

***LIFT SYSTEM***

***REPAIR MANUAL***

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## MAIN DRIVE TRAIN

Pictured on page 3 is the main drive train lifting system for all non-hydraulic trailers.

In this segment of the service manual will be a description of each component and its basic function relating to the lift system operation. (Refer to page 3 for corresponding numbers.)

**NOTE:** Destiny series folding trailers do not utilize the lower crank shaft extension, front radial bearing, or the coupler. This drive train begins at the coupler attachment points.

### IMPORTANT

1. **Lower crank extension shaft.** This extension is used to extend the length of the whiffle tree past the front body panel. Attached to the extension is a 12-tooth chain gear sprocket. The upper crank assembly, by means of a bicycle chain, connects to the lower crank extension shaft gear. By turning the upper or lower crank assembly, this will initially engage the drive train process.
2. **Front radial bearing.** The front radial bearing is used as a guide and to provide smooth rotation of the lower crank extension shaft.
3. **Coupler.** The coupler is used to connect the lower crank extension to the whiffle tree.
4. **Thrust bearing cover box.** The thrust bearing cover box is designed to protect the thrust nut and thrust bearing from debris. It is also used as an aid in aligning the thrust bearing and thrust nut through the frame cross channel.
- 5/6. **Thrust nut and thrust nut bearing.** The thrust nut and thrust bearing are the main load-bearing points of the entire lift system. The thrust nut has a collar which must ride on the race side (or movable side) of the thrust bearing. Improper installation of the thrust bearing to thrust nut will cause lift system problems.
7. **Bearing retainer plate.** The bearing retainer plate acts as a strengthening support on the frame cross channel where the thrust bearing will seat against it. It also helps to align the thrust nut through the frame cross channel.
8. **Solid shear pin.** The solid shear pin is the most critical attaching point of the lift system. It is used to connect the thrust nut to the whiffle tree. **The solid shear pin supports the entire weight of the top assembly.**
9. **Guide channel.** The guide channel serves two important functions in the lift system. It serves as a means of protection for the whiffle tree, guarding it from road debris and weather-related elements. But the most crucial function of the guide channel is to maintain the proper spacing and support between the two frame cross channels. The overall length of the guide channel measuring from flange to flange lengthwise is 24 1/2". Any variation in length will cause lift system problems. If at any time the guide channel is found to be bent or distorted in any way, have it replaced with a new one.



## MAIN DRIVE TRAIN

### Page 2

**NOTE:** As of the 1996 model introduction, all 10' and 12' models will have permanent guide channels welded in place between the frame cross members. The guide channel should **never, under any circumstances**, be removed with the top in the up position without having the two adjacent cross channels properly blocked at 24 1/2". They will also incorporate a removable cover plate.

10. **Whiffle tree.** The whiffle tree is a combination worm gear and draw bar mechanism used in raising each individual lift arm. There are two types of whiffle trees used on Fleetwood folding trailers. (See specifications in whiffle tree section of lift system.)

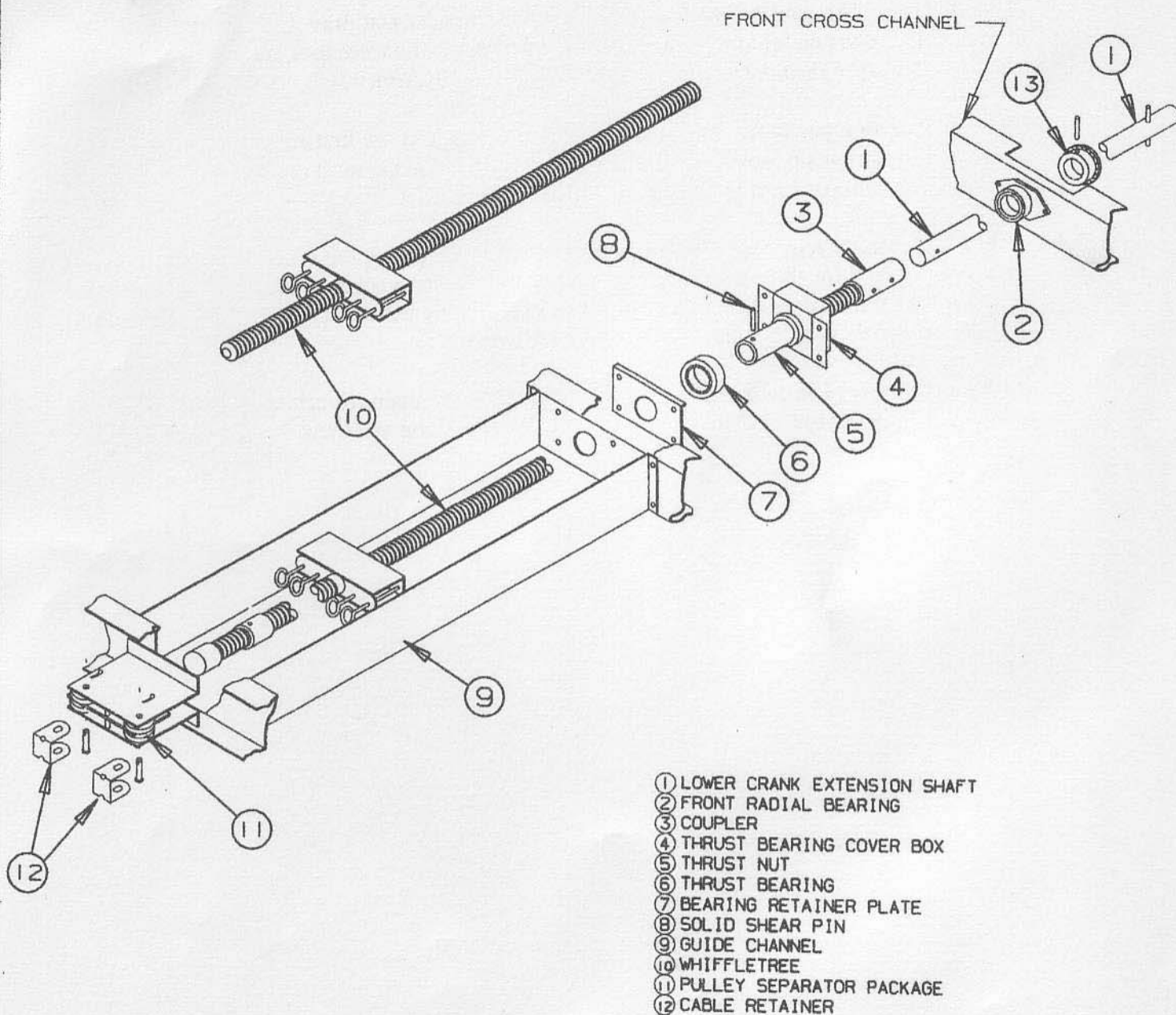
11. **Pulley separator package.** The pulley separator package is the first routing point of all four individual lift arm main cables. In essence, this pivot point is the most crucial, having the most pressure or strain put forth by raising the top assembly.

**NOTE:** There are four steel needle bearing pulleys in the pulley separator package. Identical pulleys are used throughout the lift system, four at each corner bracket on the frame assembly and four in each lift arm assembly. Total number of steel bearing pulleys in system: 24. **Exception:** Plantation models had 26 pulleys in the entire lift system.

12. **Cable retainers.** The cable retainers are used to keep the main lift cables from inadvertently slipping off the pulleys. When the top is in the down position and there is slack in the cable.



# MAIN DRIVE TRAIN

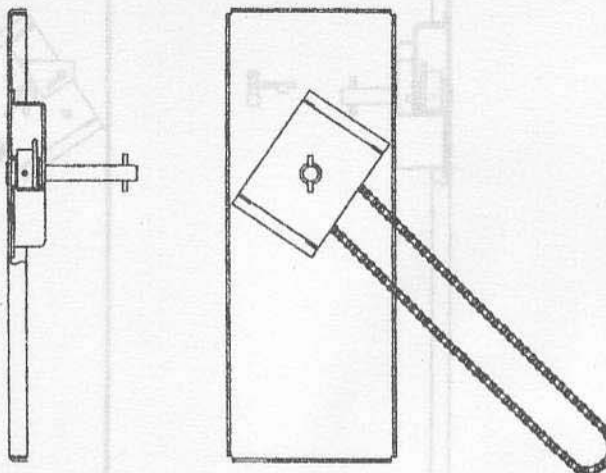


## CRANK AND SPROCKET ASSEMBLIES

### All 1968 - 1992 Pioneer Series Trailers

Sprockets	12-tooth upper crank assembly; 12-tooth lower crank extension
Cranking Ratio	1 to 1
Ratchet	None
Torque on upper crank	75 - 100 foot pounds acceptable

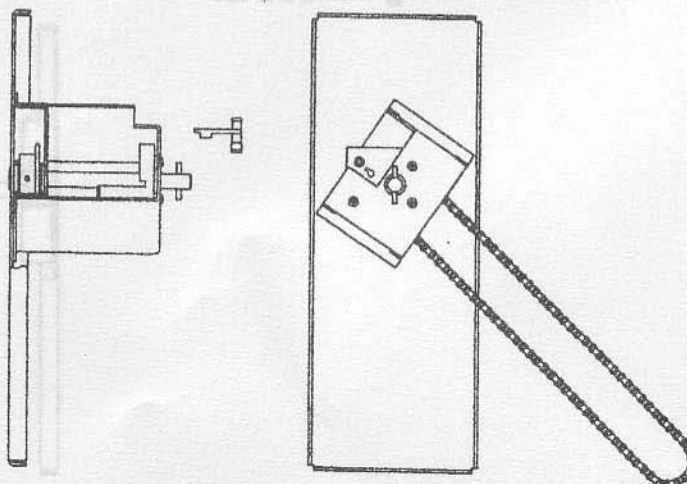
Used in conjunction with Acme whiffle tree.



### All 1989 to 1993 Americana Series Trailers

Sprockets	24-tooth upper crank assembly; 12-tooth lower crank extension
Cranking Ratio	2 to 1
Ratchet	Yes, encased in upper crank and sprocket assembly
Torque on upper crank	60 - 100 foot pounds acceptable

Used in conjunction with ball bearing whiffle tree.



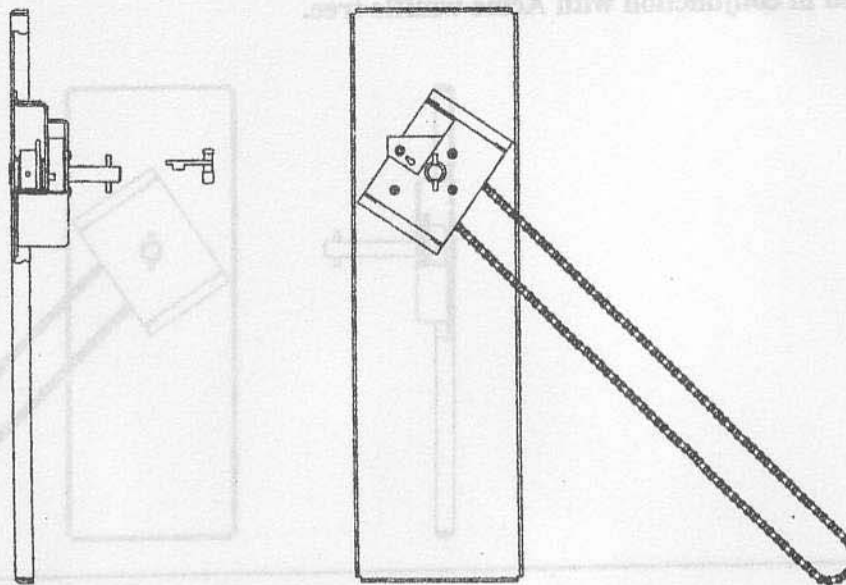
## CRANK AND SPROCKET ASSEMBLIES

Page 2

### All 1993 Four Season Series Trailers

Sprockets	18-tooth upper crank assembly; 12-tooth lower crank extension
Cranking Ratio	1.75 to 1
Ratchet	Yes, encased in upper crank and sprocket assembly
Torque on upper crank	60 - 100 foot pounds acceptable

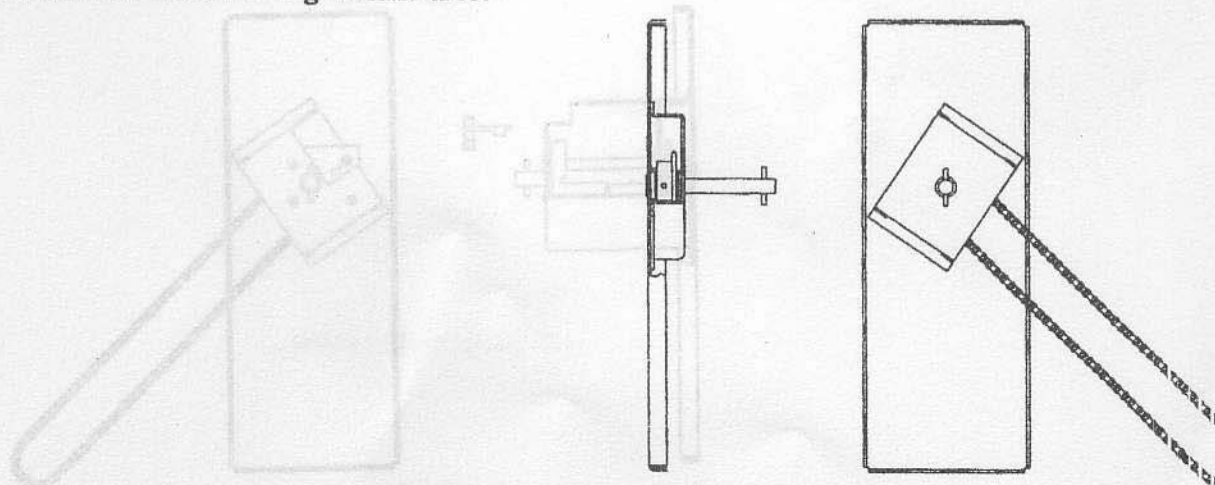
Used in conjunction with ball bearing whiffle tree.



### All 1988 and Prior Americana Series Trailers All 1993 Pioneer Series Trailers

Sprockets	24-tooth upper crank assembly; 12-tooth lower crank extension
Cranking Ratio	2 to 1
Ratchet	Yes, located on <u>lower</u> crank extension
Torque on upper crank	60 - 100 foot pounds acceptable

Used in conjunction with ball bearing whiffle tree.





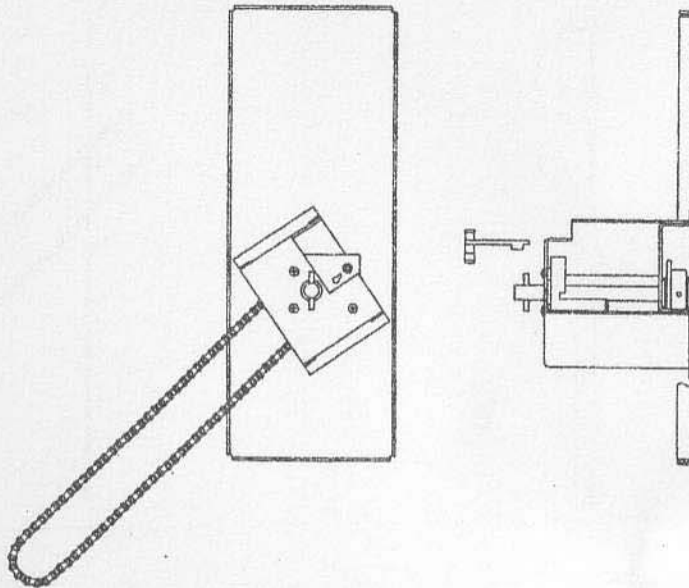
## CRANK AND SPROCKET ASSEMBLIES

Page 3

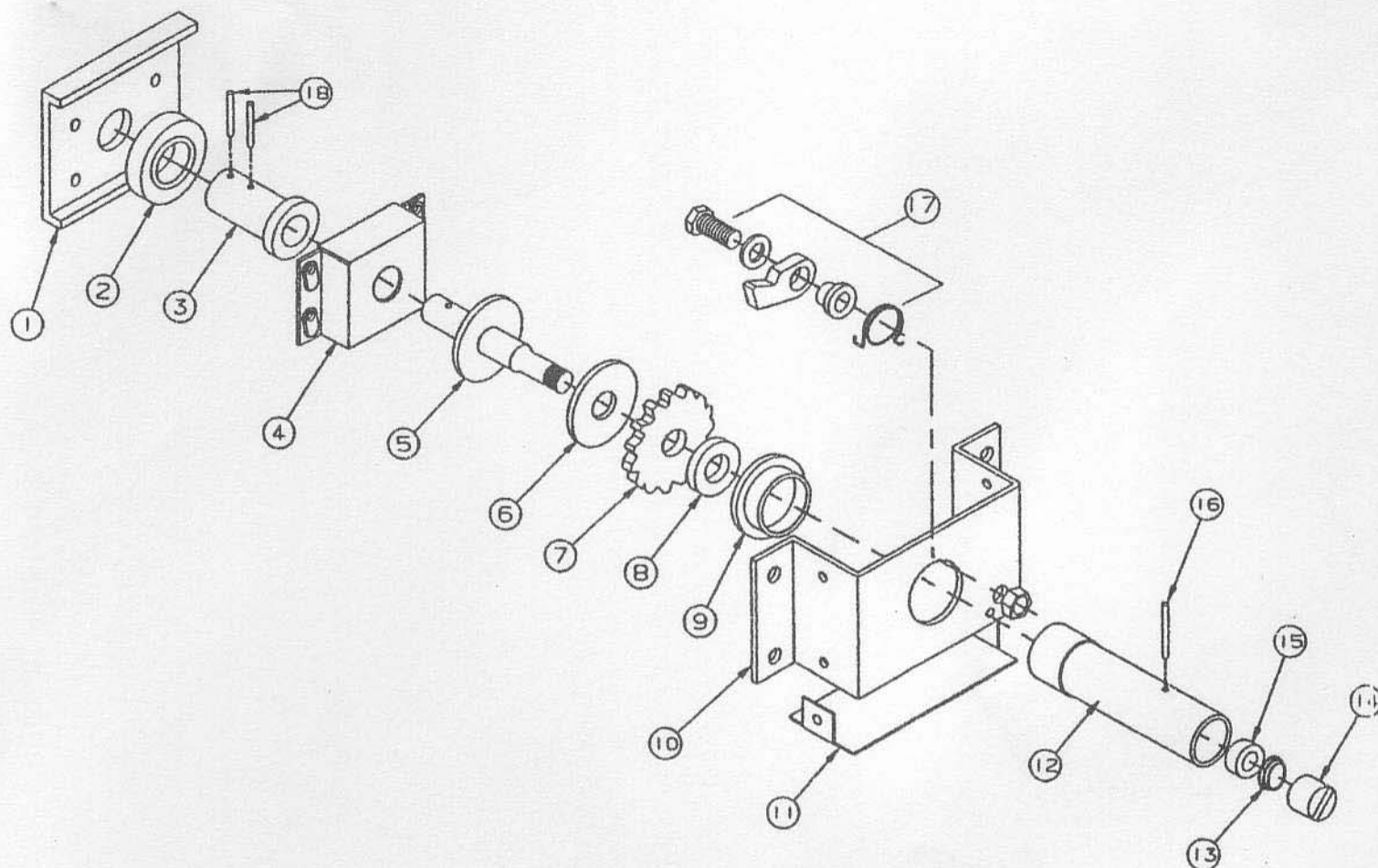
### All 1986 - 1991 Plantation Series Trailers

Sprockets	24-tooth upper crank assembly; 12-tooth lower crank extension
Cranking Ratio	2 to 1
Ratchet	Yes, encased in upper crank and sprocket assembly
Torque on upper crank	60 - 100 foot pounds acceptable

Used in conjunction with ball bearing whiffle tree.



# 1994 - 1998 DESTINY CRANK-UP/CRANK-DOWN LIFT ASSEMBLY

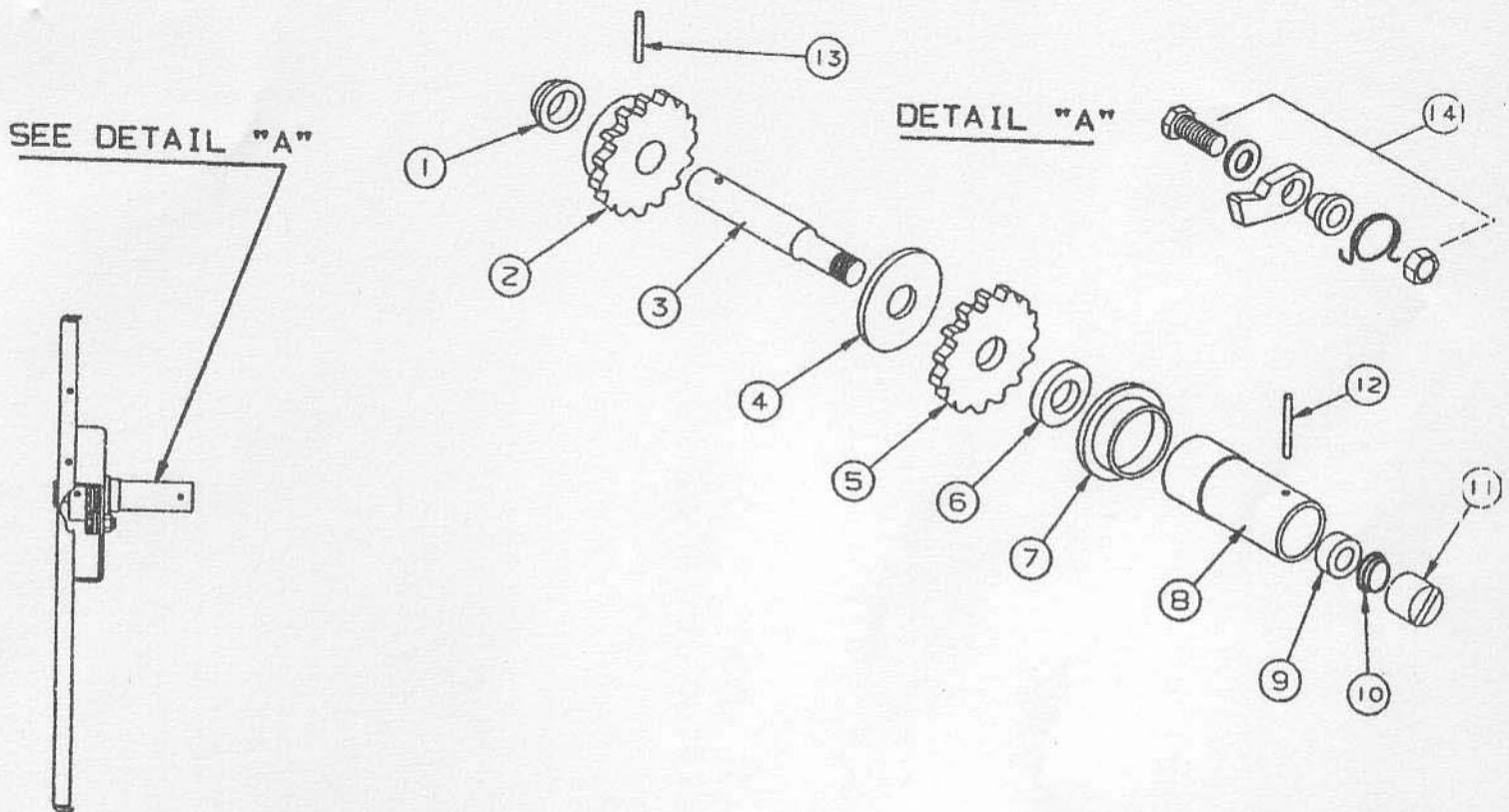


Sprockets	none; direct drive
Cranking Ratio	1 to 1
Ratchet	No; clutch release mechanism
Torque on crank assembly	60 - 100 foot pounds

**NOTE:** 1990 - 1993 Destiny series trailers utilize a direct cranking mechanism straight off of the whiffletree shaft. No clutch release mechanism was utilized.

**Used in conjunction with Acme whiffletree.**

# 1994 - 1995 PIONEER SERIES CRANK AND SPROCKET ASSEMBLY

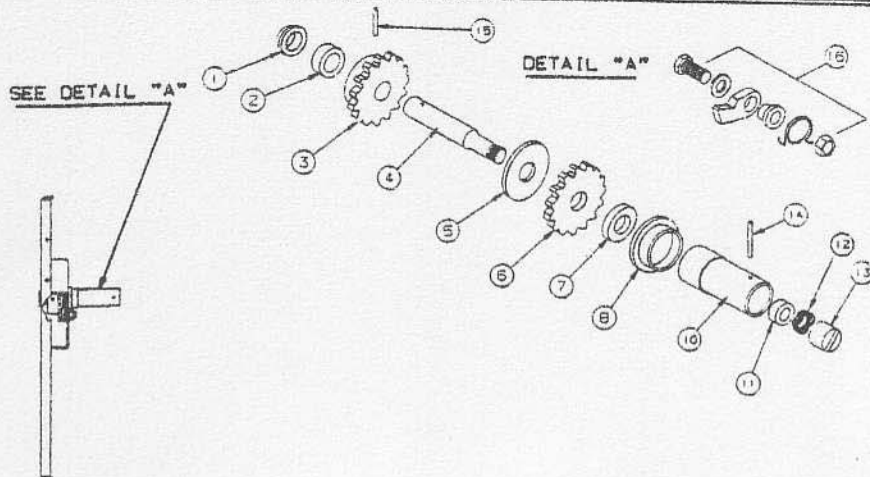


Sprockets	24-tooth upper crank assembly; 12 tooth lower crank assembly
Cranking Ratio	2 to 1
Ratchet	No; clutch release mechanism
Torque on Upper Crank	75 - 100 foot pounds

Used in conjunction with ball bearing whiffletree.

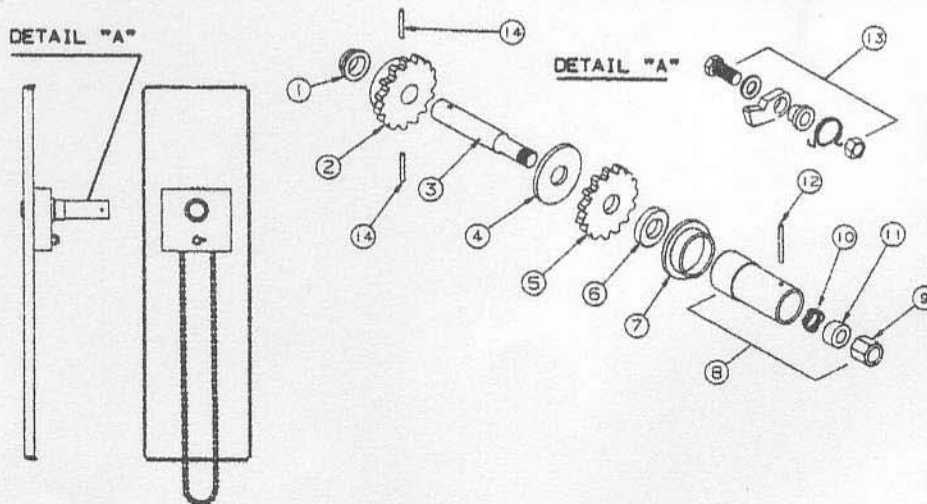


## 1994 - 1995 FOUR SEASON SERIES (CAPE COD/UTAH MODELS) CRANK AND SPROCKET ASSEMBLY



Sprockets 18 tooth upper crank assembly; 12 tooth lower crank assembly (Note: Utah model used 24 tooth upper sprocket.)  
 Cranking Ratio 1.75 to 1 (Note: Utah model used 2:1.)  
 Ratchet No; clutch release mechanism  
 Torque on Upper Crank. 75 - 100 foot pounds  
 Used in conjunction with ball bearing whiffletree.

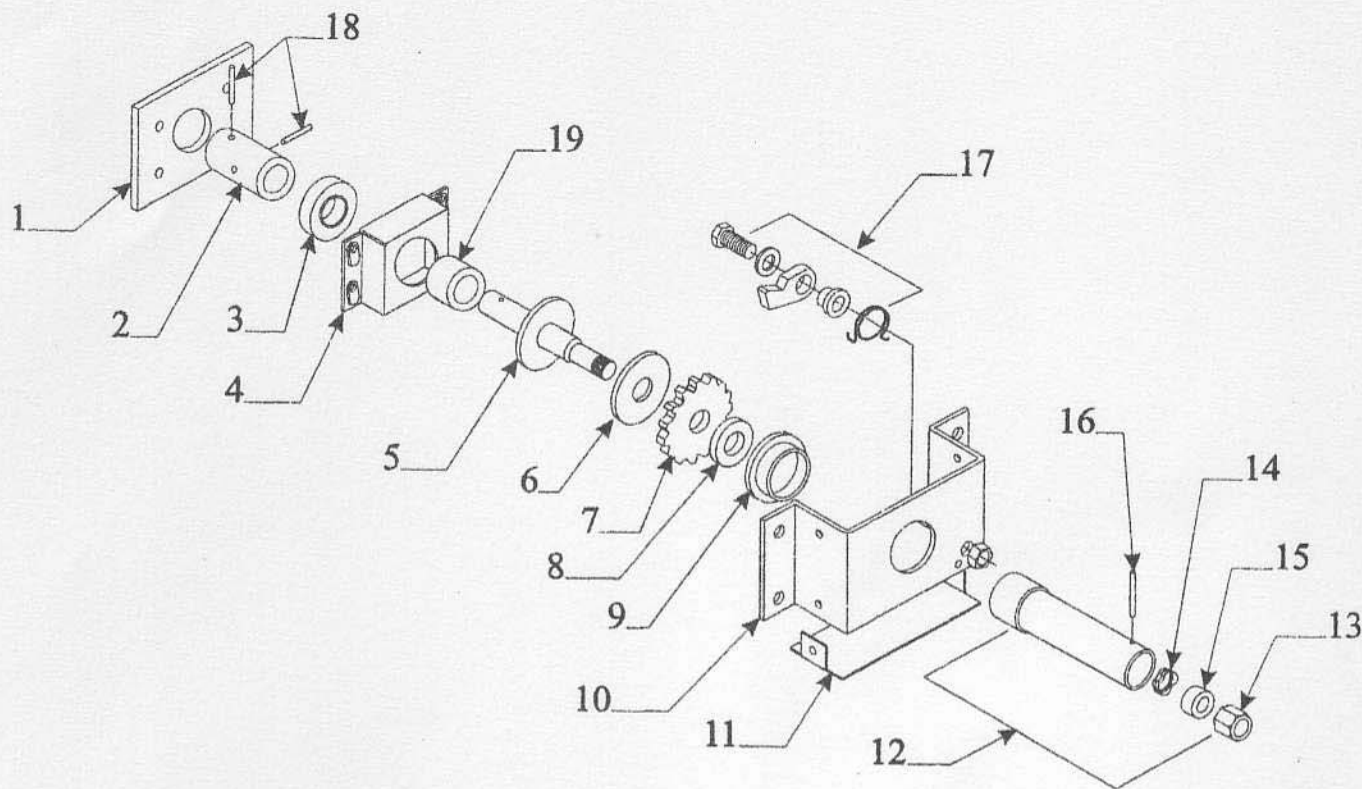
## 1996 - 1998 GRAND TOUR SERIES AND 1999 GRAND TOUR ELITE SERIES CRANK AND SPROCKET ASSEMBLY



**NOTE:** On 1996 models, the chain ran diagonally versus straight up and down as shown.

Sprockets 24 tooth upper crank assembly; 12 tooth lower crank assembly  
 Cranking Ratio 2 to 1  
 Ratchet No; clutch release mechanism  
 Torque on Upper Crank. 75 - 100 foot pounds  
 Used in conjunction with ball bearing whiffletree.

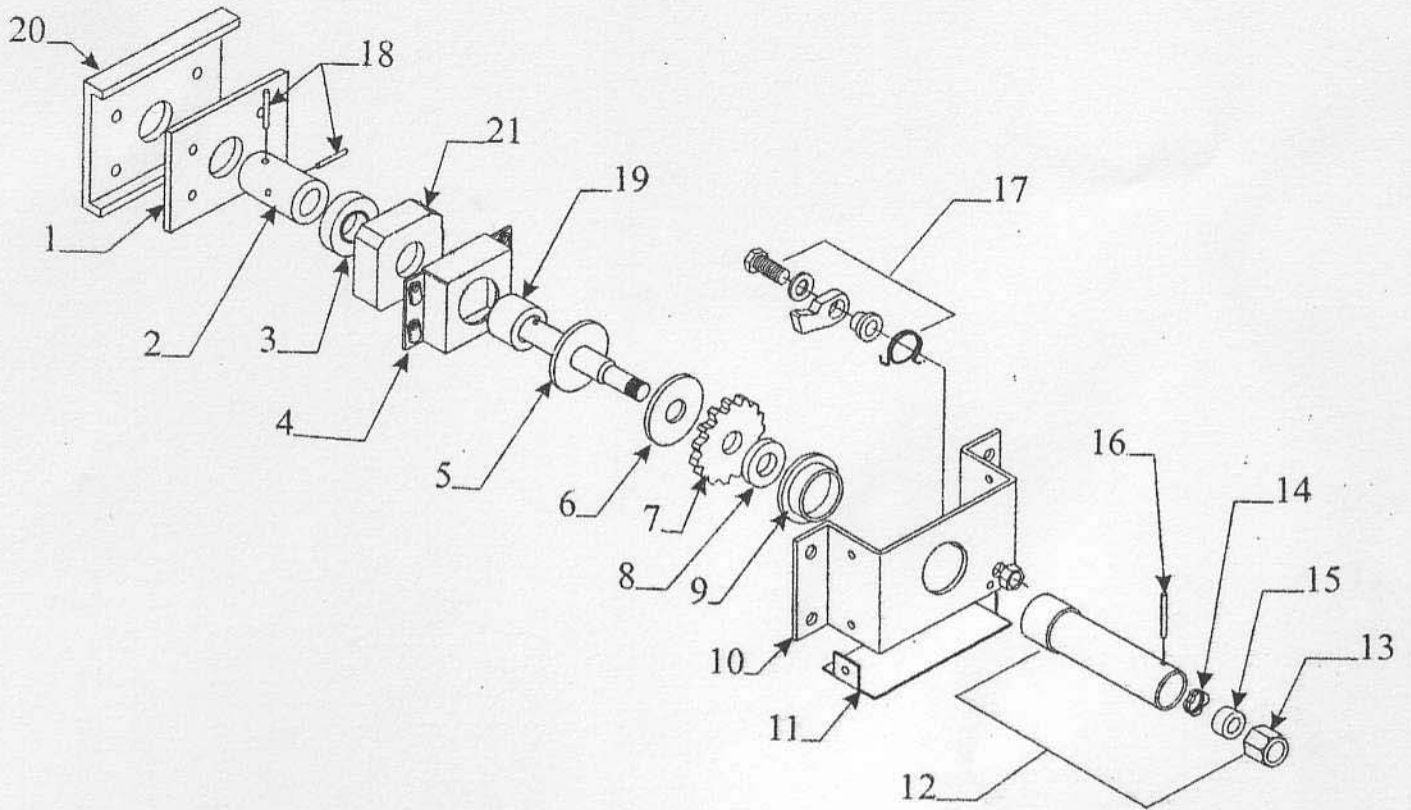
# 1999 GRAND TOUR AND DESTINY SERIES CRANK-UP/CRANK-DOWN



Sprockets	None; direct drive
Cranking Ratio	1 to 1
Ratchet	No; clutch release
Torque on Crank Assy.	60 - 100 foot pounds

Used in conjunction with Acme whiffletree.

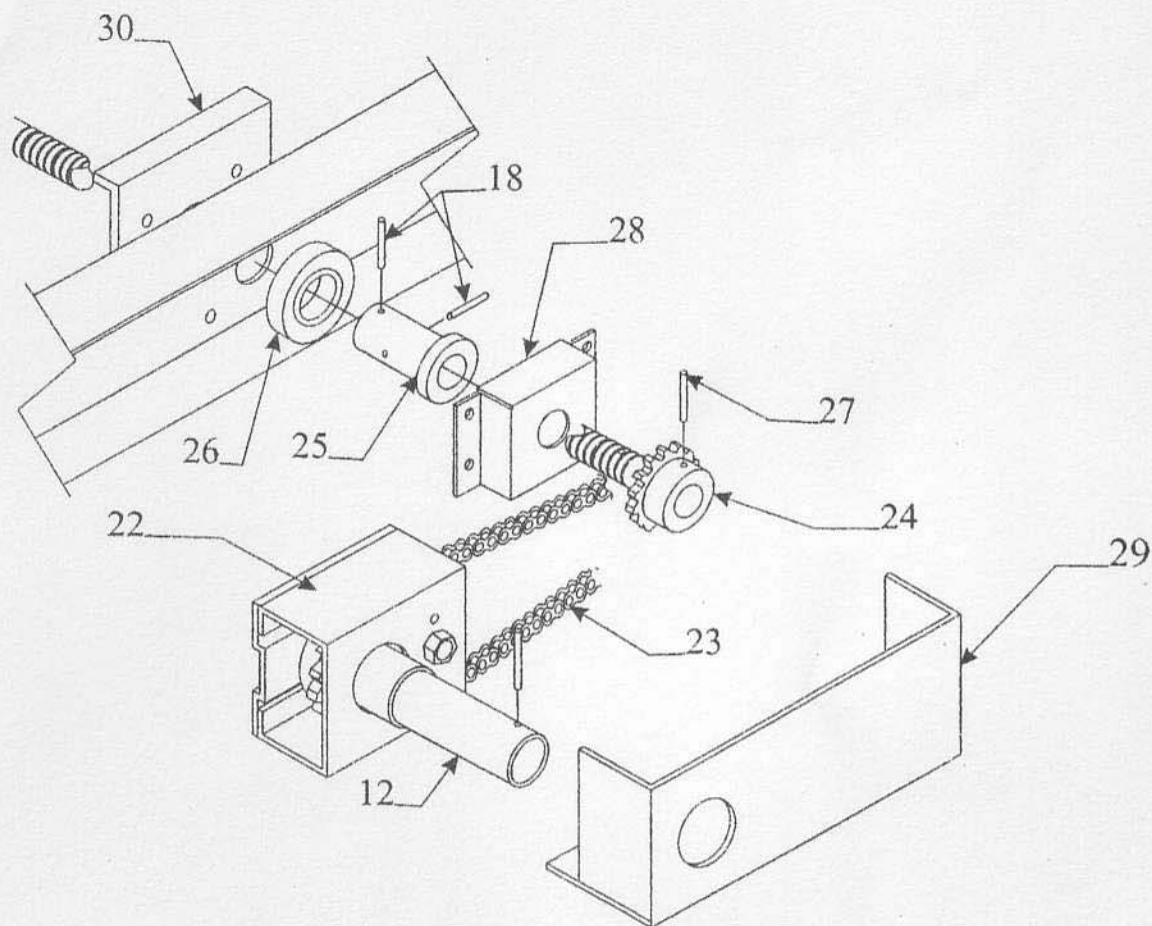
**2000 GRAND TOUR (10' MODELS ONLY) AND ALL DESTINY MODELS**



Sprockets	None; direct drive
Cranking Ratio	1 to 1
Ratchet	No; clutch release
Torque on Crank Assy.	60 - 100 foot pounds
<b>Used in conjunction with Acme whiffletree.</b>	



**2000 GRAND TOUR/GRAND TOUR ELITE 12' MODELS ONLY**



Sprockets	24 tooth and 12 tooth
Cranking Ratio	2 to 1
Ratchet	No; clutch release
Torque on Crank Assy.	75 - 100 foot pounds
<b>Used in conjunction with ball bearing whiffletree.</b>	

## CHAIN ADJUSTMENT FOR CONVENTIONAL LIFT SYSTEM

There are basically two methods in which the connecting chain between the upper crank and sprocket assembly and the lower crank can be tightened when excessive slack creates a cranking problem.

### Method I

1. Crank top assembly up approximately two feet and prop into position by using boards or other suitable supports. Release tension on trailer lift system by lowering top assembly completely down on supports until crank stops.
2. Remove the upper portion of the front or rear body panel from along the body rail by removing the retaining rivets, screws, clips, or top latches securing the body panel to the rail. Refer to corresponding panel section of service manual, if necessary.

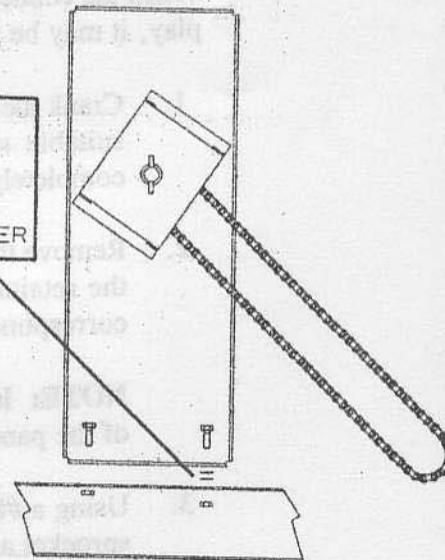
**NOTE:** It is not necessary to completely remove front or rear body panel, only the top half of the panel should be loosened.

3. Locate the two hex-head fastening bolts along the lower portion of the crank and sprocket assembly that connect the crank and sprocket assembly to the front or rear frame cross channel. See figure.
4. Using two 7/16" open-end wrenches, completely remove the bolt, washer, and nut closest to the lower crank extension.

**NOTE:** Only loosen the adjacent attaching bolt and nut.

5. Insert a flat screwdriver tip between the frame cross channel and lower portion of the crank and sprocket assembly and separate.
6. Insert extra washers (maximum of three) between the crank and sprocket assembly and the frame cross channel to get the desired tension on the chain. See figure.
7. Replace the bolt, washer, and nut removed in steps 3 and 4 in the crank and sprocket assembly, ensuring that the bolt goes through the washers applied in step 6.
8. Re-tighten both bolts in crank and sprocket assembly.

PLACE ADDITIONAL  
SPACING WASHERS  
IN BETWEEN UPPER  
CRANK AND SPROCKET  
ASSEMBLY AND FRONT  
CROSS CHANNEL MEMBER



## CHAIN ADJUSTMENT FOR ALL MODEL TRAILERS

Page 2

### Method I (continued)

9. Check chain for proper tension. Do not over-tighten (1" - 1 1/2" gap between chain halves).
10. Replace front or rear body panel and fasten securely with rivets, screws, clips, or latches removed in step 2.
11. Crank top assembly up and remove supports.
12. Check torque on crank and sprocket assembly to ensure proper function. For proper torque specifications, refer to crank and sprocket assembly section of service manual.

### Method II

#### Removal of Half Link

When the connecting chain from the upper crank and sprocket assembly to lower crank has excessive play, it may be necessary to adjust tension by removing the half link within the chain.

1. Crank the top assembly up approximately two feet and prop into position using boards or other suitable supports. Release tension on the trailer lift system by lowering the top assembly completely down on the supports until the crank stops.
2. Remove the upper portion of the front or rear body panel from along the body rail by removing the retaining rivets, screws, clips, or top latches securing the body panel to the rail. Refer to corresponding panel section of service manual, if necessary.

**NOTE:** It is not necessary to completely remove the front or rear body panel, only the top half of the panel should be loosened.

3. Using a #8 drill bit, drill the two large, flat-head steel rivets out securing the upper crank and sprocket assembly to the top of the body rail.

**CAUTION:** When drilling out top two rivets on crank and sprocket assembly, care must be taken or damage can occur to the bed seal and/or bed frame.

4. Locate two hex-headed fastening bolts along the lower portion of the upper crank and sprocket assembly that connect the upper crank and sprocket assembly to the frame cross channel.
5. Using two 7/16" open-end wrenches, completely remove the bolt, washer, and nut closest to the lower crank extension.

**NOTE:** Only loosen the adjacent attaching bolt and nut.



## CHAIN ADJUSTMENT FOR ALL MODEL TRAILERS

Page 3

### Method II (continued)

6. Locate the connecting half link on the chain assembly.
7. Using a pair of needle-nosed pliers, remove cotter pin from connecting link and remove half link.
8. Chain can be reconnected by pushing the upper crank and sprocket assembly towards the center of trailer, allowing for enough slack in chain to reconnect.
9. Realign the top of the crank and sprocket assembly to top of body rail and re-rivet.
10. Re-tighten lower attaching bolts with 7/16" wrenches.

**NOTE:** If removal of the half link is not enough, additional spacing washers between the upper crank and sprocket assembly and the frame cross channel may be necessary to obtain proper tension.

11. Check tension on chain. Do not over-tighten (1" - 1 1/2" gap between chain halves).
12. Replace front or rear body panel and fasten securely with rivets, screws, clips, or latches removed in step 2.
13. Crank up top assembly and remove supports.
14. Check torque on crank and sprocket assembly to ensure proper function. For proper torque specifications, refer to crank and sprocket assembly section of service manual.

**NOTE:** When chain tension is too tight, it will be necessary to add a half link by simply using the procedure described in Method II of chain adjustment segment.

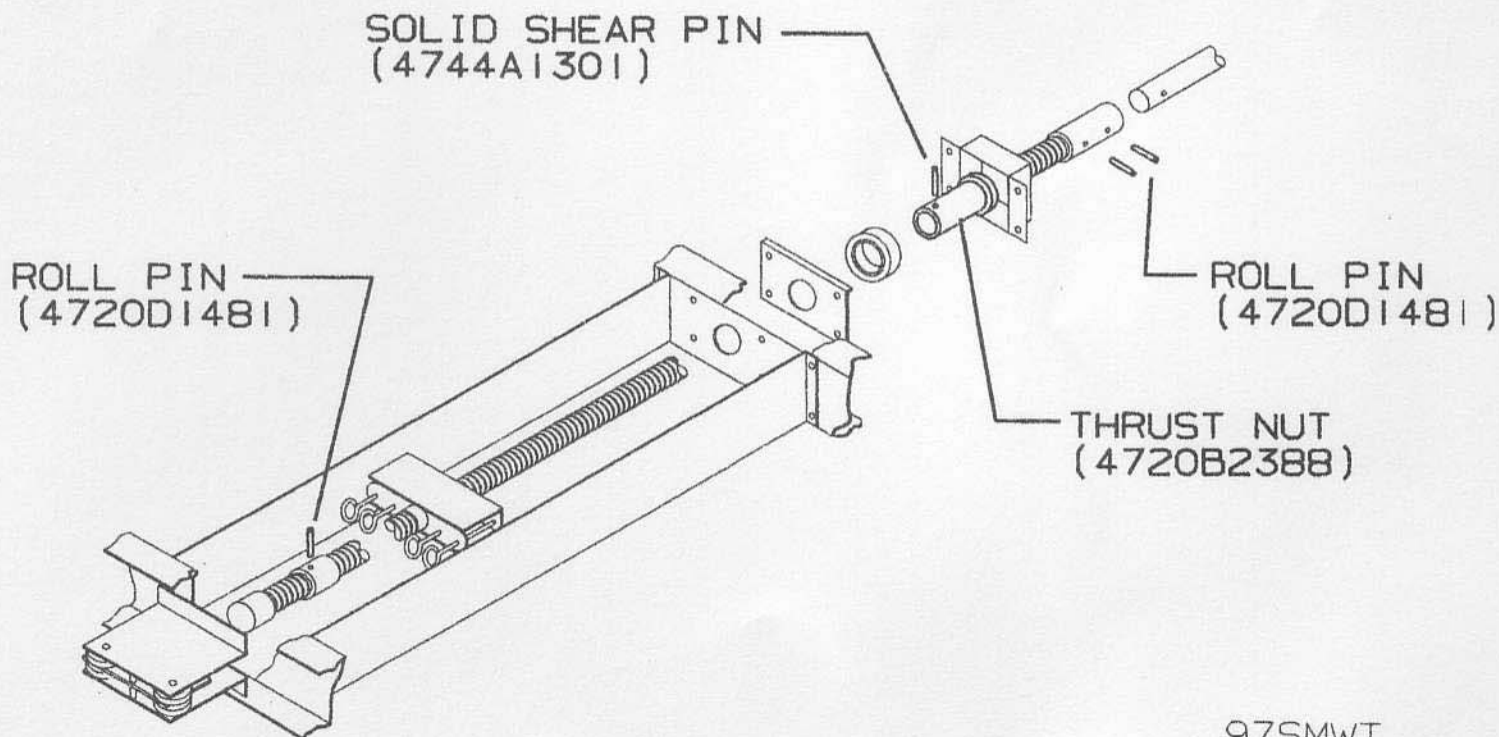
## THRUST NUT ROLL PIN REPLACEMENT

In September of 1985, a change was incorporated into the lift system. The 4744-1301 roll pin formerly used in conjunction with the thrust nut and whiffle tree was changed to a stronger, solid pin. The new part number is 4744A1301. The roll pin, part number 4720B1481, is used in the coupling and whiffle tree stop.

**This change affected all 9' and 11' models manufactured after September 6, 1985 and all 7' models manufactured after October 5, 1985.**

**NOTE:** Should any lift system service be required due to a sheared pin in the thrust nut, be certain the solid pin is installed in any model year trailer.

**NOTE:** The solid shear pin is the main load-bearing point of the lift system. Installation of an air conditioner on any folding trailers manufactured prior to the above dates will require changing the thrust nut roll pin to the solid shear pin. Failure to do so may cause irreversible lift system damage.



97SMWT

## WHIFFLETREE SPECIFICATIONS

### A

DRAWBAR CONFIGURATION:	ENCASED BALL BEARING
DRAWBAR SHAFT:	COARSE THREAD
DRAWBAR TRAVEL DISTANCE:	27" NOTE: 1" OF DRAWBAR TRAVEL = 1.71" OF LIFT HEIGHT
WHERE USED:	1996 - 1998 GRAND TOUR SERIES  1999 GRAND TOUR ELITE SERIES WITH CLUTCH RELEASE CRANK AND SPROCKET ASSEMBLY  2000 GRAND TOUR AND GRAND TOUR ELITE SERIES 12' MODELS ONLY WITH CLUTCH RELEASE CRANK AND SPROCKET ASSEMBLY
PART NUMBER:	4720F520, 4720G5201

### B

DRAWBAR CONFIGURATION:	PLASTIC DELRIN NUT
DRAWBAR SHAFT:	FINE THREAD
DRAWBAR TRAVEL DISTANCE:	27" NOTE: 1" OF DRAWBAR TRAVEL = 1.71" OF LIFT HEIGHT
WHERE USED:	1996 - 1998 8 1/2', 10', AND 12' DESTINY SERIES  1999 8 1/2', 10', AND 12' DESTINY AND GRAND TOUR SERIES TRAILERS WITH CLUTCH RELEASE CRANK  2000 10' AND 12' DESTINY SERIES ONLY AND GRAND TOUR SERIES 10' MODELS ONLY WITH CLUTCH RELEASE CRANK AND SPROCKET ASSEMBLY
PART NUMBER:	4754-5001, 4754A5001



## WHIFFLETREE SPECIFICATIONS

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### C

DRAWBAR CONFIGURATION:	ENCLOSED BALL BEARING
DRAWBAR SHAFT:	COARSE THREAD
DRAWBAR TRAVEL DISTANCE:	17" NOTE: 1" OF TRAVEL DISTANCE = 3" OF LIFT HEIGHT
WHERE USED:	1968 - 1995 AMERICANA SERIES TRAILERS WITH OR WITHOUT RATCHET 1986 - 1991 PLANTATION SERIES TRAILERS WITH RATCHET 1993 - 1995 PIONEER/FOUR SEASON SERIES TRAILERS WITH RATCHET OR CLUTCH CRANK AND SPROCKET
PART NUMBER:	4720E5201

### D

DRAWBAR CONFIGURATION:	PLASTIC DELRIN NUT
DRAWBAR SHAFT:	FINE THREAD
DRAWBAR TRAVEL DISTANCE:	17" NOTE: 1" OF TRAVEL DISTANCE = 3" OF LIFT HEIGHT
WHERE USED:	1968 - 1993 PIONEER SERIES TRAILERS WITHOUT RATCHET 1990 - 1993 DESTINY SERIES TRAILERS WITHOUT RATCHET OR CLUTCH CRANK ASSEMBLY
PART NUMBER:	4737C5661

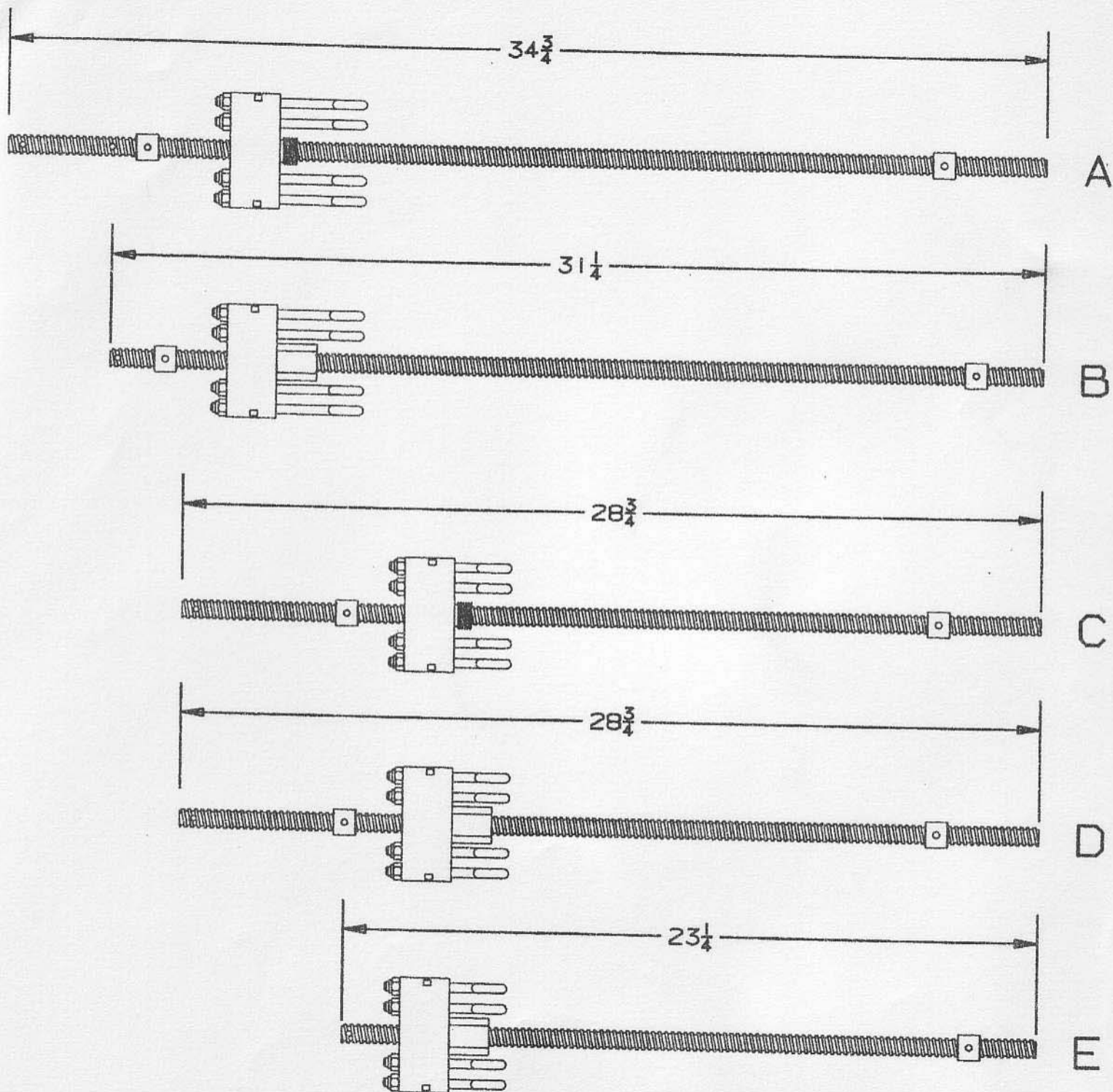
## WHIFFLETREE SPECIFICATIONS

Page 3

### E

DRAWBAR CONFIGURATION:	PLASTIC DELRIN NUT
DRAWBAR SHAFT:	FINE THREAD
DRAWBAR TRAVEL DISTANCE:	17" NOTE: 1" OF TRAVEL DISTANCE = 3" OF LIFT HEIGHT.
WHERE USED:	1994 - 1995 DESTINY SERIES TRAILERS (ALL MODELS)  1996 - 1999 (8') MODEL TRAILERS ONLY  2000 DESTINY SERIES 8' MODELS ONLY WITH CLUTCH RELEASE CRANK AND SPROCKET ASSEMBLY
PART NUMBER:	4749A6731, 4749B6731, 4749C6731

# WHIFFLETREE SPECIFICATIONS



970TT



## WHIFFLE TREE REMOVAL AND REPLACEMENT FOR CONVENTIONAL LIFT SYSTEM

### TOOLS REQUIRED

Socket wrench set with 7/16" and  
3/8" sockets  
Hammer

Pin punch (5/32")  
Open-end wrenches, 7/16" and 3/8"  
Slot screwdriver

### INSTRUCTIONS FOR REMOVAL

1. Raise the trailer top as high as needed to pull both beds out approximately one foot.
2. Lower the trailer top and allow the top to rest on the extended bed assemblies. Turn the crank handle until all cables are slack.
3. Under the trailer, remove the 7/16" bolts and/or nuts from the whiffle tree guide channel or cover plate.
4. Using a screwdriver or a small pry bar, pry the whiffle tree guide channel down from between the frame member cross channels. Cover plates will lower once the last bolt is removed (on models so equipped).
5. Using the 5/32" pin punch and a hammer, drive the solid tapered pin out of the thrust nut. This pin is located toward the rear of the frame cross channel. The thrust nut extends through the frame channel itself.

**IMPORTANT:** Destiny series trailers will have two solid shear pins in the thrust nut. Only remove the one closest to the whiffletree shaft.

**NOTE:** Check pin connection at thrust nut in order to determine which type of pin has been used. In connections made with a roll pin, drive the pin out by placing the pin punch on either end of the roll pin and drive the pin out of the thrust nut and whiffle tree screw shaft. In connections made with a solid shear pin, removal of the pin can only be done in one direction. This pin is tapered. Drive the pin out by placing the pin punch against the smallest end of the pin and drive the pin out of the thrust nut and whiffle tree screw shaft.

6. Where applicable, move toward the front of the trailer and locate the coupler tube that connects the threaded whiffle tree shaft to the smooth crank extension shaft. Drive out the pin that fastens the threaded whiffle tree shaft to the coupler tube.

**NOTE:** Destiny series trailers do not use coupler tubes. Remove the crank handle roll pin from the end of the whiffletree shaft. Continue to step 8.

## WHIFFLE TREE REMOVAL AND REPLACEMENT FOR CONVENTIONAL LIFT SYSTEM

### Page 2

#### INSTRUCTIONS FOR REMOVAL (continued)

7. Drive the second pin out of the coupler tube and slide the tube forward on the extension shaft.
8. Remove the lock nuts from the four whiffle tree eye bolts and pull the eye bolts out of the whiffle tree drawbar.

**NOTE:** Remove and replace the eye bolts in sequential order. (Two rear cables attach to the inner holes on the drawbar. The two front cables attach to the outer holes on the drawbar.) Opposite for Destiny model trailers.

9. Loosen the bolts and nuts that fasten the thrust bearing cover to the cross channel.
10. Tip the front end (rear on Destiny models) of the whiffle tree shaft up and pull slightly. This will dislodge the shaft from the retainer cup at the rear of the whiffle tree shaft.
11. Tip the opposite end of the whiffle tree shaft down and pull the complete whiffle tree out of the trailer.

---

#### INSTALLATION

1. Remove the replacement whiffle tree from its shipping carton. Make certain the correct whiffle tree has been received. Example: Americana series camping trailers must use the ball-screw-type whiffle tree. Destiny series use the plastic delrin nut.

**NOTE:** See part numbers in the parts book for appropriate trailer model and year.

2. Under the trailer, tip the rear of the whiffle tree (front on Destiny models) shaft down and insert the front part of the shaft through the thrust nut and frame cross frame channel.
3. Raise the opposite end of the whiffletree shaft and push the rear of the threaded shaft up and into the retainer cup located on the frame cross channel.
4. Tighten the bolts and nuts that fasten the thrust bearing cover to the frame cross frame channel.
5. Match the end of the whiffle tree with the end of the crank extension shaft and slide the coupler tube over the end of the threaded whiffle tree shaft. Align the holes in the coupler tube with the holes in the whiffle tree shaft and extension shaft. Drive a rolled pin into each hole to hold the whiffle tree and extension shafts in place.

**NOTE:** On Destiny series trailers, the whiffletree end attaches to the thrust nut or extends through to the rear bumper.

## WHIFFLE TREE REMOVAL AND REPLACEMENT FOR CONVENTIONAL LIFT SYSTEM

Page 3

### INSTALLATION (continued)

6. Align the hole in the thrust nut with the hole in the whiffle tree threaded shaft and drive a solid tapered pin into the thrust nut and whiffle tree shaft.

**NOTE:** A solid shear pin, part number 4744A1301, must be used for this connection on all models regardless of which type pin has been removed previously. Make certain the smallest end of the tapered pin is placed into the thrust nut before attempting to drive the pin into place.

7. Replace the four whiffle tree eyebolts into the whiffle tree in the same locations as removed. Fasten the eyebolts with the nuts removed and adjust where necessary.

**NOTE:** On 1995 and earlier models, DO NOT operate the lift system without the whiffle tree guide channel in place or blocking between the frame channels of 24 1/2". Serious frame damage will result. 1996 and later models will have spacers permanently mounted between the frame cross channels, therefore blocking will not be necessary.

8. Push the whiffle tree guide channel into place between the frame channels and fasten with the 7/16" bolts and nuts removed, or replace cover plate on those units so equipped.
9. Raise the trailer top and check top height. If top height adjustment is necessary, follow instructions on top height adjustment in service manual.
10. Push both beds into the trailer and close the trailer top.



<b>LIFT MODIFICATIONS REQUIRED FOR ROOF-MOUNTED AIR CONDITIONER INSTALLATION</b>
--

A roof-mounted air conditioner may be installed on all Fleetwood folding trailers from 1981 through current with the following modifications to the lift system:

Model Year	Modifications Required
1981-1983	<p>Change to heavier whiffle tree in Pioneer series</p> <p>Change lift pocket to welded, gusseted style</p> <p>Upgrade whiffletree to part number 4737C5661.</p> <p>Replace thrust nut roll pin with solid shear pin</p>
1984 - 1986	<p>Change to solid roll pin <b>except</b> on 9' and 11' trailers manufactured after 9/6/85 and all 7' trailers manufactured after 10/5/85.</p> <p>Change to larger eyebolts or weld eyelets shut on 1996 models produced prior to 3/27/86. If changing to larger eyebolts, drill out eyebolt holes on whiffletree to 11/32".</p> <p>Upgrade whiffletree on 1985 and prior Pioneer models to part number 4737C5661 as follows:</p> <p>7' models produced prior to 2/20/85</p> <p>9' and 11' models produced prior to 10/1/84</p>
1987	<p>Change to larger eyebolts <b>except</b> on trailers manufactured after March 27, 1986</p>
1988 - 1998	<p>All top assemblies with the exception of 1989 - 1995 Americana and Plantation series trailers will need air conditioner support braces installed by dealer.</p>
<p><b>NOTE:</b> For additional details, refer to preceding sections on whiffle tree, thrust nut, and eyebolt.</p>	
1999 - 2000	<p>All 10' and 12' "ABS" plastic top assemblies have a factory installed air conditioner brace.</p> <p>All 8', 8 1/2', 10', and 12' aluminum top assembly models require double air conditioner braces to be installed by the dealer.</p>

## 1968 TO PRESENT YEAR LIFT ASSEMBLIES

### A

#### 1968 - 1970 MODELS - 4 STAGE LIFT

CABLE ROUTING                      ONE LONG CONTINUOUS CABLE (199") CUT LENGTH  
   ONE INTERMEDIATE CABLE (51") CUT LENGTH

LIFT ATTACHMENT                      BOLTED TO TOP SIDE OF TRAILER FRAME

**NOTE:** LIFT ASSEMBLY MUST BE REMOVED THROUGH INSIDE OF TRAILER. IT WILL BE NECESSARY TO REMOVE INTERIOR FURNITURE, WALL PANELING, AND LOOSEN EXTERIOR BODY PANELS TO ACCESS THE FOUR BOLTS SECURING EACH LIFT ARM TO FRAME.

### B

#### 1971 - 1981 MODELS - 4 STAGE LIFT

CABLE ROUTING                      ONE LONG CONTINUOUS CABLE (199") CUT LENGTH  
   ONE INTERMEDIATE CABLE (51") CUT LENGTH

LIFT ATTACHMENT                      SLIDES DOWN INTO TRAILER FRAME KNOCK-OUT AND  
   BOLTS THROUGH SIDE OF FRAME CHANNEL.

### C

#### 1982 - 1989 MODELS - 4 STAGE LIFT

CABLE ROUTING                      ONE LONG CONTINUOUS CABLE (144") CUT LENGTH  
   TWO INTERMEDIATE CABLES ( SAME LENGTH - 51") CUT  
   LENGTH

LIFT ATTACHMENT                      SLIDES DOWN INTO TRAILER FRAME KNOCK-OUT AND  
   BOLTS THROUGH SIDE OF FRAME CHANNEL.

## D

### 1990 - 1995 ALL MODELS - 4 STAGE LIFT

#### 1996 - 1998 8' MODELS ONLY

##### CABLE ROUTING

ONE LONG CABLE (144" - 223") CUT LENGTH  
TWO INTERMEDIATE CABLES (29") CUT LENGTH

##### LIFT ATTACHMENT

SLIDES DOWN INTO TRAILER FRAME KNOCK-OUT AND  
BOLTS THROUGH SIDE OF FRAME CHANNEL.

## E

### 1996 - 1998 10' AND 12' MODELS - 3 STAGE LIFT

##### CABLE ROUTING:

ONE LONG CABLE (250") CUT LENGTH  
ONE INTERMEDIATE CABLES (35 7/16") CUT LENGTH

##### LIFT ATTACHMENT:

SLIDES DOWN INTO TRAILER FRAME KNOCK-OUT AND  
BOLTS THROUGH SIDE OF FRAME CHANNEL.

## F

### 1999 - 2000 8' MODELS - 4 STAGE LIFT

##### CABLE ROUTING:

ONE LONG CABLE (FRONT - 127") (REAR - 102.75") CUT  
LENGTH

TWO INTERMEDIATE CABLES (29") CUT LENGTH

##### LIFT ATTACHMENT:

SLIDES DOWN INTO TRAILER FRAME KNOCK-OUT AND  
BOLTS THROUGH SIDE OF FRAME CHANNEL.

---

### 1999 - 2000 8 1/2', 10', AND 12' MODELS - 3 STAGE LIFT

##### CABLE ROUTING:

ONE LONG CABLE - REFER TO CABLE CUT CHART CUT  
LENGTH

ONE INTERMEDIATE CABLE (35 7/16") CUT LENGTH

##### LIFT ATTACHMENT:

SLIDES DOWN INTO TRAILER FRAME KNOCK-OUT AND  
BOLTS THROUGH SIDE OF FRAME CHANNEL.

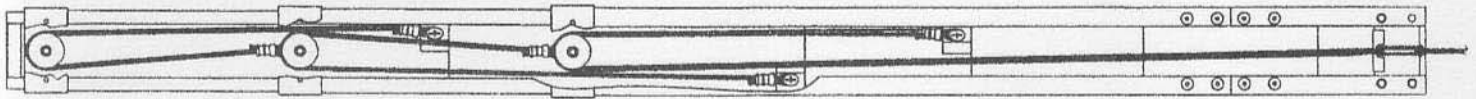


On all trailers prior to 1971, only one lift assembly was used on all four corners. This lift assembly was part number 4730C5141 and is no longer available through our Parts Department. Lift assemblies, part numbers 4716A0011 and 4716A0021 are interchangeable with trailers produced from 1971 through 1995. 1996 through 1998 8' models also use the 4716A0011 and 4716A0021. 1996 10' and 12' models use the 3-stage lift assemblies. When ordering, make certain of correct corresponding model year lift assemblies.

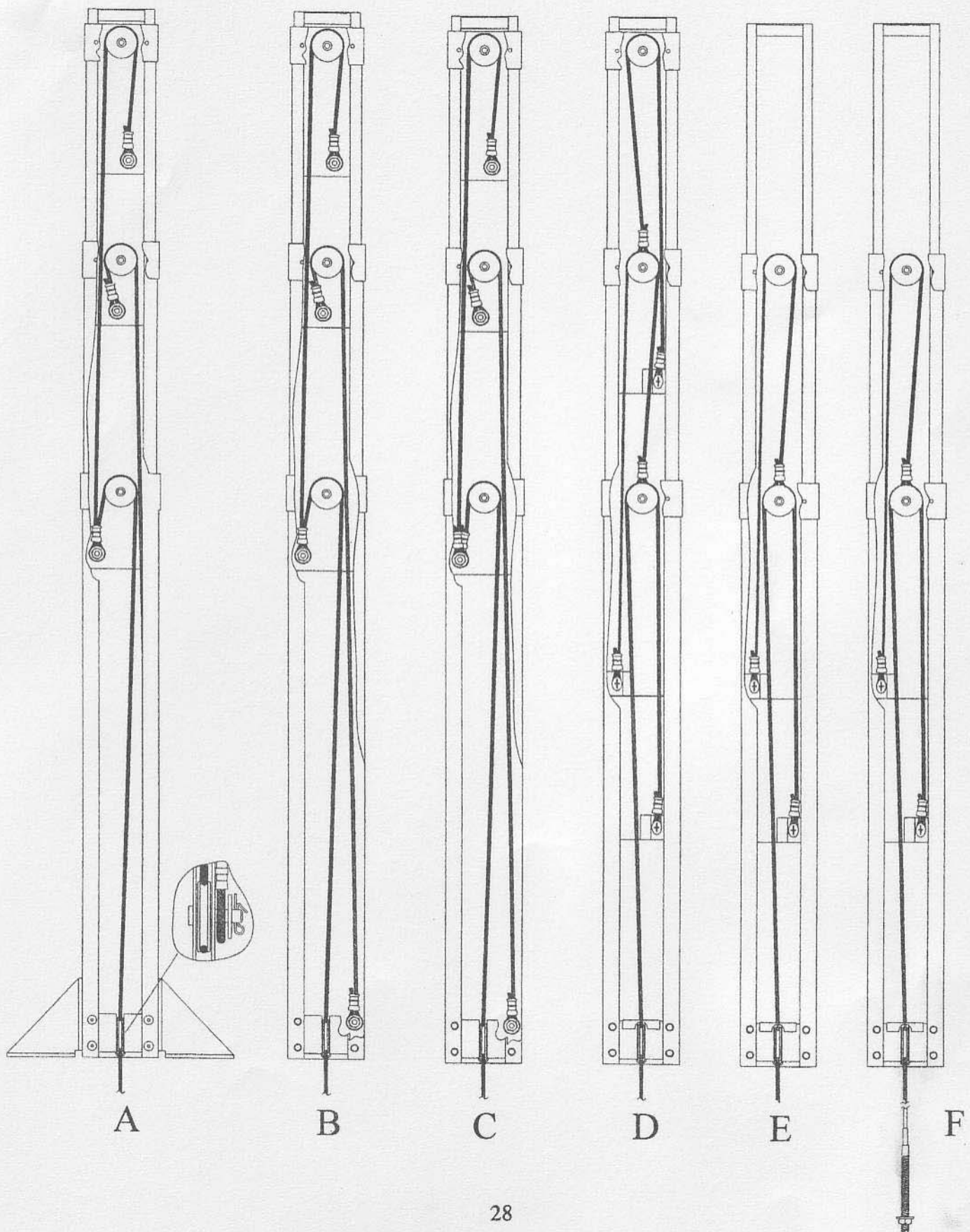
**NOTE:** On Plantation and Four Season series trailers, a small lift extension was placed on the bottom of the lift for additional height. These extensions must be reinstalled onto the replacement lift assemblies.

**NOTE:** 1967 models were manufactured in Wichita, Kansas

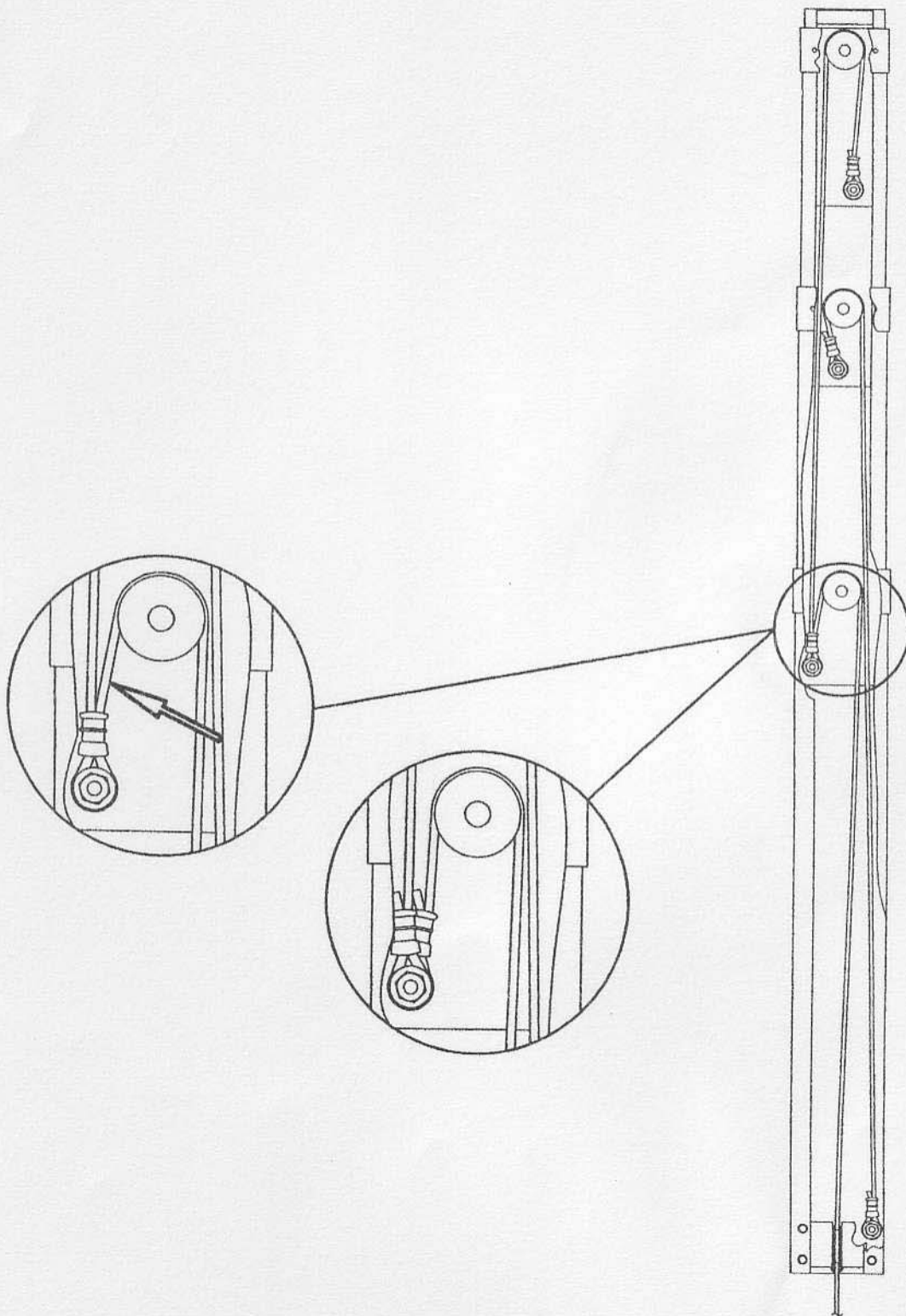
### PLANTATION LIFT



1968 - PRESENT LIFT ASSEMBLIES



MAIN CABLE ATTACHMENT POINTS (1968 - 1981)



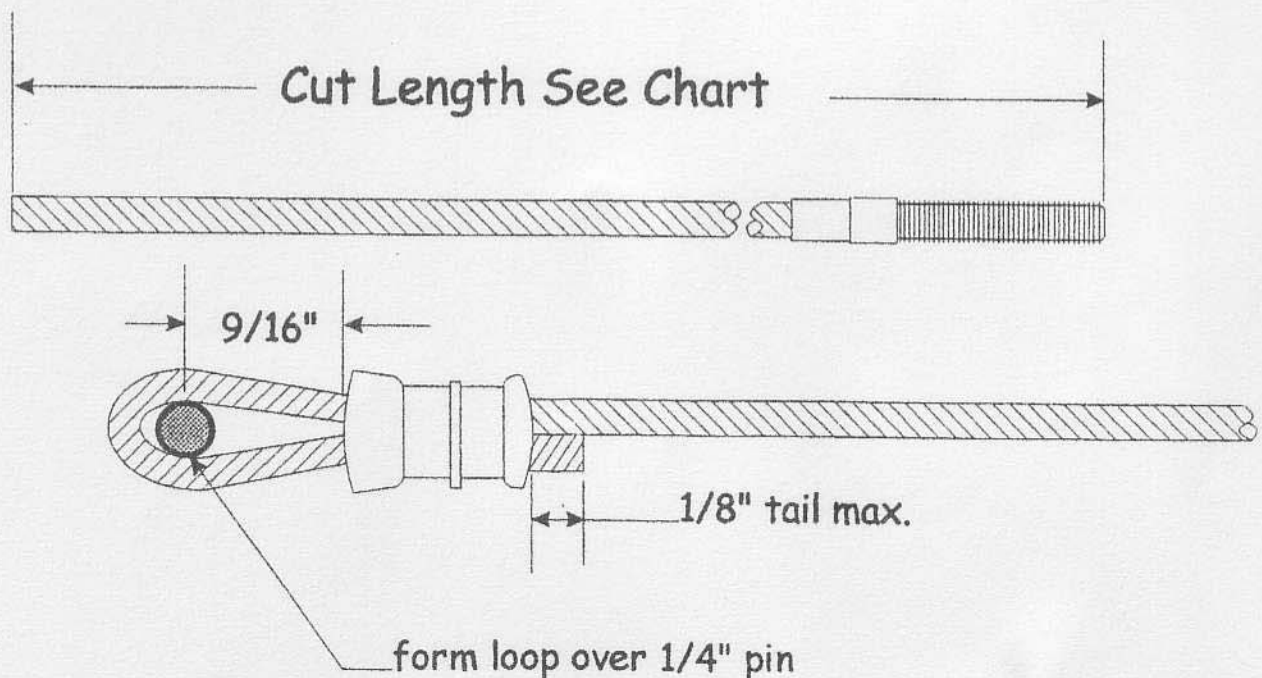


**1999 - 2000 GRAND TOUR ELITE/GRAND TOUR/DESTINY SERIES LONG  
CABLE CUT CHART**

CABLE CUT LENGTH	APPLICATION
119"	ALL 10 AND 12 FOOT ABS TOP REAR CABLES (INCLUDES SEDONA)
161"	ALL 10 FOOT ABS TOP FRONT CABLES (INCLUDES SEDONA)
184"	ALL 12 FOOT ABS TOP FRONT CABLES
127"	TAOS FRONT CABLES
102.75"	TAOS REAR CABLES
164"	SANTEE FRONT CABLES
121 1/2"	REDWOOD/SANTEE REAR CABLES
147.50"	REDWOOD FRONT CABLES

(TOLERANCE OR CUT LENGTHS  $\pm .060$ )

**NOTE: CABLE MUST BE STRUNG THROUGH LIFT ARM PRIOR TO MAKING LOOP END.**



**LIFT ASSEMBLY REPLACEMENTS FOR:  
4739B6801 (4-STAGE, LEFT FRONT/RIGHT REAR)  
4733E5801 (4-STAGE, LEFT REAR/RIGHT FRONT)**

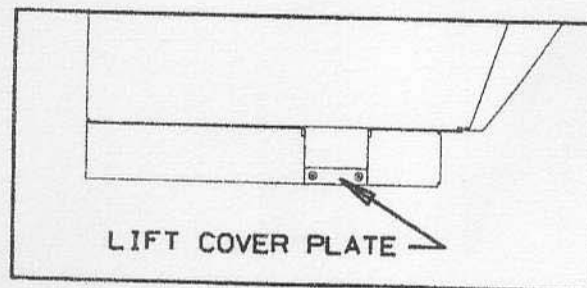
Fleetwood Folding Trailers has introduced two replacement lift arm assemblies, part numbers 4716A0011 (roadside rear/curbside front) and 4716A0021 (roadside front/curbside rear) which will start appearing on your billing invoices. These lift arm assemblies are the current substitutions for the original lift arms manufactured on all series folding trailers produced after model year 1971 inclusive.

**1990 - 1995 Destiny series trailers only:**

**1996 - 1999 Destiny series Taos, Laredo, and Sedona models only:**

**2000 Destiny series Taos model only:**

Replacement of a Destiny series lift arm assembly requires removal of the painted lift cover plate, riveted to the stationary section of the original lift arm prior to removal of the lift arm assembly (refer to figure below). See removal and installation instructions below.



## **INSTRUCTIONS**

**Removal** - Prior to removing original lift arm assembly from the trailer body, drill out the rivets securing the lift cover plate to the stationary lift section using a No. 8 drill bit.

**NOTE:** Removal of the identical rivets on the replacement lift arm assembly will be necessary as well to re-attach painted lift cover plate.

**Installation** - Once installation of the replacement lift assembly is completed, use a rivet gun & re-attach lift cover plate to the stationary section of the replacement lift arm assembly using 1203-8641 rivets or equivalent (not supplied).

Individual top, center, bottom and stationary lift sections are "only" interchangeable on 1990 models and newer due to design changes of the internal cable attachment points. Sales stock inventory will not carry individual lift sections, only the complete lift assemblies. Individual lift sections for replacement can be acquired by removing old sections from discarded or replaced lift assemblies.

## LIFT ASSEMBLY REMOVAL AND REPLACEMENT

### Tools Required:

Screwdriver  
Cable cutters  
Cable crimping tool  
Vice grips  
Long extension for socket wrench  
Open-end wrenches, 3/8" and 7/16"

Vice grips  
4 - Lift support poles  
Electric drill  
Drill Bit  
Rivet gun  
Socket wrench (3/8" & 7/16" sockets)

### 1971 THROUGH PRESENT MODEL YEAR

1. Raise the trailer roof to full height and place one support pole under each corner of the trailer. Place the poles with one end sitting on the body rail and the other end of the pole supporting the top assembly. The top edge of the pole should rest against a small lip on the inside edge of the top where the rubber seal is fastened to the top assembly.

**NOTE:** For proper support pole length, refer to the chart at the end of these instructions.

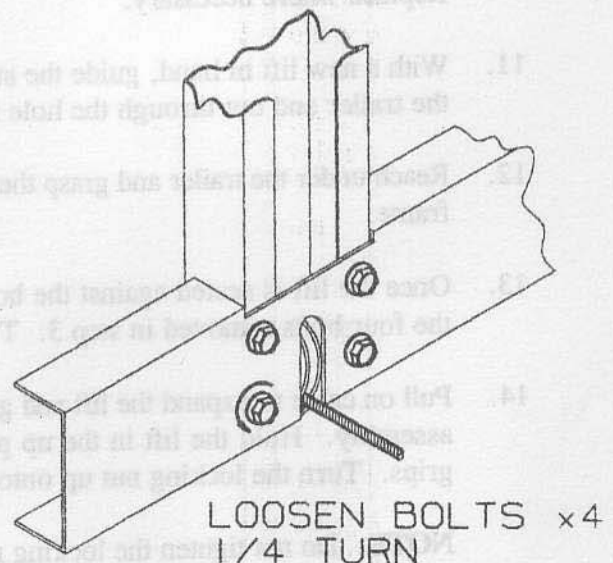
2. **For 1968 - 1998 models:** Preset the whiffletree drawbar by rotating the upper or lower crank and sprocket assembly counterclockwise. The lower whiffletree threaded shaft must be rotated four or five complete turns. This is critical as some crank and sprocket assemblies utilize various gear ratios. (Refer to crank and sprocket assemblies for correct ratio.) Regardless of gear ratios or model, the lower whiffletree threaded shaft must rotate four or five complete turns counterclockwise.

**IMPORTANT:** Presetting the whiffle tree drawbar on 1999 - 2000 model trailers is not necessary providing the cable cut length chart is followed.

3. On the underside of the trailer at the bottom of each lift assembly, four bolts hold the lift to the frame of the trailer. Remove the four bolts with a 3/8" socket wrench. See figure.

**NOTE:** Earlier models did not have lift trim around the lift, but merely used a bead of caulking to seal the lift. This caulking will have to be removed prior to removing the lift.

4. Using a drill and a #8 (3/16") drill bit, drill out the rivets that fasten the lift trim cover to the body rail. The rivets are located on each side of the lift assembly where the lift assembly extends up through the body of the trailer. Once the rivets are removed, the lift trim will slide away from the lift.



**NOTE:** On Destiny and newer Grand Tour and Grand Tour Elite series trailers: Drill out the two rivets securing the painted lift cover plate to the bottom, exposed stationary section of the lift assembly.



## LIFT ASSEMBLY REMOVAL AND REPLACEMENT

### Page 2

5. Locate the two studs that extend from the top assembly down through the top of the lift assembly. Use a socket wrench with an extension and a deep well 7/16" socket to remove the lock nuts from the studs.

**NOTE:** The studs will be easily found by looking upward behind the lift into the open channel of the lift assembly.

6. Slide under the trailer and locate the whiffle tree guide channel cover located in the center of the trailer between two cross channel frame members. Remove the eight bolts and nuts that fasten the cover to the frame members. Using a screwdriver or a small pry bar, remove the guide channel cover from the trailer.

**NOTE:** 1996 and newer model trailers will incorporate a removable cover plate over the whiffletree.

7. Once the cover is removed, the whiffle tree and cable attaching eye bolts will be exposed. Locate the cable that extends to the lift to be removed. Using cable cutters, snip the cable from the appropriate eye bolt. It will be necessary to remove the cable crimp from the cable as well.
8. Collapse the lift assembly by hand and pull the lift up and out of the trailer.
9. Look down inside the opening in the body of the trailer where the lift was removed. Locate any obstruction that would hinder the installation of the new lift assembly i.e., electrical wiring. If wires are found, tape the wires to the backside of the body panel of the trailer.
10. Check all pulleys under the trailer for razor-sharp edges and make certain they move freely. Replace where necessary.
11. With a new lift in hand, guide the stainless steel cable down through the hole in the body rail of the trailer and out through the hole in the trailer frame channel.
12. Reach under the trailer and grasp the cable and pull, guiding the lift down into the trailer body and frame.
13. Once the lift is seated against the bottom of the frame channel, fasten the lift to the frame using the four bolts removed in step 3. Tighten the bolts, then back off 1/4 turn.
14. Pull on cable to expand the lift and guide the lift up into the two studs that fasten the lift to the top assembly. Hold the lift in the up position by clamping the cable at the trailer frame with vice grips. Turn the locking nut up onto the studs approximately 1/2 the distance of the threads.

**NOTE:** Do not tighten the locking nuts. This allows the top assembly to move and fit over the trailer body when closing.

## LIFT ASSEMBLY REMOVAL AND REPLACEMENT

### Page 3

15. Make certain the pulley on the adjustable pulley bracket (1975 and newer models) is placed in the hole closest the frame of the trailer. Also loosen the nuts on the whiffle tree eye bolt to allow for future adjustment of the cable.
16. Route the long cable through the pulleys and into the whiffle tree area.
17. Slide a cable crimp onto the main cable. Route the cable through the eye bolts and back through the cable crimp. Pull cable tight and hold in place with a pair of vice grips. Push cable crimp up as close to the eye bolt as possible and compress the crimp with the cable crimping tool.  
**NOTE:** 1999 models will have eyebolts already crimped to replacement cable. Push eyebolt through whiffletree drawbar and adjust lock nut.
18. Cut off any excess cable.
19. Replace the whiffle tree guide channel (or cover plate) and hold in place with two bolts and nuts.  
**NOTE:** Place the guide channel on an angle to allow access to the eye bolts for adjusting.
20. Remove the four support poles and raise the trailer top to full height.
21. Measure between the body rail of the trailer and the top assembly where the rubber seal of the top would contact the trailer when closed. Refer to the section on top height adjustment to obtain this measurement.  
**NOTE:** If this measurement is not between those listed on the chart, replace each of the four support poles removed in Step 20. This will re-support the top assembly and allow the whiffle tree eye bolt nuts to be adjusted. For every 1" of adjustment at the eyebolt, the top will raise approximately 3". Tighten each eye bolt nut until the support in that corner no longer holds the weight of the top assembly. This will insure that the optimum top height has been attained.  
**NOTE:** On 1996 and newer models, every 1" of adjustment equals 2" of lift height.
22. Once the top height is adjusted, close the trailer top and fit the whiffle tree guide channel or cover plate to its proper location and fasten with the bolts and nuts removed.
23. Raise the trailer top slightly and replace the lift trim cover and fasten with rivets. In cases where caulking was removed from around the lift, it will be necessary to reseal around the lift opening at the body rail with a bead of caulking.  
**NOTE:** On Destiny series trailers only: Reattach painted lift cover plate to bottom of stationary lift section using two (1203-8641) rivets.



## LIFT ASSEMBLY REMOVAL AND REPLACEMENT

### Page 4

#### ALL 1970 AND PRIOR MODEL YEAR TRAILERS

1. In all 1970 and prior model year trailers, the lift assemblies are not bolted to the frame in the same manner as the current lift assemblies are.
2. These lifts have a triangle or square shaped gusset welded to the assembly and are bolted on top of the frame channel.  
With the gusset welded on to the lift assembly, it is impossible to remove the lift by pulling it up through the body rail.
3. When replacing a cable and/or replacing the entire lift assembly of one of these units, it will be necessary to remove any furniture and interior wall paneling that is located directly in front of the particular lift involved.
4. Unbolt the lift by first removing the adjacent furniture and wall paneling to expose the attaching bolts. It will also be necessary to unfasten the adjacent body panel in front of the lift involved along the bottom flange where it is secured to the frame.
5. The remaining bolts can be removed by pulling the bottom of the body panel away from the frame and working from the outside of the trailer.

**NOTE:** It will be necessary to remove the caulking seal around the lift at the body rail prior to removing the lift assembly.

Once all attaching bolts are removed, collapse the lift assembly and remove the lift through the inside of the trailer by tilting the bottom of the lift inward and pulling downward and out of the body rail.

Reverse procedure to replace lift then follow the instructions used on 1971 - 1991 lifts for restringing the main cable.



## REPLACEMENT CABLES

<b>Main Cable</b>	1968 - present	Americana/Pioneer	144"
	1986 - 1991	Plantation	186"
	1990 - 1992	Destiny	156"
	1994 - 1995	Americana	223"
	1996 - 1998	Grand Tour	250"
	1999 - 2000	See Lift Cable Cut Chart	
<b>Inner Cable</b>	1968 - 1989	Americana/Pioneer/Plantation	51"
	1990 - 1995	Americana/Pioneer	29"
	1990 - 1991	Plantation	29"
	1990 - present	Destiny (1999 8' models only)	29"
	1996 - present	Grand Tour	35 7/16"
	1999 - 2000	See Lift Cable Cut Chart	

### **Finished length of intermediate cables:**

51" cut length = 45 1/2" (finished length, eyebolt to eyebolt)  
 35 7/16" cut length = 31 1/16" (finished length, eyebolt to eyebolt)  
 29" cut length = 24 5/8" (finished length, eyebolt to eyebolt)

### **Cable part number 4753-3391 will replace the following:**

144" cable - Americana Pioneer/Series  
 199" cable - older trailers (1968 - 1981 models).

On older trailers (1968 - 1981 models) which utilize the 199" cable, it will be necessary to use one 250" main cable and one 51" inner cable. For details on changing just the main cable on older trailers utilizing the 199" continuous cable, please refer to the "Replacing the Main Cable" section in this manual.

## CABLE CUTTER AND CRIMPING TOOL SUPPLIER

Please find below a source for your purchase of the 1/8" cable cutter and crimping tool. American Lifting Products, Inc. will process your order directly on a C.O.D. basis. Should you have to order these tools for your service needs, please do not attempt to order them through Fleetwood. American Lifting Products will handle your order directly.

**American Lifting Products, Inc.**  
**1227 West Lincoln Highway**  
**Coatesville, Pennsylvania 19320**  
**Phone: 610/384-1800**  
**FAX: 610/384-8600**

**C-7 Felco Cable Wire Rope Cutters**  
**51M850 Nicopress Hand Tool**

## REPLACING THE MAIN CABLE

### Tools Required:

Socket wrench set with 7/16" and 3/8" sockets  
Open-end wrenches 7/16" and 3/8"  
Slot screwdriver  
Electric drill and bit

### 1971 THROUGH PRESENT MODEL YEAR

1. Raise the trailer roof to full height and place one support pole under each corner of the trailer. Place the poles with one end sitting on the body rail and the other end of the pole supporting the top assembly. The top edge of the pole should rest against a small lip on the inside edge of the top where the rubber seal is fastened to the top assembly.

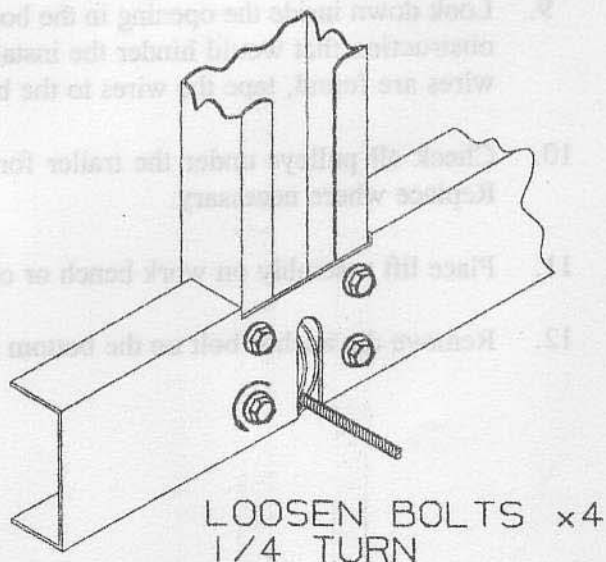
**NOTE:** Correct support poles length can be found on the chart at the end of the lift assembly removal and replacement section. 1996 and newer model trailers will require the top edge of the support pole to be inserted under the rubber seal of the top assembly.

2. **For 1968 - 1998 models:** Preset the whiffletree drawbar by rotating the upper or lower crank and sprocket assembly counterclockwise. The lower whiffletree threaded shaft must be rotated four or five complete turns. This is critical as some crank and sprocket assemblies utilize various gear ratios. (Refer to crank and sprocket assemblies for correct ratio.) Regardless of gear ratios or model, the lower whiffletree threaded shaft must rotate four or five complete turns counterclockwise.

**IMPORTANT:** Presetting the whiffle tree drawbar on 1999 - 2000 model trailers is not necessary providing the cable cut length chart is followed.

3. On the underside of the trailer at the bottom of each lift assembly, four bolts hold the lift to the frame of the trailer. Remove the four bolts with a 3/8" socket wrench. See figure.
4. Using an electric drill and a #8 drill bit (3/16"), drill out the rivets that fasten the lift trim cover to the body rail. The rivets are located on each side of the lift assembly where the lift assembly extends out of the body of the trailer. Once the rivets are removed, the lift trim will slide away from the lift.

**NOTE:** On earlier models, lift trim was not placed around lift. Instead, a bead of caulking was used to seal the opening. This will have to be removed in order to remove the lift.





## REPLACING THE MAIN CABLE

### Page 2

5. Locate the two studs that extend from the top assembly down through the top of the lift assembly. Use a socket wrench with an extension and a deep well 7/16" socket to remove the lock nuts from the studs.

**NOTE:** The studs will be easily found by looking upward behind the lift into the open channel of the lift assembly.

6. Slide under the trailer and locate the whiffle tree guide channel cover located in the center of the trailer between two cross channel frame members. Remove the eight bolts and nuts that fasten the cover to the frame members. Using a screwdriver or a small pry bar, remove the guide channel cover from the trailer.

**NOTE:** 1996 and newer model trailers will incorporate a removable cover plate over the whiffletree. (1996 - 1998 8' models still have removable guide channel covers. 1999 models have removable cover plate.)

7. Once the cover is removed, the whiffle tree and cable attaching eye bolts will be exposed. Locate the cable that extends to the lift to be removed. Using cable cutters, snip the cable from the appropriate eye bolt. It will be necessary to remove the cable crimp from the cable as well.

**NOTE:** 1999 models have the eyebolt crimped to the end of the long cable assembly. Remove the complete eyebolt and cable.

8. Collapse the lift assembly by hand and pull the lift up and out of the trailer.

**NOTE:** On Destiny series trailers only, it will be necessary to remove the painted lift cover plate at the bottom exposed section of the lift.

9. Look down inside the opening in the body of the trailer where the lift was removed. Locate any obstruction that would hinder the installation of the new lift assembly i.e., electrical wiring. If wires are found, tape the wires to the backside of the body panel of the trailer.
10. Check all pulleys under the trailer for razor-sharp edges and make certain they move freely. Replace where necessary.
11. Place lift assembly on work bench or other suitable work area.
12. Remove the anchor bolt on the bottom lift slide where the long cable attaches. See figure A.



## REPLACING THE MAIN CABLE

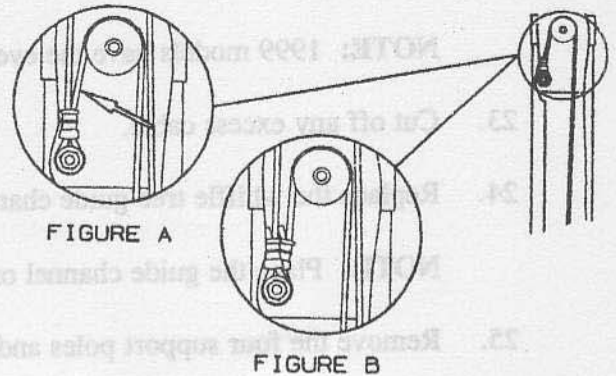
### Page 3

13. Remove the old cable by pulling uncrimped end through bottom butterfly pulley bracket and up through stationary lift pulley bracket.

**NOTE:** On all lifts prior to 1982, it will be necessary to cut the long cable behind the crimp made at the anchor bolt. Refer to figure.

14. Insert the new cable by reversing procedure mentioned in step 13.

**NOTE:** 1999 models have the eyebolt crimped to one end of the long cable. Open end of long cable must be routed through lift arm pulleys, etc., prior to making the loop end.



15. Attach the pre-looped end of cable to anchor bolt and tighten.
16. With the repaired lift in hand, guide the stainless steel cable down through the hole in the body rail of the trailer and out through the hole in the trailer frame channel.

17. Reach under the trailer and grasp the cable and pull, guiding the lift down into the trailer.

18. Once the lift is seated against the bottom of the frame channel, fasten the lift to the frame using the four bolts removed in step 3.

**NOTE:** Tighten the bolts, then back off 1/4 turn.

19. Pull on the cable to expand the lift and guide the lift up into the two studs that fasten the lift to the top assembly. Hold the lift in the up position by clamping the cable at the trailer frame with vice grips. Turn the locking nut up onto the studs approximately 1/2 the distance of the threads.

**NOTE:** Do not tighten the locking nuts. This allows the top assembly to move and fit over the trailer body when closing.

20. Make certain the pulley on the adjustable pulley bracket is placed in the hole closest the frame of the trailer. Also loosen the nuts on the whiffle tree eye bolt to allow for future adjustment of the cable.

21. Route the long cable through the pulleys and into the whiffle tree area.

## REPLACING THE MAIN CABLE

### Page 4

22. Slide a cable crimp onto the cable. Route the cable through the eye bolts and back through the cable crimp. Pull the cable tight and hold in place with a pair of vice grips. Push the cable crimp up as close to the eye bolt as possible and compress the crimp with the cable crimping tool, making two crimps.

**NOTE:** 1999 models have the eyebolt already crimped onto the cable assembly.

23. Cut off any excess cable.
24. Replace the whiffle tree guide channel and hold in place with two bolts and nuts.

**NOTE:** Place the guide channel on an angle to allow access to the eye bolts for adjusting.

25. Remove the four support poles and raise the trailer top to full height.

### 1971 THROUGH PRESENT MODEL YEARS

26. Measure between the body rail of the trailer and the top assembly where the rubber seal of the top would contact the trailer when closed. Refer to the section on top height adjustment to obtain this measurement.

**NOTE:** If the desired measurement is not attained, replace each of the four support poles removed in step 20. This will re-support the top assembly and allow the whiffle tree eye bolt nuts to be adjusted. For every 1" of adjustment at the eye bolt, the top will raise approximately 3". Tighten each eye bolt nut until the support in that corner no longer holds the weight of the top assembly. This will insure that the optimum top height has been attained.

**NOTE:** On 1996 and newer models, every 1" of adjustment equals 2" of lift height.

27. Once the top height is adjusted, close the trailer top and fit the whiffle tree guide channel to its proper location and fasten with the bolts and nuts removed. Replace cover plate only on units so equipped.
28. Raise the trailer top slightly and replace the lift trim cover and fasten with rivets where applicable.



## TOP HEIGHT ADJUSTMENT 1968 TO PRESENT MODEL YEAR TRAILERS

### Tools Required:

- Socket wrench set
- Open-end wrench set
- Screwdriver
- 4 - Lift support poles
- 2 - 2x4" Wood blocks, 24 1/2" long

1. Raise the top to full height and measure each corner between the body rail of the trailer and the top assembly where the rubber seal is fastened to the top assembly. To determine this measurement, refer to the chart at the end of these instructions.

**NOTE:** On 1996 and newer models, measure from the top seal (where seal is glued to the black channel that slips onto the edge of ABS top assembly) down to edge of body rail.

2. Place the proper length support post between the body rail of the trailer and the small lip found just behind the lower outside edge of the top assembly.

**NOTE:** Check height chart for proper length support pole.

3. Slide under the trailer and remove the 7/16" nuts and bolts from the whiffle tree guide channel or cover plate located in the center of the trailer between the frame members. Pry the guide channel down with a screwdriver or small pry bar. Cover plate will dislodge once the last screw is removed.
4. Place one 24 1/2" long 2x4" block on each side of the whiffle tree to maintain the spacing between the frame channels of the trailer. (Not needed on 1996 to present models with guide channels permanently welded in place.)
5. Turn the nuts at the end of the eye bolts up until each of the four support posts begin to fall out of place or they no longer support much of the weight of the top assembly. Repeat this procedure for each corner of the trailer.
6. Once the proper top height is attained, remove the four support posts and lower the top assembly. Be certain cables are slack.
7. Remove the two 24 1/2" x 2x4" long wood blocks from beside the whiffle tree (where applicable).
8. Replace the whiffle tree guide channel or cover plate and fasten with the bolts and nuts removed in step 3.

**NOTE:** Every 1" of adjustment at the whiffle tree will give approximately 3" of adjustment at the top assembly. (2" on 1996 to present models).



## TOP HEIGHT ADJUSTMENT

### Page 2

**NOTE:** When adjusting top height on a trailer with an air conditioner installed, it is necessary to adjust the lift to the maximum height. This will compensate for inadvertent stretching of the cables due to the extra weight added to the top.

### Adjusting the Top Height at the Corner Adjustable Pulley Brackets 1975 to Present Model Year Trailers

1. Raise the trailer top slightly and pull both beds out approximately one foot. Lower the trailer top so it rests on each bed end.
2. Locate a metal adjustable pulley bracket under each corner of the trailer. Each bracket will house a metal pulley. The bracket will have two or three holes for adjusting the pulley away from the frame of the trailer. Moving the pulley from one hole to the next will change the top height approximately 1 1/2".

3. To raise the top height, remove the cotter pin from the center pulley pin and remove the center pin from the adjustable pulley bracket. Move the pulley to the next hole away from the frame of the trailer. Insert the center pin through the pulley and secure with the cotter pin. This will raise the trailer top approximately 1 1/2".

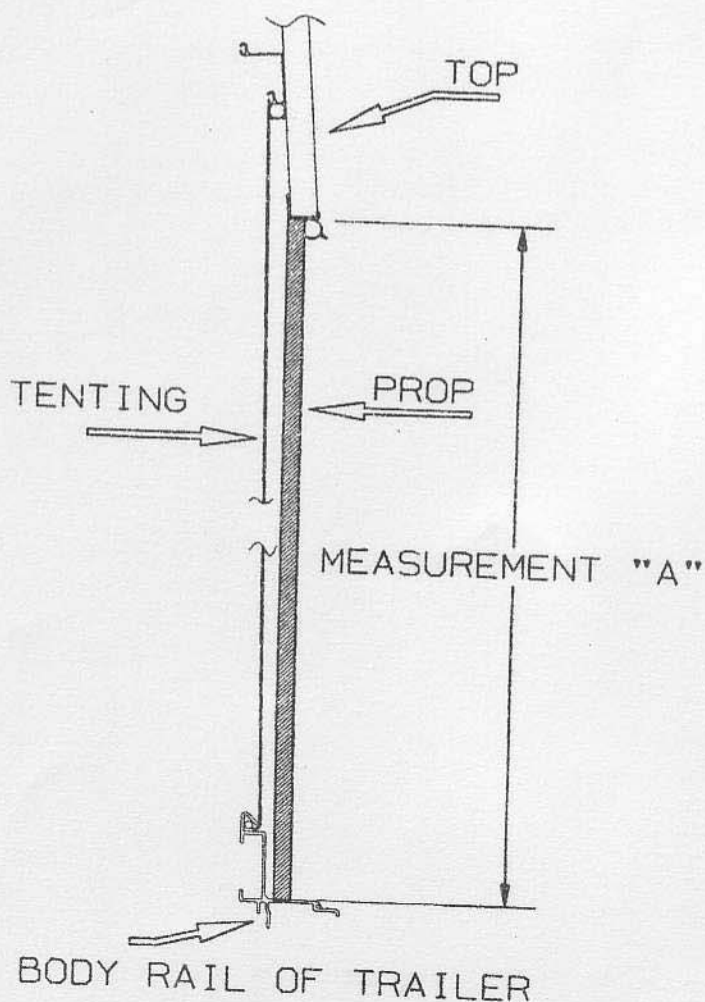
**IMPORTANT:** This adjustment should be left for the customer's convenience. All adjusting by the dealer should be accomplished at the whiffle tree.

4. Once the appropriate pulleys have been moved, raise the top and check the top height. The proper height should be within the measurements found on the lift height measurement chart below.

**NOTE:** When adjusting top height on a trailer with an air conditioner installed, it is necessary to adjust the lift to the maximum recommended height. This will compensate for inadvertent stretching of the cables due to the extra weight added to the top.

# LIFT HEIGHT MEASUREMENT CHART

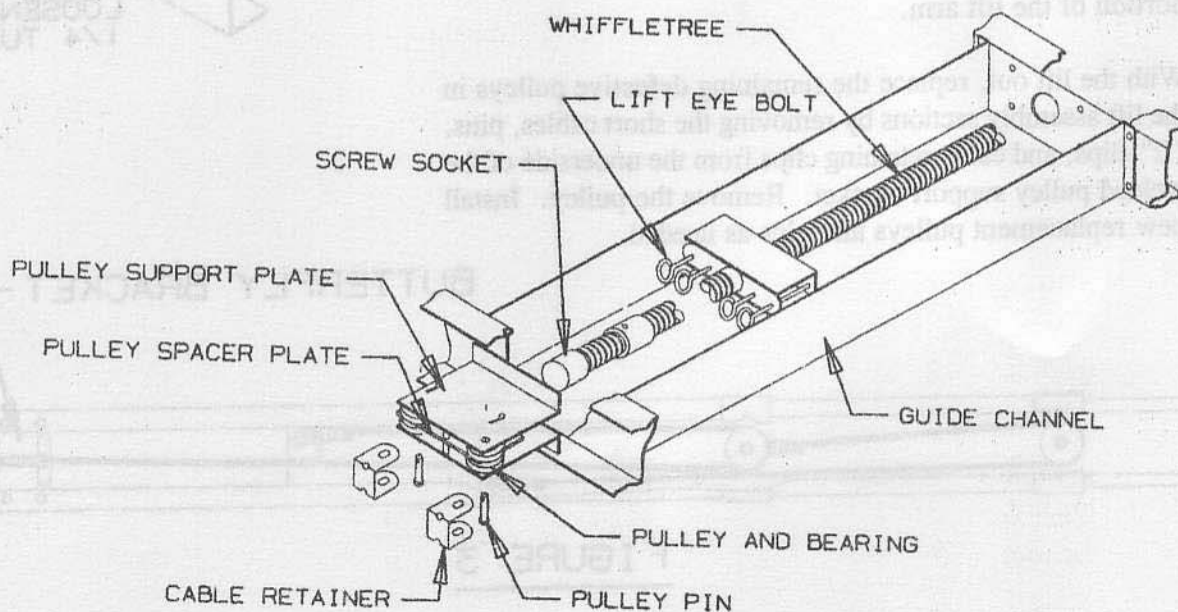
YEAR	MODEL	MEASUREMENT A	POLE SIZE
1968 - 1989	ALL	50 1/2" - 51 1/2"	51"
1991 - 1995	AMERICANA PIONEER	51" - 52"	52"
1990 - 1995 1996 - PRESENT	DESTINY (ALL) DESTINY 8' MODELS ONLY	51" - 52"	52"
1986 - 1991	PLANTATION	44 1/2" - 45 1/2"	45"
1993 - 1995	FOUR SEASON	46 1/2" - 47"	47"
1996 - PRESENT	GRAND TOUR ELITE, GRAND TOUR, AND DESTINY 8 1/2', 10', AND 12" MODELS ONLY (HIGH SIDES)	45 1/2" - 46"	46"





**PROCEDURE TO REMOVE AND CHANGE FOUR PULLEYS AND BUTTERFLY BRACKET WITHOUT CUTTING CABLE ON 1968 TO PRESENT YEAR MODELS EXCEPT THOSE MODELS EQUIPPED WITH REAR, UNDER FLOOR MOUNT WATER TANKS**

1. Raise the top assembly to maximum height.
2. Place four solid support poles next to each lift assembly between the top assembly and the body rail. See the pole length chart at the end of these instructions for correct length.
3. Turn crank back counterclockwise approximately ten turns.
4. Remove whiffle tree guide channel pan or cover plate by removing the eight hex head bolts and nuts using a 7/16" wrench and socket.
5. Place one 24 1/2" long 2x4 on each side of the whiffle tree to maintain spacing between the frame channels of the trailer. Not needed on 1996 models.
6. Disassemble the pulley separator (four pulleys located directly behind the whiffle tree) by removing the two pulley separator retainers, pins, and cotter pins from the pulley separator support plates. See figure.



7. Remove one lift eyebolt from the whiffle tree assembly by backing off the two lock nuts from the threaded end of the lift eyebolt. Feed cable back through frame channel. See Figure 1.

**CAUTION:** Remove only one lift eyebolt at a time. Removing all four lift eyebolts at one time will leave no lift system support should the solid support poles accidentally become disengaged. Ensure cables are put back in original order.



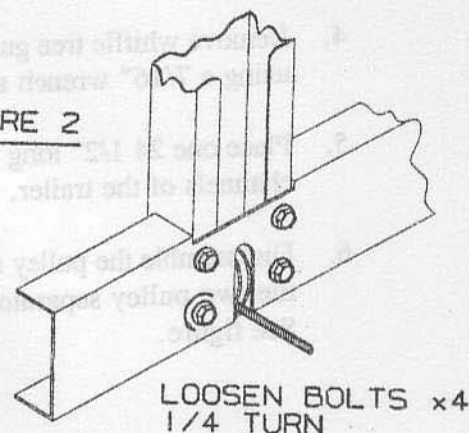
# **PROCEDURE TO REMOVE AND CHANGE FOUR PULLEYS AND BUTTERFLY BRACKET WITHOUT CUTTING CABLE** PAGE 2

8. Remove the lift cover trim from around the exterior portion of the lift assembly by either pulling the lift up from the corner trim double-stick foam tape; or, on later models, by drilling out the two large flat-head rivets retaining the lift cover trim to the body rail using a #8 drill bit.
9. Remove the two hex-shaped locking nuts from the lift pocket assembly securing the top section of the lift assembly to the top assembly. Pulling down on the top lift section, collapse the lift.
10. Remove the four bolts attaching the bottom stationary lift section to the underside of the frame channel. See figure 2.
11. Pull the lift assembly out of the trailer body and lay on a suitable work surface.
12. Remove the butterfly assembly from the bottom stationary section of the lift assembly by removing the four clinch nuts or rivets and replace with the new butterfly assembly. Replace the pulley and pin, if necessary. See figure 3.

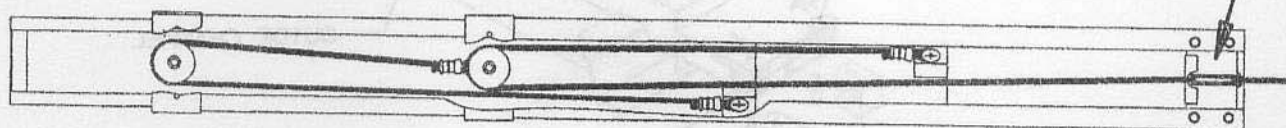
**NOTE:** On Destiny models only, it will be necessary to remove the bottom painted cover plate on the exposed portion of the lift arm.

13. With the lift out, replace the remaining defective pulleys in the lift assembly sections by removing the short cables, pins, "E" clips, and cable retaining clips from the underside of the welded pulley support bracket. Remove the pulley. Install new replacement pulleys and pins as needed.

**FIGURE 2**



**BUTTERFLY BRACKET**



**FIGURE 3**

14. Reinstall the lift assembly according to the lift installation procedures set forth in the service manual.

**PROCEDURE TO REMOVE AND CHANGE FOUR PULLEYS  
AND BUTTERFLY BRACKET WITHOUT CUTTING CABLE**  
Page 3

15. Repeat the above procedure for the remaining lifts as needed.
16. Remove the two 24 1/2" x 2x4" wood blocks from beside the whiffle tree.
17. Replace the whiffle tree guide channel or cover plate and fasten with bolts and nuts removed in step 4.

**NOTE:** In order to remove the butterfly pulley bracket on models prior to 1971, it will be necessary to remove interior paneling directly in front of each lift involved. This will allow access to the lift attachment bolts on the frame channel.



## LIFT SYSTEM TROUBLE SHOOTING GUIDE

<b>SYMPTOM: HARD CRANKING</b>	<b>REPAIR ACTION</b>
BENT PULLEY BRACKET IN LIFT ARMS	REPLACE COMPLETE LIFT
GAULDING OR SCARRING OF LIFT ARM SECTION/S	REPLACE COMPLETE LIFT
CABLE OFF PULLEY/S	REPLACE CABLE ON PULLEY/S; CHECK PULLEYS FOR ABNORMAL WEAR
WORN PULLEY BEARINGS	REPLACE DAMAGED PULLEY/S
BROKEN SHEAR PIN AT THRUST NUT	REPLACE WITH SOLID SHEAR PIN; CHECK REAR FRAME CROSS CHANNEL AT WHIFFLETREE ATTACHMENT POINT
CHAIN OVER-TIGHTENED	ADJUST CHAIN TO PROPER TENSION
CHAIN RUBBING ON FLOOR CUT-OUT	TRIM FLOOR BACK TO CLEAR CHAIN
IMPROPERLY ROUTED CABLES THROUGH FRAME ASSEMBLY	RE-ROUTE CABLE IN PROPER LOCATION
GUIDE CHANNEL REMOVED; FRAME CHANNELS BENT	RE-ALIGN FRAME CHANNELS; REPLACE GUIDE CHANNEL
IMPROPERLY INSTALLED THRUST BEARING	REPLACE THRUST BEARING
WORN BUSHING IN UPPER CRANK ASSEMBLY	REPLACE BUSHING
CRISSCROSSED CABLES AT PULLEY SEPARATOR	RE-ROUTE CABLES THROUGH PROPER PULLEY LOCATION AT PULLEY SEPARATOR
DEFECTIVE WHIFFLETREE	REPLACE WHIFFLETREE
BROKEN CHAIN SPROCKET	REPLACE SPROCKET
THRUST BEARING NOT ALIGNED PROPERLY	RE-ALIGN BEARING AT BEARING COVER BOX
IMPROPER WHIFFLETREE INSTALLED	REPLACE WITH CORRECT WHIFFLETREE
WHIFFLETREE NOT PROPERLY LUBRICATED	LUBRICATE WHIFFLETREE
<b>SYMPTOM: INTERMITTENT DRAGGING OR JUMPING WHEN CRANKING UP OR DOWN</b>	<b>REPAIR ACTION</b>
THRUST BEARING NOT PROPERLY ALIGNED	RE-ALIGN BEARING AT BEARING COVER BOX
DEBRIS IN LIFT ARMS	CLEAN/LUBRICATE LIFTS
WORN BUSHING AT UPPER CRANK ASSEMBLY	REPLACE BUSHING
CABLE OFF IN LIFT ARM	REPLACE CABLE ON PULLEY/S; CHECK PULLEY'S FOR WEAR
WHIFFLETREE NOT PROPERLY LUBRICATED	LUBRICATE WHIFFLETREE

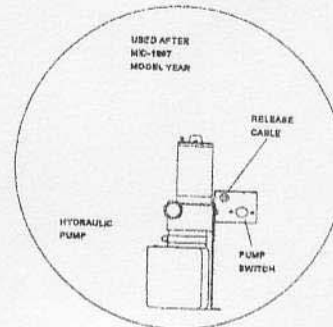
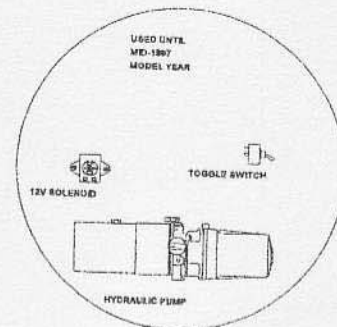
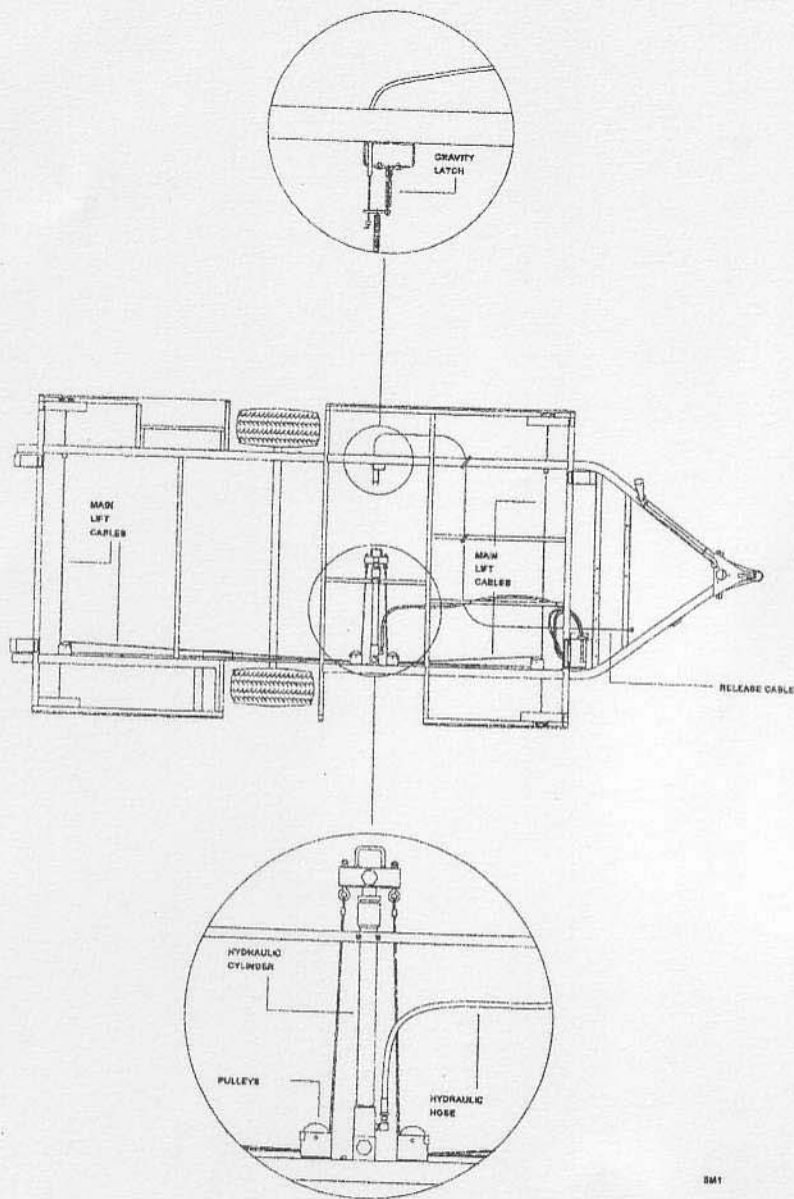


BROKEN TOOTH ON CHAIN SPROCKET	REPLACE SPROCKET
<b>SYMPTOM: TOP CRANKS UP PART WAY AND STOPS</b>	<b>REPAIR ACTION</b>
BROKEN SHEAR PIN AT THRUST NUT	REPLACE WITH SOLID SHEAR PIN
CABLE OFF PULLEY/S	REPLACE CABLE ON PULLEY/S; CHECK PULLEY/S FOR WEAR
WORN PULLEY/S	REPLACE PULLEY/S
DEFECTIVE WHIFFLETREE	REPLACE WHIFFLETREE
DEBRIS IN LIFT ARM	CLEAN/LUBRICATE LIFTS
SCREW TURNED INTO LIFT THROUGH INTERIOR PANELING	REMOVE SCREW; CHECK LIFT; REPLACE IF NECESSARY
<b>SYMPTOM: LIFT ASSEMBLIES BENT, SCARRED, GAULDED</b>	<b>REPAIR ACTION</b>
EXCESSIVE WEIGHT ON TRAILER TOP	REPLACE LIFT ASSEMBLY
TOP OPENED WITHOUT ALL FOUR TOP LATCHES UNLATCHED	REPLACE LIFT ASSEMBLY
BROKEN EYEBOLT	REPLACE EYEBOLT; REPLACE LIFT ASSEMBLY
<b>SYMPTOM: LIFT SYSTEM BANGS/HAMMERS WHEN CRANKING</b>	<b>REPAIR ACTION</b>
CHAIN LOOSE	TIGHTEN CHAIN
THRUST BEARING NOT PROPERLY ALIGNED	RE-ALIGN BEARING AT BEARING COVER BOX
BROKEN TOOTH ON CHAIN SPROCKET	REPLACE SPROCKET
SHEAR PIN NOT COMPLETELY IN AT THRUST NUT	INSERT SHEAR PIN COMPLETELY
<b>SYMPTOM: CRANK TURNS WITHOUT RAISING TOP</b>	<b>REPAIR ACTION</b>
CHAIN BROKEN	REPAIR/REPLACE CHAIN
BROKEN ROLL PIN AT WHIFFLETREE COUPLER	REPLACE ROLL PIN
CHAIN OFF SPROCKET/S	REPLACE CHAIN ON SPROCKET/S
BROKEN ROLL PIN IN UPPER/LOWER SPROCKET	REPLACE ROLL PIN
BROKEN UPPER/LOWER SPROCKET	REPLACE SPROCKET

<b>SYMPTOM: TOP LEANS WHEN CRANKED TO FULL UP POSITION</b>	<b>REPAIR ACTION</b>
LIFT CABLE NOT SET A PROPER HEIGHT	ADJUST CABLE TO PROPER HEIGHT
CABLE OFF PULLEY/S	REPLACE CABLES ON PULLEY/S; CHECK PULLEY/S FOR WEAR
BROKEN WELD IN LIFT POCKETS	REPLACE LIFT POCKET/S
CABLE BROKEN IN LIFT ARM	REPLACE BROKEN CABLE; CHECK FOR PROPER HEIGHT
WRONG LIFT INSTALLED; EXAMPLE: LEFT REAR IN POSITION WHERE LEFT FRONT SHOULD BE	REPLACE LIFT WITH PROPER LIFT FOR PARTICULAR LOCATION
<b>SYMPTOM: LIFT ARM WILL NOT RAISE</b>	<b>REPAIR ACTION</b>
BROKEN CABLE	REPLACE CABLE; CHECK LIFT FOR DAMAGE
CABLE PULLED THROUGH CRIMP	REPLACE CABLE; CHECK LIFT FOR DAMAGE
BROKEN EYEBOLT	REPLACE EYEBOLT; CHECK LIFT FOR DAMAGE
SCREW TURNED INTO LIFT THROUGH INTERIOR PANELING	REMOVE SCREW; CHECK LIFT; REPLACE LIFT IF NECESSARY
BROKEN SPOT WELD ON LIFT ARM	REPLACE LIFT ARM
<b>SYMPTOM: CRANK-UP/CRANK-DOWN SYSTEM NOT WORKING</b>	<b>REPAIR ACTION</b>
CRANK IN LOCK-OUT STAGE	CRANK TRAILER UP TO FULL HEIGHT AND OVER-CRANK TO RE-ENGAGE CLUTCH SYSTEM
TOP SLIPS DOWNWARD WHEN RELEASED	REPLACE CLUTCH BRAKE PAD
TOP WILL NOT CRANK DOWN	BROKEN THRUST NUT - REPLACE DRIVE HUB STRIPPED - REPLACE



# HYDRAULIC LIFT SYSTEM COMPONENTS



SM1



## CHANGING THE RELEASE CABLE ASSEMBLY

1994 - 1995 Americana Series

1994 - 1995 Four Season Series (Yosemite and Hatteras models)

1996 - 1998 Grand Tour Series (Niagara model)

**IMPORTANT NOTE:** All 1994 Americana trailers manufactured prior to September 28, 1993 utilized a .032 diameter release cable which was accessed through the hatch cover door located on the front ABS plastic body panel. These old style release cables have now been replaced by a heavier gauge push/pull style cable (.0625 diameter). Furthermore, it was necessary to remount the push/pull cable onto the two metal gas bottle angles welded on the tongue of the trailer.

**NOTE:** All Yosemite model trailers were manufactured with the heavier push/pull release cable.

### REMOVAL AND REPLACEMENT INSTRUCTIONS

These instructions cover removal and replacement of both the old and new style cables. Where applicable, follow the instructions for the specific cable being replaced.

#### Removal of the old style cable (Americana series trailers only)

1. With the top in the lowered position, remove the old style release cable by cutting off the copper crimp under the trailer at the safety latch. Pull the cable out of the protective plastic sheath. Cut off the excess plastic sheath under the trailer just behind the front frame cross channel. Leave remaining portion intact.

**NOTE:** Discard any cable clamps or nylon ties securing the cable to the floor.

2. Locate the front and rear metal gas bottle angles welded on the tongue of the trailer.
3. Using a ruler or tape measure, measure 3 3/4" from the inside edge of the curbside main frame bar along the vertical edge of the front gas bottle angle. Place a mark on the gas bottle angle at this point. Using this mark as a reference point, make a second measurement 3/8" down from the top edge of the gas bottle angle and intersect the two marks. See figure 1.

**NOTE:** Ensure that the marks established are located on the vertical side of the gas bottle angle facing the battery tray.

4. Repeat step 3 for the rear gas bottle angle using a 9 1/4" measurement from the inside edge of the curbside main frame bar and 3/8" down from the top edge of the rear gas bottle angle.

**NOTE:** Ensure that the marks established are located on the vertical side of the gas bottle angle facing the battery tray.

## CHANGING THE RELEASE CABLE ASSEMBLY

### Page 2

- Using a drill and a 3/8" drill bit, drill one hole through both front and rear gas bottle angles at the marks established in steps 3 and 4.

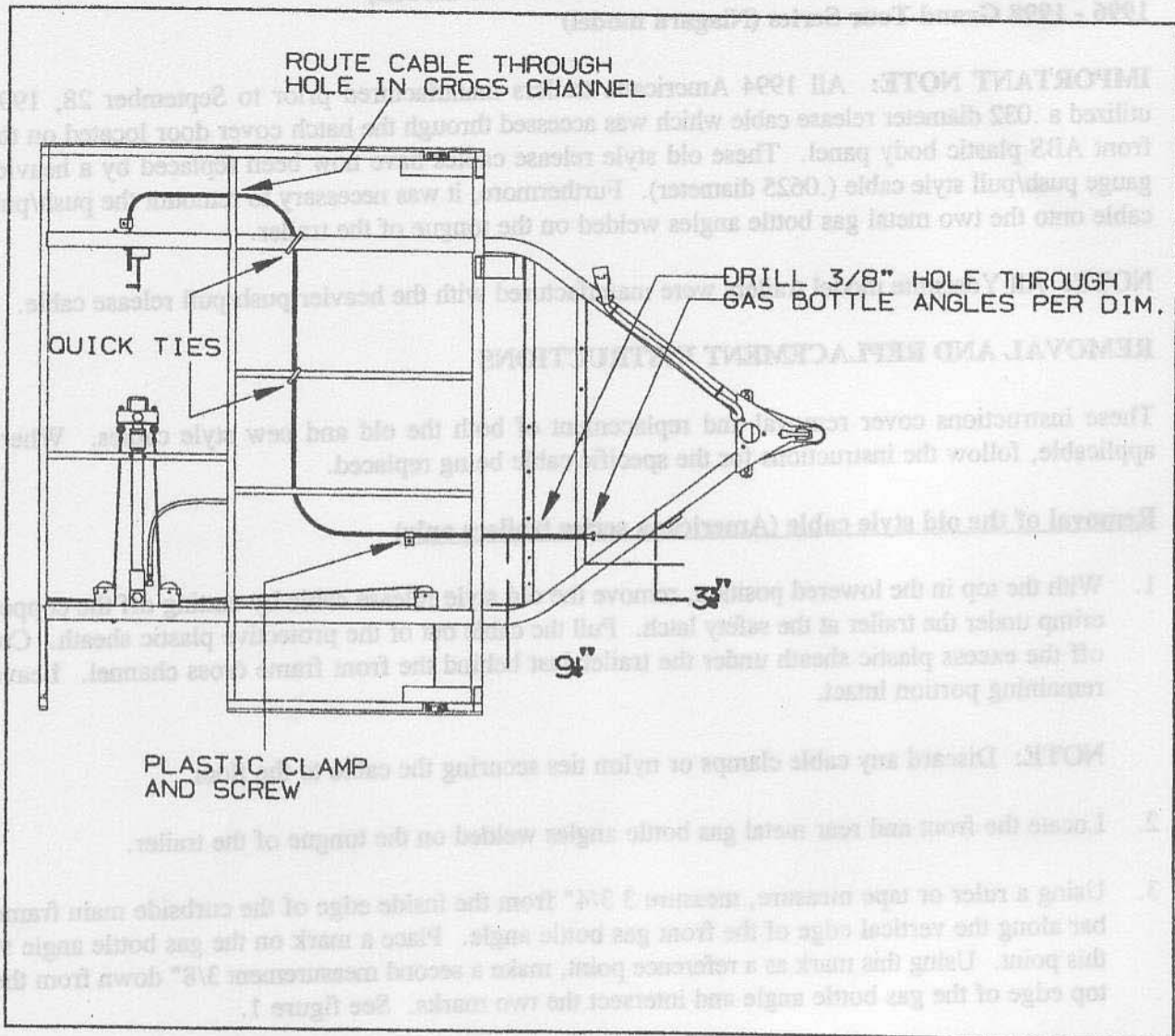


FIGURE 1

- Proceed to step 11 (skip steps 7 - 10).

### Removal of new style cable only (push/pull type)

- With the top in the lowered position, locate the safety latch under the trailer and cut the unprotected cable end between the compression sleeve and the latch screw. See figure 2.

# CHANGING THE RELEASE CABLE ASSEMBLY

Page 3

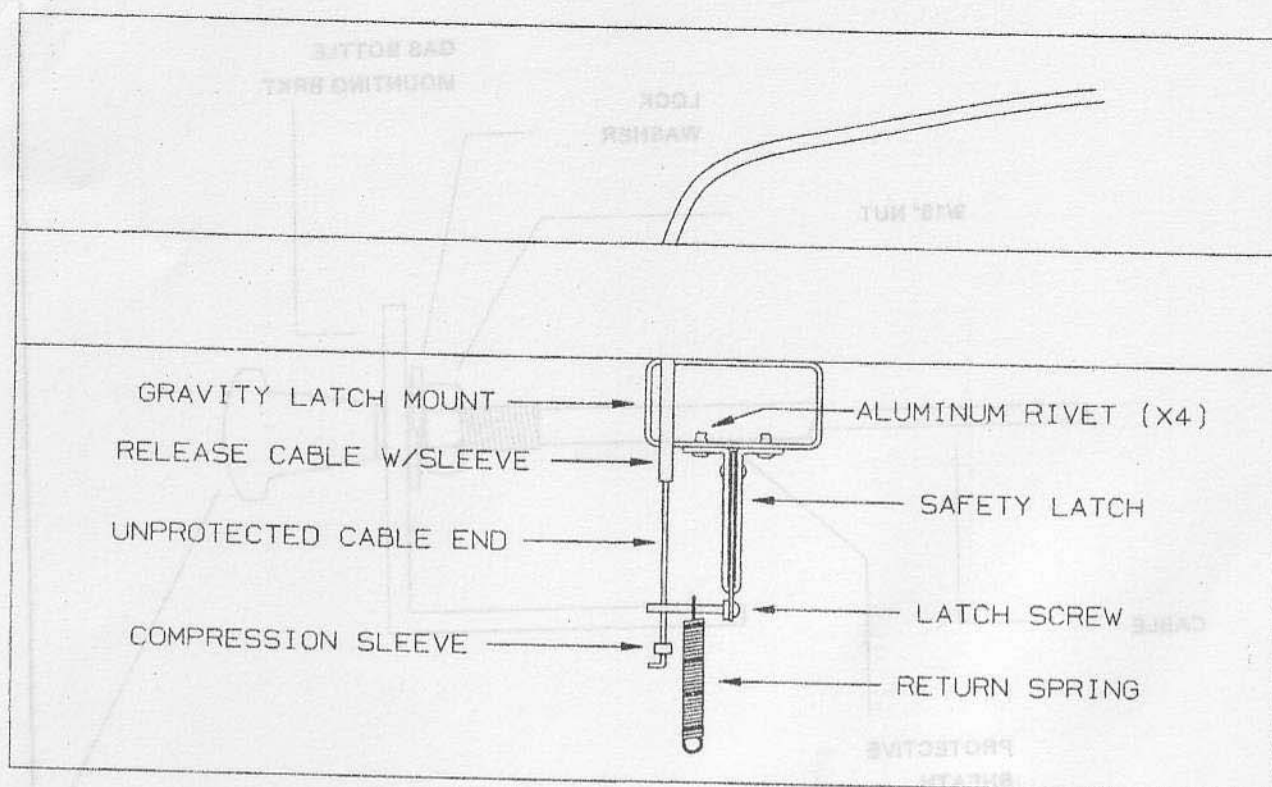


FIGURE 2

8. Locate the push/pull control assembly at the front gas bottle bracket on the A-frame of the trailer or inside the cabinet assembly (Americana/Grand Tour series) or on the curbside rear cabinet assembly inside the trailer (Four Season series).
9. Using a 9/16" wrench, completely remove the nut and the lock washer from the threaded portion of the push/pull control assembly. See figure 3.



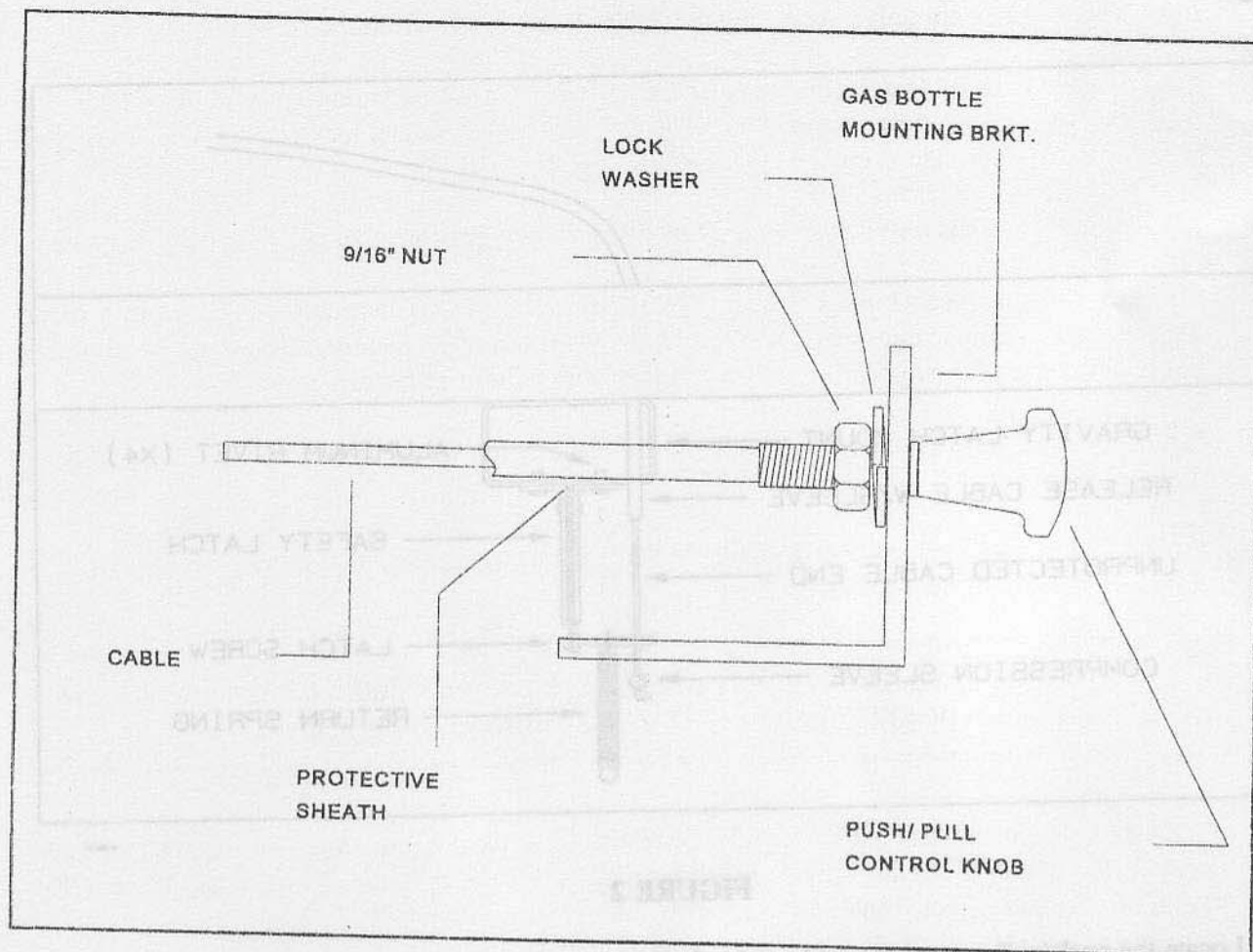


FIGURE 3

10. Remove the push/pull cable out of the protective sheath.

**Installation of push/pull style cable**

11. **For Americana series only:** Uncoil the push/pull control assembly from the kit. Remove the nut and lock washer from the rear of the control assembly. (Completely remove the nut and lock washer from the push/pull assembly.)
12. **For later Americana and Grand Tour series only:** Insert the open cable end through the mounting hole drilled in the front gas bottle angle or through the pump mounting plate. (Insert open cable end toward rear of trailer.) Slip the lock washer and tightening nut over the open cable end. Continue routing the cable through the rear gas bottle angle mounting hole or floor.

## CHANGING THE RELEASE CABLE ASSEMBLY

### Page 5

**For Yosemite models only:** Remove the push/pull cable only from the protective sheath.

13. **For Americana and Grand Tour series only:** Guide the push/pull control assembly through the front gas bottle angle or pump mounting plate and tighten the nut and lock washer against the gas bottle or mounting plate using a 9/16" wrench. See figure 3.

**For Yosemite models only:** Route the cable only through the protective sheath to the safety latch.

14. Route the remaining cable under and through (where applicable) the trailer frame. If necessary, space the two plastic clamps and nylon ties as shown in figure 1. Secure the plastic clamps to the trailer floor with the two 5/8" wood screws provided. Refer to figures 1 and 2.
15. Guide the unprotected cable end through the pre-drilled hole in the latch screw. Refer to figure 2.
16. Pull on the unprotected cable end to ensure that the push/pull control assembly at the tongue is fully depressed into the protective sheath.

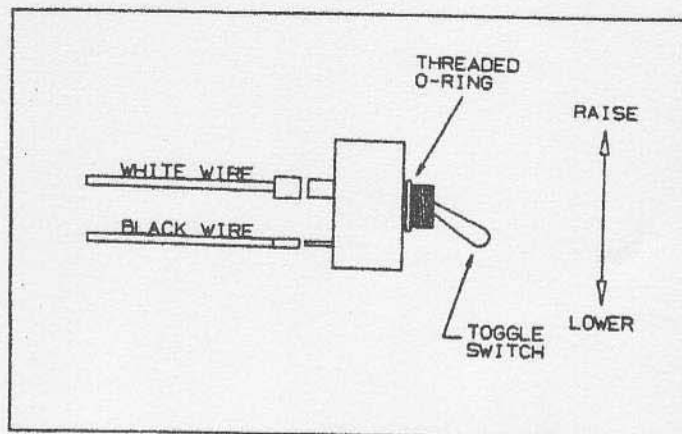
**CAUTION:** Failure to ensure full engagement of the push/pull control assembly into the protective sheath will not allow the safety latch to function properly.

17. With the push/pull control assembly fully depressed, slide the compression sleeve against the latch screw. See figure 2. Using a pair of pliers, squeeze the compression sleeve tight. Place a 90° bend in the cable directly behind the compression sleeve.
18. Function check the release cable to ensure the safety latch clears the hat bracket on the end of the hydraulic cylinder when fully extended. Slight adjustments may be needed.

## TOGGLE SWITCH

**NOTE:** Applies only to models with Oildyne hydraulic pump.

**Description:** Off - momentary on  
**Rating:** 15 amps  
**Operation:** 12 volt DC



### Toggle Switch Replacement

1994 - 1995 Americana Series and Four Season Yosemite Models  
1996 - Mid 1997 Grand Tour Series (Niagara)

1. Disconnect all 12 volt and 110 volt power supplies from the trailer.

**WARNING:** Failure to disconnect all power supplies could result in electrical shock.

2. **On Americana series trailers:** Loosen the top of the front body panel to access the toggle switch.

**On Four Season series Yosemite model only:** The toggle switch may be accessed from inside the hutch cabinet located inside the entry doorway.

**On Grand Tour series:** The toggle switch may be accessed from inside the right front body panel access hatch door.

3. Turn the retaining O-ring counterclockwise and remove it from the toggle switch.
4. Remove the defective toggle switch from either the cabinet or ABS body panel by grasping it from the rear and backing it out of the mounting hole.
5. Remove the black (hot) and white (hot) wires from the rear terminals on the toggle switch. Note the locations at which they were attached (white wire to vertical terminal, black wire to horizontal terminal).
6. Reverse steps 1 - 5 for installation of replacement toggle switch.



## HYDRAULIC PUMP

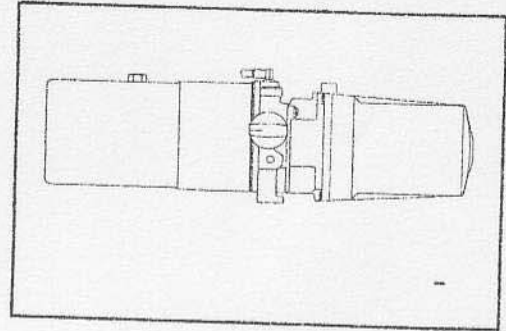
1994 - 1995 Americana Series

1994 - 1995 Four Season Series (Yosemite and Hatteras models)

1996 - Mid 1997 Grand Tour Series (Niagara model)

Oildyne Power Unit Series 108

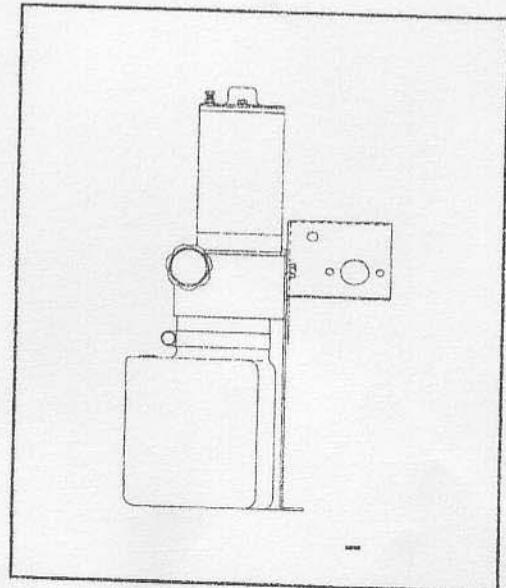
- single direction with check valve
- manual adjustment relief flow valve
- operating pressure: 3200 P.S.I.
- relief flow control pressure: 3200 P.S.I.
- thermal relief pressure: 3800 P.S.I.
- Motor Code: 12 volt DC series wound
- Pump size: .190
- C.I.P.R. (cubic inches per revolution) flow: .0149
- Reservoir size: 46 cubic inches (23 cubic inches usable)
- Port size: SAE 4 (7/16" - 200NF)
- Operating amperage: 40 amps
- Replacement fluid: Dexron II ATF (automatic transmission fluid)
- Battery required: deep cell (12V) 24 series (27 series recommended)



Mid 1997 - 1998 Grand Tour Series (Niagara Model)

Monarch Model M-259

- single direction with check valve
- manual adjustment relief flow valve
- operating pressure: 3000 P.S.I.
- relief flow control pressure: 3000 P.S.I.
- thermal relief pressure: N/A
- Motor Code: 12 volt permanent magnet
- Pump size: #72
- C.I.P.R. (cubic inches per revolution) flow: .031
- Reservoir size: 63 cubic inches
- Port size: SAE 4 (7/16" - 200NF)
- Operating amperage: 50 amps (Max. 150 amps)
- Replacement fluid: Dexron II ATF
- Battery required: deep cell (12V) 24 series (27 series recommended)



## HYDRAULIC PUMP REPLACEMENT OILDYNE MODEL ONLY

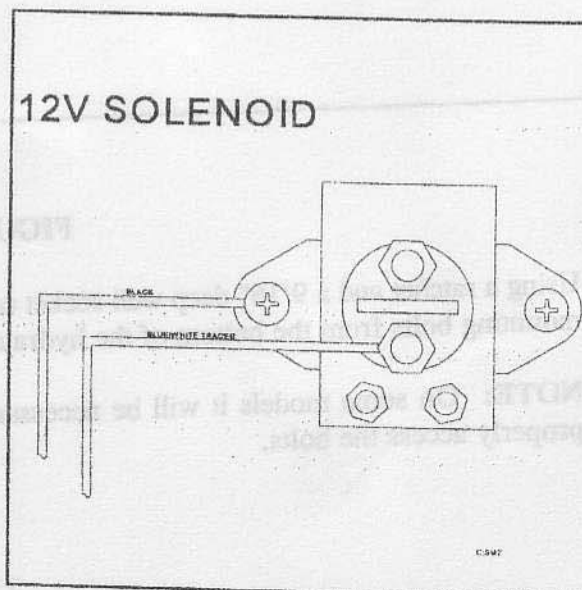
1994 - 1995 Americana Series Only

1994 - 1995 Four Season Models (Yosemite and Hatteras)

1996 - Mid 1997 Grand Tour Series (Niagara Model)

1. Disconnect all 12 volt and 110 volt power supplies to the trailer.
  2. **On Americana series trailers**, it is necessary to loosen the front ABS plastic body panel to access the hydraulic pump assembly:
    - a. Using a socket wrench with a 1/4" socket, remove the four hex head bolts from each top latch assembly on the front body panel.
    - b. Open the hydraulic pump access door on the front or curbside front body panel and remove the retaining O-ring from the toggle switch assembly. Push the toggle switch back through the ABS plastic body panel or metal mounting plate.
    - c. **1994 - 1995 models:** Using a 7/16" wrench (preferably with a 90° angle handle), securely hold the relief flow valve knob backing nut in place while turning the relief flow valve knob **CLOCKWISE**; removing it from the threaded stem.
    - d. Pull the front body panel out of the slot at the top of the front body rail to allow access to the hydraulic pump assembly.
- NOTE:** On Grand Tour series trailers, locate the hydraulic pump inside the right front body panel access hatch door.
3. Locate the 12 volt solenoid behind the front body panel or inside the cabinet assembly.
    - a. Using a 7/16" wrench, remove the retaining nut on the 12 volt "hot" wire (blue with white tracer) that runs from the solenoid to the hydraulic pump. Remove the wire from the solenoid terminal. See figure.

- b. Using a phillips screwdriver, remove the retaining screw that attaches the black wire to the solenoid base.



## HYDRAULIC PUMP REPLACEMENT

Page 2

- Using two 9/16" wrenches, remove the hydraulic hose from the 90° fitting on the hydraulic pump assembly. See figure 2.

**CAUTION: DO NOT** allow hydraulic fluid to come in contact with the interior paneling, linoleum, body panel, etc. It will cause discoloration.

Using a 9/16" wrench, loosen the lock nut and remove the 90° elbow fitting from the pump.

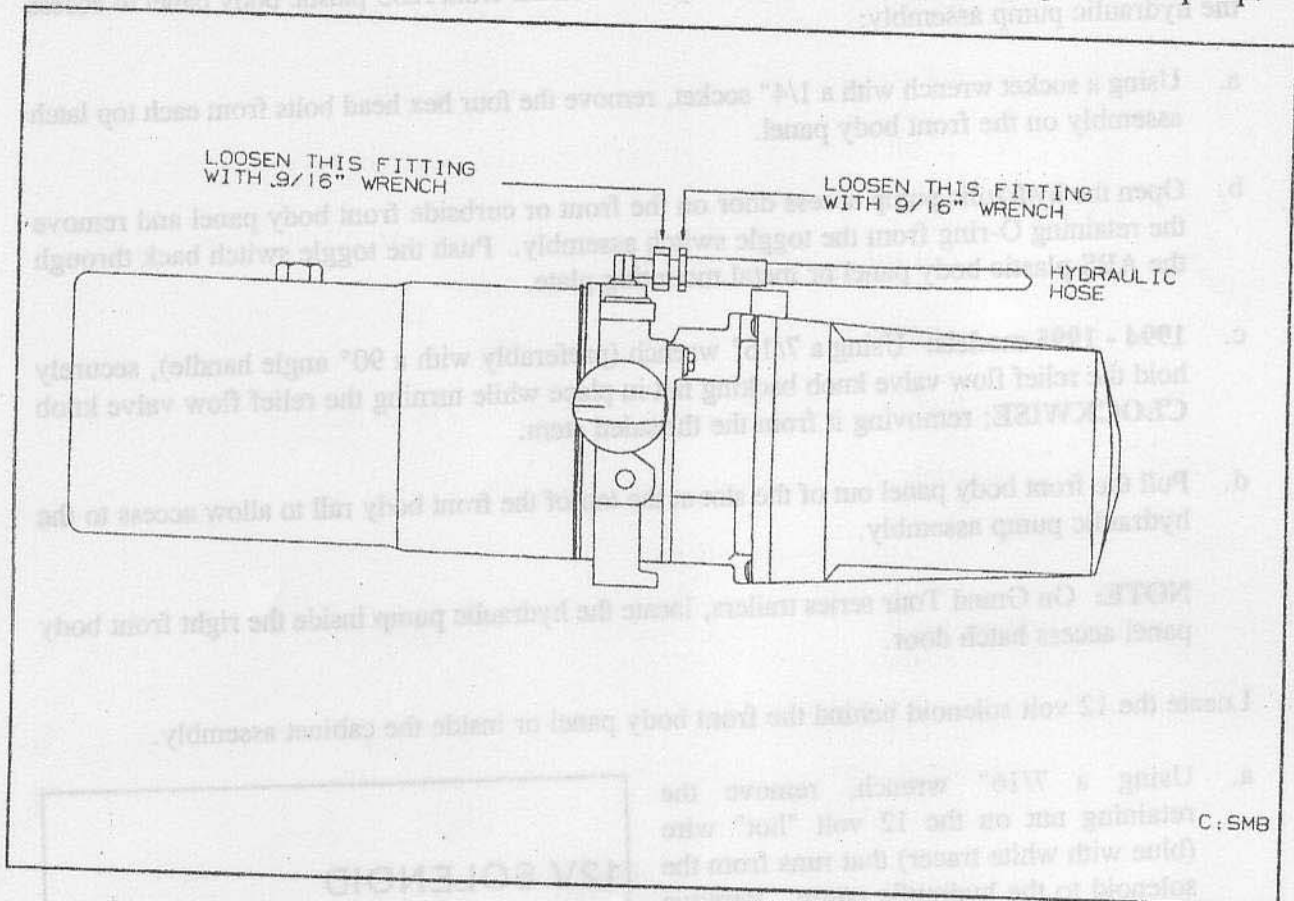


FIGURE 2

- Using a ratchet and a 9/16" deep well socket (and a short extension if necessary), remove the two mounting bolts from the bottom of the hydraulic pump assembly.

**NOTE:** On some models it will be necessary to loosen the mounting plate from the floor to properly access the bolts.



## HYDRAULIC PUMP REPLACEMENT

### Page 3

6. Remove the defective hydraulic pump assembly from the trailer.

**CAUTION: Do not turn the pump assembly upside down as hydraulic fluid will leak from the breather cap and hydraulic hose fitting.**

7. To install the replacement pump:
  - a. Remove the plastic plug from the port on the replacement pump.
  - b. Install the 90° elbow fitting in the replacement pump so the opening points away from the breather cap.
  - c. Insert the pump and secure it with the two 9/16" mounting bolts.
  - d. Re-connect the hydraulic hose to the hydraulic pump.
  - e. Re-connect the 12 volt (blue with white tracer) and ground (black) wires to the solenoid.
8. Remove the brass breather cap from the top of the hydraulic pump and fill the cylinder within 1/4" of the top with Dexron II automatic transmission fluid.
9. Re-connect the 12 volt power supply to the hydraulic pump.
10. Close the hydraulic relief flow valve and flip the toggle switch up to raise the top assembly.

**NOTE:** The top assembly may not reach its maximum height.

11. Open the relief flow valve to lower the top assembly.
12. Once the top assembly has been lowered, remove the brass breather cap and refill the cylinder to within 1/4" of the top of the cylinder.
13. Repeat steps 10 through 12 until the top assembly reaches its maximum height and the fluid level in the hydraulic cylinder remains 1/4" from the top of the cylinder when the top assembly is in the lowered position.
14. Place the toggle switch through the opening in the front body panel or metal mounting plate and secure it with the retaining O-ring.
15. Reinstall the front body panel by sliding it back into the body rail and attaching the two top latches on the front of the body panel.

**NOTE:** On some models, re-secure the pump mounting plate to the floor or cabinet assembly.

16. Place a few drops of loc-tite on the threads of the relief flow valve stem and install the adjusting knob.

## HYDRAULIC PUMP REPLACEMENT MONARCH MODEL ONLY

### Mid 1997 - 1998 Grand Tour Series (Niagara Model)

1. Disconnect all 12 volt and 110 volt power supplies to the trailer.
2. With the top in the lowered position, open the compartment door on the curbside front body panel to gain access to the hydraulic pump.
3. Disconnect the red wire from the top of the hydraulic pump.
4. Using a 9/16" wrench, remove the two bolts securing the switch/release cable bracket to the side of the pump.
5. Remove the four Phillips screws securing the pump to the floor.
6. Disconnect the hydraulic hose from the pump.
7. Remove the black wire from the back of the hydraulic pump.
8. Remove the two black mounting brackets from the pump.
9. Reverse steps 1 through 8 to install replacement pump.
10. Fill the replacement pump with Dextron II Automatic Transmission Fluid.
11. Close the relief flow valve and raise the top assembly.  
  
NOTE: The top assembly may not reach its maximum height.
12. Open the relief flow valve and lower the top assembly.
13. Once the top has been lowered, check the fluid level in the hydraulic reservoir. If necessary add fluid.
14. Repeat steps 11 through 13 until the top assembly reaches its maximum height (45 1/2" - 46") and all air has been bled from the hydraulic system.

## 12 VOLT HYDRAULIC PUMP WIRING

### Oildyne Pump System, used on:

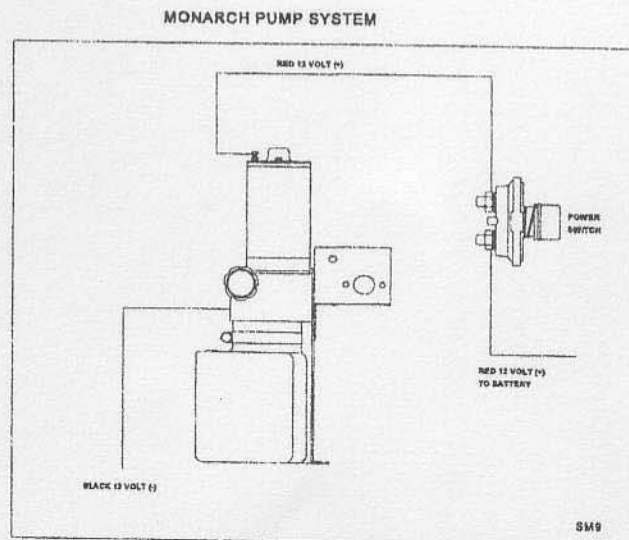
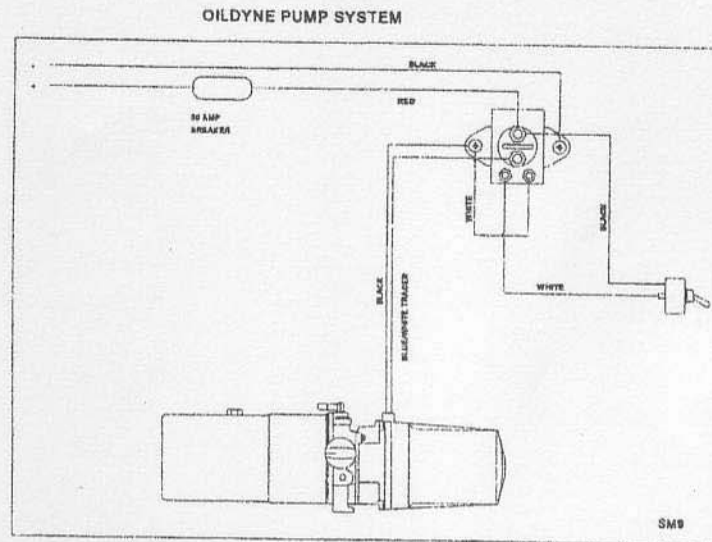
1994 - 1995 Americana Series (Sequoia and Williamsburg Models)

1994 - 1995 Four Season Series (Yosemite and Hatteras Models)

1996 - Mid 1997 Grand Tour Series (Niagara Model)

### Monarch Pump System, used on:

Mid 1997 - 1998 Grand Tour Series (Niagara Model)





## 12 VOLT SOLENOID REPLACEMENT

**1994 - 1995 Americana Series Only (Sequoia and Williamsburg models)**  
**1994 - 1995 Four Season Series (Yosemite and Hatteras Models)**  
**1996 - Mid 1997 Grand Tour Series (Niagara model)**

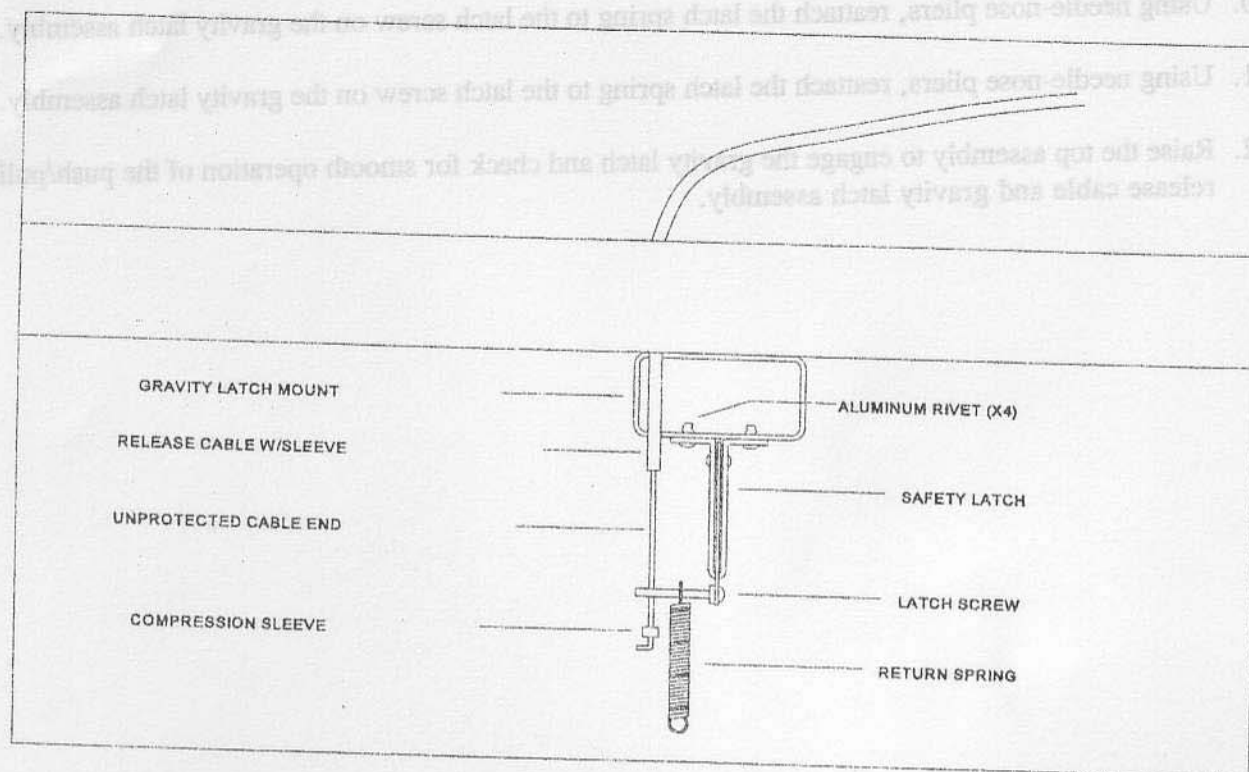
1. Disconnect all 12 volt DC and 110 volt AC electrical supplies to the trailer.

**NOTE:** On Grand Tour series trailers, locate the solenoid inside the right front body panel access door hatch.

2. Using a socket wrench with a 1/4" socket, remove the four hex head bolts from each top latch assembly on the front body panel. (Not necessary on Grand Tour and Four Season models.)
3. Remove the retaining O-ring from the toggle switch assembly.
4. **1994 - 1995 Americana models only:** Using a 7/16" wrench (preferably with a 90° angle handle), securely hold the relief flow valve knob locking nut in place while turning the relief flow valve knob **CLOCKWISE**; removing it from the threaded stem.
5. Pull the front body panel out of the slot at the top of the front body rail to allow access to the 12 volt solenoid. (Not necessary on Four Season or Grand Tour models.)
6. Locate the 12 volt solenoid behind the front body panel or pump mounting plate and remove all wires from the solenoid, noting their routing and attachment points for reinstallation. See diagram of 12 volt hydraulic pump wiring.
7. Using a phillips screwdriver, remove the two mounting screws from the solenoid and remove the 12 volt solenoid.
8. Install the replacement solenoid by performing the following steps:
  - a. Using two phillips screws, mount the solenoid to the mounting plate.
  - b. Reattach the wires in their proper locations.
  - c. Insert the toggle switch through the opening in the front body panel or pump mounting plate and install the retaining O-ring.
  - d. Reattach the front body panel and top latches. (Not necessary on Four Season or Grand Tour models.)
  - e. Install the relief flow valve knob on the threaded stem.

## GRAVITY LATCH REPLACEMENT

- 1994 - 1995 Americana Series (Sequoia and Williamsburg models)  
 1994 - 1995 Four Season Yosemite Models (Yosemite and Hatteras models)  
 1996 - 1998 Grand Tour Series (Niagara model)

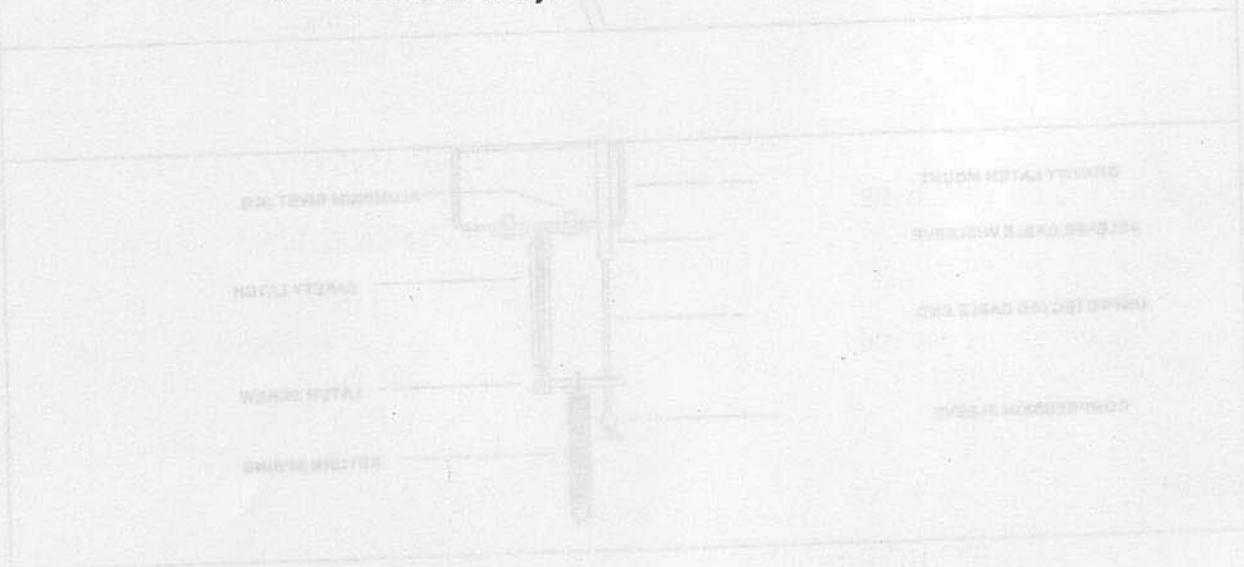


1. With the top in the lowered position, locate the gravity latch assembly on the main frame channel under the roadside of the trailer.
2. Using needle-nose pliers, remove the latch spring from the latch screw.
3. Using wire cutters, cut the release cable between the release cable crimp and the latch screw.
4. Using a phillips screwdriver and a 3/8" wrench, remove the latch screw from the gravity latch assembly.
5. Using a drill with a 3/16" drill bit, drill out the four aluminum rivets securing the gravity latch assembly to the gravity latch mount.
6. Remove the defective gravity latch assembly.
7. Using four aluminum rivets, attach the replacement gravity latch to the gravity latch mount.

## GRAVITY LATCH REPLACEMENT

### Page 2

8. Using a phillips screwdriver and a 3/8" wrench, install the latch screw on the gravity latch ensuring that the hole for the release cable is in a horizontal position.
9. Since the release cable was cut to remove the latch screw, it will be necessary to install a new release cable. Please refer to the instructions for changing the release cable assembly on page 51.
10. Using needle-nose pliers, reattach the latch spring to the latch screw on the gravity latch assembly.
11. Using needle-nose pliers, reattach the latch spring to the latch screw on the gravity latch assembly.
12. Raise the top assembly to engage the gravity latch and check for smooth operation of the push/pull release cable and gravity latch assembly.



1. With the top in the lowered position, locate the gravity latch assembly on the main frame channel under the inside of the roller.
2. Using needle-nose pliers, remove the latch spring from the latch screw.
3. Using wire cutters, cut the release cable between the release cable clamp and the latch screw.
4. Using a phillips screwdriver and a 3/8" wrench, remove the latch screw from the gravity latch assembly.
5. Using a drill with a 3/16" drill bit, drill out the four aluminum rivets securing the gravity latch assembly to the gravity latch mount.
6. Remove the defective gravity latch assembly.
7. Using four aluminum rivets, attach the replacement gravity latch to the gravity latch mount.



## **HYDRAULIC CYLINDER AND RELATED ASSEMBLIES**

1994 - 1995 Americana Series (Sequoia and Williamsburg models)

1994 - 1995 Four Season Series (Yosemite and Hatteras models)

1996 - 1998 Grand Tour Series (Niagara model)

### **1994 AMERICANA**

#### **Monarch Hydraulic Cylinder Specifications**

- CS100 - 18.00 RAM Cylinder
- 1 inch bore rod-chromed
- 18 inch stroke
- V pack seals

#### **Hydraulic Hose Specifications**

- Diameter: 1/4" hose
- Length: 77"
- 1/4" female swivel one end
- 37° JIC flare one end

#### **Fittings**

- 7/16 - 20 O-ring 37° JIC flare 90° elbow

### **1995 AMERICANA**

### **1994 - 1995 FOUR SEASONS**

#### **Hydraulic Cylinder (Monarch)**

- CS150 - 18.00 RAM Cylinder
- 1 1/2" bore rod-chromed
- 18" stroke
- V pack seals

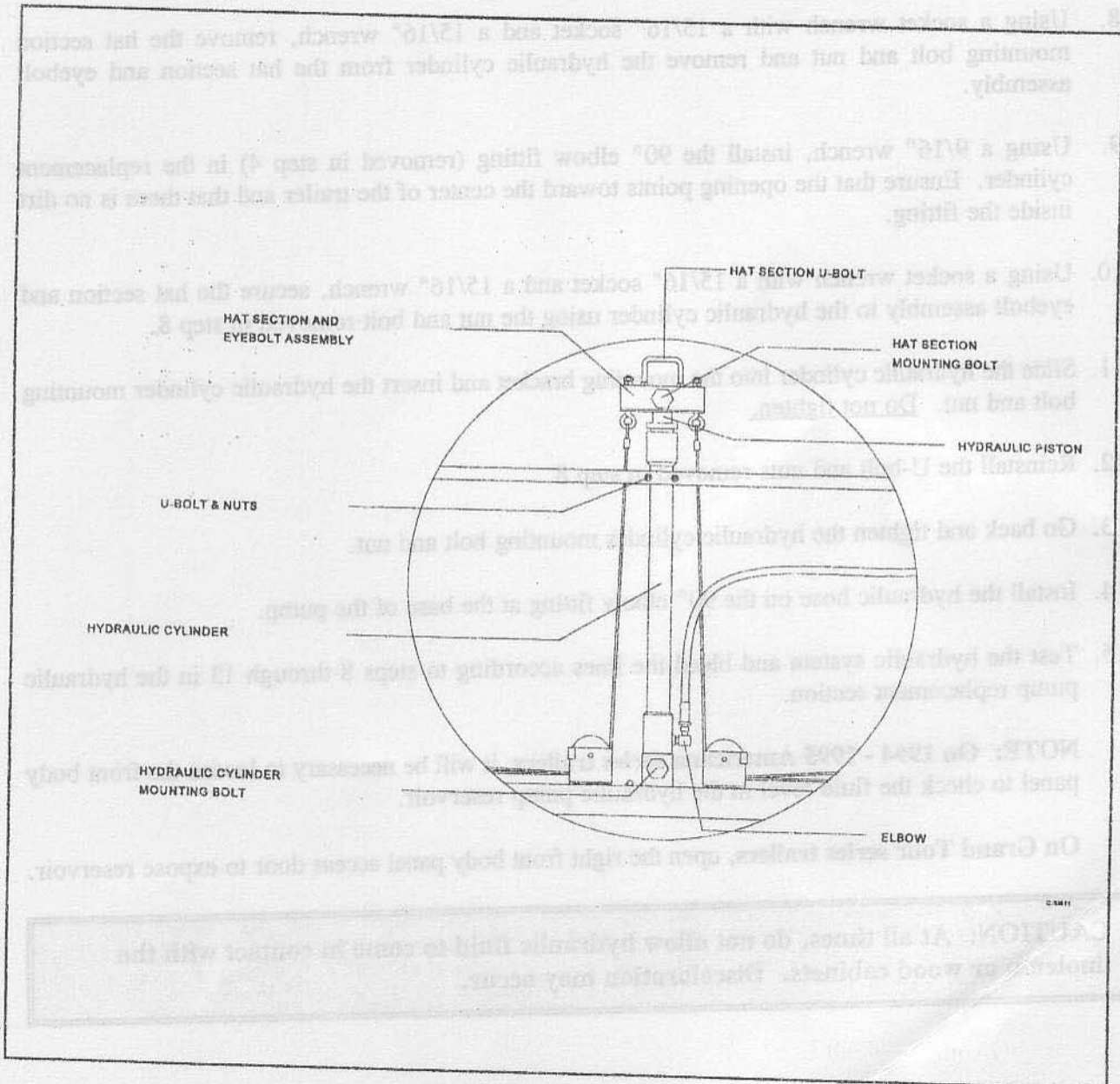
### **1996 - 1998 GRAND TOUR**

#### **Hydraulic Cylinder (Monarch)**

- CS150 - 24.00 RAM Cylinder
- 1 1/2" Bore Rod - Chromed
- 24" Stroke
- V Pack Seals

## HYDRAULIC CYLINDER REPLACEMENT

1. At each corner of the trailer place a 2" block between the top assembly and the body rail to allow enough slack in the main cables to remove the hydraulic cylinder.
2. Locate the hydraulic cylinder under the curbside of the trailer.
3. Using two 9/16" wrenches, remove the hydraulic hose from the 90° elbow fitting at the base of the hydraulic cylinder. See figure below.



4. Using a 9/16" wrench, remove the 90° elbow fitting from the base of the hydraulic cylinder.

## HYDRAULIC CYLINDER REPLACEMENT

### Page 2

5. Using two 15/16" wrenches, remove the hydraulic cylinder mounting bolt and nut from the base of the hydraulic cylinder.
6. Using a 7/16" wrench, remove the two nuts from the U-bolt located near the front of the hydraulic cylinder.
7. Slide the base of the hydraulic cylinder out of the mounting bracket and lower the hydraulic cylinder from the trailer frame.
8. Using a socket wrench with a 15/16" socket and a 15/16" wrench, remove the hat section mounting bolt and nut and remove the hydraulic cylinder from the hat section and eyebolt assembly.
9. Using a 9/16" wrench, install the 90° elbow fitting (removed in step 4) in the replacement cylinder. Ensure that the opening points toward the center of the trailer and that there is no dirt inside the fitting.
10. Using a socket wrench with a 15/16" socket and a 15/16" wrench, secure the hat section and eyebolt assembly to the hydraulic cylinder using the nut and bolt removed in step 8.
11. Slide the hydraulic cylinder into the mounting bracket and insert the hydraulic cylinder mounting bolt and nut. Do not tighten.
12. Reinstall the U-bolt and nuts removed in step 8.
13. Go back and tighten the hydraulic cylinder mounting bolt and nut.
14. Install the hydraulic hose on the 90° elbow fitting at the base of the pump.
15. Test the hydraulic system and bleed the lines according to steps 8 through 13 in the hydraulic pump replacement section.

**NOTE:** On 1994 - 1995 Americana series trailers, it will be necessary to loosen the front body panel to check the fluid level in the hydraulic pump reservoir.

On Grand Tour series trailers, open the right front body panel access door to expose reservoir.

**CAUTION:** At all times, do not allow hydraulic fluid to come in contact with the linoleum or wood cabinets. Discoloration may occur.



## REPLACING THE MAIN LIFT CABLE

1994 - 1995 Americana Series (Sequoia and Williamsburg models)

1994 - 1995 Four Season Series (Yosemite and Hatteras models)

1996 - 1998 Grand Tour Series (Niagara model)

1. Raise the trailer roof to full height and place one support pole under the corner of the top assembly which corresponds to the cable that is being replaced.

<u>YEAR</u>	<u>SERIES</u>	<u>SUPPORT POLE LENGTH</u>
1994 - 1995	Americana	52"
1994 - 1995	Four Season	47"
1996 - 1998	Grand Tour	46"

2. From inside the trailer, locate the two studs which extend from the top assembly down through the top of the affected lift assembly. Using a socket wrench with an extension and a deep well 7/16" socket, remove the lock nuts from the studs.
3. Collapse the lift assembly.
4. Using an electric drill and drill bit, drill out the rivets that attach the lift trim to the outer body rail and slide the lift trim away from the lift.
5. On the underside of the trailer at the bottom of the lift assembly, remove the four bolts which hold the lift to the frame of the trailer.
6. If necessary, cut the main cable which runs from the hat bracket eyebolt to the lift assembly. (This will only be necessary if the cable is not broken.)
7. Pull the lift assembly up and out of the trailer.
8. Look down inside the opening in the body of the trailer where the lift was removed. Locate any obstructions that would hinder the reinstallation of the lift assembly. If wires are found, tape the wires to the inside panel of trailer.
9. Inspect all pulleys for sharp edges and make certain they move freely. Replace where necessary (sharp edges or seized pulleys will cut cables).
10. Place the lift assembly on a work bench and remove the anchor bolt on the bottom lift slide where the main cable attaches.
11. Remove the old cable by pulling the uncrimped end through the bottom butterfly pulley bracket and up through the stationary lift pulley bracket.
12. Install the replacement cable by reversing step 11.

## REPLACING THE MAIN LIFT CABLE

### Page 2

13. Attach the pre-looped end of the cable to the anchor bolt and tighten.
14. With the repaired lift in hand, guide the stainless steel cable down through the hole in the body rail of the trailer and out through the hole in the trailer frame channel.
15. Reach under the trailer and pull the loose end of the cable, guiding the lift down into the trailer.
16. Fasten the lift to the frame using the four bolts removed in step 5.

**NOTE:** Tighten the bolts and back off 1/4 turn.

17. With the lift assembly collapsed, **CAREFULLY** lower the top assembly to the body of the trailer making sure the lift studs extend through the top of the lift assembly. Secure the top corner down with the top latch.

**CAUTION:** It will be necessary for one person to hold the corner of the top assembly while another person opens the hydraulic relief flow valve to lower the top.

18. On the underside of the trailer, make certain the pulley on the adjustable pulley bracket is placed in the hole closest to the frame of the trailer. Also, loosen the nuts on the hat bracket eyebolt to allow for future adjustment of the cable.
19. Route the long cable through the pulleys and to the hat bracket area.
20. Slide a cable crimp onto the cable. Route the cable through the eyebolt and back through the cable crimp. Pull the cable tight and hold in place with a pair of vice grips. Push the cable crimp as close to the eyebolt as possible and compress the crimp with the cable crimping tool, making two crimps.
21. Cut off any excess cable.
22. Raise the trailer top and install the lock nuts on the lift studs that extend down through the lift assembly.

**NOTE:** Only turn the lock nuts up onto the studs approximately 1/2 the distance of the threads so that the top can move and fit over the trailer body when closing.

23. Check the distance between the top assembly rubber seal and the body rail to insure that the proper lift height is attained.

<u>YEAR</u>	<u>SERIES</u>	<u>RECOMMENDED TOP HEIGHT</u>
1994 - 1995	Americana	51 1/2" - 52"
1994 - 1995	Four Season	46 1/2" - 47"
1996 - 1998	Grand Tour	45 1/2" - 46"

If top height adjustment is necessary, refer to "Adjusting The Top Height" section.



## REPLACING THE MAIN CABLE PULLEYS

**1994 - 1995 Americana Series (Sequoia and Williamsburg models)**

**1994 - 1995 Four Season Series (Yosemite and Hatteras models)**

**1996 - 1998 Grand Tour Series (Niagara model)**

1. Raise the top assembly approximately two feet.
2. Pull front and rear beds out only to extend past the body rails.
3. Completely lower the top assembly onto the extended beds. This will allow slack in the cables, relieving pressure from the pulleys.
4. From underneath the trailer, ensure that the lift cables are not exerting pressure on the pulleys. If additional slack is required, manually push the piston and hat bracket assembly toward the hydraulic cylinder.
5. From underneath the trailer, remove the pin from the pulley to be replaced and remove the pulley.
6. Insert the replacement pulley and install the pulley pin from the top of the pulley bracket. Place the cotter pin through the pulley pin.
7. Push beds back into the travel position and lower the top.