

# Excelerator

## Users Manual



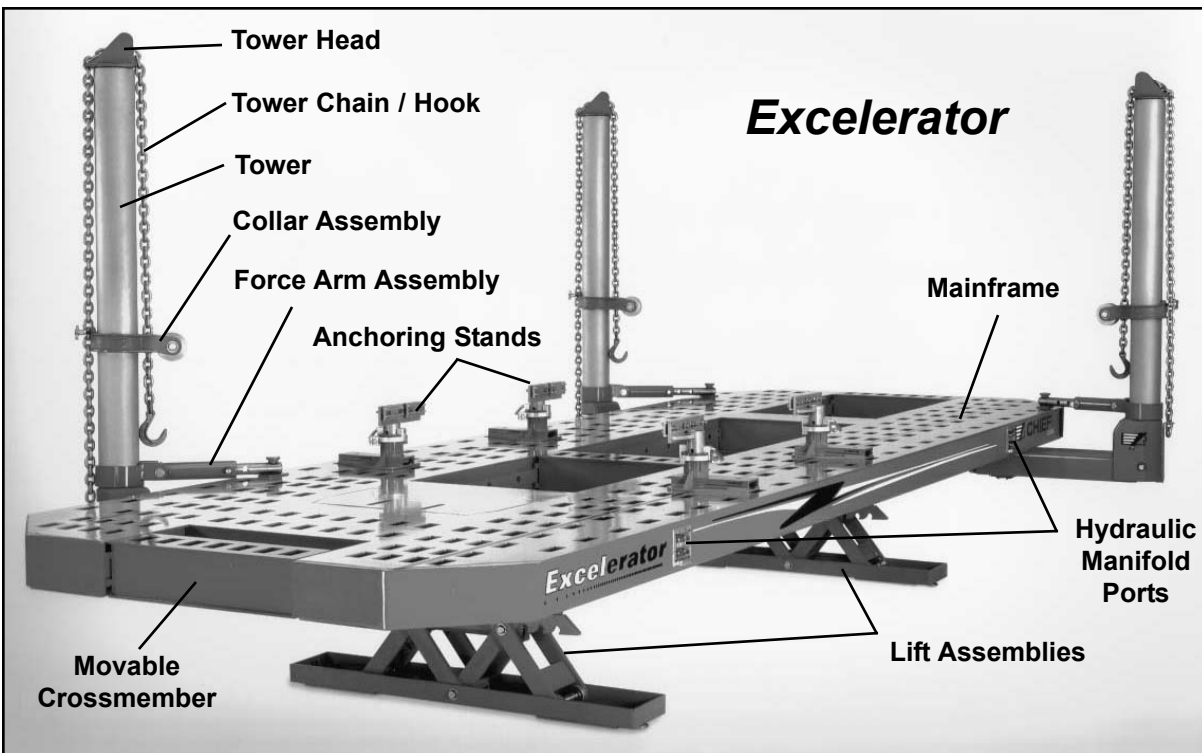


Figure 1

## Introduction

This users manual is written to familiarize operators with the safe and efficient use of the Chief EZ Liner Excelerator System. (See Figure 1.) The Excelerator accommodate today's larger sport utility vehicles and its platform measures 22 feet long and 7 feet 5 inches wide.

The Excelerator platform adjusts to five working heights (18, 21, 27, 31 and 34 inches) and its tilting capabilities at both ends allow for a more productive shop flow. In addition to its floor level operation, the platform can be elevated to four other working heights.

Three towers are provided with the Excelerator and three more can be added as optional equipment. Each tower features a carriage that mounts to a u-shaped track on the underside of the mainframe. The design of the carriage allows movement of the tower 360 degrees around the

vehicle. The Excelerator platform features three sturdy crossmembers, one in each section. The crossmembers adjust forward and rearward and are secured to the deck with built in locks. When secured correctly, the crossmembers not only allow perpendicular pushes and pulls, but also angular pushes and pulls.

The Excelerator features Chief's controlled precision hydraulics. Each tower has a 10 ton hydraulic cylinder with a 10 inch stroke. The system is powered by an electrically operated dual hydraulic pump that features a remote control. Like all Chief EZ Liner systems, multiple, simultaneous and equal hydraulic force is distributed to tower cylinders and auxiliary cylinders. The flow of fluid to the cylinders is controlled by valves and pulling force is monitored by a portable force gauge that attaches to any of the systems four hydraulic manifolds.

## **CHIEF'S LIMITED TWO-YEAR WARRANTY & LIABILITY**

Chief Automotive Systems, Inc. warrants for two years from date of installation and/or purchase any of its products which do not perform satisfactorily due to defect caused by faulty material or workmanship. Chief's obligation under this warranty is limited to the repair or replacement of products which are defective and which have not been misused, carelessly handled, or defaced by repair or repairs made or attempted by others.

CHIEF AUTOMOTIVE SYSTEMS, INC. DOES NOT ASSUME RESPONSIBILITY FOR ANY DEATH, INJURY OR PROPERTY DAMAGE RESULTING FROM THE OPERATOR'S NEGLIGENCE OR MISUSE OF THIS PRODUCT OR ITS ATTACHMENTS. CHIEF MAKES NO WRITTEN, EXPRESS OR IMPLIED WARRANTY WHATSOEVER OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OR OTHERWISE REGARDING THE EQUIPMENT OR ANY PART OF THE PRODUCT OTHER THAN THE LIMITED TWO-YEAR WARRANTY STATED ABOVE.

Returned merchandise requires a "RETURNED GOODS AUTHORIZATION NUMBER" on the package. Authorization numbers can be obtained by calling or writing the Customer Service Department, Chief Automotive Systems, Inc. No returned merchandise will be accepted without an authorization number. All returned merchandise must be shipped freight prepaid (and may be subject to a handling and restocking charge) to:

Chief Automotive Systems, Inc.  
Attn: Returned Goods Department  
1924 E. Fourth St.  
P.O. Box 1368  
Grand Island, Ne. 68802-1368  
308-384-9747

or Your Authorized  
Chief Automotive Systems, Inc.  
Representative

## General Safety Tips

Complete safety information is highlighted throughout this manual and is identified by this safety alert symbol shown at right. This WARNING / CAUTION symbol identifies safety information and operator injury could result if this safety information is not followed.



DO NOT operate this machine unless:

- 1) You are authorized in writing by your employer.
- 2) All towers are properly secured to machine.
- 3) Vehicle's wheels are blocked and parking brake is set.
- 4) Load is 8,500 lbs or less.
- 5) Field of motion of load carrying device is free of persons and obstructions.



Persons operating the Exceleator repair system must be at least 18 years of age, must be trained in the operation of Exceleator system, and must have demonstrated their qualifications to the employer.



DO NOT attempt to operate the Exceleator pulling system without first reading this entire manual.

### Crossmember



Always engage crossmember locks and DO NOT use crossmember as a step.



During removal and reinstallation of crossmember, hold crossmember firmly to support its 90 lb. weight. Use a helper if needed. Also, engage crossmember locks following installation and re-install short guide bars on inside walls of mainframe.

### Collar



To avoid accidental dropping of tower collar, tighten collar locking knob and or lower collar to bottom of tower.



Collar locking knob must be tightened before removing tower chain from vehicle.

### Force Arm



#### **WARNING!**

To avoid severe personal injury, force arm and carriage pin must always be engaged in mainframe.



When moving tower, force arm must be in 'up' position and hands must be on tower pipe and release handle. Always push the tower.

### Pulling



#### **WARNING!**

To avoid severe personal injury to yourself and others: DO NOT position yourself close to, or in line with chains, clamps, or other accessories while pressure is applied to this system.



To prevent personal injury from flying objects:

- Check all bolts, nuts and clamps for deformation or elongation prior to each use.
- Deformed or elongated materials must be replaced.
- If materials look deformed, they are deformed. Replace them.

### Raise / Lower Machine



Lifting of persons is prohibited.



Keep feet and objects clear of tower while adjusting height.



Verify safety lock arms are engaged before working under machine.



When raising or lowering machine with vehicle aboard, DO NOT walk around ends of machine.



To prevent damage to lift while adjusting height:

- Move towers away from scissor lift.
- Move towers away from lowering end of machine.
- Before lowering mainframe always engage wheel stops.







When raising or lowering machine make certain tower force arms engage tie down holes.




Always use wheel stops when raising or lowering machine.

## General Safety Tips (continued)


### Loading / Unloading Machine

-  Prior to driving or winching vehicle on the machine make sure loading ramps are installed correctly.
-  When driving or winching a vehicle on or off machine, use helper to guide you. If vehicle's brakes are inoperable, use a Chief Winch and refer to instructions packaged with that accessory.
-  Immediately after positioning vehicle on main-frame, put vehicle in park (if automatic transmission), apply vehicles emergency brake, and have helper install wheel stops at "front" of front tire and at "rear" of rear tire. Install wheel stops as close to the tires as possible to prevent vehicle movement and keep wheel stops installed whenever vehicle is not anchored to mainframe.
-  Before lowering machine, put vehicle in park (if automatic transmission), apply vehicles parking brake, and install wheel stops. Then check to make sure loading ramps are installed correctly.


### Auxiliary Cylinders


-  To reduce the possibility of auxiliary cylinders tipping over or kicking out when lifting a vehicle or making a down pull, use a Ram Base to support the cylinder. See Auxiliary Cylinder and Ram Base Users Manuals.


### Steps / Ladders

-  Use only approved steps and ladders when working on or around this equipment.

### Chain

-  The 1/2 inch (13mm) tower chain is proof tested to 28,000 lbs. and has a normal working load limit of 13,000 lbs.

-  The 3/8 inch (10mm) tie down chain is proof tested to 20,000 lbs. and has a normal working load limit of 7,300 lbs.

-  DO NOT use 3/8 inch (10mm) tie down chain on the Exceleator towers.

### Electrical

#### **WARNING!**

To avoid severe personal injury or death: DO NOT enter this enclosure without first disconnecting power supply. Contact an authorized Chief Automotive Systems, Inc. Representative for Service.


### Fire / Explosion

#### **WARNING!**

To prevent personal injury or death from explosion or fire:

- Vehicles with fuel leaks should not be placed on the EZ Liner.
- Fuel tanks should not be removed or replaced on the EZ Liner.
- Clean up and ventilation of fuel spills is mandatory before operating the EZ Liner electric pump, grinding, welding, drilling, or smoking.

### Operational Capacity

-  Qualified service personnel must check operational capacity of Exceleator system prior to its initial use and at intervals of no more than one year. Contact Chief Automotive Systems, Inc. or contact your authorized Chief Automotive Systems, Inc. representative.

## Hydraulic System Components

The Excelerator is powered by an electrically operated dual hydraulic pump which features a remote control. The components of the system are identified in Figures 2-4.

Hydraulic fluid is distributed to tower cylinders, auxiliary cylinders and lift cylinders. The flow of hydraulic fluid to these cylinders is controlled by a valve. Pulling force is monitored by a force gauge which can be mounted to any of the four hydraulic manifolds on the machine. The manifolds allow for quick attachment of tower hoses or auxiliary cylinder hoses.

The Excelerator builds pulling force quickly. Be aware of this quick reaction when making pulls or lifting the vehicle.

**IMPORTANT:** Tower cylinders, auxiliary cylinders and lift cylinders can be operated either simultaneously (with equal hydraulic pressure) or individually. When using the hydraulic system, close all valves where hydraulic pressure is not required.

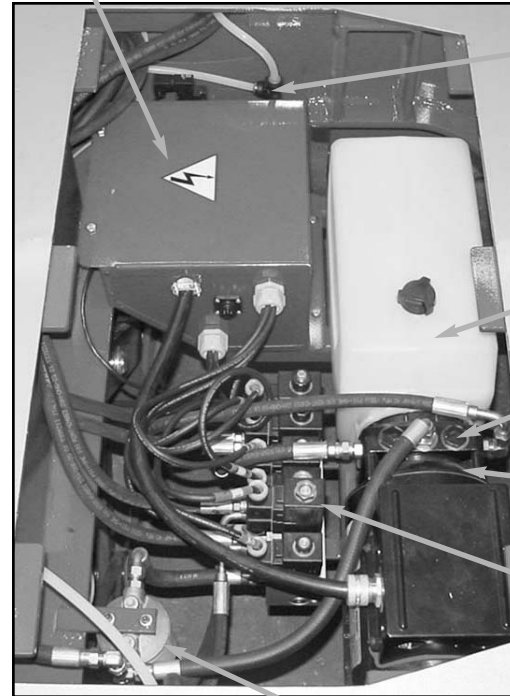
The wired remote control (see Figure 3) features “front” and “back” buttons which activate and/or deactivate the front and rear lift assemblies. It also features an “unlock” button which releases the lock arms within the lift assemblies, plus the standard “up” and “down” buttons which govern the flow of hydraulic pressure for pulling, pushing or lifting.

The force gauge (see Figure 4), which mounts to any of the hydraulic manifold’s “A” ports, measures the amount of pulling force each cylinder applies to its respective chain (and vehicle). Each cylinder in use exerts the same amount of force. The Excelerator force gauge displays pressure readings in tons or kilo Newtons (kN)

### WARNING!

To avoid severe personal injury or death: DO NOT enter this electrical enclosure without first disconnecting power supply. Contact an authorized Chief Automotive Systems, Inc. representative for service.

Electrical  
Box



Air Filter,  
Valve

Reservoir  
(Tank)

End Head

Motor

Control  
Manifold

Figure 2

P  
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Hydraulic Filter

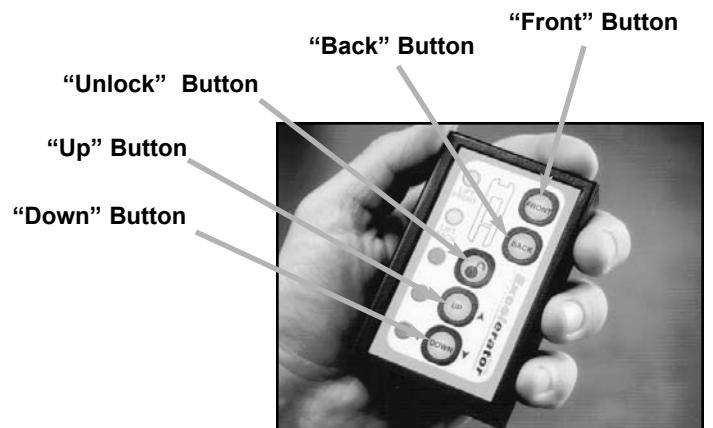


Figure 3

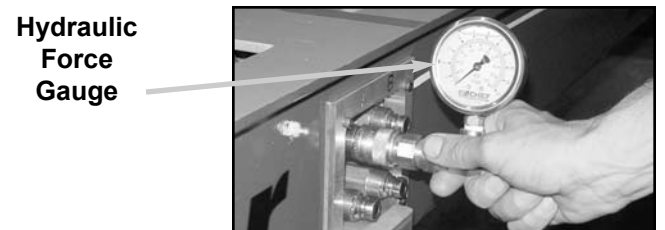


Figure 4

## Movable Crossmembers

The Excelerator features three movable crossmembers that mount to the guide bars on the inside walls of the of the mainframe. One crossmember is located in each section of the machine.

The primary use of the front and rear movable crossmembers is to support and secure towers at the ends of the machine. (See Figure 5.) These crossmembers, plus the crossmember in the center section, can also be used as a base for making hydraulic pulls and pushes provided their locking mechanisms are engaged.

The crossmembers adjust forward and rearward within their respective sections. (See Figure 6.) To move the crossmember, disengage the locking mechanisms at the ends of the crossmember (see inset - Figure 6) and move it forward or rearward. Secure the crossmember by re-engaging its locking mechanisms with adjustment holes on the guide bars - see inner walls of mainframe. (See Figure 7.)

**⚠ CAUTION:** To avoid personal injury always engage crossmember locks and DO NOT use crossmember as a step.

Crossmembers are not easily removed from the machine as each one weighs approximately 90 lbs. Therefore, it is not advisable to move them from one section to another.

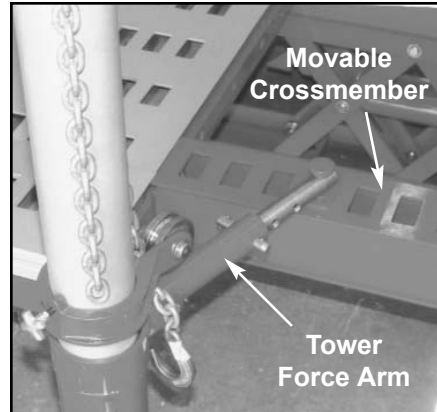


Figure 5

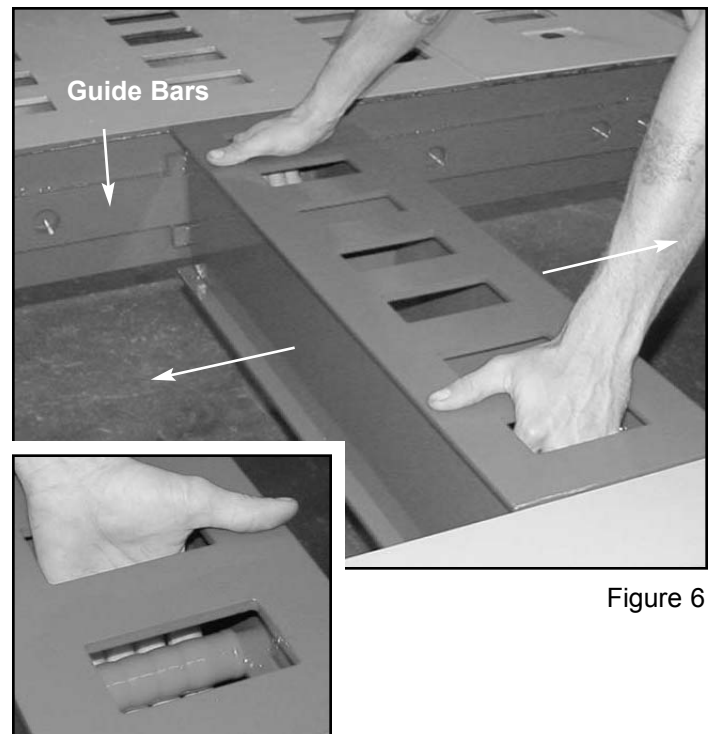


Figure 6

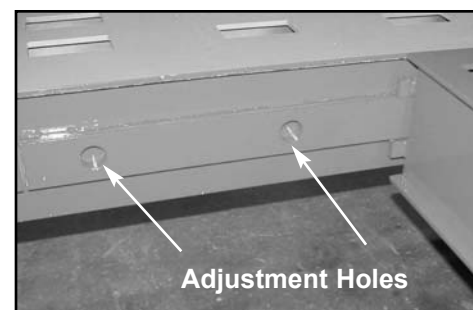


Figure 7

If for some reason it becomes necessary to move a crossmember, first remove one of the short guide bars from that section of the machine. (See Figure 8.) Also remove the short guide bar from the section where it will be installed. Next, grip the crossmember firmly and disengage its locking mechanisms. Move it slowly to the open location. After reinstalling the crossmember in its new location, re-engage its locking mechanisms and reinstall the short guide bars.

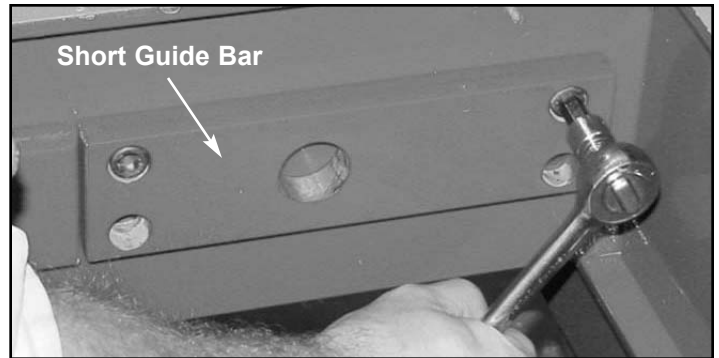


Figure 8

**⚠ CAUTION:** During removal and reinstallation of the crossmember, hold the crossmember firmly to support its 90 lb. weight. (See Figure 9.) Use a helper if needed. Also, re-engage the crossmember's locking mechanisms following installation and reinstall the short guide bars on the inside walls of the mainframe.



Figure 9

## Towers

The Excelerator is equipped with three pulling towers that attach to and rotate round the main-frame. Tower carriages fit within a u-shaped track on underside of machine (see Figure 10 which shows cut-away view of mainframe with u-shaped track exposed) allowing 360 degree access to the vehicle. Up to three additional towers can be added to the system.

Multiple pulls can be set up quickly and are controlled by a hand-held remote control switch. Lateral and elevated pulling angles can be made or changed in just a fraction of a minute.

### ⚠ CAUTION:

- 1) The 1/2 inch (13mm) tower chain is proof tested to 28,000 lbs. and has a normal working load limit of 13,000 lbs.
- 2) DO NOT use 3/8 inch (10mm) tie down chain on the Excelerator towers.

### To Position And Operate Excelerator Towers

1. Disengage tower force arm from mainframe and pivot force arm upward. (See Figure 11.) **IMPORTANT:** Force arm pin must engage notch in force arm collar. See Figure 12 and its inset.)
2. Rotate tower so it is perpendicular (90 degree angle) with mainframe. (See Figure 13.)

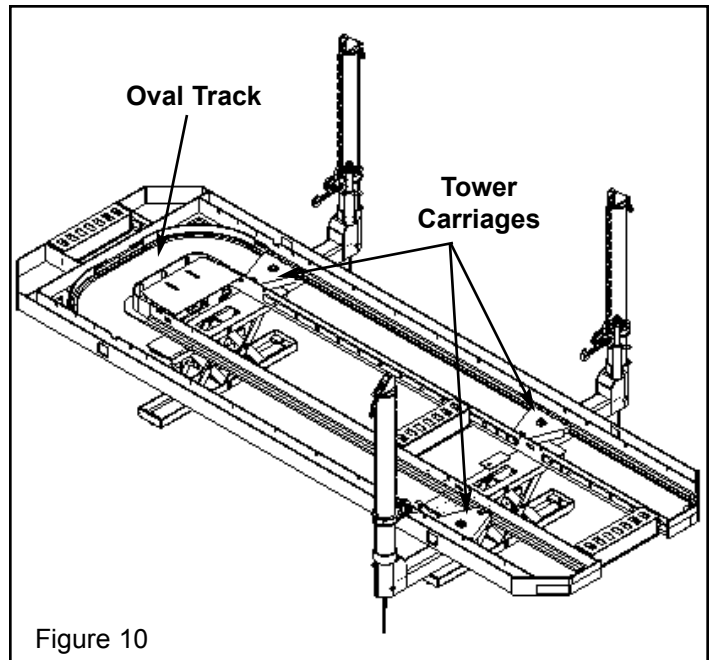


Figure 10

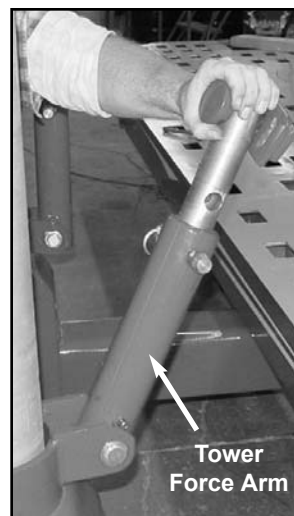


Figure 11

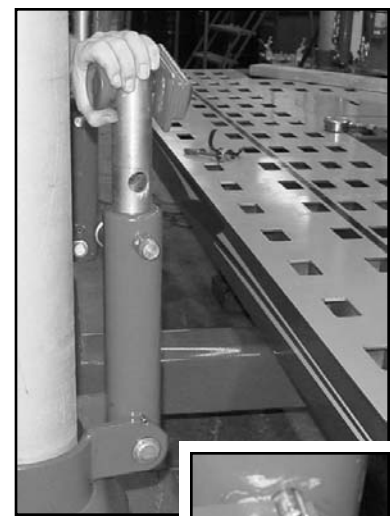


Figure 12

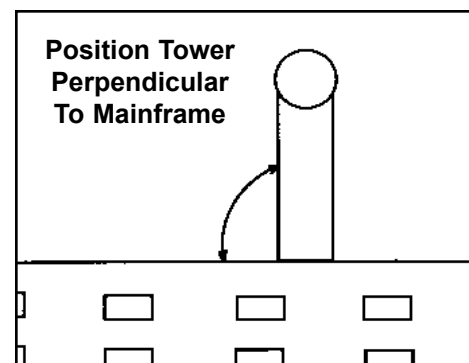


Figure 13

3. Push tower lever down (see Figure 14 and its inset) and move Tower to appropriate pulling location. The lever disengages the tower carriage pin on underside of mainframe allowing tower movement to another location. (See Figure 15.)

**⚠ CAUTION:** To prevent personal injury to hands and fingers, force arm must be in 'up' position and hands must be on tower pipe and release handle. Always push the tower.

4. Near the desired location, release the tower carriage lever. If the tower carriage pin does not re-engage a mounting hole on the underside of the mainframe, a slight fore or aft movement of the tower may be required until it does. Although this engagement prevents further lateral movement, it still allows the pivoting of the tower to achieve a more critical pulling angle. (See Figure 16.)

5. Determine the correct angle of pull and engage the tower force arm with a tie down hole on the mainframe. (See Figure 17 and its inset.) The beveled end of the arm mates with any of the tie down holes and prevents movement of the tower during the pull. The adjustable force arm provides flexibility when establishing the pulling angle. (See page 11 which shows examples of "allowable" pulling setups.)

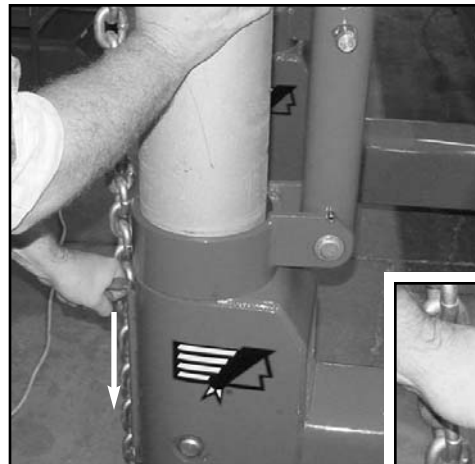


Figure 14

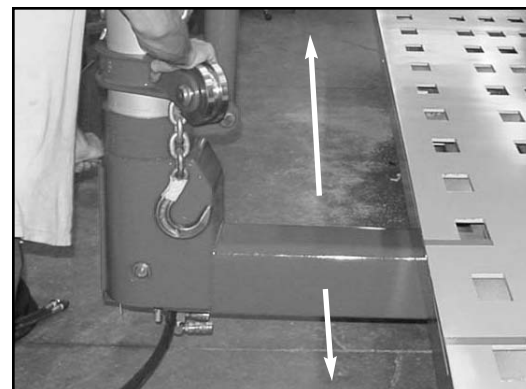


Figure 15

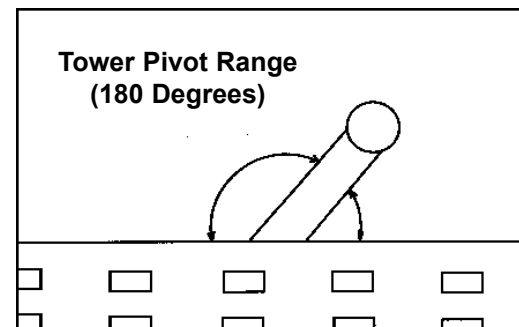


Figure 16

**⚠ WARNING!**

To avoid severe personal injury, force arm and carriage pin must always be engaged in mainframe.

- ⚠ CAUTION:** When raising or lowering machine make certain tower force arms engage tie down holes.

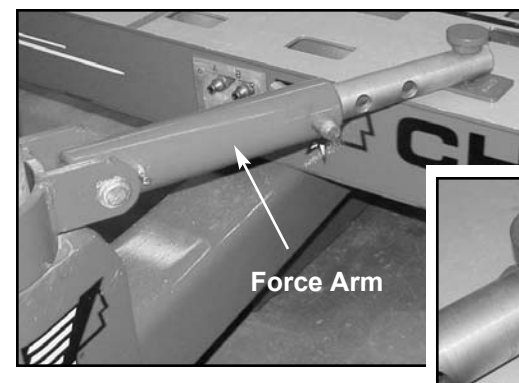


Figure 17

6. To adjust slack tower chain grip chain on each side of tower. (See Figure 18.) Lift out on end of chain until it is approximately 45 degrees from tower. Then disengage chain from tower head and pull chain to either increase or decrease amount of slack.

7. Support collar with one hand while loosening collar locking knob with opposite hand. Then position collar approximately 3 inches (75mm) above desired pulling height and retighten collar locking knob. (See Figure 19.)

**NOTE:** Make certain there is enough slack chain before loosening collar. After loosening locking knob, it might be necessary to turn collar slightly to disengage it from tower pipe.

8. Let tower chain hang free momentarily to remove twist. Then, without twisting chain, attach hook to vehicle. Pull on end of chain to remove slack and then lower collar. (See Figure 20.)

**IMPORTANT:** Remove twist from chain before lowering collar. Make sure that chain links between collar roller and hook align.

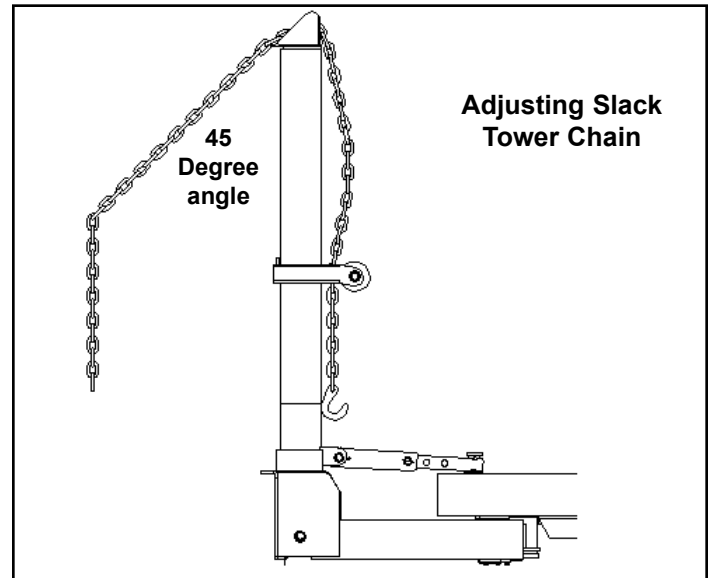


Figure 18

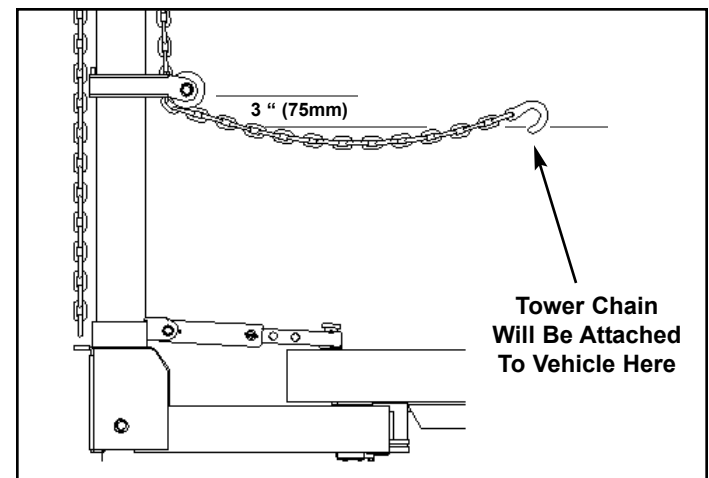


Figure 19

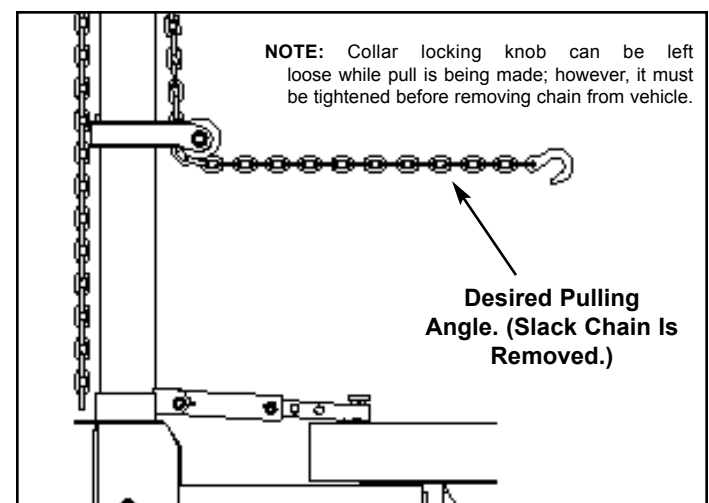


Figure 20

9. Connect tower's hydraulic hose to the nearest hydraulic manifold port. (See Figure 21.) Connect the valve connection to an "A" port and connect the non-valve connection to a "B" port. (See Figures 22 and 23). Then Open the tower valve. (See Figure 24.) Press "up" button on the remote control to operate and press the "down" button to release pressure.

**NOTE:**

1. Before pressing the "up" button to operate, make certain "front" and "back" lift buttons are deactivated (turned off). The towers will not operate when the lift buttons are activated.
2. DO NOT tighten collar locking knob while force is applied to system. It will be impossible to loosen the knob the system is released. If it has been tightened by error while force is on the system, reapply and loosen the knob.

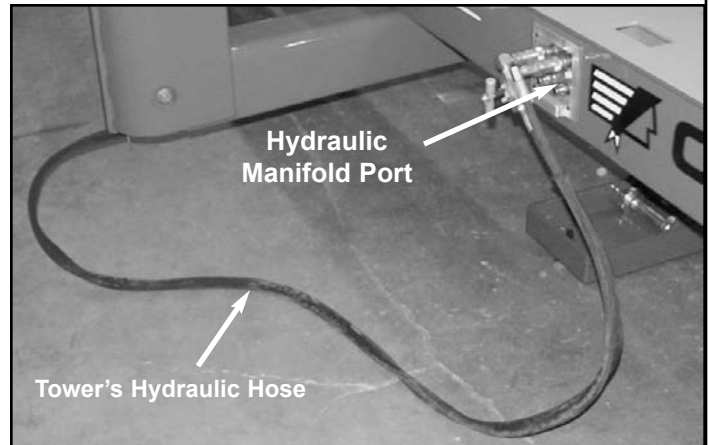


Figure 21

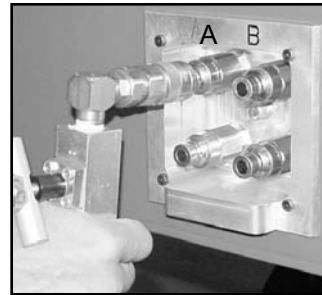


Figure 22



Figure 23

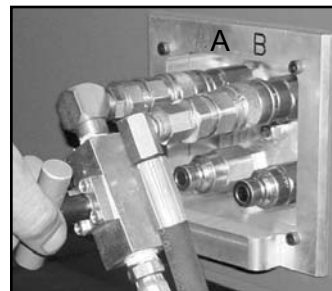


Figure 24



Figure 25

**! WARNING!**

To avoid severe personal injury to yourself and others DO NOT position yourself close to, or in line with chains, clamps, or other accessories while pressure is applied to this system.

**! CAUTION:** To prevent personal injury from flying objects:

- Check all bolts, nuts and clamps for deformation or elongation prior to each use.
- Deformed or elongated materials must be replaced. If they look deformed, they are deformed. Replace them!

10. Connect force gauge to any of the hydraulic manifold ports. When attaching the gauge make certain it is attached to an "A" port. (See Figure 25.)

11. When tower is no longer needed, close tower valve, disengage tower chain hook, and store collar using one of the three methods shown. (See Figures 26, 27 and 28.)

**NOTE:**

1. When collar and chain are stored as shown in Figures 26 and 27, the collar locking knob must be tightened before removing tower chain from vehicle.
2. When storing collar at bottom of tower (see Figure 28), DO NOT rest collar roller directly on the force arm (see Figure 29) as it will be more difficult to lift the collar.

**Pulling Setups**

When setting up a pull, observe the following suggestions regarding the positioning of the tower, its force arm and the pulling chain.

Before making a pull, align the tower with the vehicle and engage the tower force arm with a tie down hole on the mainframe. (See Figure 30 and its inset.)

**CAUTION:** To avoid severe personal injury, force arm and carriage pin must always be engaged in mainframe.

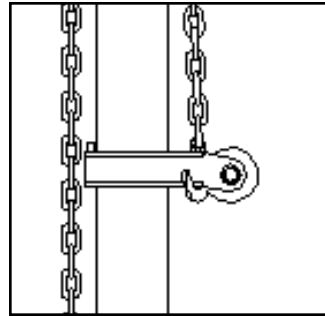


Figure 26

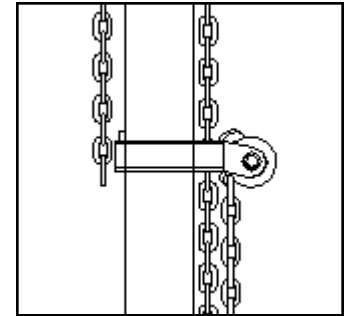


Figure 27

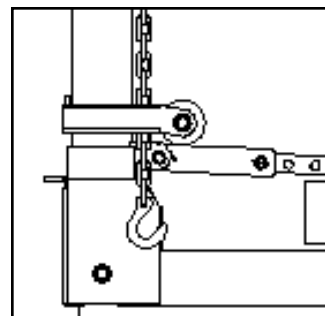


Figure 28

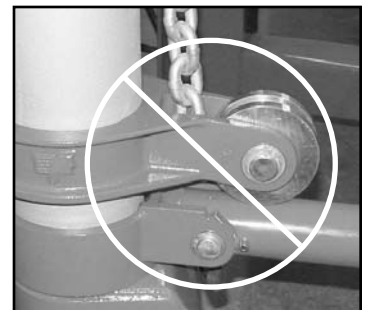


Figure 29

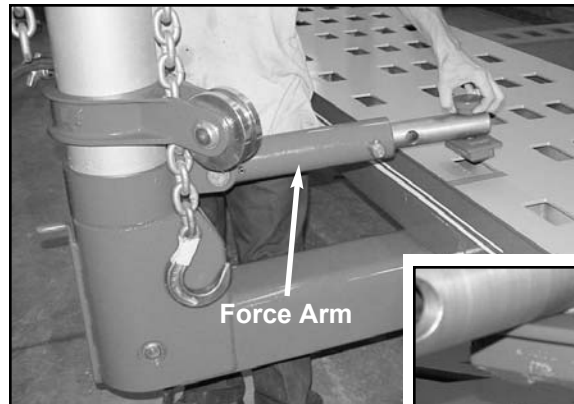


Figure 30



Whenever possible, establish the pulling angle between the tower and the tower force arm. (See Figure 31.) This pulling angle lifts the tower firmly against the underside of the mainframe dividing the stress of the pull on both the tower and the force arm.

Other pulling angles that are permissible include those shown in Figures 32 and 33. In both examples, the positioning of the tower and its force arm allow both components to readily withstand the stress of the pull.

Figure 34 shows an example of a pulling setup that must not be used. In this situation, the tower and the force arm are not positioned at different angles and the stress of the pull will be absorbed at one location instead of two. In this example, the tower will not lift against the underside of the mainframe and its unpredictable movement could result in damage to the machine.

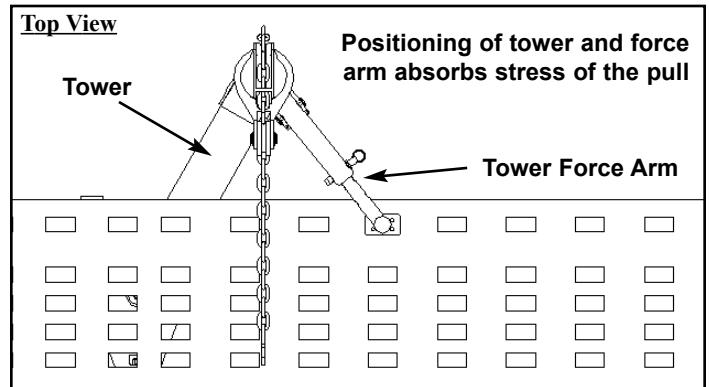


Figure 31

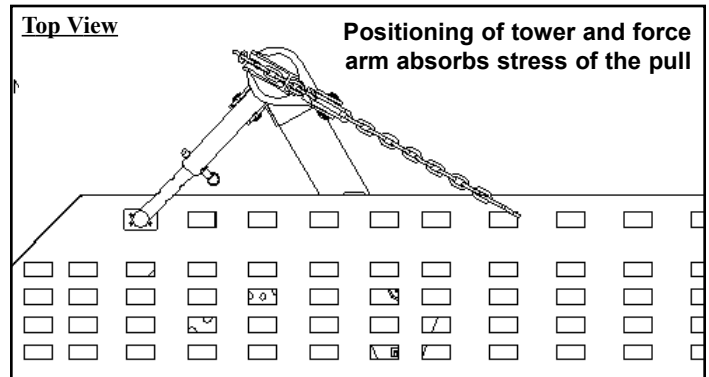


Figure 32

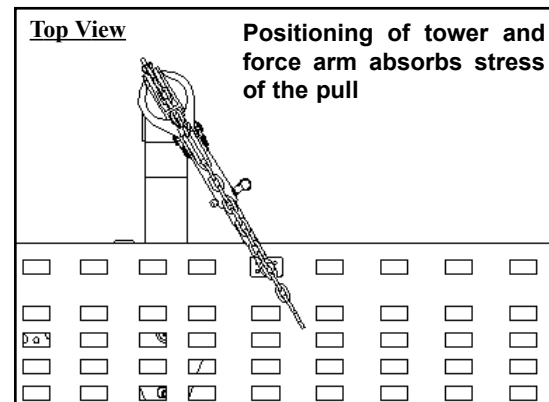


Figure 33

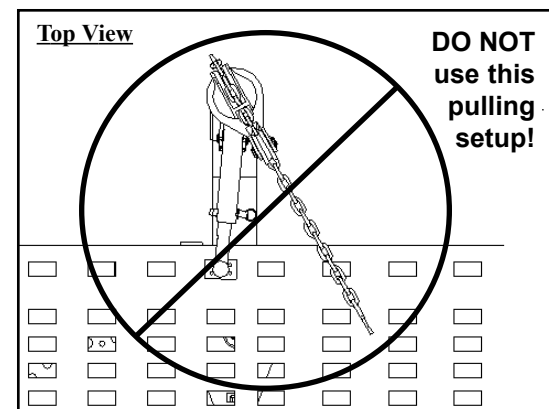


Figure 34

## Upward Pulls

Upward pulls require certain precautions.

**IMPORTANT:** DO NOT make upward pulls if angle between tower chain and tower pipe is 45 degrees or less. (See Figure 35.) If a repair situation requires an upward pull at a more severe angle, use an auxiliary ram set up. See (S21M) Auxiliary Cylinder Users Manual.

## Auxiliary Ram Push (From Tower)

When an auxiliary cylinder is used to push from the tower to the vehicle follow either the Auxiliary Pushing Attachment Method or the Tower Chain Method.

### Auxiliary Pushing Attachment Method

1. Place tower so it is in line with the push to be made.
2. Secure tower force arm to a convenient tie down hole.
3. Secure pushing attachment to tower pipe. (See Figures 36 and 37.) Make certain the attachment's pivot coupling is perpendicular with the rail to be pushed.

**IMPORTANT:** The lock on the auxiliary pushing attachment must hold the attachment secure. If necessary, adjust tension on U-bolt until a firm locking pressure is achieved. (See Figure 38.)

4. Install the auxiliary cylinder and its attachments, i.e. extension couplings, v-base, appropriate length extension tube, etc. (See Figure 39.)
  - a. Install desired length of extension tubing.
  - b. Install male adapter at base of cylinder and desired attachment (v-base, etc.) on piston end of cylinder.

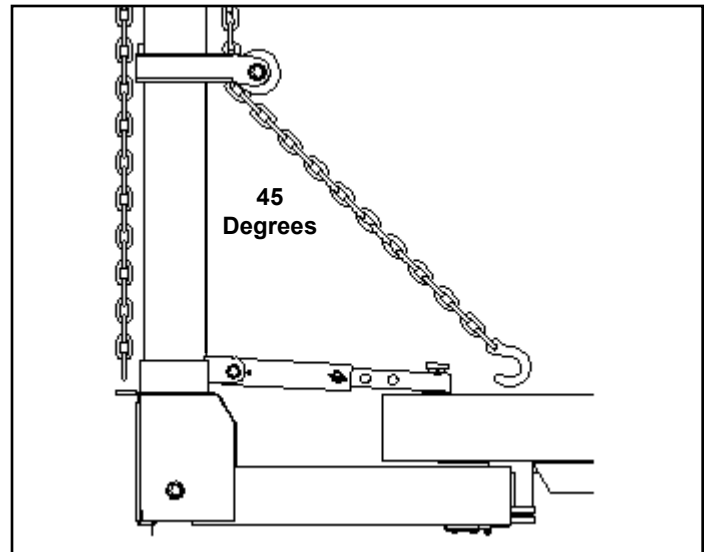


Figure 35

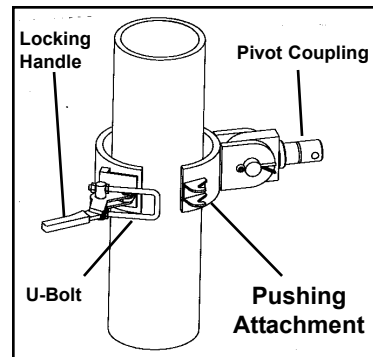


Figure 36

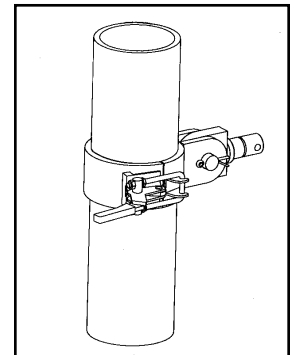


Figure 37

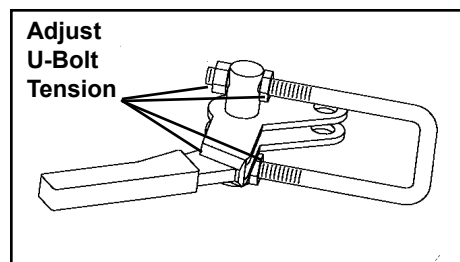


Figure 38

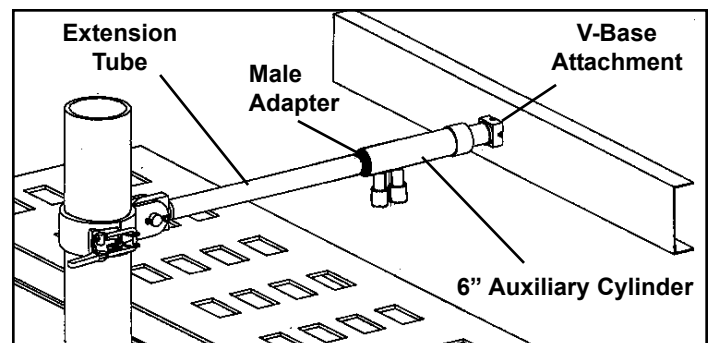
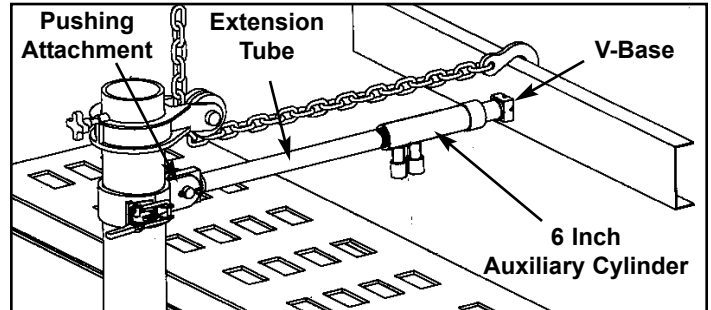


Figure 39

5. Open auxiliary line valve on ram being used and close all other valves. Press “up” button to apply force.

**NOTE:**

1. If the setup is used as a hold, close auxiliary line valve after enough force has been applied to hold cylinder and its attachments in place.
2. Before pressing the “up” button to apply force, make certain “front” and “back” lift buttons are deactivated (turned off). It is impossible to make a pull or a push when the lift buttons are activated.



See Figure 40

**⚠ WARNING!**

To avoid severe personal injury to yourself and others DO NOT position yourself close to, or in line with, chains, clamps, or other accessories while pressure is applied to this system.

**⚠ CAUTION:** To prevent personal injury from flying objects:

- Check all bolts, nuts and clamps for deformation or elongation prior to each use.
- Deformed or elongated materials must be replaced! If they look deformed, they are deformed. Replace them.

**(Pulling And Pushing From Same Tower)**

To pull and push from the same tower, refer to Figures 40 and 41. In Figure 41, the angle of the pull doesn't interfere with auxiliary pushing attachment usage.

**IMPORTANT:** DO NOT apply force against tower if locking handle is not holding auxiliary pushing attachment in position.

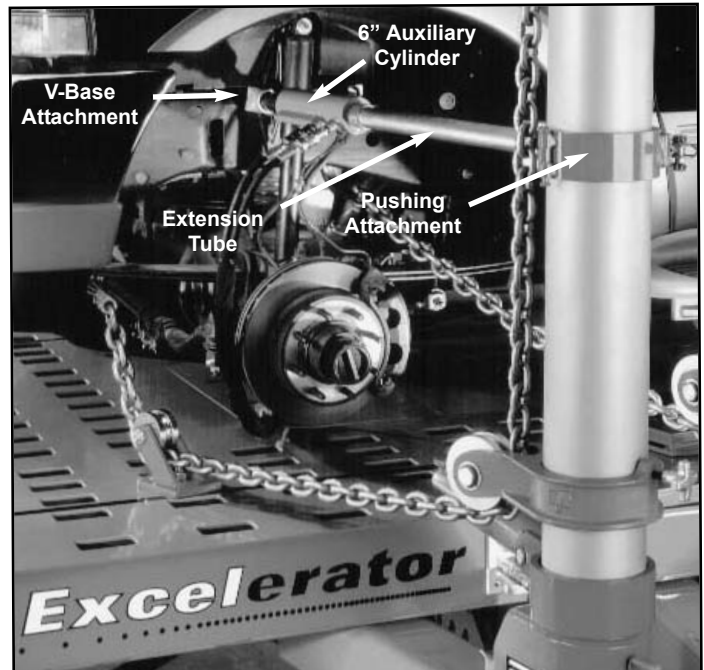


Figure 41

### Tower Chain Method

1. Align tower perpendicular to the mainframe.
2. Attach tower hook to inside row of tie down holes.
3. Lower collar as far as possible and tighten its locking knob.
4. Apply force to 1.5 ton (210 bar) and shut off tower valve.
5. Secure auxiliary pulling head (or v-base) to piston end of 6 inch auxiliary cylinder and attach extension couplings and appropriate length extension tube to opposite end of auxiliary cylinder. Then attach serrated saddle (or v-base) to end of extension tube to protect it when pushing against vehicle.
6. Position auxiliary pulling head against tower chain and extension tube assembly against vehicle. (See Figure 42.)
7. Apply pressure.

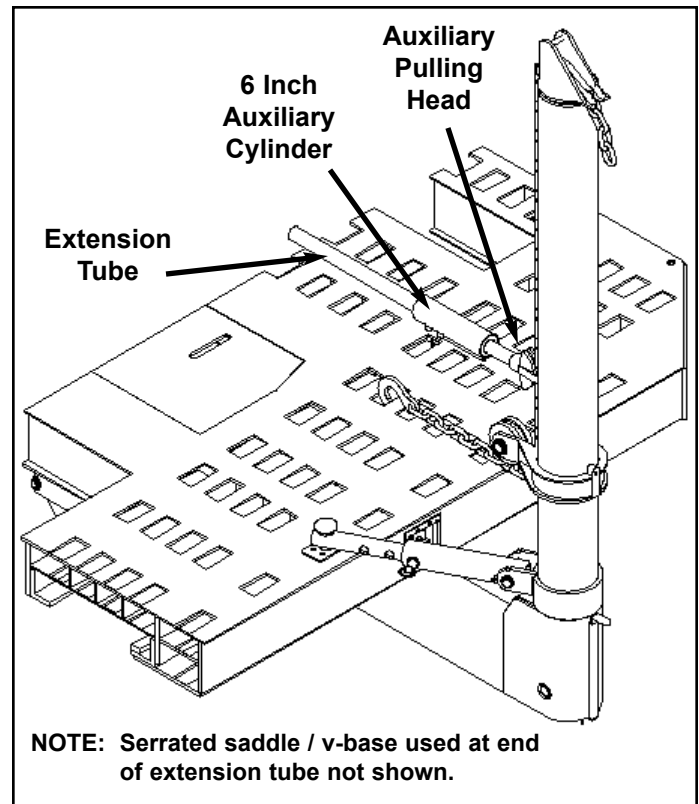


Figure 42

**⚠ WARNING!**

To avoid severe personal injury to yourself and others, DO NOT position yourself close to, or in line with, chains, clamps, or other accessories while pressure is applied to this system.

**⚠ CAUTION:** To prevent personal injury from flying objects:

- Check all bolts, nuts and clamps for deformation or elongation prior to each use.
- Deformed or elongated materials must be replaced! If they look deformed, they are deformed. Replace them.

**NOTE:** Refer to (S21M) Auxiliary Cylinder (Ram) Users Manual for all auxiliary cylinder uses.

## Lowering / Raising Machine

The Excelerator has two lift assemblies that operate simultaneously or individually. The mainframe can be raised up or down while horizontal (see Figures 43 and 44) or it can be tilted at either end for loading and unloading (see Figures 45 and 46.) The mainframe adjusts to five different working heights: 18 inches, 21 inches, 27 inches, 31 inches and 34 inches.

**CAUTION:** To prevent personal injury and/or property damage while adjusting machine height:

- Move towers away from scissor lift and away from lowering end of machine. Also, before lowering mainframe always engage wheel stops!
- Keep feet and objects clear of tower while adjusting height.
- Lifting of persons is prohibited.
- Verify safety lock arms are engaged before working under machine.

Although the Excelerator is flexible, use the safest and most productive means to load, repair, and remove a vehicle from the machine. When loading and unloading, refer to the safety **CAUTION** statements on page 18. These **CAUTIONS** apply to all lowering and raising procedures whenever a vehicle is on the mainframe. The precautions are followed by instructions for raising and lowering both ends of the machine simultaneously and instructions for raising or lowering just one end of the machine for vehicle loading and unloading. Instructions are also provided for loading and unloading extra large vehicles.

**IMPORTANT:** After lowering or raising machine to the appropriate working height, make certain the “Front” and “Back” buttons on the remote control switch are turned off. If they are not turned off, it will be impossible to make a pull or a push.

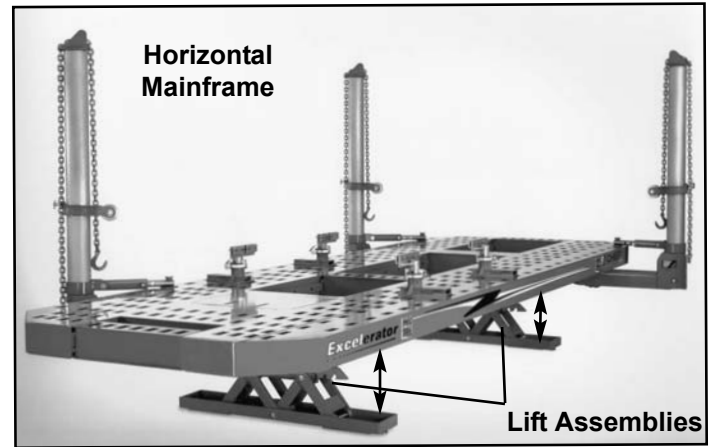


Figure 43

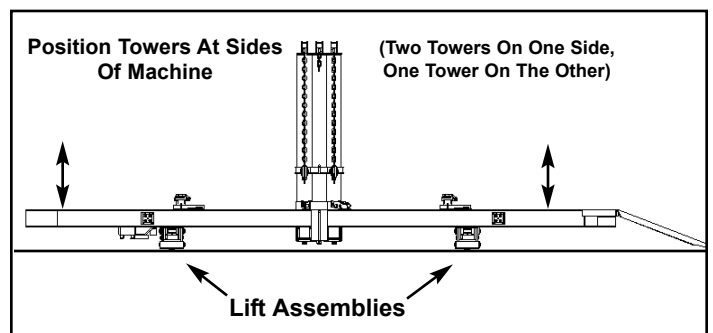


Figure 44

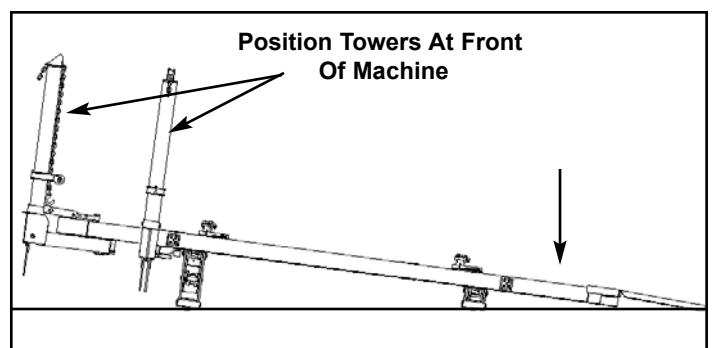


Figure 45

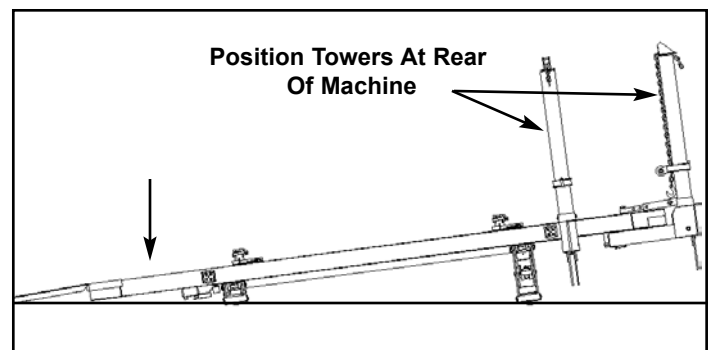


Figure 46

**PRECAUTIONS (With Vehicle Aboard)**

When lowering or raising a machine with a vehicle aboard observe the following precautions. Be sure to install wheel stops according to instructions.

**⚠ CAUTION:**

1. When driving or winching a vehicle on or off machine, use helper to guide you. (See Figure 47.) If vehicle's brakes are inoperable, use a Chief Winch and refer to instructions packaged with that accessory.
2. Prior to driving or winching vehicle on the machine make sure loading ramps are installed correctly.
3. When raising or lowering machine make certain tower force arms engage tie down holes. (See Figure 48 and its inset.)
4. Immediately after positioning vehicle on mainframe, put vehicle in park (if automatic transmission), apply vehicles emergency brake, and have helper install **wheel stops** (see Figure 49 and its inset) at "front" of front tire and at "rear" of rear tire. Install **wheel stops** as close to the tires as possible to prevent vehicle movement.
5. Before lowering machine, put vehicle in park (if automatic transmission), apply vehicles parking brake, and install **wheel stops**. Then check to make sure loading ramps are installed correctly.
6. Keep vehicle's **wheel stops** installed during raising and lowering procedures and whenever vehicle is not anchored to mainframe.
7. When raising or lowering machine with vehicle aboard. DO NOT walk around ends of machine.



Figure 47



Figure 48

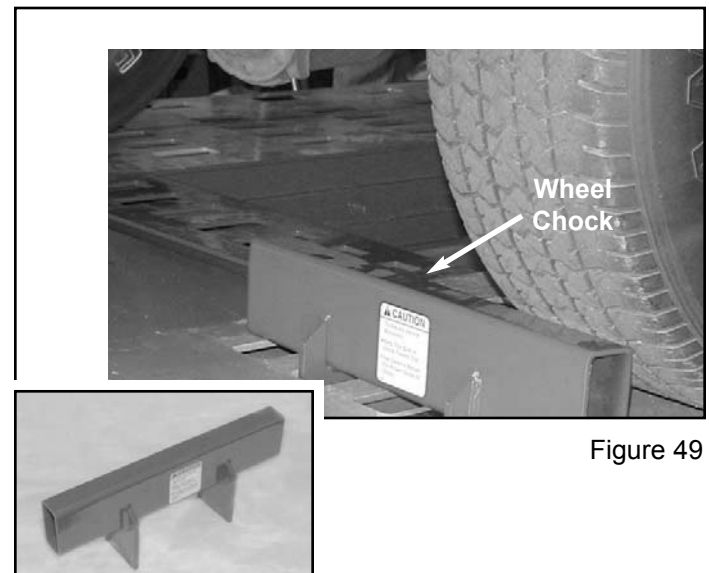


Figure 49

## Lowering / Raising Both Ends Simultaneously

### IMPORTANT:

1. When raising and lowering both ends of machine simultaneously, position two towers on one side of machine and one tower on the other. (See Figure 50 and 51.) If more towers are installed, evenly distribute the number of towers from side to side.
2. DO NOT position tower carriages below areas identified with “red” lines (see Figure 52) or they will be damaged when lowering machine to its lowest working height. The “red” lines represent the locations of the lift assemblies below the mainframe.
3. If intending to do front end repair work at the lowest working height, position towers at front of machine before lowering mainframe. At the machine’s lowest working height, towers can not be moved past the lift assemblies.
4. Mainframe should be in a horizontal position prior to using the lift assemblies simultaneously. (See Figures 50 and 51.)

**CAUTION:** To prevent personal injury and/or property damage while adjusting machine height:

- Move towers away from scissor lift and away from lowering end(s) of machine. Before lowering mainframe always engage wheel stops!
- Keep feet and objects clear of tower while adjusting height.
- Lifting of persons is prohibited.
- Verify safety lock arms are engaged before working under machine.

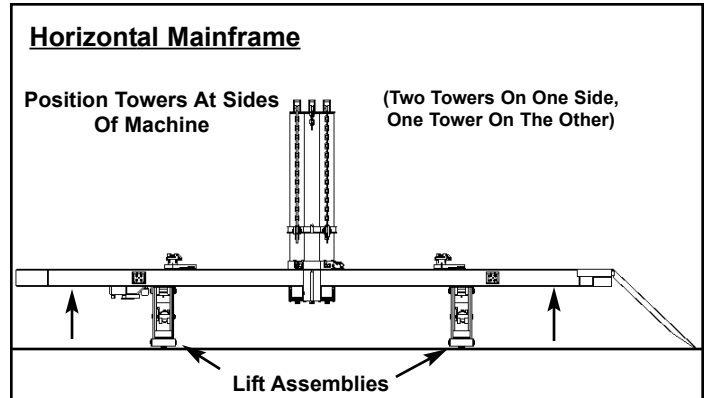


Figure 50

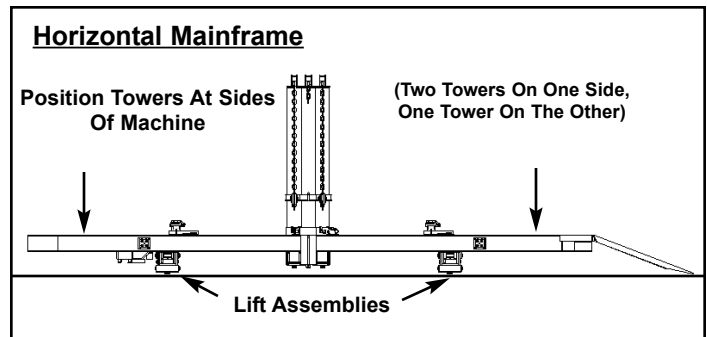


Figure 51

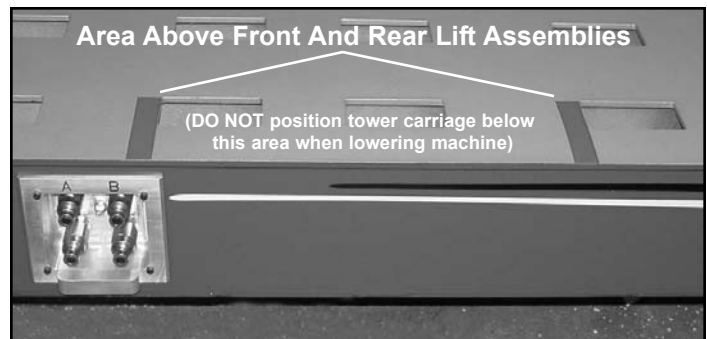


Figure 52

### Lowering Both Ends

Refer to **CAUTION** statements on pages 18 and 19 and the **IMPORTANT** references on page 19 prior to lowering both ends of machine simultaneously. Be sure to install wheel stops whenever a vehicle is on the machine.

1. Press “front” and “back” buttons on remote control. (See Figure 53.)
2. Press “up” button (see Figure 53) to disengage front and rear lock arms from their lock arm stops. See Figure 54 and its inset.
3. Press “unlock” button and “down” button at the same time to lower entire mainframe.
4. Prior to reaching desired working height, release “unlock” button to allow front and rear lock arms to engage the appropriate lock arm stops. Figure 55 and its inset show lock arm fully engaged with lock arm stop.

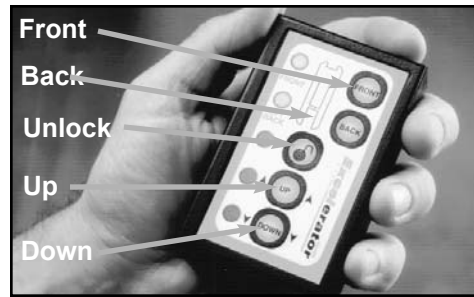


Figure 53

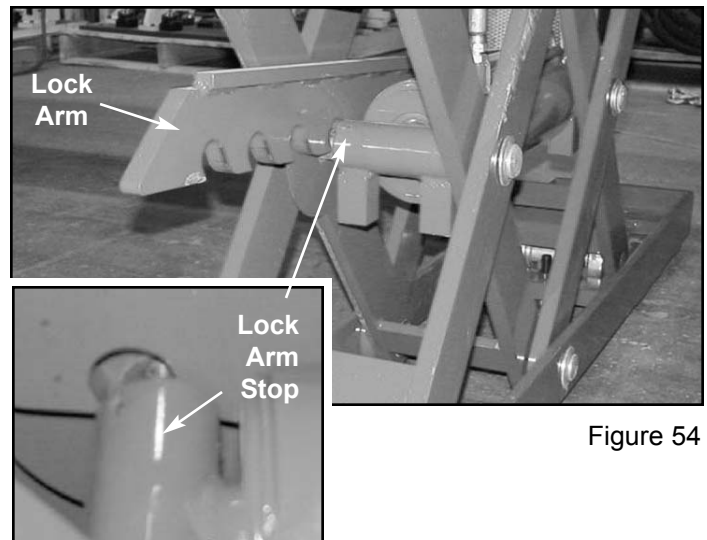


Figure 54

### Raising Both Ends

Refer to the **CAUTION** statements on pages 18 and 19 and the **IMPORTANT** references on page 19 prior to raising both ends of machine simultaneously. Be sure to install wheel stops whenever a vehicle is on the machine.

1. Press “front” and “rear” buttons on remote control.
2. Press “up” button to raise the mainframe.
3. Continue raising mainframe until lock arms clear the desired lock arm stops. Then release “up” button and push “down” button until lock arms fully engage the lock arm stops.

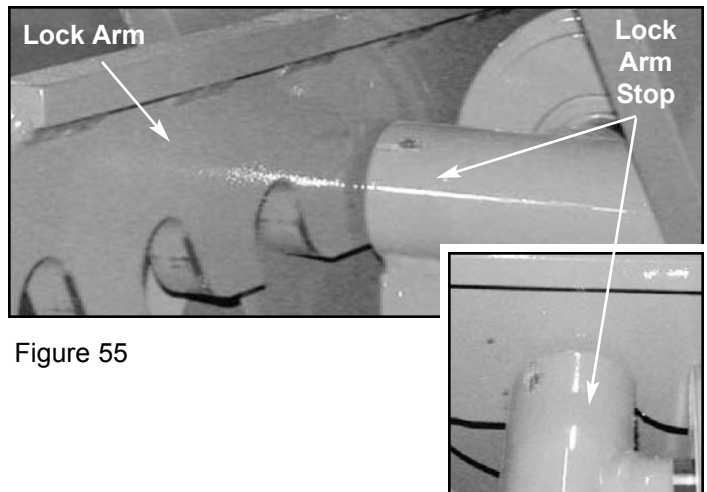


Figure 55

## Lowering / Raising One End Of Machine

The Excelerator's front or rear end can be lowered or raised individually (see Figures 56 and 57) for loading and unloading a vehicle. The best position for loading and unloading is to have one end of mainframe at its highest working height and the other at its lowest working height.

**CAUTION:** To prevent personal injury and/or property damage while adjusting machine height:

- Move towers away from scissor lift and away from lowering end of machine. Before lowering mainframe always engage wheel stops!
- Keep feet and objects clear of tower while adjusting height.
- Lifting of persons is prohibited.
- Verify safety lock arms are engaged before working under machine.

### Lowering One End

**IMPORTANT:** Prior to lowering or raising machine with vehicle aboard, refer to the **CAUTION** statements on this page and on page 18. Be sure to install wheel stops whenever a vehicle is on the machine.

1. Install loading ramps (if not already installed) at end to be lowered. (See Figure 58.)
2. Position towers at opposite end of machine. Make sure tower force arms are engaged with tie down holes. (See Figure 48 - page 18.)

### IMPORTANT:

1. DO NOT position tower carriages below areas identified with "red" lines (see Figure 59) or they will be damaged when lowering machine to its lowest working height. The "red" lines represent the locations of the lift assemblies below the mainframe.
2. DO NOT position all of the towers on one corner of machine. Divide towers across end of machine as equally as possible.

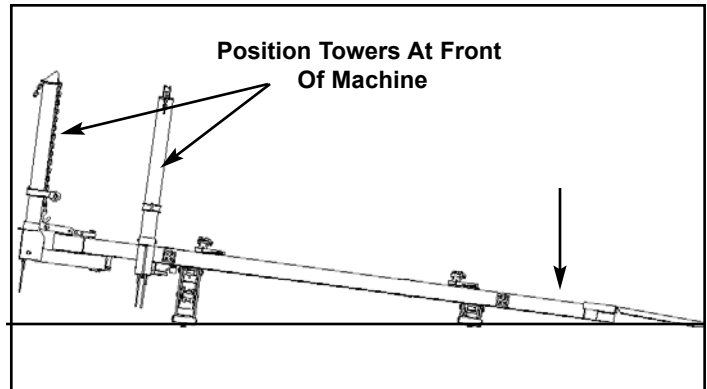


Figure 56

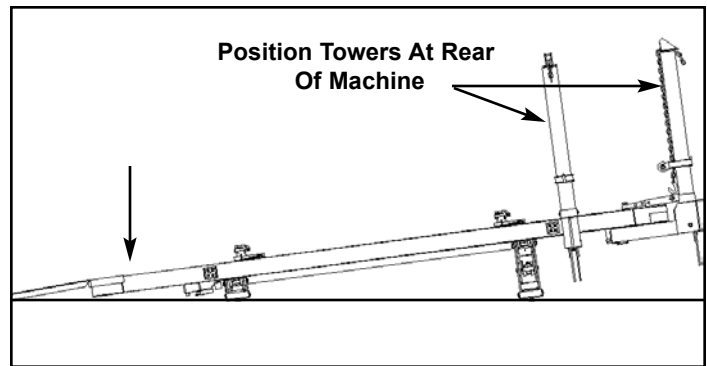


Figure 57

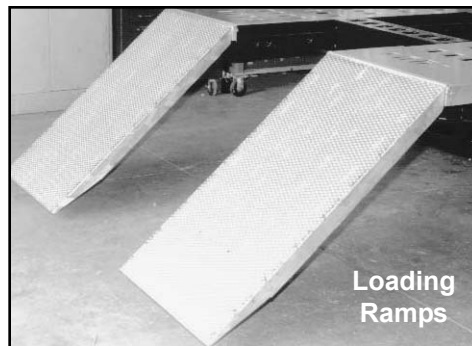


Figure 58

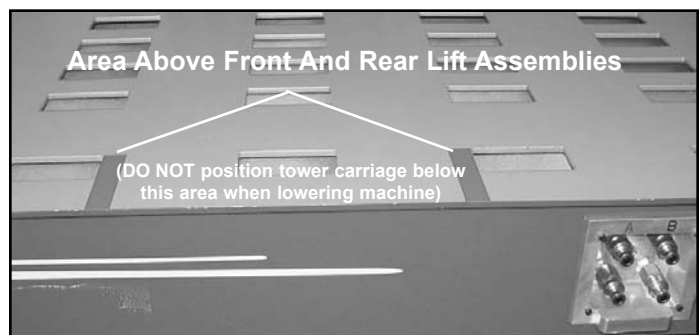


Figure 59

3. Close all tower valves.
4. If lowering rear of machine, press “back” button on remote control. (See Figure 60.) If lowering front, press “front” button.
5. Press “up” button to disengage lock arm from lock arm stop. (See Figure 61 and its inset.)
6. Press “unlock” button and “down” button at the same time to lower end of mainframe.
7. Just prior to mainframe reaching floor, release “unlock” button. Continue lowering mainframe until lock arm engages bottom lock arm stop. (See Figure 62 and its inset.)
8. If opposite end of mainframe is not at its highest working height, raise that end of the platform. (See following instructions.)

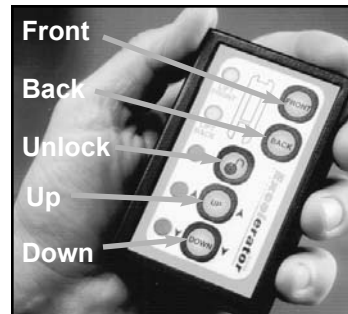


Figure 60

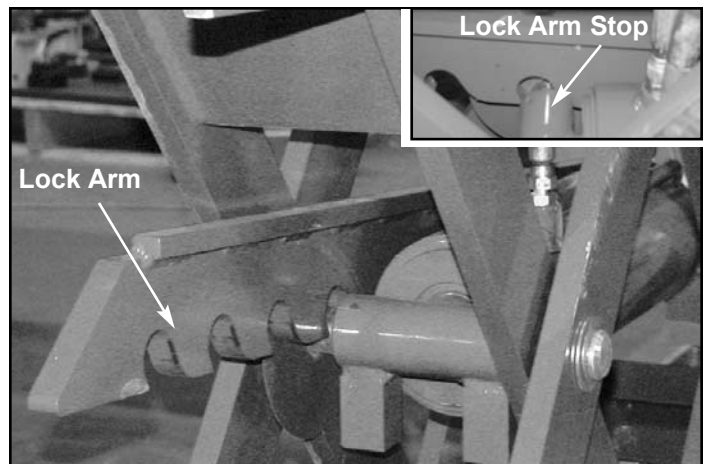


Figure 61

### Raising One End

**IMPORTANT:** Prior to lowering or raising machine with vehicle aboard, refer to **CAUTION** statements on pages 18 and 21. Be sure to install wheel stops whenever a vehicle is on the machine.

1. Close all tower valves.
2. If raising rear of machine, press “back” button on remote control. (See Figure 60.) If raising the front, press “front” button.
3. Press “up” button to raise end of mainframe.
4. When lock arm clears the desired lock arm stop release the “up” button. Then press the “down” button until lock arm fully engages the lock arm stop.

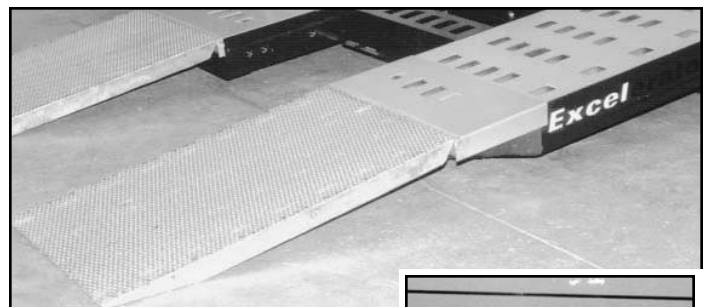


Figure 62



## Loading / Unloading Large Vehicles

**IMPORTANT:** Refer to **CAUTION** statements on this page and on page 18 prior to lowering or raising machine with vehicle aboard. Be sure to install wheel stops whenever a vehicle is on the machine.

Vehicles exceeding the 8,500 lbs. lifting capacity must be loaded, unloaded and repaired with mainframe “horizontal” and at its lowest working height. Tall vehicles may also have to be loaded, unloaded and repaired at mainframe’s lowest height because of ceiling restrictions.

Most of the heavy and/or tall vehicles are high ground clearance vehicles which allow them to be loaded and unloaded with the mainframe “horizontal” and at its lowest working height. (See Figure 63.)

### **IMPORTANT:**

1. Prior to loading these specialty vehicles, position the towers for the repair work required. Remember, tower movement is restricted when the mainframe is at its lowest working height.
2. DO NOT position tower carriages below areas identified with “red” lines (see Figure 64) or they will be damaged when lowering machine to its lowest working height. The “red” lines represent the locations of the lift assemblies below the vehicle.
3. DO NOT position all of the towers on one corner of the machine. Equally divide the towers across end of machine.

**CAUTION:** To prevent personal injury and/or property damage while adjusting machine height:

- Move towers away from scissor lift.
- Keep feet and objects clear of tower while adjusting height
- Lifting of persons is prohibited.



Figure 63



Figure 64

## Install / Remove Loading Ramps

The Excelerator loading ramps (see Figure 65) can be used at either the front or rear of the machine.

To install the loading ramps:

- 1) Secure a ramp mounting plate at the end of each treadway. The mounting plates mate with the tie down holes at the end of the treadways and are secured to the mainframe using an 5/16 inch allen wrench. (See Figures 66, 67 and 68.)
- 2) Secure a loading ramp to the end of each mounting plate using a pair of 5/16 inch clevis pins. (See Figure 69.)

**IMPORTANT:** If loading ramps and/or mounting plates are removed during the repair, reinstall the equipment prior to removing vehicle from machine.

**NOTE:**

1. When making pulls at rear of machine remove the loading ramp from the mounting plate and position the tower(s) accordingly. There is no need to remove the mounting plate.
2. When making pulls at front of machine, remove both the loading ramp and the mounting plate and position the tower(s) accordingly. The mounting plate must be removed in the front for two reasons:
  - To allow tower movement around the front corners of machine.
  - To allow allow tower pulls at front corners of machine.



Figure 65

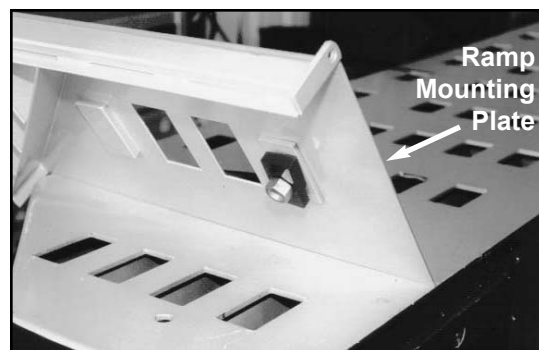


Figure 66



Figure 67

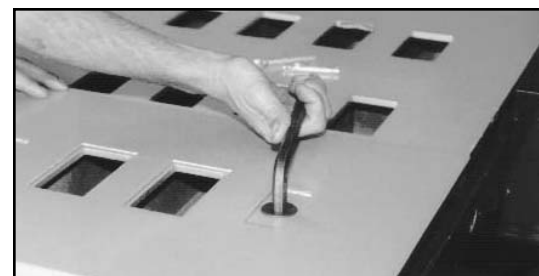


Figure 68

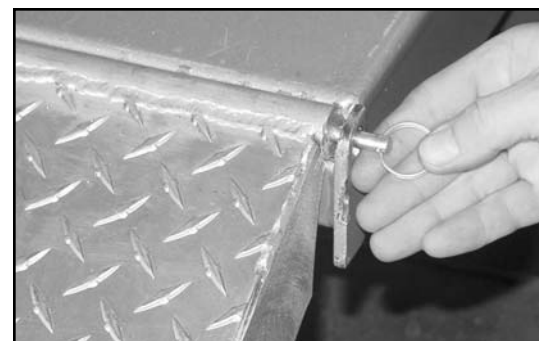


Figure 69

## Leveling The Machine

To adjust the Excelerator mainframe for level use the system's eight leveling pads. There are four leveling pads (see Figure 70) on each lift assembly.

If the machine is not level:

- 1) Elevate the mainframe to its upper working height and make sure its lock arms engage the lock arm stops.
- 2) Loosen the 3/4 inch lock nut on each leveling pad assembly. (See Figure 71.)
- 3) Lay a carpenter's level across the front permanent crossmember. (See Figure 72.) If an adjustment for 'level' is needed, use a 5/16 inch allen wrench to adjust the height of the leveling pads. (See Figure 73.)  
**IMPORTANT:** The bottom of each leveling pad must touch the floor.
- 4) Lay the level across the rear permanent crossmember and adjust the leveling pads as needed.
- 6) Lay the level along the left treadway and adjust the leveling pads as needed.
- 7) Lay the level along the right treadway and adjust the leveling pads as needed.
- 8) When the machine is level, tighten the lock nut on each leveling pad assembly.

**IMPORTANT:** Recheck all eight leveling pads to make sure they touch the floor.

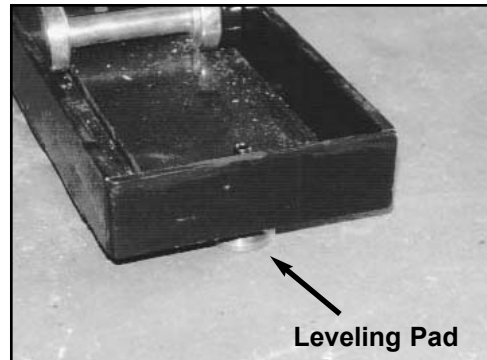


Figure 70



Figure 71



Figure 72

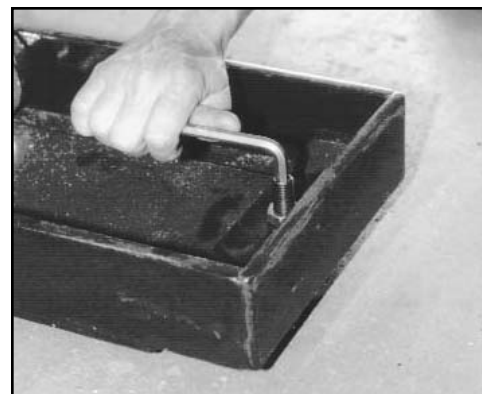


Figure 73

## Optional Pneumatic Connections

Although the four hydraulic manifold ports are designed primarily for tower attachment and force gauge purposes (see Figures 74 and 75), they can be used as an additional power source.

Each manifold can be outfitted with an air coupler that allows the use of assorted air driven tools. To outfit a manifold with a coupler, remove the plug in the center of the manifold (see arrow - Figure 76), and install an air system coupler (see arrow - Figure 77).

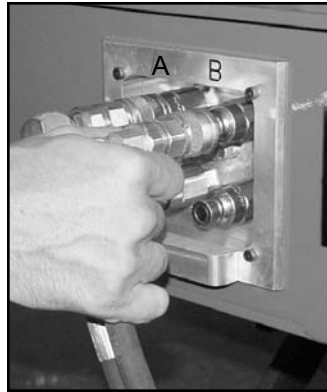


Figure 74

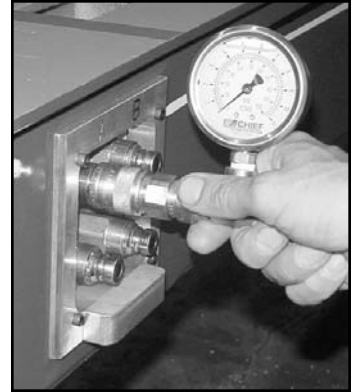


Figure 75

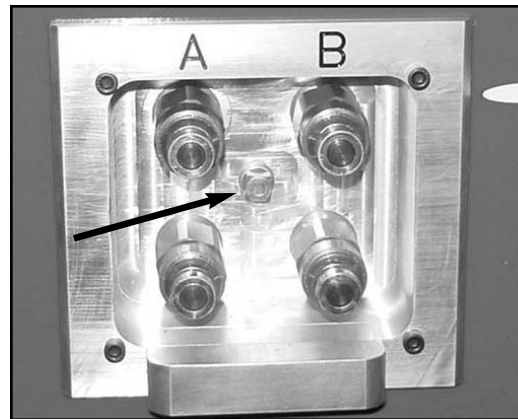


Figure 76

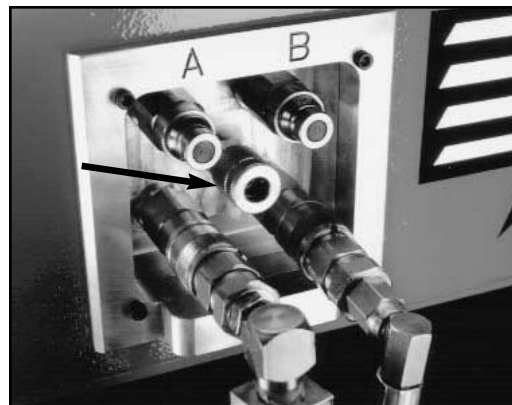


Figure 77

## Machine Maintenance

### Check And Inspect

These components should be checked 'monthly' and any-time a problem is suspected.

### Tower Chains, Tie-Down Chains

The chains furnished with this product are a special alloy frame straightening chain designed exclusively for Chief Automotive Systems, Inc. to meet the rigid requirements of the collision repair industry. If replacement is required, purchase only the original Chief product from an authorized Chief Automotive Systems, Inc. representative.

#### **CAUTION:**

1. DO NOT heat chain or hook while repairing vehicle — 600 degrees F (316C) of heat on chain will weaken it.
2. DO NOT tip load chain hook. Tip loading chain hook will stress hook beyond its designed capability and could cause hook to fail.
3. DO NOT pull with twisted chain links. Pulling with twisted chain links will stress chain links beyond their designed capability and could cause chain to fail.

Tower chain must be inspected for wear, nicks, gouges, stretched and bent links. Replace chain if damaged or worn.

Tower chain hooks must be inspected for twist and stretched openings. Replace chain if damaged or worn.

### Loading Ramp

Inspect loading ramps making sure they are securely attached to the machine and they pivot smoothly. Check pins periodically for deformation. Check mounting plate to make sure it is firmly secured to the machine's tie down holes.

### System Compartment

Remove access cover and check mainframe to pump compartment bolts/nuts. Tighten if loose.

### Power And Control Cords

Inspect power and control cords for worn insulation or other damage. Replace if damaged or worn.

### Tower To Mainframe Gap

The gap between the Tower arm and the lower plate of the mainframe should be between 1/8 and 3/8 inch. If the gap is not in this range contact an authorized Chief Automotive Systems, Inc. representative.

### Cleaning and Lubricating

These components should be cleaned and lubricated as specified for trouble free and extended service. When lubricating, use the following:

Grease — Use a SUS 750 Lithium type grease such as lubricate #630-2 for all components requiring grease.

#### Tower Track

The tower track should be clean and free of objects to provide long trouble free operation of towers. Periodically apply a thin film of grease to the outside corners of the track.

#### Lift Assemblies

Periodically clean and remove objects from the lower lift channels.


#### Crossmembers

Periodically clean crossmember guide bars. Silicon can be applied to the upper surface to promote smooth operation.

#### Collars

Clean and lubricate collars monthly.

1. Use compressed air to blow out dirt or dust that collects between collar ears and rollers.

 **CAUTION:** Wear safety glasses while using compressed air to blow out dirt and dust.

2. Place a few drops of oil on roller pin between roller and collar ears (each side). Then turn roller a few times. Roller must turn freely.

**Eliminating Air in Hydraulic System**

All air has been removed from hydraulic system at the factory, but if hydraulic system is opened to replace a system component, it is necessary to bleed air from system prior to using it.

**Bleeding Air From System At Quick Coupler**

1. Attach bleed hose to an 'A' port and a 'B' port at the rear of the machine.
2. Deactivate the 'Front' and 'Back' buttons on the remote control.
3. Press the 'Up' button and hold for 45 seconds to bleed air from the system.
4. Repeat the procedure on the opposite side of the machine.

**Bleeding Air From Lift Cylinders and Tower Cylinders**

To bleed air from the lift cylinders, raise and lower the machine five times.

**Bleeding Air From Tower Cylinders**

To bleed air from the tower cylinders, contact an authorized Chief Automotive Systems, Inc. service representative.

**Refill Hydraulic Fluid Reservoir**

After bleeding air from hydraulic system, elevate both ends of mainframe to their maximum height and refill the hydraulic fluid reservoir to within 1.5" of top with SUS215 viscosity 100 degrees F (38C) 10W hydraulic oil.

**SAVE THIS USERS MANUAL**



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