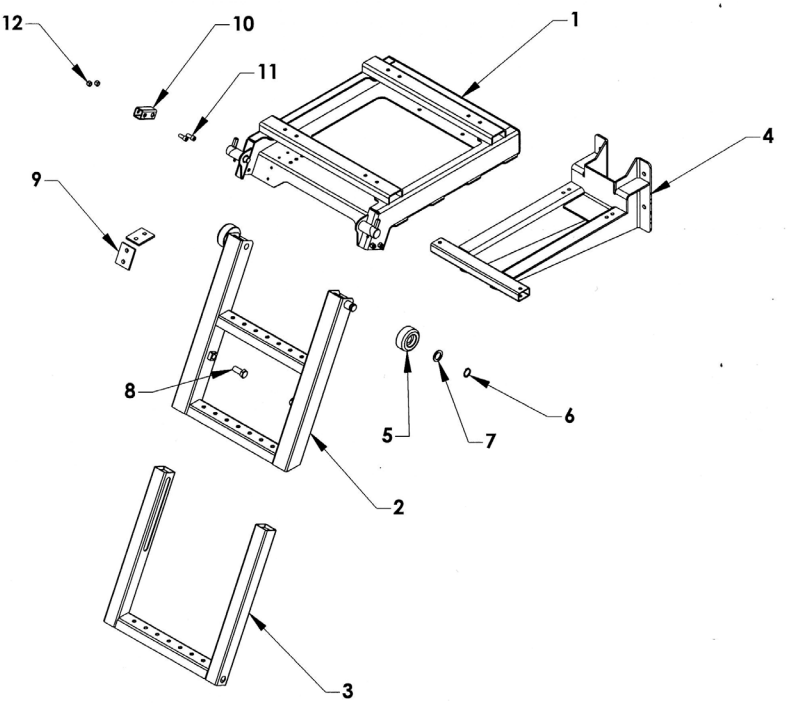
REF	PART #	QTY	DESCRIPTION
1	35FL048	1	2 x 5 PERIMETER TUBE CAB PROTECTOR - 48"
	35FL050		2 x 5 PERIMETER TUBE CAB PROTECTOR - 50"
	35FL052		2 x 5 PERIMETER TUBE CAB PROTECTOR - 52"
	35FL056		2 x 5 PERIMETER TUBE CAB PROTECTOR - 56"
	35FL060		2 x 5 PERIMETER TUBE CAB PROTECTOR - 60"
	35FL063		2 x 5 PERIMETER TUBE CAB PROTECTOR - 63"
	35FL066		2 x 5 PERIMETER TUBE CAB PROTECTOR - 66"
	35FL068		2 x 5 PERIMETER TUBE CAB PROTECTOR - 68"
2	0400343	6	HHCS 1/2 -13 UNC x GR 8
3	0400408	6	NUT NYLOK 1/2 -13 UNC
4	0400492	12	WASHER 1/2

Section V - PARTS
MUDFLAP COMPONENTS



REF	PART #	QTY.	DESCRIPTION
1	0751024L	1	MUDFLAP MOUNTING BRACKET (LH)
	0751024R	1	MUDFLAP MOUNTING BRACKET (RH)
2	9033233	1	MUDFLAP 24 x 24
3	0750340	1	MUDFLAP SUPPORT BAR
4	0400132	4	BOLT HHCS 3/8-16 UNC x 1-1/2 GR5
5	0400480	16	WASHER 3/8
6	0400392	16	3/8-16 NYLON LOCK NUT
7	0400122	4	BOLT HHCS 3/8-16 UNC x 1-1/.4 GR5

Section V - PARTS
RETRACTABLE LADDER



REF	PART #	QTY	DESCRIPTION
	391000	1	LADDER ASSEMBLY
1	391010	1	LADDER CARRIAGE
2	391020	1	UPPER RUNG ASSEMBLY
3	391030	1	LOWER RUNG ASSEMBLY
4	391050	1	FRAME MOUNTING BRACKET - OPTIONAL
5	36310	2	WHEEL
6	86100E	2	RETAINING RING 1.00 EXTERNAL
7	0400470	2	FLAT WASHER 1 x 1.50
8	0403063	2	RETAINING BOLT 5/8-11 x 1-1/2
9	391018	4	WEAR PAD
10	391015	2	RETAINING TUBE
11	0403109	4	ALLEN HEAD BOLT 3/8-16 x 1
12	0400392	4	NYLON LOCK NUT 3/8-16

Section VI - INSTALLATION

TRUCK FRAME PREPARATION

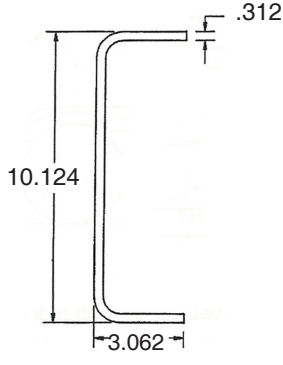
Make sure the frame height at the burn-off does not exceed 37 inches. Also make sure that the strength of the truck frame meets or exceeds Miler's guide lines for resistive bending moment (RBM) for each frame rail. On Series 16 LCG carriers the guide lines are as follows:

CARRIER LENGTH (FT.)	CA (INCHES)	MIN. FRAME RBM (EACH RAIL INCH • LBS.)
21	138	800,000 in. • lbs.
21-1/2	144	800,000 in. • lbs.
22	150	800,000 in. • lbs.
23	154-156	1,200,000 in. • lbs.
24	166	1,200,000 in. • lbs.
25	170	1,600,000 in. • lbs.
26	182	1,600,000 in. • lbs.
30	224	1,800,000 in. • lbs.

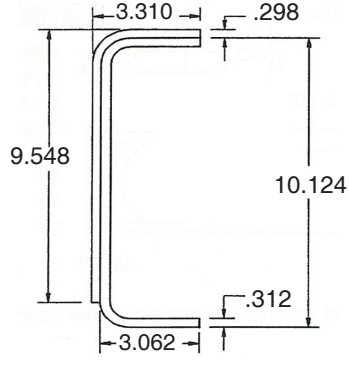
If you do not know the RBM for the truck you are installing, call your chassis dealer and find out what it is. If the dealer does not know the RBM, then find out the Section modulus and yield strength rating. Once the Section modulus and yield strength are known, the RBM can be found by multiplying these two numbers together.

The RBM quantitatively describes how strong the frame is. The Section modulus quantitatively describes how strong the shape of the frame is. And the yield strength quantitatively describes how strong the steel in the frame is. Therefore, the frame RBM is found by taking the strength of the frame's shape and multiplying it by the strength of the frame's steel.

Shown below are two International frame rail examples. The first frame is a single 5/16 rail. The second frame is a 5/16 rail reinforced with 1/4 inverted L.



Section Modulus = 12.48 in.^{3}
Yield Strength = 50,000 PSI
RBM = 12.48 x 50,000 = 624,000 in. • lbs.



Section Modulus = 17.05 in.^{3}
Yield Strength = 50,000 PSI
RBM = 17.05 x 50,000 = 852,500 in. • lbs.

Notice that the reinforced frame has a higher RBM than the single frame because the Section modulus is greater when the frame is reinforced.

Section VI - INSTALLATION

GENERAL TRUCK FRAME PRACTICES TO BE AWARE OF BEFORE INSTALLING THE CARRIER

1. The only permissible place to burn or weld on a truck frame is at the frame cutoff. Do not weld or burn (oxy-acetylene torch or plasma torch) on a truck frame anywhere else.

2. Before welding the subframe hinge angle to the truck frame, disconnect the batteries to protect the chassis computer and electrical system.

3. Bolt holes are to be drilled, not burned.

4. When drilling holes into the side of a truck frame, use a steel plate inside the frame to protect wires and air hoses from the drill bit piercing through.

5. Never drill holes in or near the frame flanges. Never drill a hole in the side of a frame any closer to the flanges than the chassis builder did. It is recommended that drilled holes in the side of the truck frame be at least 2-1/4" away from the frame flanges.

6. The distance between frame holes should be at least twice the diameter of the larger hole.

7. The bolt hole diameter should not be more than 1/16" larger than the bolt diameter.

8. Avoid removing chassis crossmembers. It is preferred to move them to a new position out of the way. Truck frame hinge angles are not a replacement for a chassis crossmember. Truck frame hinge angles are to be used in addition to the rear suspension crossmemeber. **IF** the frame cutoff gets into a rear chassis crossmember, **THEN** move the rear chassis crossmember forward a few inches.

9. Inboard tilt cylinder saddles are not a replacement for a chassis crossmember. **IF** the inboard saddle interferes with a chassis crossmember, **THEN** try to plan the frame cutoff so that the drive shaft carrier bearing angle can remount to the front face of the inboard saddle. **DO NOT** rotate the carrier bearing mounting angle opposite of the way it was mounted by the chassis builder. Move the interfering chassis crossmember forward just enough to be out of the way of the saddle.

10. **IF** there is too much interference between the inboard tilt cylinder saddle and a drive shaft carrying crossmember, **THEN** switch the inboard tilt cylinder saddle to the outboard saddle system with lower connecting angle.

Section VI - INSTALLATION

POWER TAKE-OFF (AUTOMATIC TRANSMISSION)

CAUTION

DISCONNECT BATTERY BEFORE PERFORMING ANY WELDING ON CHASSIS TO PREVENT DAMAGE TO ELECTRONIC COMPONENTS!

Make sure the combination of transmission and PTO selected have an output ratio between 100% and 110%, preferably closer to 100%. A proper output ratio is necessary to achieve a proper hydraulic flow rate. Excessive flow rate will cause excessive heat which can cause hydraulic component damage. There is a point at which a PTO output ratio that is too high will produce extra heat instead of more speed because the extra oil cannot get through the control valve.

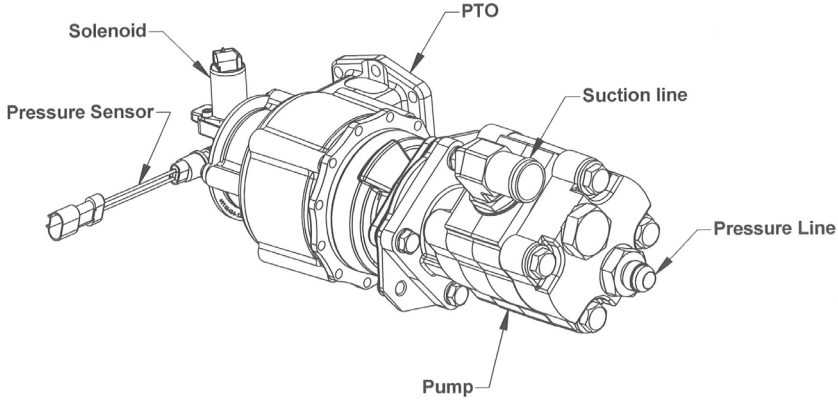
Drain the transmission fluid into a large clean container to be re-used later.

Install the PTO to the transmission. Refer to the instructions included with the PTO. Make sure that the mounting studs and bolts are fastened with Loctite and properly torqued according to the PTO manufacturer's specifications.

Determine the desired hose routing from the pump. The bi-directional pump provides 1-1/4 inch SAE side ports and 1 inch SAE rear ports. Insert the pressure and return line fittings into the pump.

Pack the female pilot of the PTO pump shaft with grease before installing the pump on the PTO (reference Chelsea grease pack 379688).

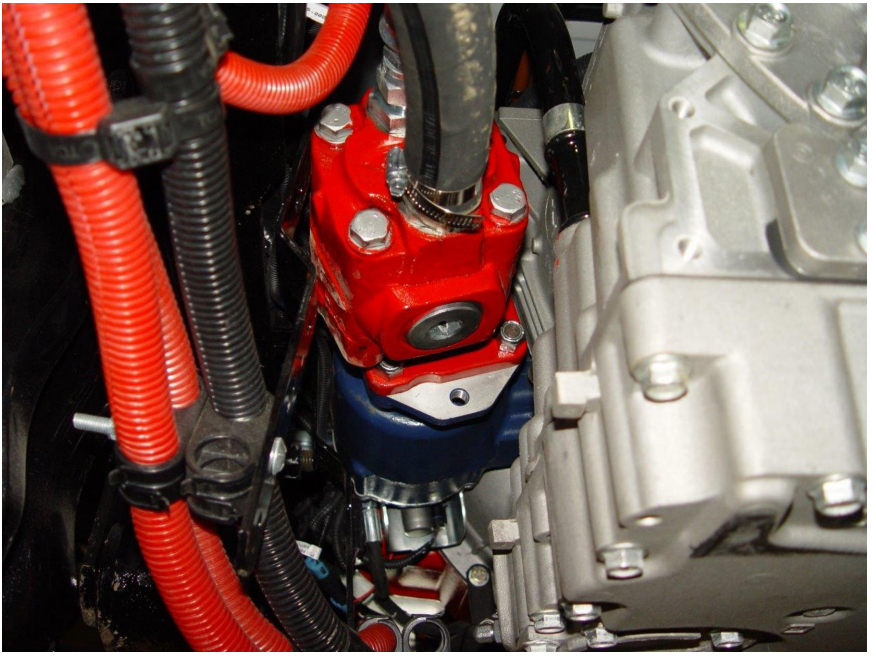
Install the pump onto the PTO as shown.



Refill the transmission with the previously drained transmission fluid.

Section VI - INSTALLATION
POWER TAKE-OFF
(AUTOMATIC TRANSMISSIONS)

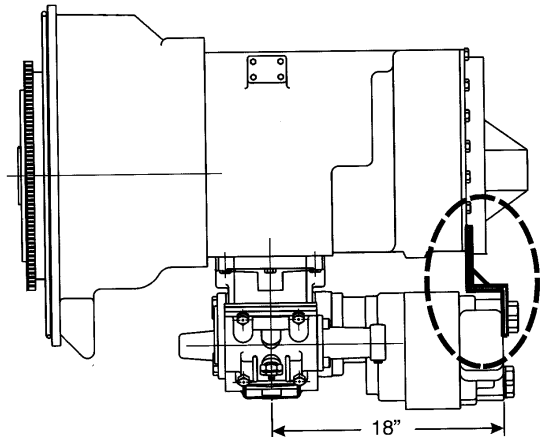
Follow the PTO instructions supplied by the PTO manufacturer that are included with the PTO. Hot shift PTO's on automatic transmissions are torque converter driven. The torque converter must be instructed to lock up when the PTO is activated. The on board computer must be programmed to lock up the torque converter when the PTO is engaged. On some trucks the PTO must be wired to pin 43 of the TCM. On some trucks the PTO must be wired to pin 42 of the TCM. The individual installing the PTO must be aware that the PTO is being wired and activated in a way that locks up the torque converter. The carrier without a load or with a light load may operate fine if the torque converter is not slipping while also not instructed to lock up. The carrier hydraulics may also operate sluggishly or with insufficient power with a light load or a heavy load when the torque converter is not locked up. A torque converter that slips will cause the pump to intermittently turn or stop turning. A pump that stops turning may give the false appearance of a control valve pressure problem. If the carrier hydraulics perform sluggishly, it may be necessary to have a chassis dealer perform diagnostic testing to determine if the torque converter is programmed to lock up on PTO engagement.



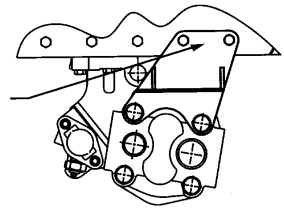
Section VI - INSTALLATION
REAR PUMP SUPPORT

If the direct mounted pump exceeds 40 lbs. or if the combined length of the pump and the PTO exceeds 18 inches, then an additional support bracket hung from the transmission to the back of the pump is required. The Permco 24 GPM pump along with its pressure and return fittings supplied by Miller weighs 37.7 lbs. It is assembled with extended rear studs for mounting a support bracket. Factory installed carriers equipped with a 24 GPM pump are supplied with a rear pump support bracket for insurance.

Direct Mount Pump Support Recommendations



Note: For proper bracketing attach at 2 or more transmission bolt locations and 2 or more pump locations.



CAUTION

Use caution to ensure that bracket does not pre-load pump/PTO mounting.

The PTO warranty will be void if a pump bracket is not used when:

1. The combined weight of pump, fittings and hose exceed **40 lbs.**
2. The combined length of the PTO and pump is more than **18 inches** from the PTO centerline to the end of the pump.

Section VI - INSTALLATION
CHASSIS PREPARATION

The following layout diagram depicts general information and serves only as an example. Subframes for carriers 24 ft. and longer are built to specifically fit each chassis. **DO NOT** assume the measurments on the following **EXAMPLE DIAGRAM** applies to the chassis you have. Chassis specific layouts should be packed in the kit box and they are also available to the field installer upon request by providing to the factory the sales order number, carrier series and carrier length.

Always mark on top of the truck frame the following strategic locations;

1. Subframe hinge pin.
2. Truck frame cut-off.
3. Back of subframe tilt cylinder box.
4. Front of tilt cylinder saddle.
5. Front of subframe.
6. Front of bed.

Use the factory sales order specific layout diagram for these frame markings. Also measure the subframe to verify that it is built to these same measurements. **DO NOT** cut the truck frame until it has been determined by the markings on the frame that the front of the bed is in a position that makes logical sense.

SERIES 16 LCG & CONVENTIONAL CARRIER INSTALLATION LAYOUT MATRIX

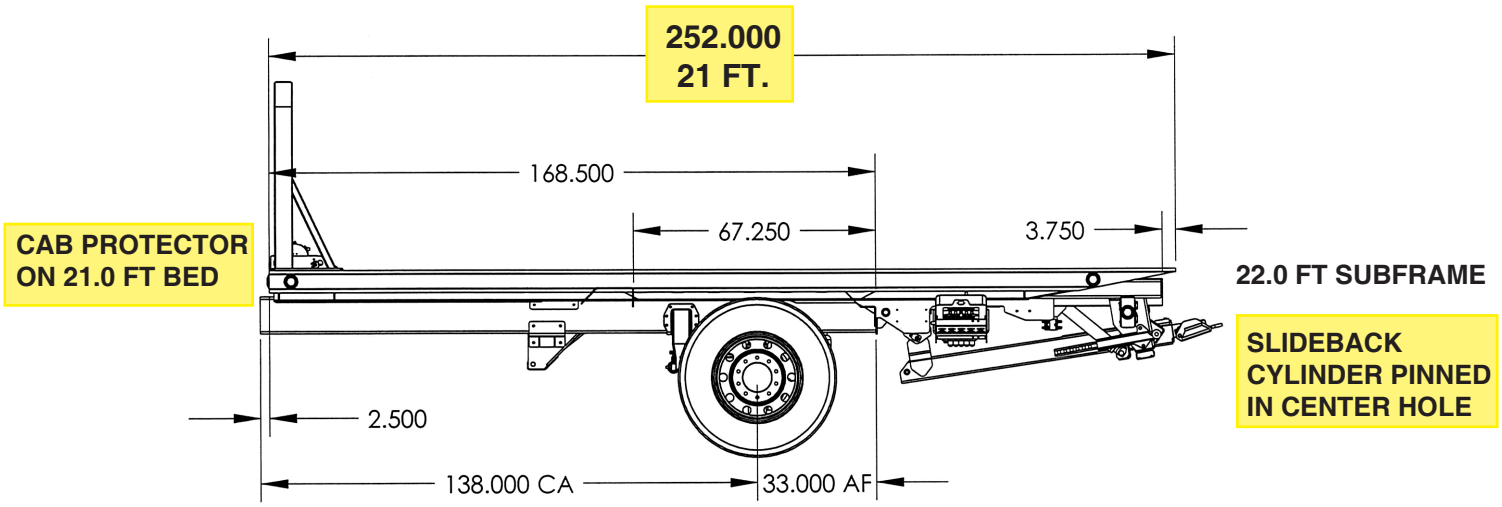
REV. 6/2017

		CAB-TO-AXLE DIMENSION (Inches)					
CARRIER LENGTH (Ft)	SUBFRAME RANGE (Ft)	BED MOUNTED CAB PROTECTOR	FMP 5 INCH BASE	FMP 8 INCH BASE	FMP 12 INCH BASE	HINGE PIN REAR OVER-HANG (In)	TILT CYLINDER LOCATION
20.5	21-22	N/A	N/A	N/A	144	81	Rear Drive Shaft
21	21-22	138	144	144-146	150	81	Rear Drive Shaft
21.5	21-22	144	150	150-152	156	81	Rear Drive Shaft
22	21-22	150	156	156-158	162	81	Rear Drive Shaft
23	23	154-156	160-162	162	166	89	Rear Drive Shaft
24	24	166	172	172-174	178	89	Middle Drive Shaft
25	25-26	170	176	176-178	182	97	Middle Drive Shaft
26	25-26	182	188	188-190	194	97	Middle Drive Shaft

NOTES:

- The rear hinge pin overhang increases with carrier length to improve load angle and turning radius.
- Carriers 23.5 ft. and longer have the tilt cylinders custom located to fit specific chassis crossmember spacing associated with the middle drive shaft.
- 12 inch Frame Mounted Pylons are intended to be used in combination with 9 inch urea tanks located within 17 inches of the back of the cab.
- Side Pullers SP8 and SP12 use the same CA dimensions as the 12 inch frame mounted pylons.
- SP12 units equipped for carriers should not include the control valve mounted on the SP12. Use the carrier wide control station options.
- SP12 units equipped for wreckers should include the solenoid control valve mounted on the SP12.
- Layouts are created for each sales order for 24 ft or longer. Consult Engineering layout before frame cutoff.
- **FMP 8 inch base is discontinued.**

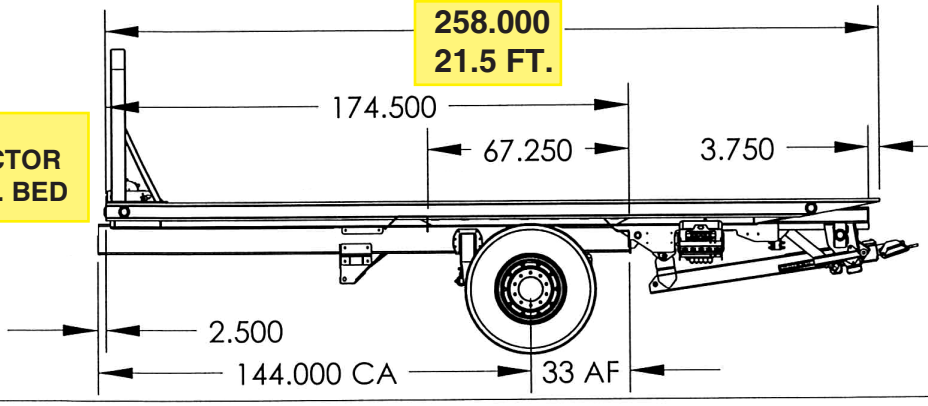
RECOMMENDED CARRIER LAYOUT CONFIGURATION FOR 138 CA



CA = CAB TO AXLE **AF = AFTER FRAME**

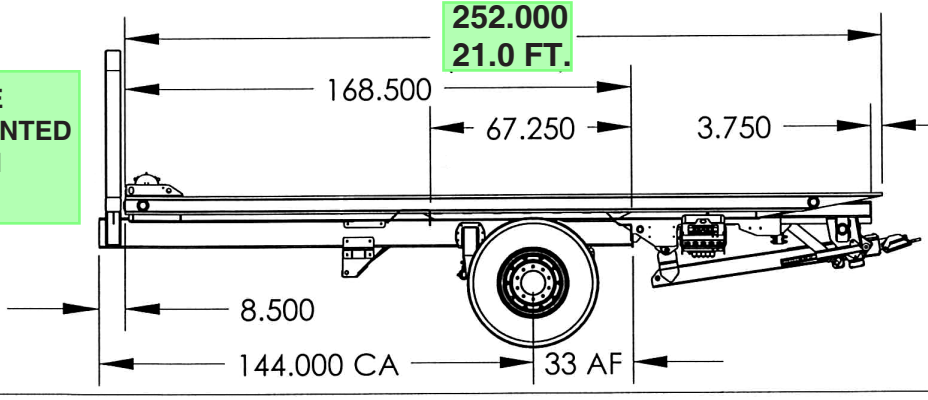
RECOMMENDED CARRIER LAYOUT CONFIGURATION FOR 144 CA

CAB PROTECTOR WITH 21.5 FT. BED



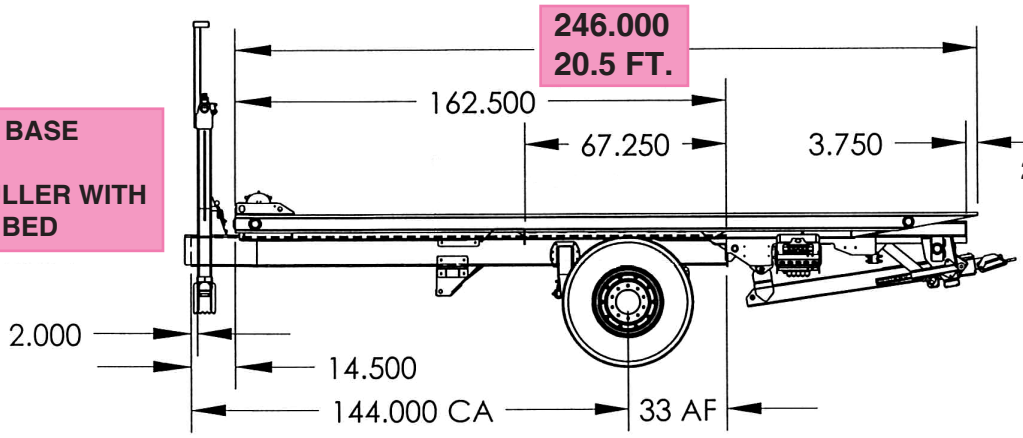
SLIDEBACK CYLINDER PINNED IN CENTER HOLE

5 INCH BASE FRAME MOUNTED PYLON WITH 21.0 FT. BED



SLIDEBACK CYLINDER PINNED IN CENTER HOLE

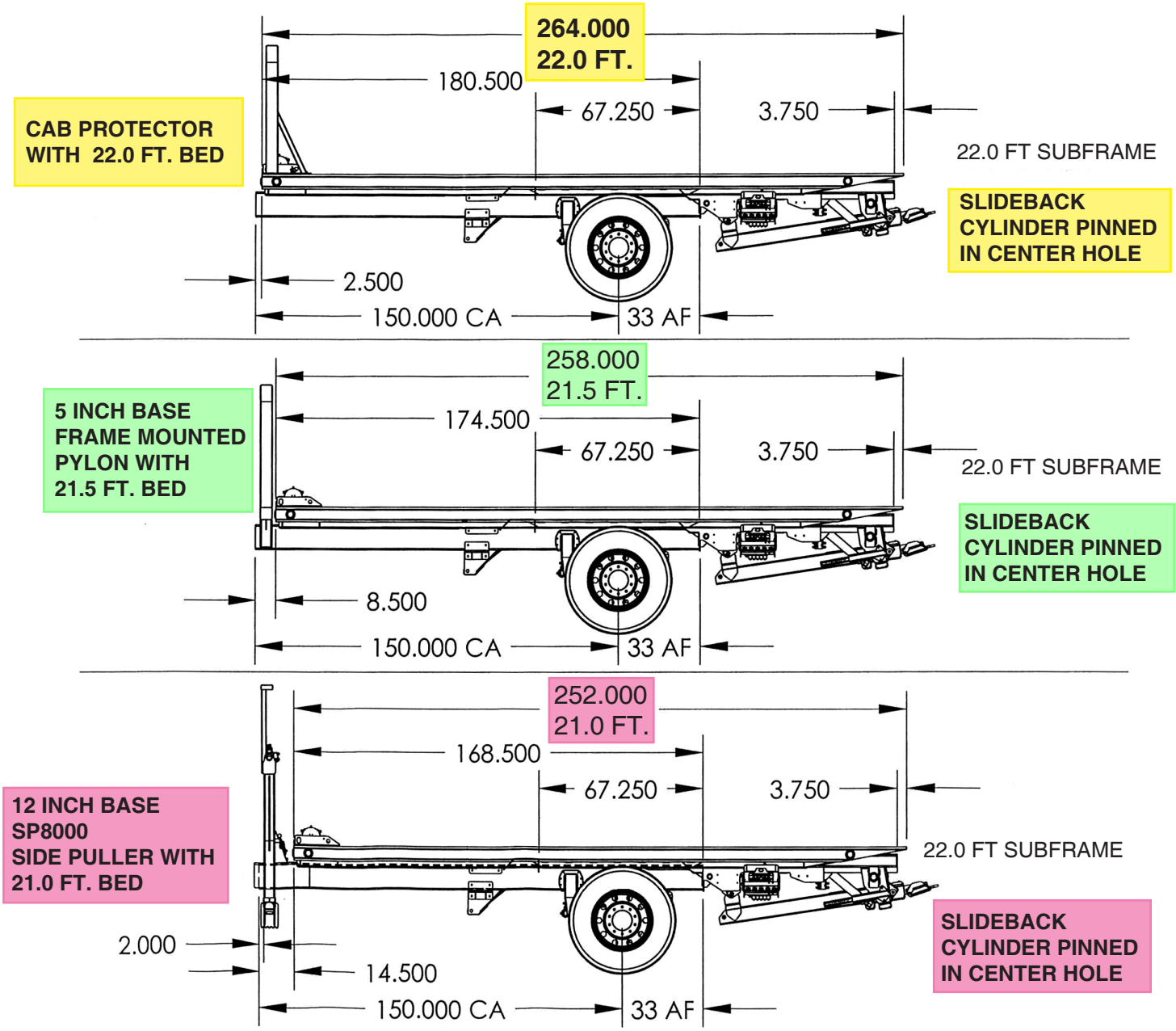
12 INCH BASE SP8000 SIDE PULLER WITH 20.5 FT. BED



SLIDEBACK CYLINDER PINNED IN CENTER HOLE

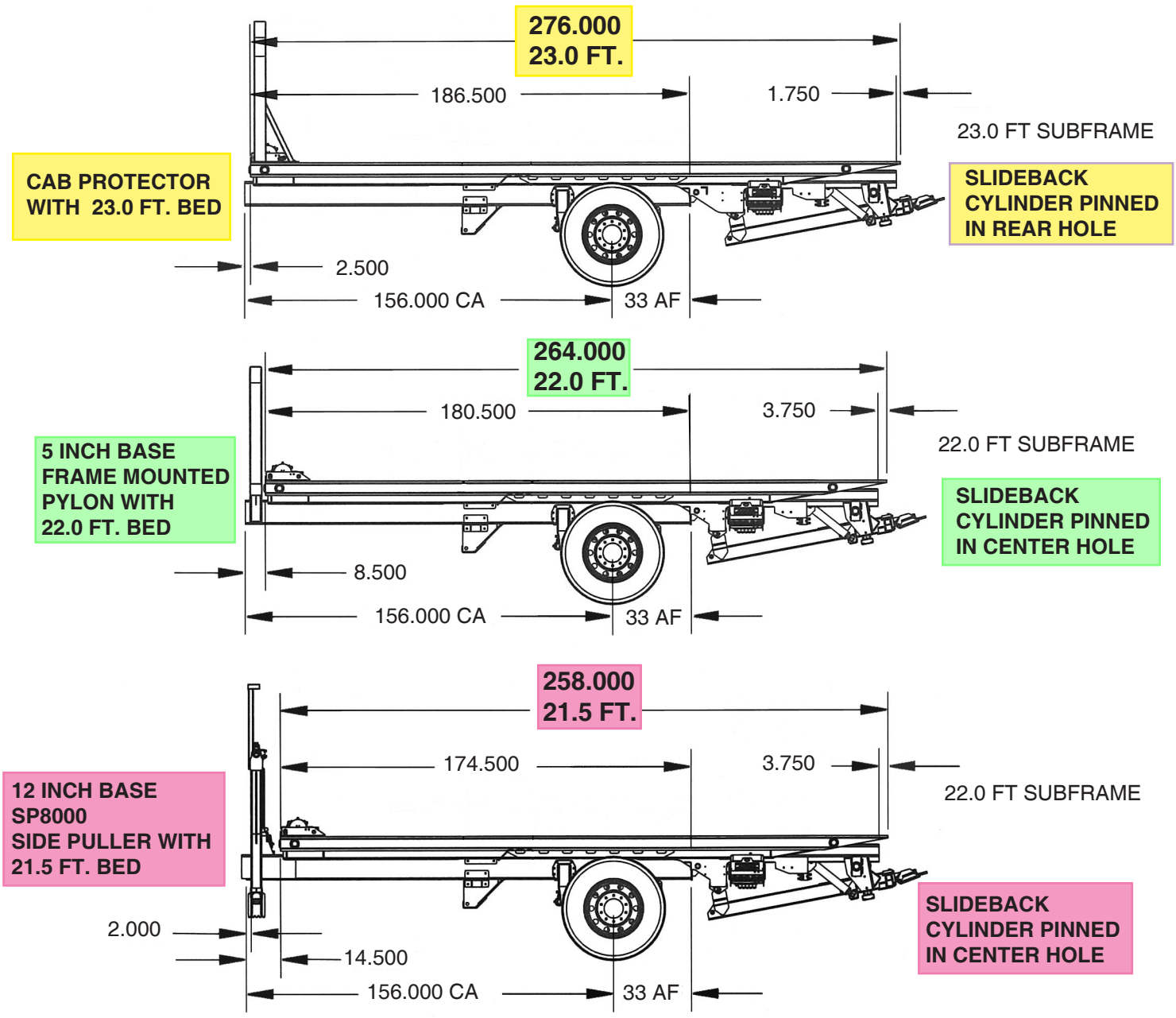
CA = CAB TO AXLE **AF = AFTER FRAME**

RECOMMENDED CARRIER LAYOUT CONFIGURATION FOR 150 CA



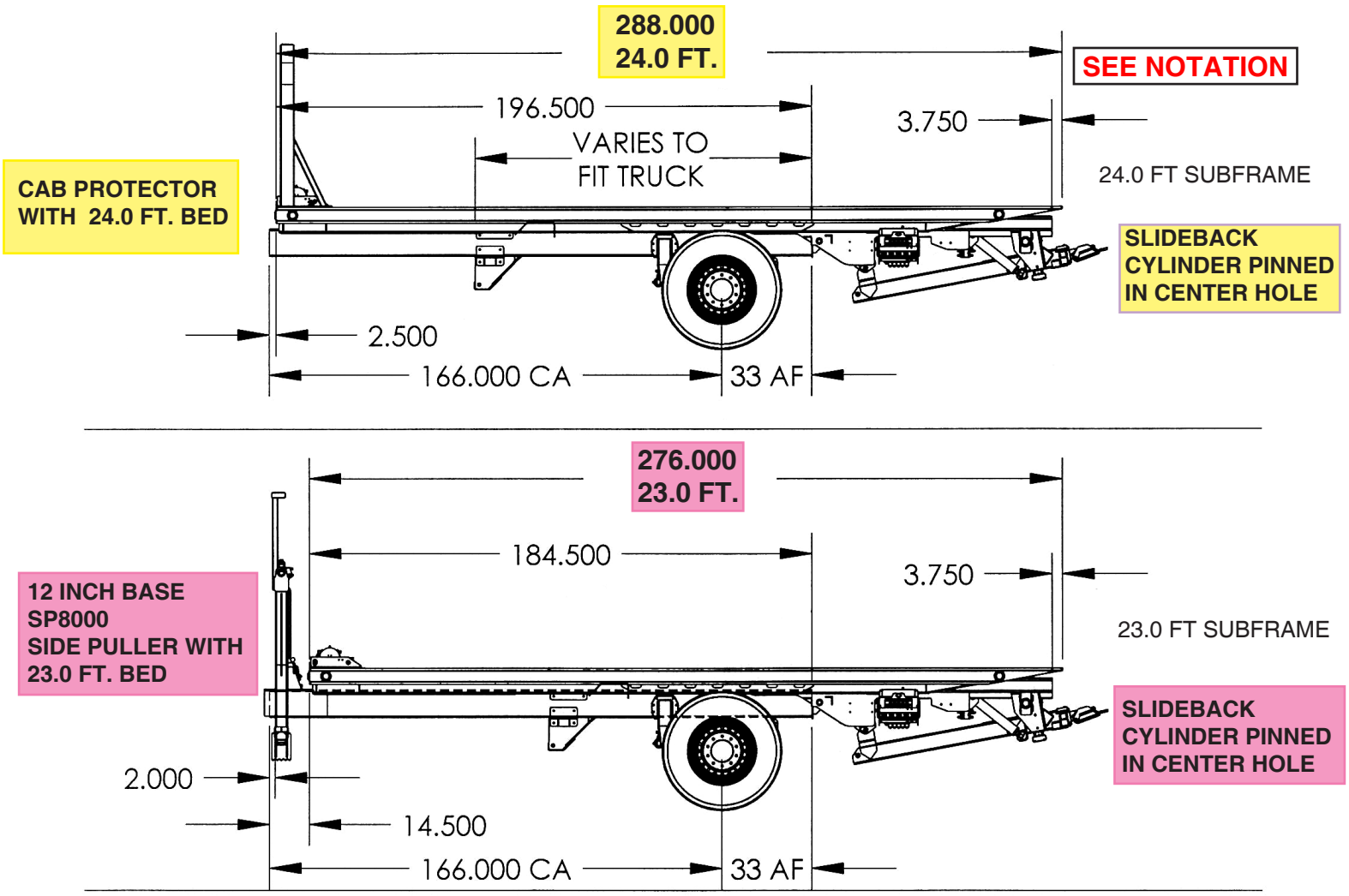
CA = CAB TO AXLE **AF = AFTER FRAME**

RECOMMENDED CARRIER LAYOUT CONFIGURATION FOR 156 CA



CA = CAB TO AXLE **AF = AFTER FRAME**

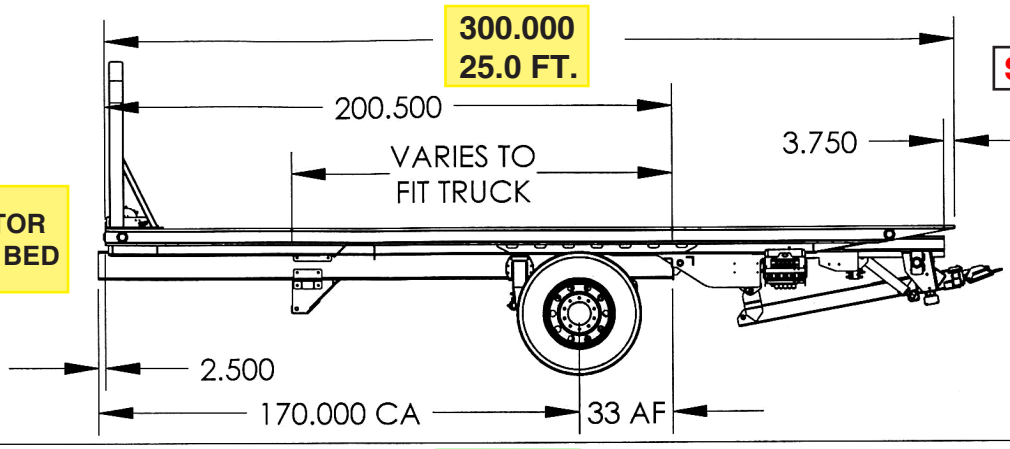
RECOMMENDED CARRIER LAYOUT CONFIGURATION FOR 166 CA



CA = CAB TO AXLE **AF = AFTER FRAME**

NOTE: Layouts are created for each sales order for 24 Ft. or longer. Consult engineering layout before frame cutoff.

RECOMMENDED CARRIER LAYOUT CONFIGURATION FOR 170 CA

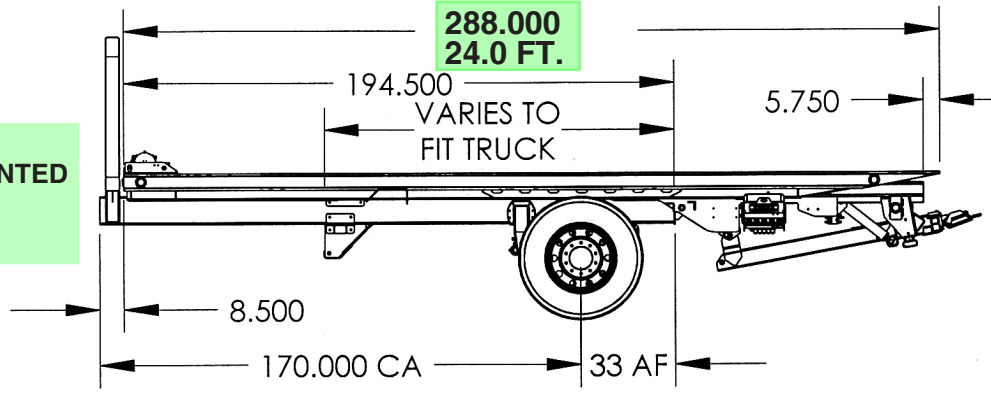


SEE NOTATION

26.0 FT SUBFRAME

CAB PROTECTOR WITH 25.0 FT. BED

SLIDEBACK CYLINDER PINNED IN CENTER HOLE

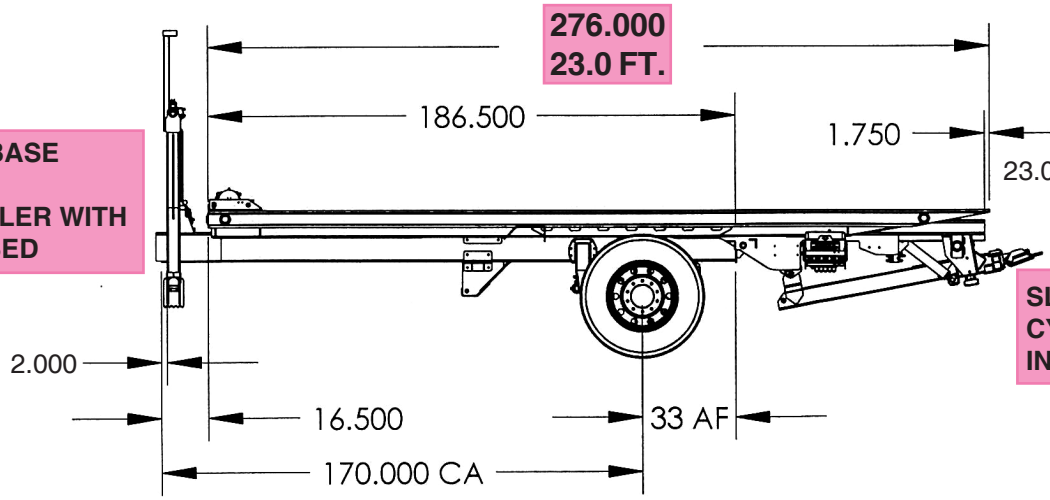


SEE NOTATION

24.0 FT SUBFRAME

5 INCH BASE FRAME MOUNTED PYLON WITH 24.0 FT. BED

SLIDEBACK CYLINDER PINNED IN FRONT HOLE



23.0 FT SUBFRAME

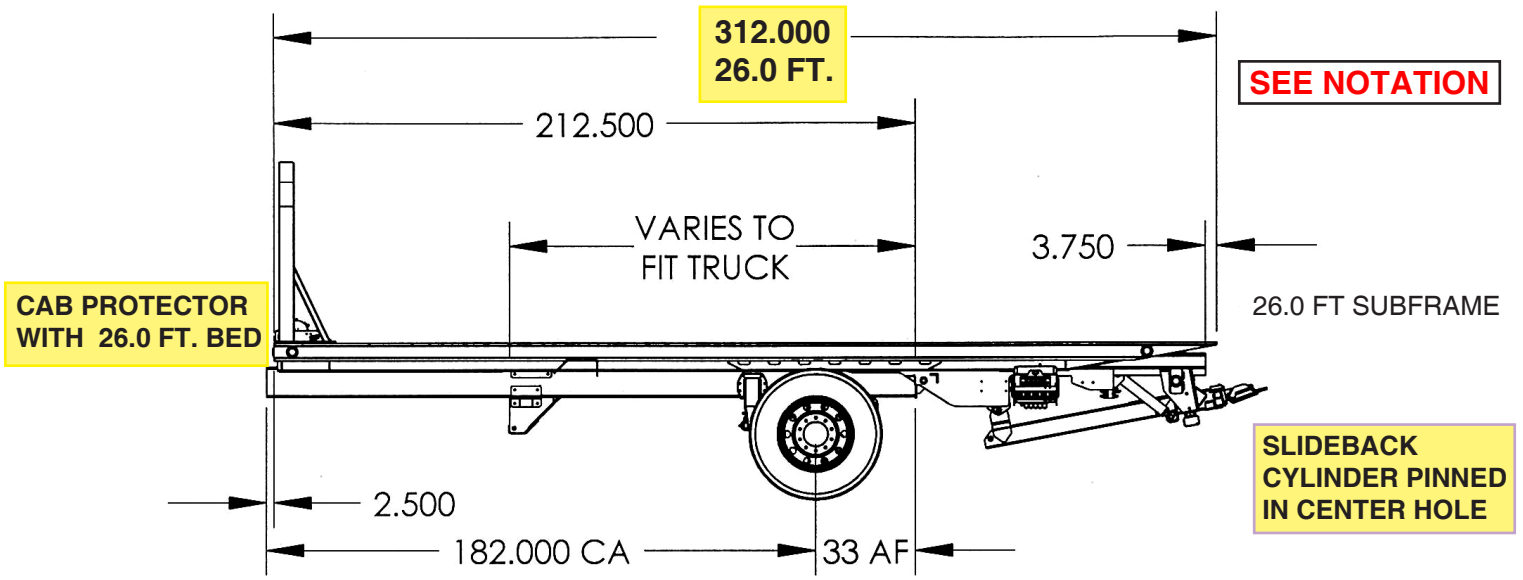
12 INCH BASE SP8000 SIDE PULLER WITH 23.0 FT. BED

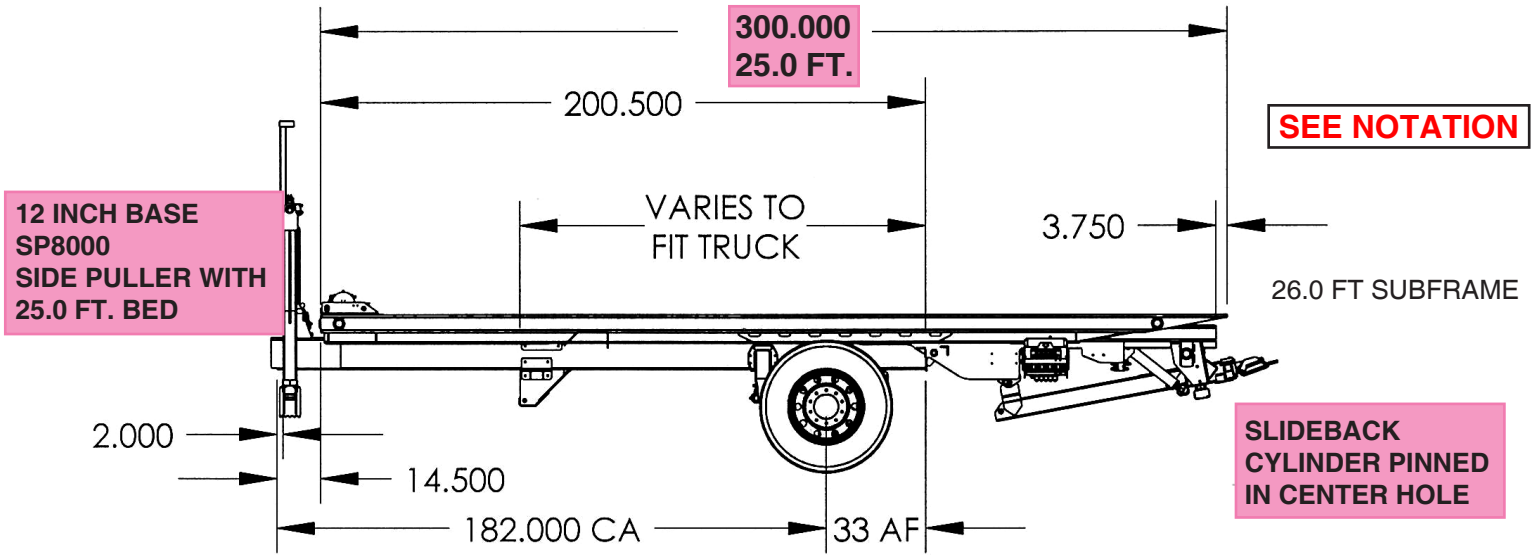
SLIDEBACK CYLINDER PINNED IN CENTER HOLE

CA = CAB TO AXLE **AF = AFTER FRAME**

NOTE: Layouts are created for each sales order for 24 Ft. or longer. Consult engineering layout before frame cutoff.

RECOMMENDED CARRIER LAYOUT CONFIGURATION FOR 182 CA





CA = CAB TO AXLE AF = AFTER FRAME

NOTE: Layouts are created for each sales order for 24 Ft. or longer. Consult engineering layout before frame cutoff.

Section VI - INSTALLATION
TRUCK FRAME HEIGHT AND TIRE HEIGHT

As a general rule, LCG carriers need the top of the truck frame to be approximately level with the top of the rear tires. When the installation is complete, the bed crossmembers will be 4.5 inches above the truck frame. The bed crossmembers should not be allowed to sit on top of the rear tires when the air bags are deflated. If the truck frame height is less than the rear tire height, it may be necessary to limit the distance the truck frame drops when the air bags are deflated. See the photo below as one example for limiting the distance the truck frame drops..

TIRE SIZE

The recommended tire sizes for Series 16 LCG carriers are:

275/70R22.5 Aluminum rear inside wheels required

Larger tires can present a clearance problem beside the bed slide rails. There must be no less than 49 inches between the inside rear tires side to side. Larger tires listed must have aluminum inside wheel for adequate bed slide clearance.

EXHAUST

Identify the tilt cylinder zone. On carriers 23 ft. and shorter, the tilt cylinder One is between chassis crossmembers above the rear drive shat. On carriers 24 ft. and longer, the tilt cylinder zone is between chassis crossmember above the 2nd drive shaft from the rear axle. The chassis must be equipped with an exhaust design that keeps the tail pipe forward of the tilt cylinders. Do not use long in-line horizontal exhausts. The tail pipe should be i close proximity to the back of the cab.

Section VI - INSTALLATION
SHOCK ABSORBER REMOUNT

The low profile slide rails on LCG carriers may require outboard shock absorber relocation to clear the bed slide rails or subframe hinge plates. When remounting the shock absorbers, care must be taken as part of the installation planning to make sure the shock absorbers cannot retract far enough to "bottom out" especially with air-bag suspensions. Use this procedure;

1. Dismount the top of the shock absorber observing the torque of the shock bracket mounting bolts. Make sure the air-bags are inflated.

2. Collapse the shock absorber completely.

3. Mark a line indicating the location of the bottom of the outer shock absorber tube onto the inner shock absorber tube.

4. Deflate the air bags. Plan the new upper location of the shock absorber in a way that positions the bottom of the outer shock absorber tube at least 1/2 inch above the line marked on the inner shock absorber tube.

5. Remount the shock absorber bracket. Tighten the mounting bolts to the factory torque.

6. Remount the top of the shock absorber.

Shown below is Hino shock absorber remounted with a Series 12 LCG carrier.

Driver Side

Passenger Side

Section VI - INSTALLATION

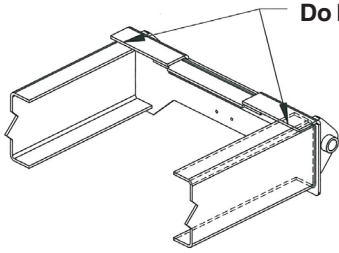
HINGE ANGLE

Make sure the chassis frame rails are parallel on flat level pavement. If the frame rails are not parallel, the suspension may need corrected or shimmed.

⚠ CAUTION

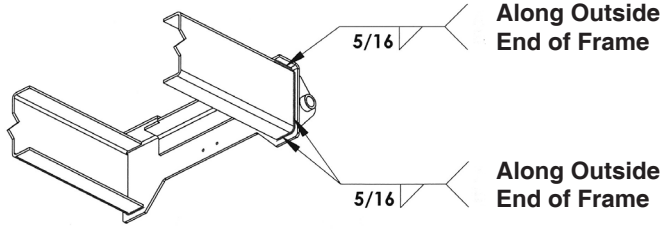
If the frame rails are not parallel when the carrier is installed, the carrier will tilt unevenly so that one side lifts before the other and one side will land before the other. The left front frame height **MUST** equal the right front frame height. The left rear frame height **MUST** equal the right rear frame height. If the frame rail elevations are slightly uneven, make them match with a floor jack or jack stands before welding the hinge angle. **DO NOT** weld the hinge angle to the truck frame if the frame rails are uneven. Uneven tilting cannot be fixed when the hinge angle is welded to uneven frame rails. If the frame rails are significantly uneven get them fixed at a truck dealer before installing the subframe onto the truck.

Burn off the excess after-frame and grind the frame end straight and smooth.



⚠ WARNING

The rear chassis crossmember at the frame cut-off may need to be relocated forward. **DO NOT** remove and discard this chassis crossmember. **DO NOT** rely on the hinge angle by itself to function as the rear chassis crossmember.



Pin the hinge angle to the subframe if it is not already mounted. Position the subframe on the truck frame. Make sure the subframe is centered side to side on the chassis front and back. Also make sure that the subframe is horizontally parallel with the truck frame. **WARNING: DO NOT** fit the angle to the truck frame without the subframe pinned to it.

Clamp the subframe vertically to the truck frame near the hinge and front cross member. Weld the hinge angle to the end of the truck frame. The weld bead should travel horizontally along the frame radius vertically down the frame cut-off and across the bottom frame flange. **DO NOT** weld across the top frame flange as this can cause a stress crack. **DO NOT** weld anywhere else on the truck frame. **WARNING**: The welds to the upper half of the truck frame can only be applied by unpinning the subframe and lifting it out of the way. After applying the welds as described, lower the subframe and re-pin it to the hinge angle. Do not forget to insert the hinge pin retaining bolts and lock nuts.

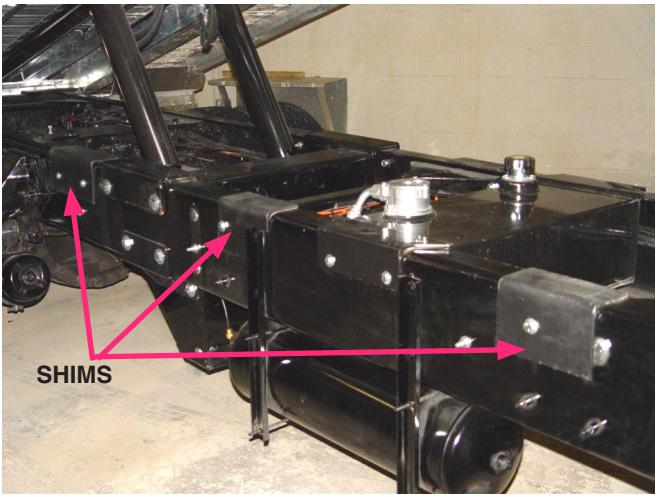
Clean and repaint the heat affected areas of the truck frame and the hinge angle.

Section VI - INSTALLATION
CHASSIS CONSIDERATIONS

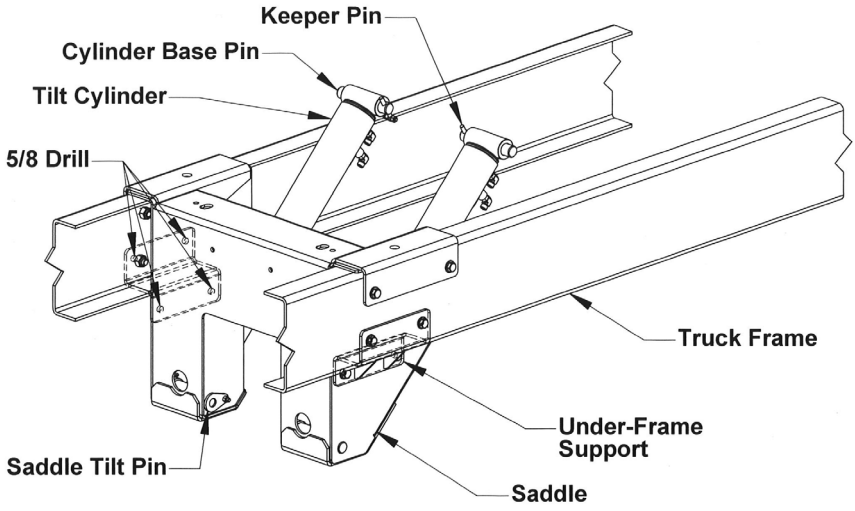
CAUTION

ALUMINUM CARRIERS MOUNTED ON PETERBILT CHASSIS MUST HAVE THE HINGE ANGLE AND SUBFRAME AT EACH OF IT'S CROSSMEMBERS SHIMMED UP 1/4 INCH ABOVE THE TRUCK FRAME TO PROVIDE CLEARANCE BETWEEN THE ALUMINUM BED SLIDE RAILS AND THE REAR AXLE SPRING HANGERS.

The slide rails on aluminum beds protrude below the top of the truck frame 1/2 inch more than the I-beam slide rails on steel beds.



Section VI - INSTALLATION
INBOARD SADDLE



Pin and bolt the tilt cylinder base pin and keeper pin into the subframe tilt cylinder box using 3/8 x 1-1/2 bolts, flat washers, and nylon lock nuts.

With the saddle placed on the truck frame, pin the rod end of the tilt cylinders into the saddle. Bolt the saddle tilt pins to the saddle using 3/8 x 1-1/4 bolts and nylon lock nuts.

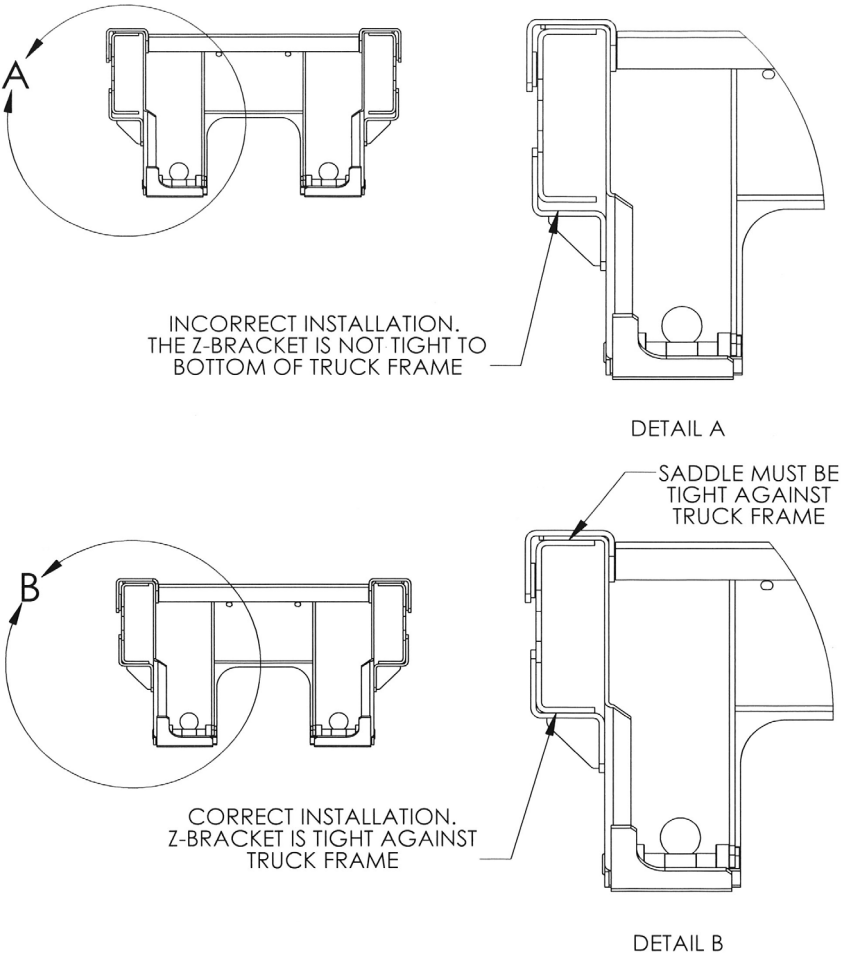
Completely retract the tilt cylinders and clamp the saddles tight to the top frame flange. Scribe a line onto the truck frame along the back of the saddles. Unclamp the saddles and reposition them forward 1/8 inch from the scribed line. This saddle repositioning will cause the tilt cylinders to extend 1/8 inch so that the cylinders can be hydraulically pre-loaded to remove excess pin clearance that can cause the subframe to rattle against the truck frame. Reclamp the saddles and drill two 5/8 x 2-1/4 bolt and nylon lock nuts.

Clamp the under-frame support angle tight to the bottom frame flange and saddle as shown. Drill two bottom row 5/8 holes in the saddle and two top row 5/8 holes in the truck frame through the support angle. Fasten the support angles to the saddles with 5/8 x 2 bolts and nylon lock nuts.

⚠ CAUTION

MAKE SURE THE SADDLE IS TIGHT TO THE TOP OF THE FRAME. THE Z-GUSSET MUST BE TIGHT AGAINST THE BOTTOM FRAME FLANGE TO PREVENT CRACKING OF THE SADDLE IN ITS HORIZONTAL BENDS.

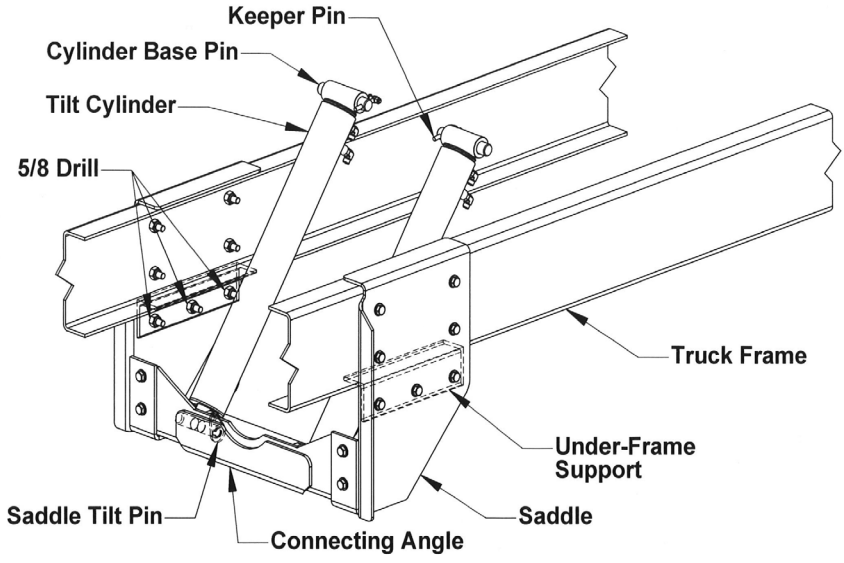
Section VI - INSTALLATION
SADDLE Z-BRACKET



WARNING

The Z-bracket must be tight to the bottom of the truck frame to prevent the inboard saddle from flexing. If the saddle is allowed to flex, fatigue cracks may develop along the bends of the saddle and the Z-brackets.

Section VI - INSTALLATION
OUTBOARD SADDLE



Pin the tilt cylinder feet to the base of the tilt cylinders as shown. Bolt the tilt cylinder feet into the subframe tilt cylinder box using 3/8 x 1-1/2 bolts, flat washers, and nylon lock nuts.

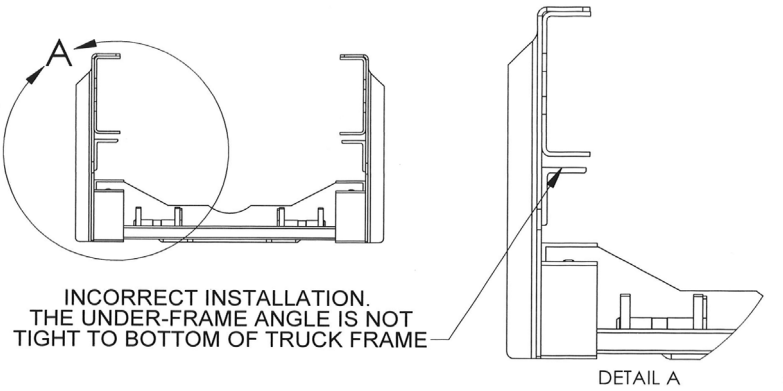
Temporarily clamp the saddles to the truck frame and bolt the connecting angle to the saddles with 5/8 x 2 bolts, flat washers, and lock nuts six places.

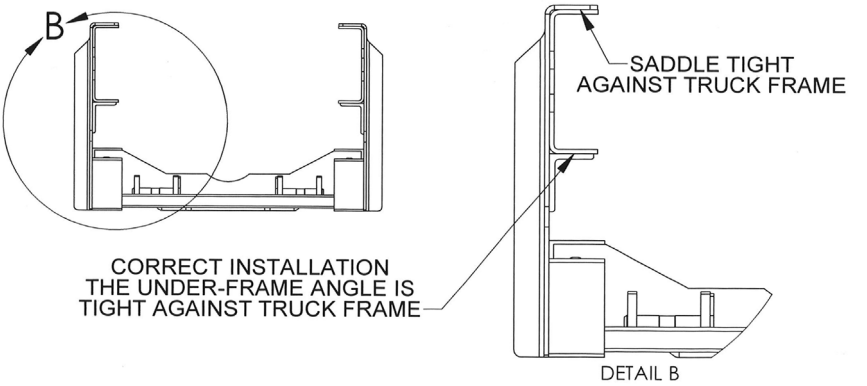
Unclamp the saddles and pin the rod end of the tilt cylinders into the connecting angle. Bolt the saddle tilt pins using 3/8 x 1-1/2 bols and nylon lock nuts.

Completely retract the tilt cylinders and clamp the saddles tight to the top frame flange. Scribe a line onto the truck frame along the back of the saddles. Unclamp the saddles and reposition them forward 1/8 inch from the scribed line. This saddle repositioning will cause the tilt cylinders to extend 1/8 inch so that the cylinders can be hydraulically pre-loaded to remove excess pin clearance that can cause the subframe to rattle against the truck frame. Reclamp the saddles and drill four 5/8 saddle holes through each frame rail. Bolt the saddles to the frame with 5/8 x 2-1/4 bolts and nylon lock nuts.

Clamp the under-frame support angle tight to the bottom frame flange and saddle as shown. Drill three bottom row 5/8 holes in the saddles through the support angle. Fasten the support angles to the saddles with 5/8 x 2 bolts and nylon lock nuts.

OUTBOARD SADDLE MOUNTING ANGLE

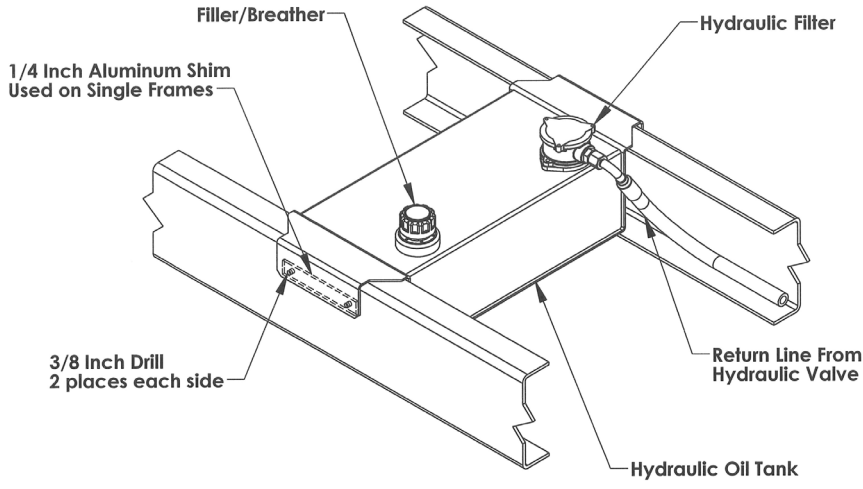




WARNING

The mounting angle must be tight to the bottom of the truck frame to prevent the outboard saddle from flexing. If the saddle is allowed to flex, fatigue cracks may develop along the bends of the saddle.

Section VI - INSTALLATION
INBOARD OIL RESERVOIR



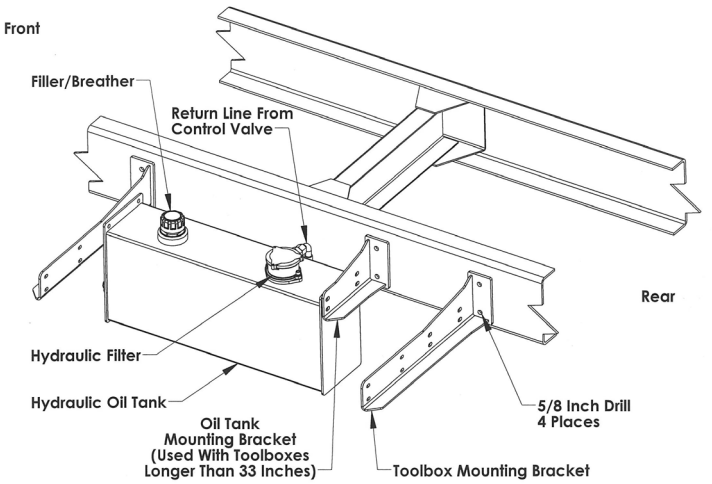
Chassis that have clear space between the frame rails use the inboard hydraulic oil tank. The inboard oil tank allows the suction and return lines to remain inside the truck frame along with the pump and control valve. Position the tank so that the return line does not interfere with a chassis crossmember. The bottom of the tank is equipped with two suction line ports to accommodate left or right side PTO installations. The unused port is closed off with an O-ring plug. Drill four 3/8 holes through the side of the frame rails and fasten the tank to the frame with 3/8 bolts and lock nuts. Chassis that do not have doubled frames require an aluminum shim as shown above.

The filter is submerged inside the tank. It is a 25 micron filter with a 30 GPM flow capacity and it is compatible with both 18 and 24 GPM pumps. The filter element can be changed by removing the top filter cover.

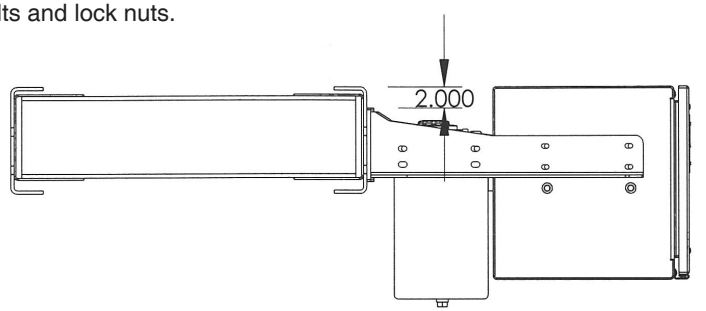
⚠ CAUTION

TO PREVENT DAMAGE TO HIGH PRESSURE HOSE, USE EXTREME CARE WHEN ROUTING THROUGH FRAME. KEEP HOSES AWAY FROM EDGES THAT CAN PRESS INTO THE HOSES.

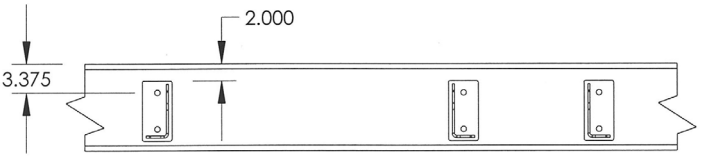
Section VI- INSTALLATION
OUTBOARD OIL RESERVOIR



Chassis that do not have sufficient space between crossmembers for the inboard hydraulic oil tank use the outboard hydraulic oil tank. Position the tank so there is sufficient clearance between the top of the oil tank filler cap and the bottom of the body main rail. Be sure never to drill any holes closer than 2.5 inches from the top or bottom of the truck frame. A hole too close to the frame flange will drastically reduce the strength of the frame and could result in catastrophic failure. Drill four 5/8 holes through the side of the frame rail and fasten the tank to the frame with 5/8 bolts and lock nuts.



Top of toolbox is level with top of truck frame. Top of toolbox bracket is 2 inches below top of truck frame.



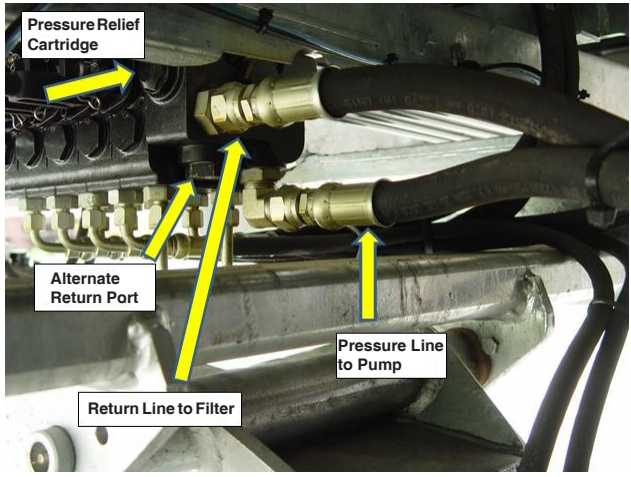
Fasten the tank to the mounting bracket using 1/2 bolts and lock nuts.

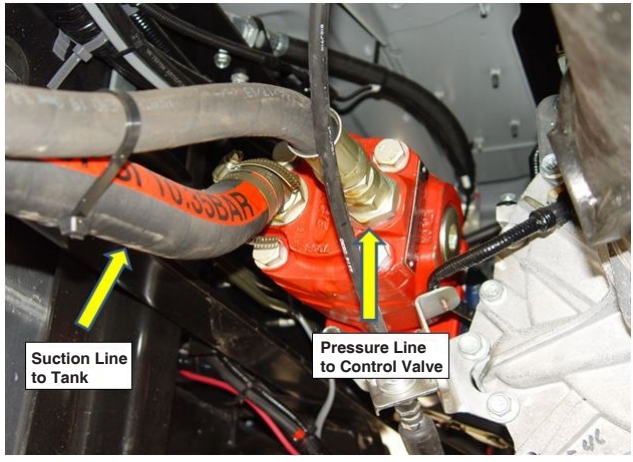
Section VI - INSTALLATION
HYDRAULIC HOOK-UP

The filter is submerged inside the tank. It is a 25 micron filter with a 30 GPM flow capacity and it is compatible with both 18 and 24 GPM pumps. The filter element can be changed by removing the top filter cover.

	HOSE DIAMETERS		
PUMP	**INLET/SUCTION HOSE**	**RETURN HOSE**	**PRESSURE HOSE**
15 GPM	1-1/4	3/4	3/4
18 GPM	1-1/4	3/4	3/4
23-24 GPM	1-1/2	1.00	3/4

Route and attach the pressure line from the inlet port of the control valve along the truck frame to one of the pressure ports on the pump. Route and attach the return line from the outlet port of the control valve along the truck frame to the inlet port of the filter. These hoses should cross over along a chassis crossmember to the passenger side truck frame rail.





Secure the hoses to the truck frame with bolt-on rubber covered cushion clamps.

Fill the hydraulic reservoir up to the bottom of the filler neck screen with high quality multi-purpose ATF.

Check to make sure all hose connections are properly tightened. Plug the unconnected end of the winch hoses with suitable fittings. Reconnect the battery ground cable to the battery ground terminal.

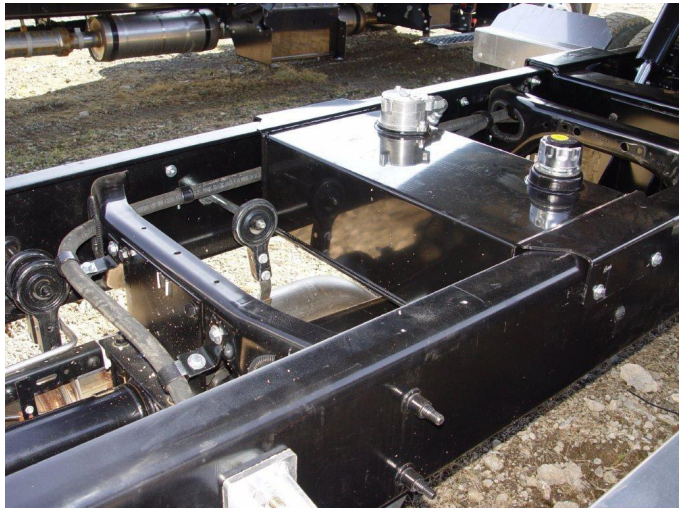
Start the truck engine and engage the PTO. Completely cycle all cylinders to pressure by-pass in both directions at least 3 times to remove all air from the hydraulic system.

CAUTION

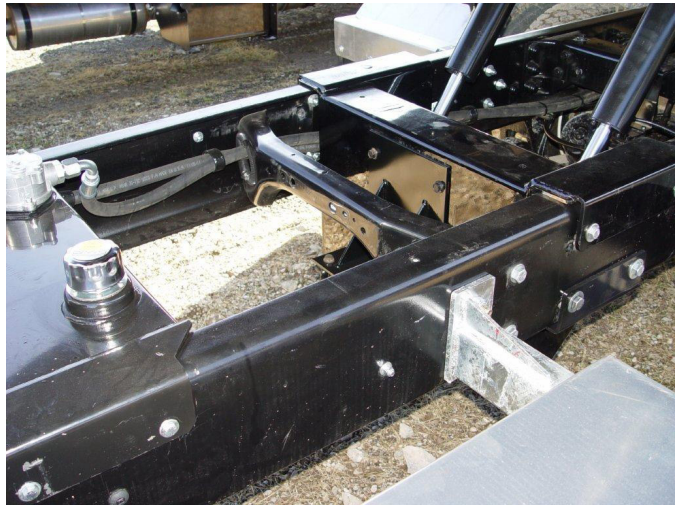
The slideback cylinder shaft must be vertically supported by hand while it is being extended and retracted. Failure to support the slideback cylinder shaft while it is being cycled will put excessive force on the internal seals from the extended weight of the shaft. This excessive force can damage the cylinder seals. If the seals become damaged, the cylinder may leak or drift during normal operation.

Check the oil level in the reservoir with all cylinders retracted. Refill as necessary until the oil level reaches the bottom of the filler neck screen.

PRESSURE AND RETURN LINE HOSE ROUTING



The driver's side frame rail is typically congested with the chassis builder's hoses and wires. Therefore, the pressure and return line hoses should be routed along the passenger side frame rail. Fasten the hoses as shown with rubberized hose clamps. Take care to prevent the hoses from contacting metal edges.



Using a paint brush, apply grease to the full length of the subframe rails on the top and sides.

Lift the body and slide it onto the subframe to within 6 feet of the front of the subframe. Extend the slideback cylinder and pin it to the body at the cylinder mount. Do not extend the slideback cylinder more than 6 feet with the cylinder rod unsupported. A slideback cylinder that is substanitally extended with the rod unsupported puts extreme stress on the internal seals and degrades the life of the cylinder.

Section VI - INSTALLATION
LOOP HARNESS

The loop harness cable electrically joins the junction box in the subframe to the junction box in the bed. The loop harness is routed through a flexible track shown above. The track is bolted to the front end of the subframe tray. Route the loop harness through the underbody conduit tube to the front of the bed for connection to the junction box. Fasten the Igus track mounting bracket to its mounting holes under the bed with #10 - 24 x 2 socket head cap screws and nylon lock nuts provided.

Section VI - INSTALLATION
WINCH HOSES

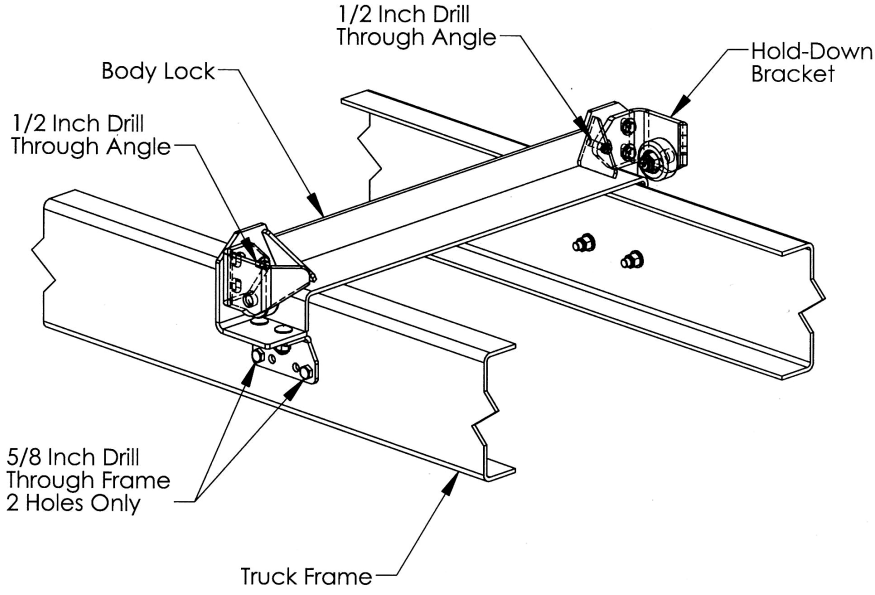
The winch hoses are joined to the subframe at one end by means of a pair of bulkhead fittings, and to the underbody fluid tubes at the other end. The winch hoses when laid flat should reach 21-1/2 inches past the subframe hose tray or 2-3/4 inches past the Igus track.

Connect and tighten the winch hoses to the underbody fluid tubes.

Fasten the Igus track mounting bracket to its mounting holes under the bed. Using #10 - 24 x 2 socket head cap screws and nylon lock nuts provided.

Attach the cable to the winch drum. If the winch is an upright design, under-wind the cable so that the cable is tangent to the bottom of the drum barrel near the bed surface. Never over-wind a cable on an upright winch. The additional torque applied to an upright winch with an over-wound cable can cause the winch to break loose from the bed.

Section VI - INSTALLATION
BODY LOCK



Position the body lock on the truck frame near the back of the cab. Slide the body fully forward and re-adjust the body lock so that there is 1/2 inch gap between the vertical face of the body lock and the bed I-beams.

Clamp the bed lock to the top flange of the truck frame. Bolt the body lock mounting brackets to the body lock angle with 5/8 carriage bolts. Drill two 5/8 holes for each bracket into the truck frame. Use one hole on each side of center of the mounting bracket. Fasten the body lock to the truck frame with 5/8 x 2 grade 5 bolts and nylon lock nuts.

Adjust the height of the hold-down brackets so that they pull the body down 1/8 inch. The hold-down brackets have 2 slotted holes to allow vertical adjustment. Tighten the bolts in the slotted holes. Drill the third hole in each hold-down bracket 1/2 inch in diameter and fasten with 1/2 x 2 grade 5 bolts and nylon lock nuts. This third drilled hole will lock each hold-down bracket from moving along the slotted holes.

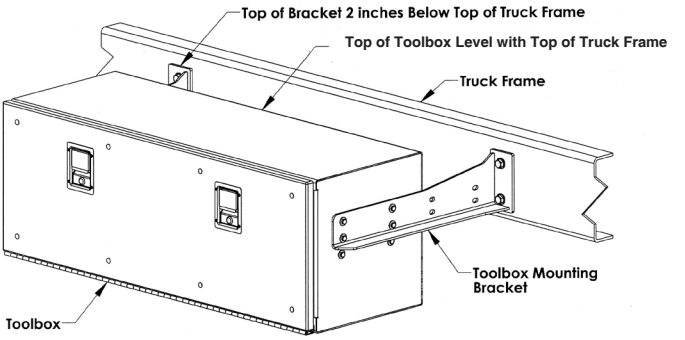
Section VI - INSTALLATION
TOOLBOX INSTALLATION

Fasten the toolbox mounting brackets to the toolbox with 3/8 x 1-1/2 grade 5 bolts, flat washers, and nylon lock nuts through the top and middle holes as shown. Make sure that the mounting brackets are parallel with the top of the toolbox.

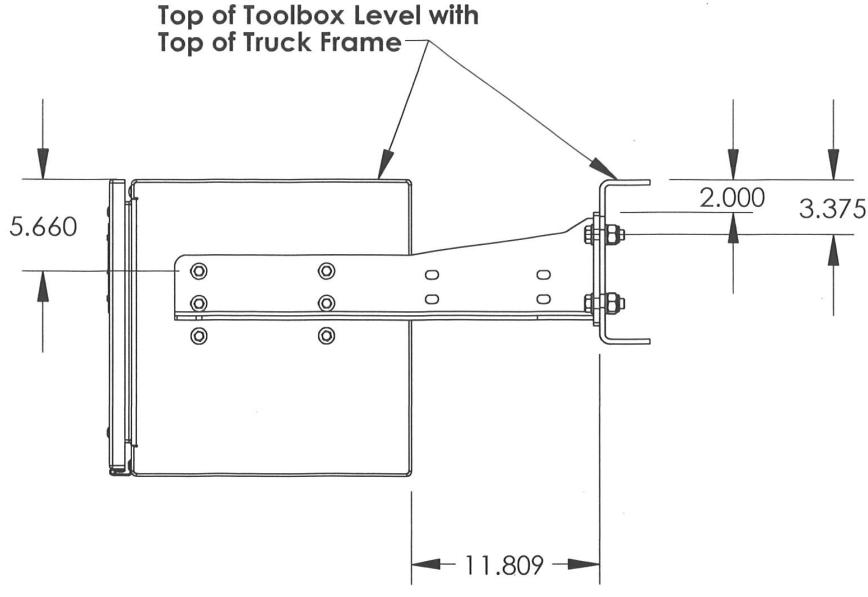
Position the toolbox mounting brackets 2 inches below the top of the truck frame and scribe the mounting holes onto the truck frame. The center of the holes should be 3-3/8 inches away from the frame flanges. Remove the box and drill 21/32 holes through the truck frame. **WARNING**: If toolboxes or toolbox mounting brackets are being used other than what is specifically shown here, make sure the mounting bracket holes drilled into the frame are no closer than 2-1/4 inches away from the frame flanges. Holes that are drilled too close to the frame flanges pose a potential risk for frame damage over time.

Bolt the toolbox to the truck frame with 5/8 x 2 grade 5 bolts and nylon lock nuts. The toolboxes should be mounted so that the top of the boxes are level with the top of the truck frame. **DO NOT** mount the toolbox higher than the truck frame or it will collide with the bed.

For tandem toolbox installations, use optional spacer channel PN 37760 between the boxes on the same mounting bracket. Use four 3/8 x 3-1/2 grade 5 bolts, flat washers and nylon lock nuts.



Section VI - INSTALLATION
LCG CARRIER TOOLBOX MOUNTING



MUDFLAP INSTALLATION

Attach the splash guard to the subframe as shown with 3/8 x 1-1/4 bolts, flat washers and lock nuts. Fasten the mudflaps between the splash guard and backing plate with 3/8 x 1-1/4 bolts, flat washers and lock nuts.

FINAL MOUNTING

(a) Install light mounting bar to carrier bed as shown in Figure 7.17.

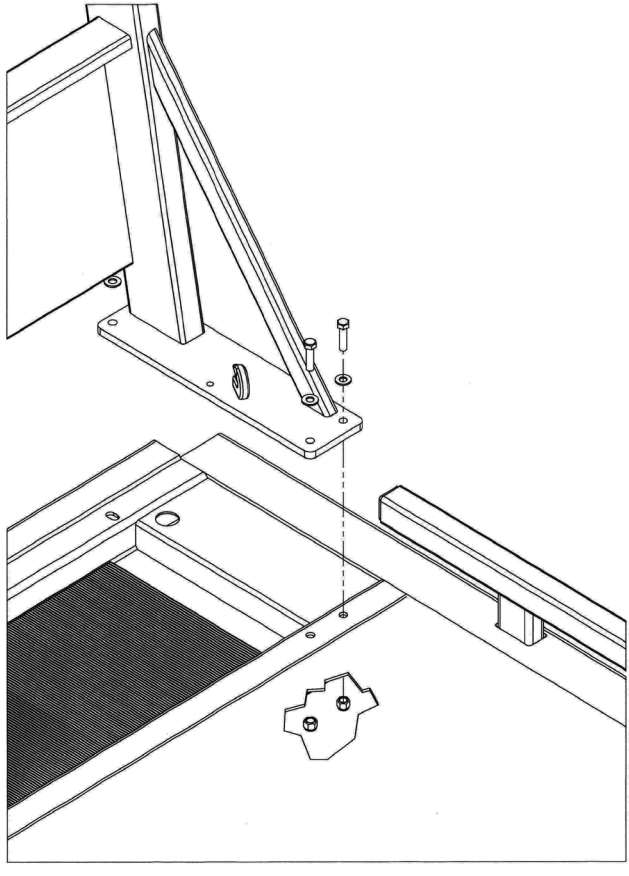


FIGURE 7.17

ELECTRICAL CONNECTIONS

Refer to Electrical Schematic,

(a) Wire up light bar.

(b) Wire up clearance lights.

(c) Wire up PTO switch and control panel illuminator lights.

Section VI - INSTALLATION
SUBFRAME WIRING (AMERICAN TRUCKS)

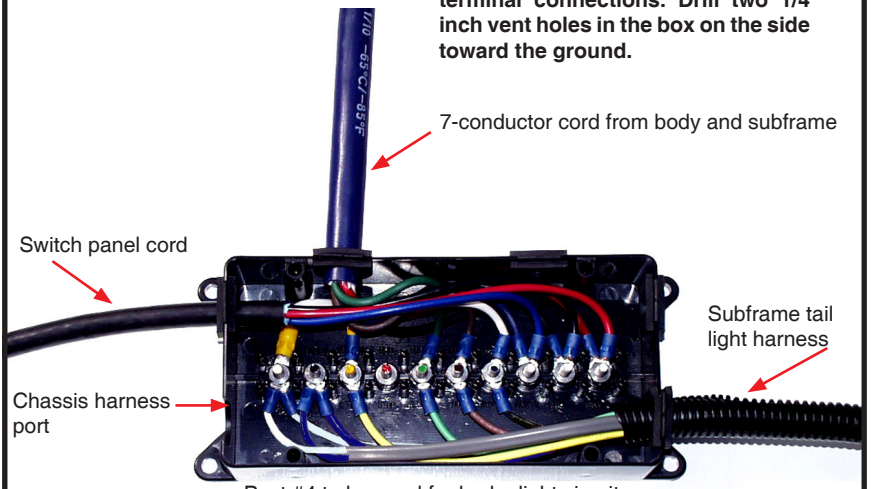
COMBINED BRAKE AND TURN SIGNALS

Refer to the wire chart when making electrical connections in the junction boxes.

	POST#	FUNCTION	SUBFRAME HARNESS WIRE COLOR/GAUGE	BAR LIGHT CORD WIRE COLOR/GAUGE
CHASSIS CIRCUITS	1	Ground	White 12	White 10
	2	Back-Up	Blue 14	N/A
	3	LH Turn/Brake	Yellow + (Yellow Stripe) 14	Yellow 12
	4	Reserved	N/A	N/A
	5	RH Turn/Brake	Green + (Green Stripe) 14	Green 12
	6	Marker/Clearance	Brown 14	Brown 12
AUXILIARY CIRCUITS	7	Lower Work Lights	Black 14	N/A
	8	Upper Work Lights	N/A	Blue 12
	9	Rotate Lights	N/A	Black 12
	10	Flashing Lights	N/A	Red 12

Subframe Junction Box

NOTE: Use electrical grease on all terminal connections. Drill two 1/4 inch vent holes in the box on the side toward the ground.



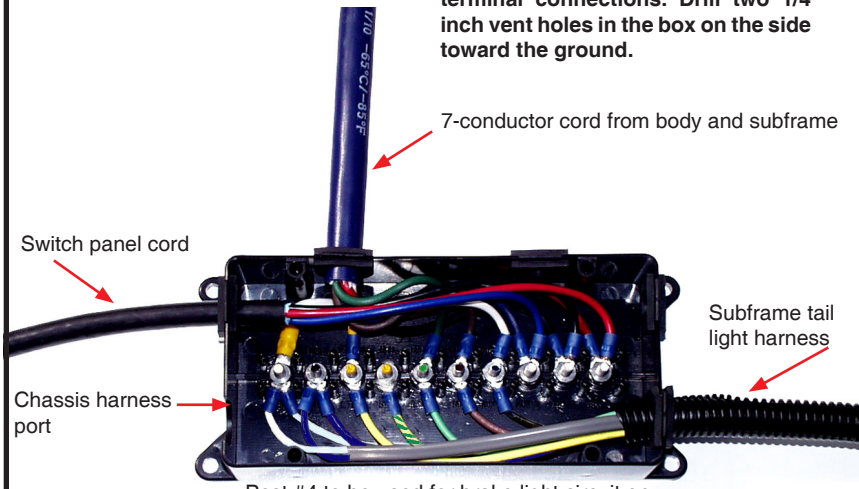
Section VI - INSTALLATION
SUBFRAME WIRING (FOREIGN TRUCKS)
INDEPENDENT BRAKE AND TURN SIGNALS

Refer to the wire chart when making electrical connections in the junction boxes.

	POST#	FUNCTION	SUBFRAME HARNESS WIRE COLOR/GAUGE	BAR LIGHT CORD WIRE COLOR/GAUGE
CHASSIS CIRCUITS	1	Ground	White 12	White 10
	2	Back-Up	Blue 14	N/A
	3	LH Turn	Yellow 14	Yellow 12
	4	Independent Brake	Yellow Stripe 14 + Green Stripe 14	
	5	RH Turn	Green 14	Green 12
	6	Marker/Clearance	Brown 14	Brown 12
AUXILIARY CIRCUITS	7	Lower Work Lights	Black 14	N/A
	8	Upper Work Lights	N/A	Blue 12
	9	Rotate Lights	N/A	Black 12
	10	Flashing Lights	N/A	Red 12

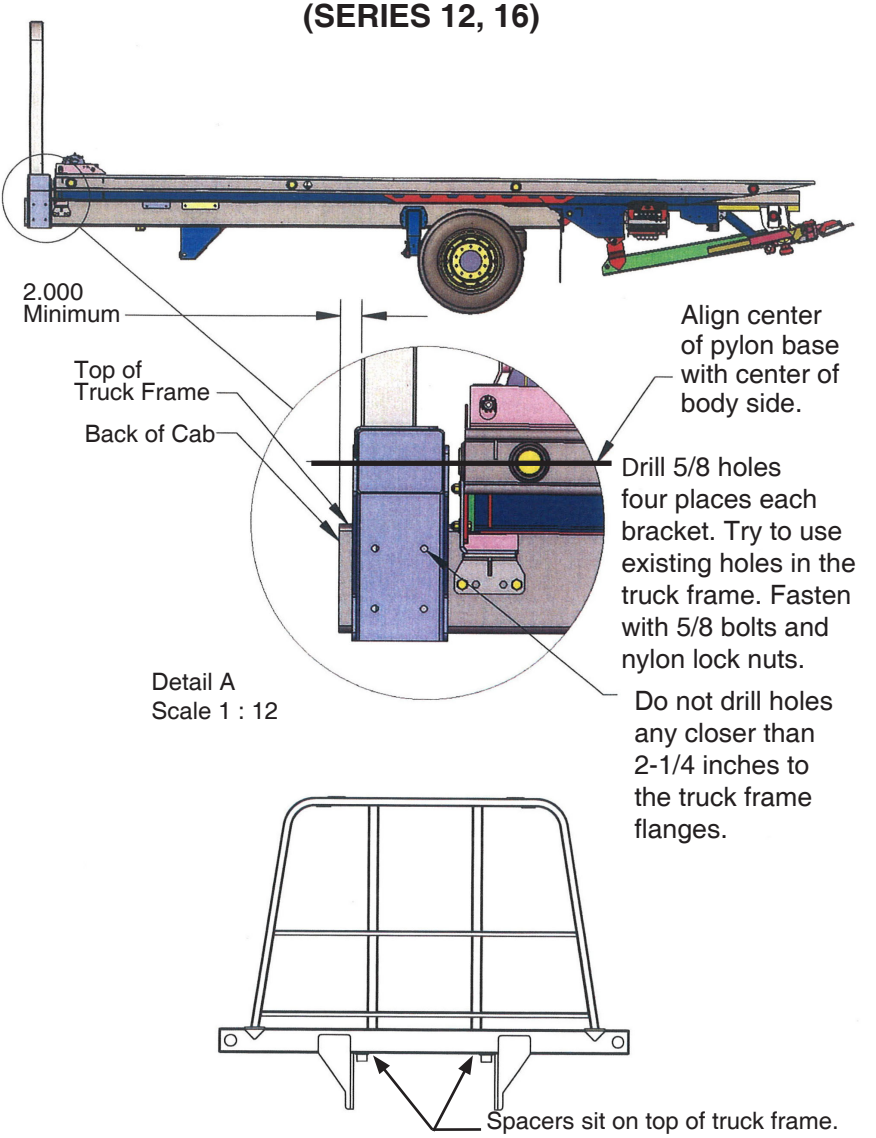
Subframe Junction Box

NOTE: Use electrical grease on all terminal connections. Drill two 1/4 inch vent holes in the box on the side toward the ground.



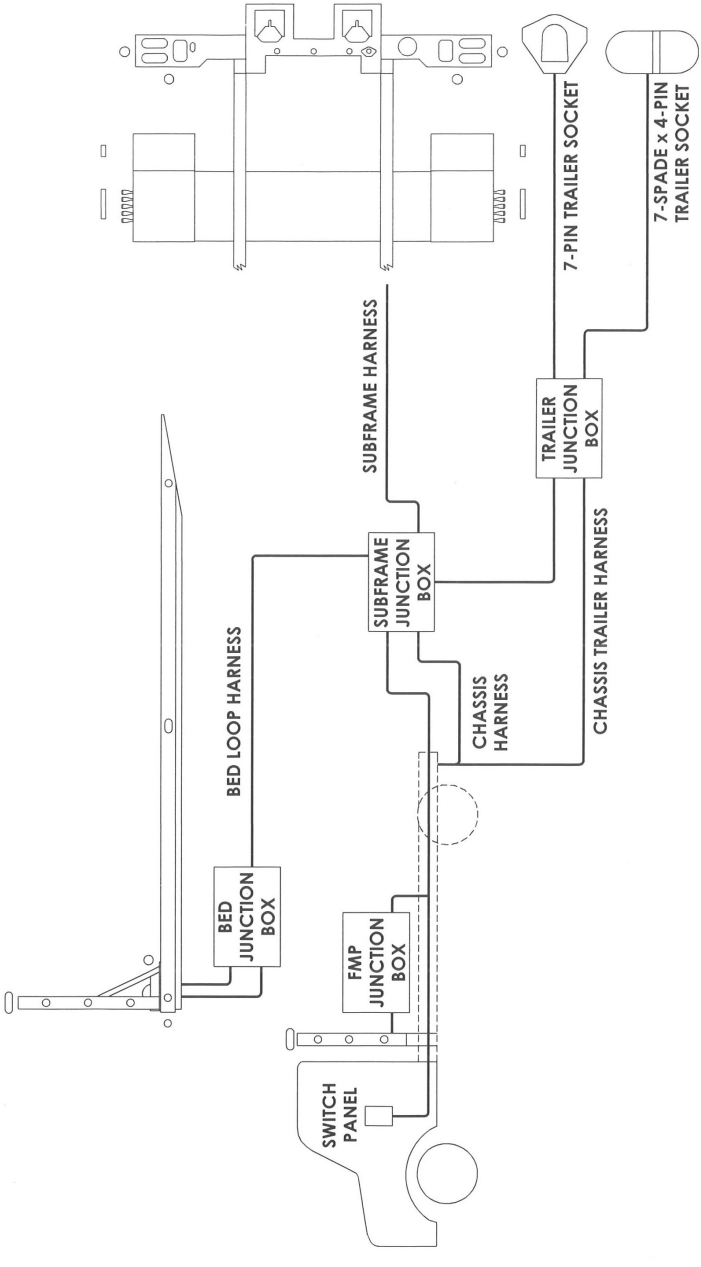
Post #4 to be used for brake light circuit on foreign chassis, or other special application circuits.

LCG FRAME-MOUNTED PYLON INSTALLATION (SERIES 12, 16)



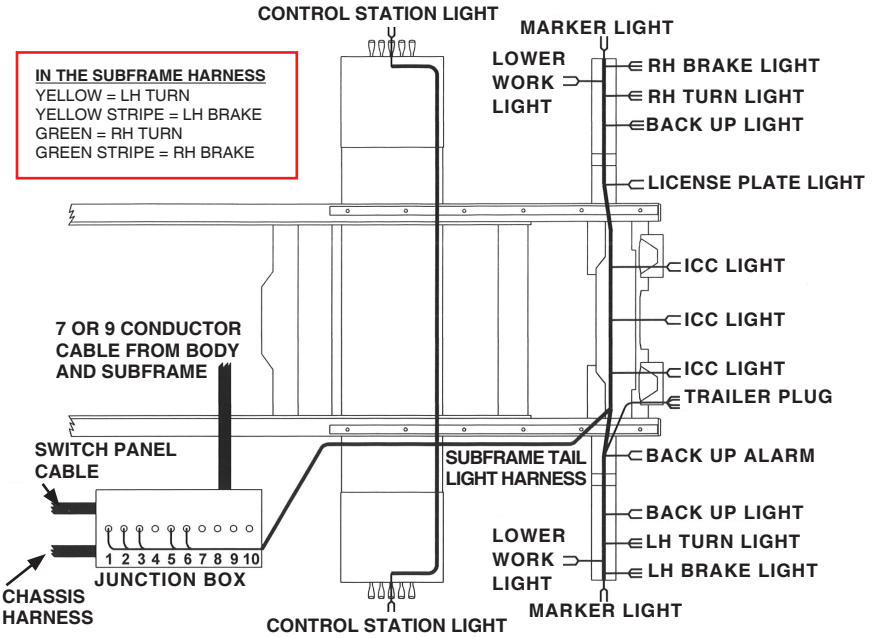
Section VII - SCHEMATICS

GENERAL CARRIER WIRE DIAGRAM



Section VII - SCHEMATICS

SUBFRAME WIRING



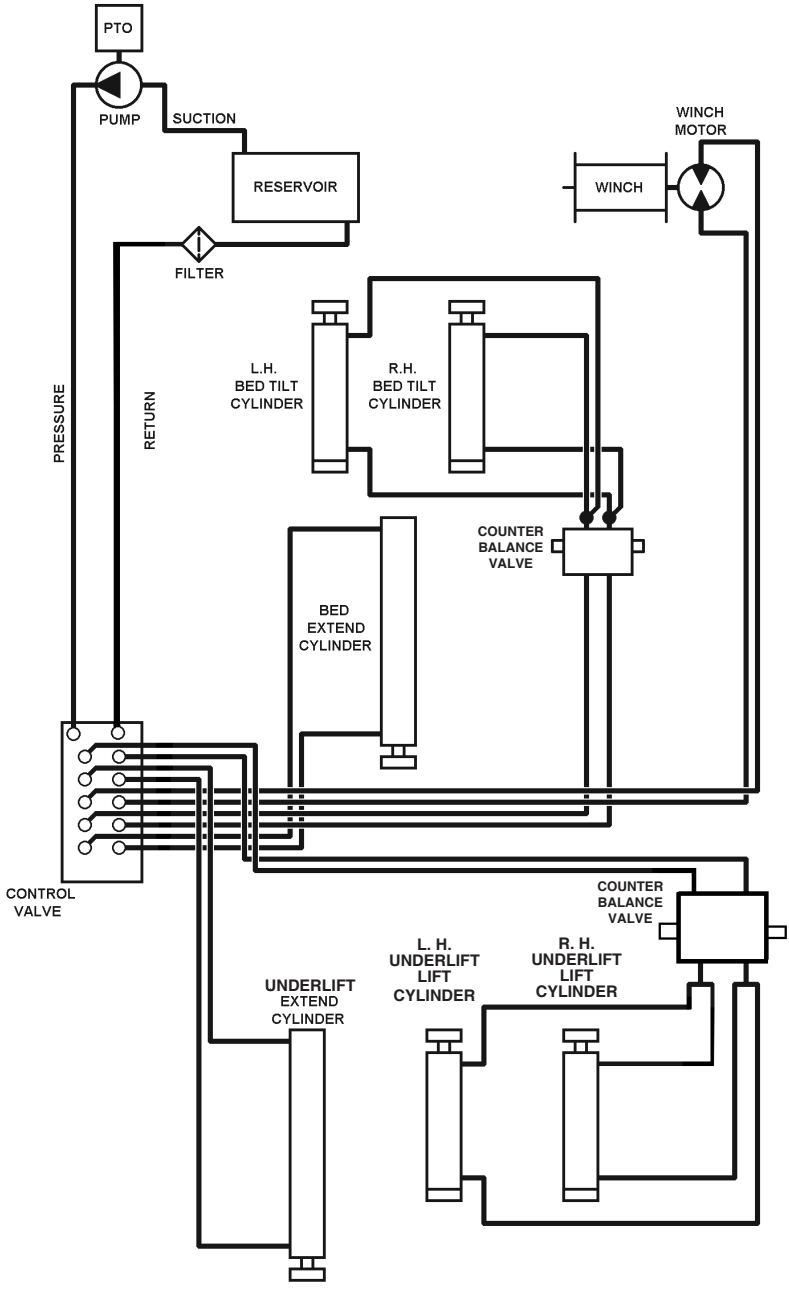
AMERICAN SYSTEM COMBINED BRAKE & TURN SIGNALS

	POST#	FUNCTION	SUBFRAME HARNESS WIRE COLOR/GAUGE	BAR LIGHT CORD WIRE COLOR/GAUGE
CHASSIS CIRCUITS	1	Ground	White 12	White 10
	2	Back-Up	Blue 14	N/A
	3	LH Turn/Brake	Yellow + (Yellow Stripe) 14	Yellow 12
	4	Reserved	N/A	N/A
	5	RH Turn/Brake	Green + (Green Stripe) 14	Green 12
	6	Marker/Clearance	Brown 14	Brown 12
AUXILIARY CIRCUITS	7	Lower Work Lights	Black 14	N/A
	8	Upper Work Lights	N/A	Blue 12
	9	Rotate Lights	N/A	Black 12
	10	Flashing Lights	N/A	Red 12

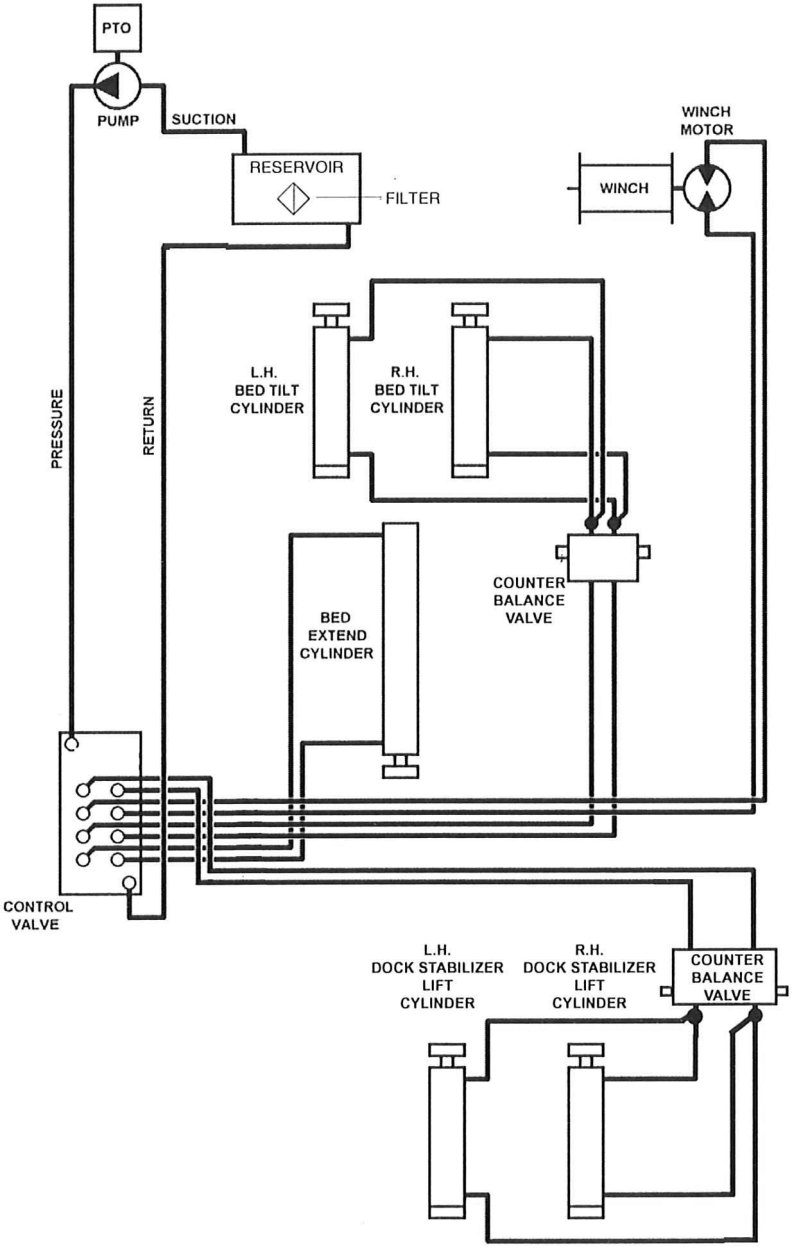
FOREIGN SYSTEM INDEPENDENT BRAKE & TURN SIGNALS

	POST#	FUNCTION	SUBFRAME HARNESS WIRE COLOR/GAUGE	BAR LIGHT CORD WIRE COLOR/GAUGE
CHASSIS CIRCUITS	1	Ground	White 12	White 10
	2	Back-Up	Blue 14	N/A
	3	LH Turn	Yellow 14	Yellow 12
	4	Independent Brake	Yellow Stripe 14 + Green Stripe 14	
	5	RH Turn	Green 14	Green 12
	6	Marker/Clearance	Brown 14	Brown 12
AUXILIARY CIRCUITS	7	Lower Work Lights	Black 14	N/A
	8	Upper Work Lights	N/A	Blue 12
	9	Rotate Lights	N/A	Black 12
	10	Flashing Lights	N/A	Red 12

Section VII - SCHEMATICS
HYDRAULICS WITH EXTENDABLE UNDERLIFT

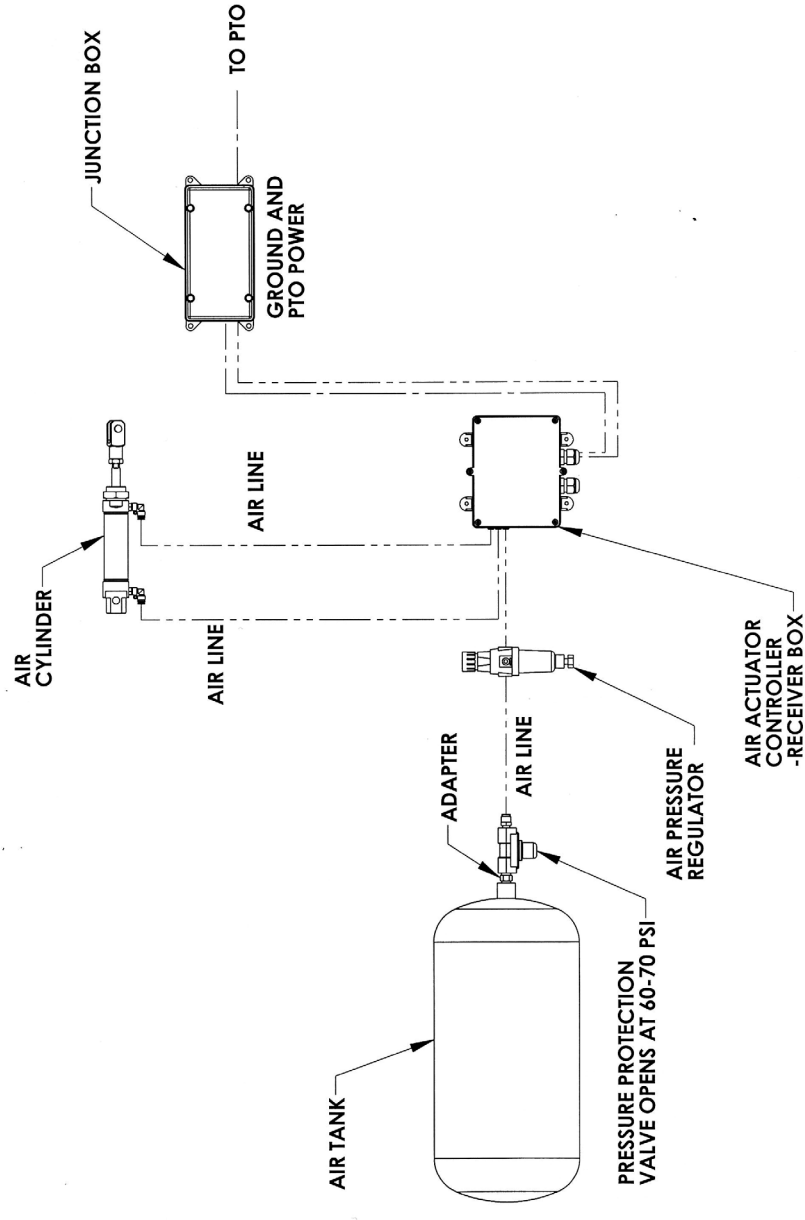


Section VII - SCHEMATICS
DOCK STABILIZER HYDRAULICS



Section VII - SCHEMATIC

WIRELESS AIR ACTUATED REMOTE CONTROLS



Section VII - SCHEMATICS

CONTROL VALVE
REMOTE CONTROL WINCH
WIRE DIAGRAM