

Chief

impulse - VHT

USERS MANUAL



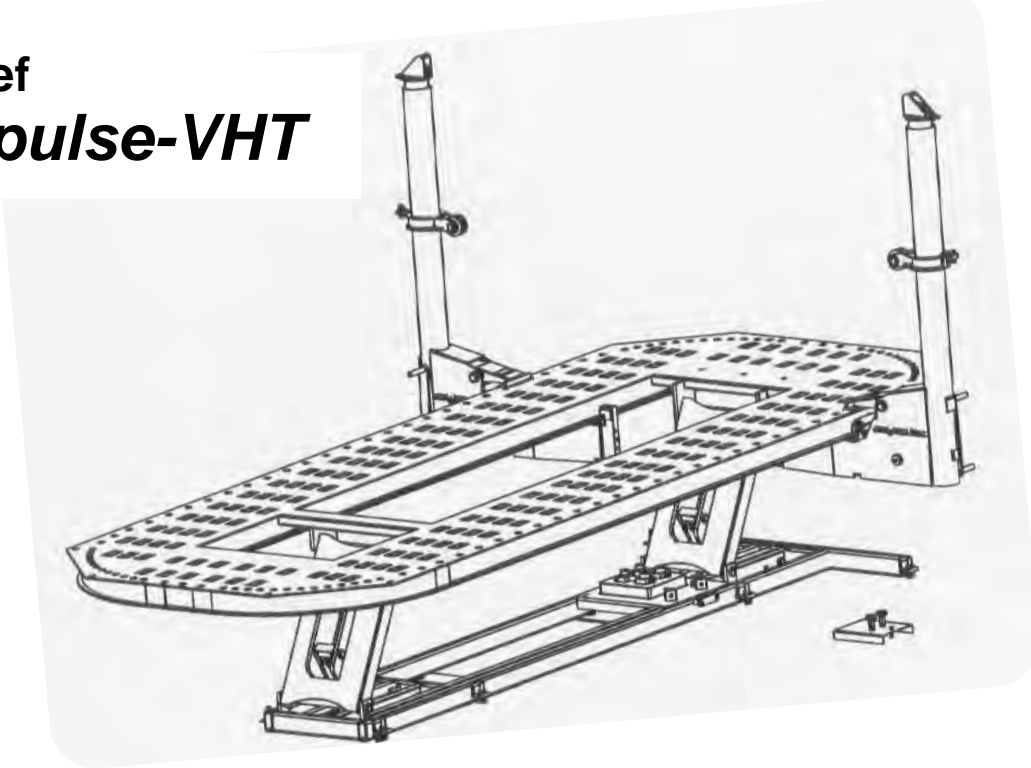


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Chief Automotive Technologies, Inc. warrants for one year from date of installation and/or purchase any of its products which do not perform satisfactorily due to defect caused by faulty material or workmanship. Chief's obligation under this warranty 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.

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Chief *impulse-VHT*



This owners manual is written to familiarize operators with the safe and efficient operation of the Chief *impulse-VHT*. The *impulse-VHT* machine features unibody and full frame repair capabilities with 360 degree pulling access around the vehicle.

Two towers are provided with the *impulse-VHT* and up to three more can be added as optional equipment. Each tower mounts to the bottom plate of the mainframe. A unique tower roller design allows easy movement around the machine and a "Sure-Lock" force clamp secures the tower to the mainframe when making a pull. Each tower is equipped with one 5-ton hydraulic ram operated by an air over hydraulic pump. The machine is hydraulically positioned at various working heights, and tilts hydraulically for either drive-on or winch-on positioning of vehicles.

NOTE: Illustrations shown in this manual may vary slightly from actual product.

This manual is not intended to replace Chief Automotive Training. For information concerning Training, contact Chief Automotive Technologies.

IMPORTANT:

1. DO NOT attempt to operate the Chief *impulse-VHT* without first reading this entire manual.

2. Complete safety information is highlighted throughout this manual and is identified by:




This safety alert symbol identifies safety information. Operator injury could result if these CAUTION notes are not followed.


3. Qualified service personnel must check operational capacity of the Chief *impulse-VHT* system prior to its initial use and at intervals of no more than one year. Contact Chief Automotive Technologies or contact your authorized Chief Automotive Technologies representative.


4. Persons operating the Chief *impulse-VHT* repair system must be at least 18 years of age, must be trained in the operation of the *impulse-VHT* system, and must have demonstrated their qualifications to the employer. They must also be specifically assigned to operate the *impulse-VHT* system by the employer and this assignment must be made in writing.


General Safety Tips


General


-  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 6,000 lbs or less.
 - 5) Field of motion of load carrying device is free of persons and obstructions.

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


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


 Always wear safety glasses when using the *impulse* machine or any of its accessories.


 DO NOT move machine if vehicle is on it.


 Maintain a free space of 20 inches (50cm) minimum around all moving parts and pinch points on machine.

Optional Crossmember

 DO NOT use optional crossmember as a step.


 DO NOT use optional crossmember to make angular pushes or pulls.


 During removal and reinstallation of optional crossmember, hold crossmember firmly to support its weight. Use a helper if needed. Following installation, install support pins at each end of crossmember to prevent accident disengagement.

 To Avoid Damage to the lift assemblies or the hydraulic power unit:

- Crossmember must be installed and located properly when Raising or Lowering Equipment

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.

Tower Movement

WARNING

Fully engage "Sure-Lock" force clamp with pinning hole on mainframe to prevent tower movement during the pull or during a raising or lowering procedure.

 When pushing tower, keep one hand on tower lever and the other on the tower pipe above the collar. Also, keep hands away from all pinch points...i.e. roller assemblies on bottom mainframe plate and force clamp pinning location on top mainframe plate.


 When engaging "Sure-Lock" force clamp, keep hands away from all pinch points...i.e. roller assemblies on bottom mainframe plate and force clamp pinning location on top mainframe plate.

NOTE: Hoses may need to be disconnected when moving towers around the front and rear of machine.


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.

 Remove twist in chain before applying pressure to the chain.


Raise / Lower Machine

 When raising or lowering machine, secure towers to front of mainframe. The "Sure-Lock" force clamps must firmly engage pinning holes at that location and tower levers must be down










 Lifting of persons is prohibited.

 Keep feet and objects clear of mainframe when lowering machine.



General Safety Tips (continued)

-  To Avoid Personal Injury or Damage to Equipment:
 - Before operating the machine make sure:
 - Persons and objects are clear of machine
 - Hoses and other objects are free of the lift legs.
 - **Both** lift valves must be **open** to operate the lifts.
 - **Both** lift valves must be **closed** to operate the towers.
 - Oil spills must be cleaned up immediately to prevent slipping.
 - Hoses on the floor can create a tripping hazard.








Loading / Unloading Machine

-  Prior to driving or winching vehicle on or off 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 mainframe, put vehicle in park (if automatic transmission), apply vehicles emergency brake, and have helper install wheel chocks at "front" of front tire and at "rear" of rear tire. Install wheel chocks as close to the tires as possible to prevent vehicle movement and keep wheel chocks installed whenever vehicle is not anchored to mainframe.
-  Position vehicle far enough onto mainframe so that wheels do not rest on loading ramps .
-  Before lowering machine, put vehicle in park (if automatic transmission), apply vehicles parking brake, and install wheel chocks. Then check to make sure loading ramps are installed correctly.
-  DO NOT run over air hoses or hydraulic lines when loading or unloading vehicles.
-  DO NOT exceed the machine's 6,000 lbs. (2,722 kg.) lifting capacity.
-  When raising or lowering machine with vehicle aboard, DO NOT walk behind rear of machine.
-  Always install wheel chocks when raising or lowering machine with a vehicle aboard.


Chain

-  The 3/8" tower chain is proof tested to 20,000 lbs. (90kN).
-  To avoid personal injury or damage to property, DO NOT:
 - Heat chain or hook while repairing vehicle. 600 degrees F (316 degrees C) of heat on chain will weaken it.
 - Tip load chain hook.
 - Pull with twisted chain links.


Hydraulics

-  Keep pumps far away from excessive heat or flames. The surrounding temperature should not exceed 122° F (50° C).
-  Always release hydraulic pressure before disconnecting hydraulic hoses.
-  If pump fails to shut off, disconnect air supply and contact an authorized Chief Automotive Technologies Service Representative.
-  All components must be replaced with Chief Automotive Technologies authorized replacement parts.
-  Improper handling and/or modification of parts is forbidden and may cause a hazardous situation for the user. Such action immediately voids the guarantee and releases the manufacturer from all liability.
-  Keep pump in upright position. DO NOT turn pump upside down or lay on its side.
- 
 1. Fill pump reservoir with all cylinders retracted. (See Maintenance Section - page 14.)
 2. DO NOT overfill pump reservoir.

Operational Capacity

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

Optional Steps / Ladders

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

Hydraulic System Components

The hydraulic pneumatic pumps provided with the *impulse* -VHT machine is reliable and efficient. One pump is provided.

The hydraulic pneumatic pump (see Figure 1a) is a variable rate pressure device that delivers hydraulic oil under pressure through the use of compressed air as a power source. It is particularly useful in body shops where operators rely on hydraulic rams to not only lift vehicles but also to pull structural components into alignment.

IMPORTANT:

Use hydraulic pneumatic pump only for it's intended purpose.

Hydraulic Pump Operation

NOTE: The compressed air inlet port is ¼ inch NPTF. Air must be regulated, lubricated and filtered. A total of 115 PSI (8 bar) is recommended. Also, use a suitable quick connect. Install an automatic air line oiler in the air inlet line as close to the pumping unit as possible. It should feed approximately 1 drop of oil (SAE 10W) per minute.

1. Attach air hose to air coupler. (See Figure 1b.)
2. Attach pump's hydraulic hose to tower ram's quick coupler.
3. To operate pump, see page 5.

IMPORTANT: If hydraulic connections are not seated correctly, couplers may leak fluid or may not allow fluid to pass through. Male and female connectors must be fully seated and then tightly threaded together. Figure 2 shows a coupling that is not fully seated and Figure 3 shows a coupling that is fully seated.

CAUTION: To avoid personal injury or damage to property: When disconnecting hydraulic hose from quick coupler, some fluid spillage may occur. Always clean up any hydraulic fluid spillage from floor or work area.



Figure 1a



Figure 1b

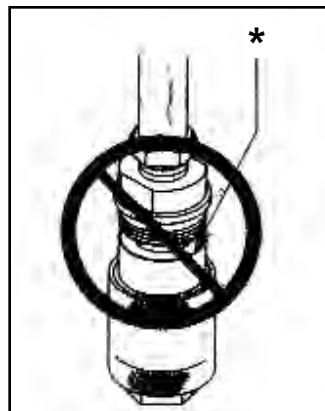


Figure 2

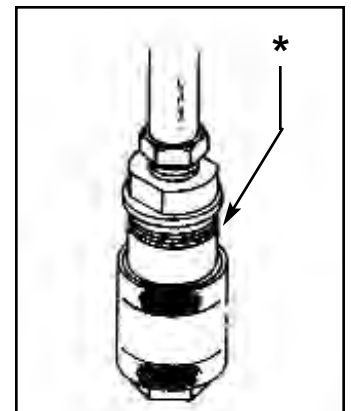


Figure 3

* Male and female couplers are not fully seated. DO NOT thread them together.

* Male and female couplers are fully seated and can be threaded together.

Pump Usage

1. To activate hydraulic pump to apply pressure to system to raise machine or towers, depress "UP" button on the hand-held control pendant. The pump will build hydraulic pressure and release it to the lift or tower hydraulic rams. (See Figure 4a.)
2. To disengage hydraulic pump, release "UP" button on hand-held control pendant. This action stops the flow of hydraulic oil to the selected hydraulic ram(s) being operated: However, it holds existing hydraulic pressure.
3. To release hydraulic pressure, depress the "DOWN" button on the hand-held control pendant. This action returns hydraulic oil for the selected ram(s) to the pump reservoir. (See Figure 4b.)

CAUTION: To prevent damage to the pump and hydraulic ram, DO NOT operate pump when ram is fully extended. (If possible, stop supplying pressure before ram reaches its full extension).

Priming The Pump

Occasionally, it may be necessary to prime the pump. To do this

1. Depress both the "UP" and "DOWN" buttons on the hand-held pendant simultaneously. (See Figure 5.)
2. Allow the pump to run for approximately 15 seconds.
3. If ram extends or pressure builds, the pump has been successfully primed. If it doesn't, repeat procedure.

IMPORTANT: All air has been removed from hydraulic systems at the factory, but if hydraulic system is opened to replace a system component, it is necessary to bleed air from the system prior to use (See Maintenance Section - Page 13.)



Figure 4a



Figure 4b




Figure 5

Towers

The *impulse*-VHT repair system is equipped with two pulling towers that can be positioned 360 degrees around the machine. The system can accommodate up to three additional towers. All towers feature telescoping heads, adjustable collars, and a unique roller assembly that not only secures the tower to the bottom of the machine but also allows for 360 degree movement around the machine.


Also unique to this system are the “Sure-Lock” force clamps that secure towers to circular pinning holes along the outer edge of the mainframe. The force clamps secure towers to the mainframe while removing stress from the roller assemblies.

Tower pulls can be set up quickly and are controlled by a hand-held pendant, which controls the flow of hydraulic pressure, and individual tower valves which control the flow of oil to each tower. Lateral and elevated pulling angles can be made or changed in just a fraction of a minute.

 **CAUTION:** The 3/8 inch (10mm) tower chain is proof tested to 20,000 lbs. (90kN).

To Operate Towers

1. Lift up tower lever and rotate it forward to disengage “Sure-Lock” force clamp from top of mainframe. (See Figures 6 and 7.)
2. Push tower to desired location on machine. (See Figure 8.)

 **CAUTION:**
When pushing tower, keep one hand on tower lever and the other on the tower pipe above the collar. Also, keep hands away from all pinch points...i.e. roller assemblies on bottom mainframe plate and force clamp pinning location on top mainframe plate.

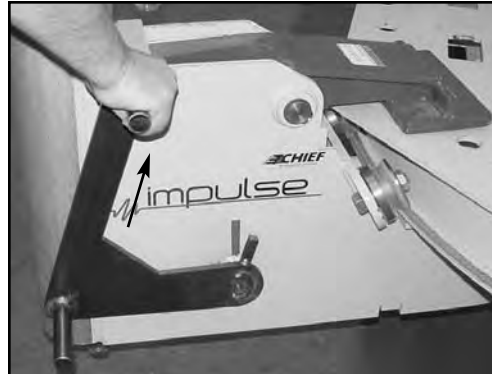


Figure 6

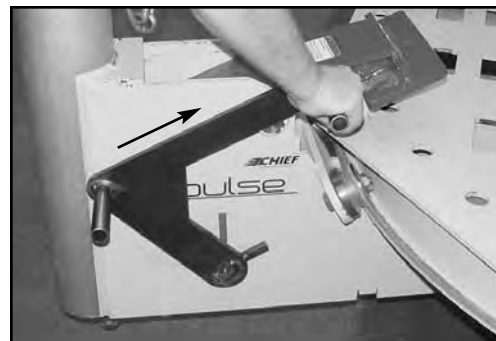


Figure 7



Figure 8

3. To secure tower to mainframe, rotate tower lever back and down to engage "Sure-Lock" force clamp with mainframe pinning hole. While holding upper lever, step on lower lever to firmly secure "Sure-Lock" force clamp. (See Figure 9.) Force clamp is fully engaged when indicator aligns with vertical decal. (See Figure 9 Inset.) Figure 10 shows close up of force clamp and pinning hole prior to engagement.



WARNING

Fully engage "Sure-Lock" force clamp with pinning hole on mainframe to prevent tower movement during the pull or during a raising or lowering procedure.



CAUTION: When engaging "Sure-Lock" force clamp, keep hands away from all pinch points...i.e. roller assemblies on bottom mainframe plate and force clamp pinning location on top mainframe plate.

4. To adjust slack tower chain, grip chain on each side of the tower. Lift out on tail 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. (See Figure 11.)
5. 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 12.)
6. Let tower chain hang free momentarily to remove twist. Then without twisting chain, attach hook to the vehicle. Pull on tail end of chain to remove slack (See Figure 13) and then lower collar.

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

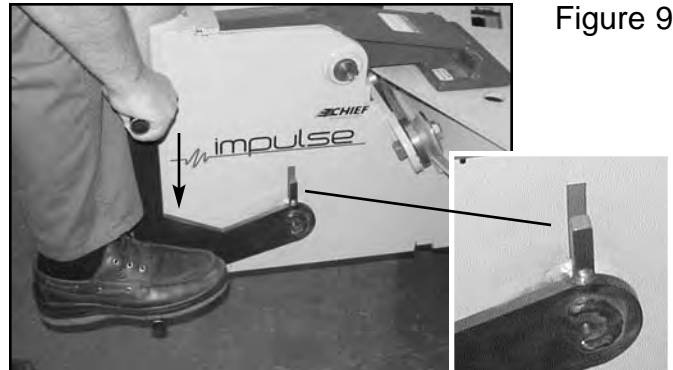


Figure 9

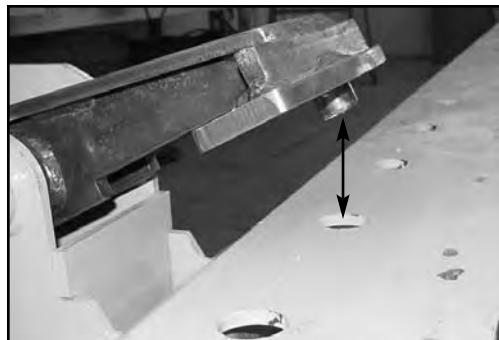


Figure 10

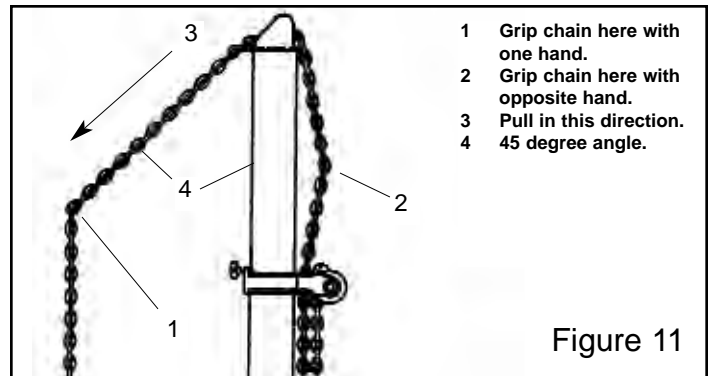


Figure 11

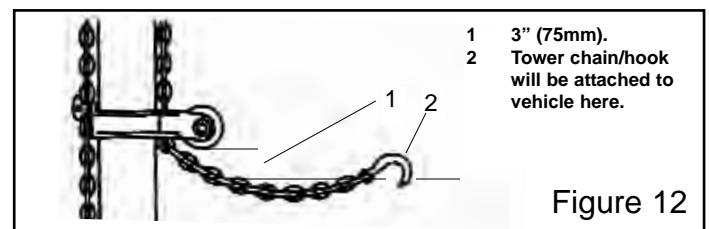


Figure 12

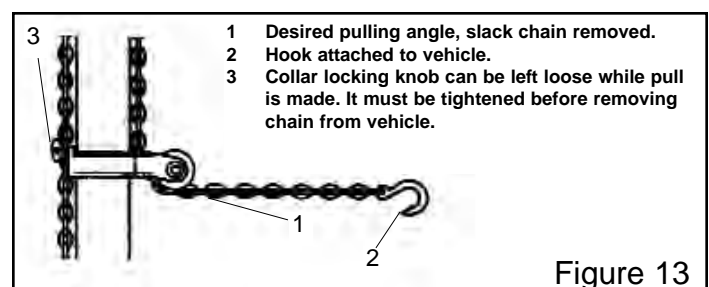


Figure 13

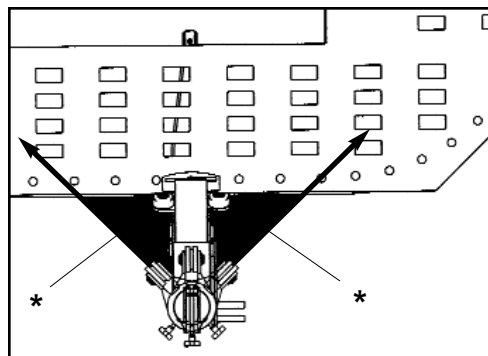
7. Attach pump's hydraulic hose to tower ram's quick coupler. (See Figure 14.)
8. To operate pump, follow usage procedures on page 6.

CAUTION:

- 1. To prevent damage to tower assembly, pulls must not exceed a 45 degree angle from tower base. (See Figure 15.)
- 2. To avoid personal injury or damage to equipment, DO NOT:
 - Heat chain hook while repairing vehicle. 600 degrees F (316 degrees C) of heat on chain will weaken it.
 - Tip load chain hook.
 - Pull with twisted chain links.



Figure 14



* Pulling Angle Must Not Exceed 45 Degree Range From Tower Base.

Figure 15



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.

IMPORTANT:

1. DO NOT tighten collar locking knob while pressure is applied to system because it will be impossible to loosen the knob without pressure on the system. If it has been tightened by error while pressure is on the system, reapply pressure and loosen the knob.
 2. DO NOT wrap tower chain around track nor attach tower hook to track. Damage to track will impede tower usage.
9. When tower is no longer needed, disconnect hydraulic hose from tower ram's quick coupler, remove tower chain and hook from vehicle and store collar using one of the two methods shown in Figures 16 and 17.

CAUTION:

- 1. Collar locking knob must be tightened before removing tower chain and hook from vehicle.
- 2. Collar locking knob must be tight when collar is not in use.
- 3. Store collar at bottom of tower pipe or support collar with tower chain.

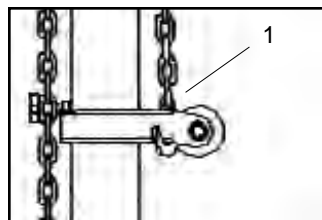


Figure 16

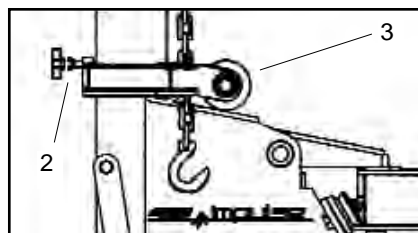


Figure 17

- 1 Collar supported by Tower Chain.
- 2 When collar and chain are stored this way, collar locking knob must be tightened before removing tower chain and hook from vehicle.
- 3 Collar rests on tower base.

Optional Crossmember

An optional crossmember is available for the *impulse* system. The crossmember (see Figure 18) mounts to the inside edges of the treadway and can be moved forward or rearward as needed. The crossmember does not lock to the machine; however, support pins (see Figure 20) prevent it from being accidentally disengaged.

The primary use of the crossmember is to support perpendicular pulls and pushes. In both instances, the auxiliary ram must be positioned perpendicular with top or bottom of crossmember.


To install the crossmember, hold it secure while rotating it into position. (See Figure 19.) Both ends of the crossmember must engage top mainframe plate. Then secure support pins (see Figure 20) at each end of the crossmember.

CAUTION:

1. DO NOT use movable crossmember as a step.
2. DO NOT use movable crossmember as a base to make a hydraulic pull or push unless auxiliary ram is positioned perpendicular (90 degrees) with top or bottom of crossmember.
3. Each time crossmember is removed from mainframe and reinstalled, reinstall support pins at each end of the crossmember to prevent accidental disengagement.
4. DO NOT make angular pulls or pushes from the crossmember.

Reverse Usage - Optional Crossmember

If additional height is required for lifting high ground clearance vehicles, the crossmember can be turned upside down to provide a higher platform. (See Figure 21.) Bridging the treadways in this fashion provides an additional 5 inches of height.

 **CAUTION:** When crossmember is installed as shown in Figure 21 use extreme caution.

1. Use this setup only when mainframe is in level position.
2. Center crossmember evenly from side to side.
3. Remove crossmember before lowering machine.
4. Use this setup for perpendicular lifting only. DO NOT use this setup for any type of pull.
5. DO NOT position yourself close to or underneath the crossmember when lifting the vehicle.
6. Take caution to position crossmember when raising and lowering machine so that it does not damage the lift arm or pump.

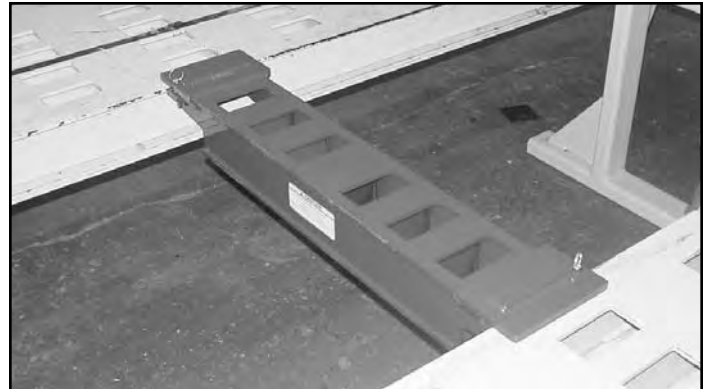


Figure 18



Figure 19

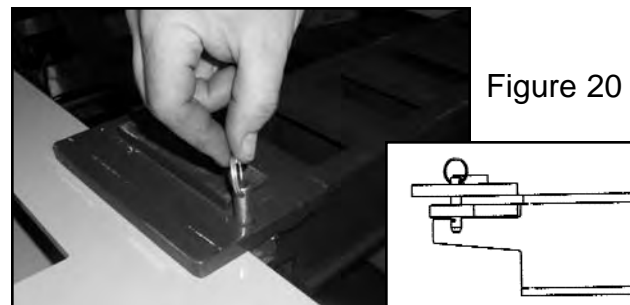


Figure 20

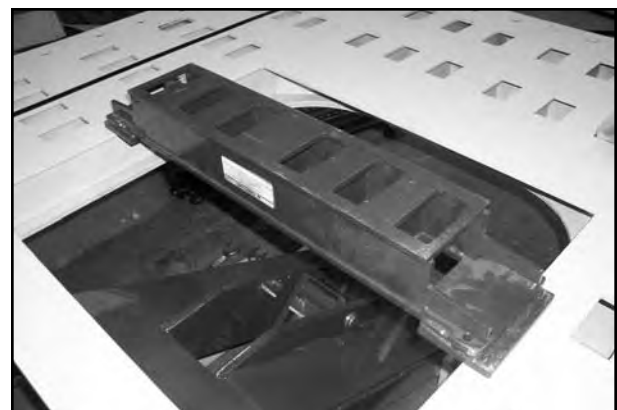


Figure 21

Lowering / Raising Machine

When lowering or raising a machine with a vehicle aboard observe the following precautions.

- CAUTION:**
1. When driving or winching vehicle on or off machine, use a helper to guide you. (See Figure 22.) If vehicle's brakes are inoperable, use a Chief Winch and refer to instructions packaged with that accessory.
 2. When vehicle is on mainframe, all wheels must clear the loading ramps. (See Figure 23.) DO NOT attempt to lift machine with vehicle's wheels on the loading ramps.
 3. Immediately after positioning vehicle on mainframe, put vehicle in park (if automatic transmission), and apply vehicles emergency brake. Continue to press brake pedal until helper installs wheel chocks (see Figure 24) at "front" and "rear" of rear tires.
 4. Prior to lowering machine, put vehicle in park (if automatic transmission), apply vehicles emergency brake, and install wheels chocks at front of front tires and rear of rear tires. Then install loading ramps at rear of machine.
 5. Keep vehicles wheels blocked during raising and lowering procedures and whenever vehicle is not anchored to mainframe.
 6. When raising or lowering machine with vehicle aboard, DO NOT walk behind machine.
 7. DO NOT exceed 6,000 lbs. (2,722 kg) lifting capacity of *impulse-VHT* system.



Figure 22

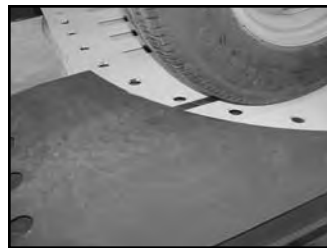


Figure 23



Figure 24

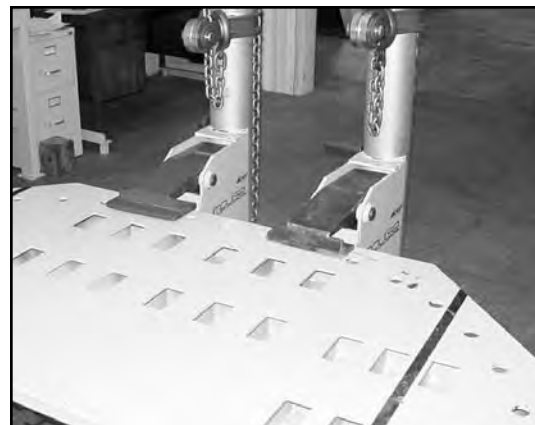


Figure 25

To Lower Machine For Loading

IMPORTANT: Observe preceding precautions when lowering machine with vehicle aboard.

1. Position towers at front of machine and secure the "Sure-Lock" force clamps to front pinning holes. (See Figure 25.)
2. Install loading ramps at rear of machine. (See Figure 26.)

NOTE: Loading Ramp pins must engage loading ramp pinning holes at rear corners of machine. (See Figure 26 Inset.)



Figure 26

* Loading Ramp Pinning Holes On Mainframe

3. Open both lift control valves (See Figure 27a.) or disconnect towers from hydraulic system.
4. Raise machine until it is level and both front and rear lockarms are released and above the 4th working height. (See figure 27b.)
5. Activate lock arm release by stepping on tilt button on lift control valve enclosure or depressing tilt button on hand-held pendant. (See Figure 28.)
6. Depress “down” button on hand-held pendant to lower machine. Machine will automatically tilt into the loading position. (See Figure 29.)



Figure 27a

⚠ CAUTION:

1. Before lowering machine, clear all obstacles from under and around machine.
2. DO NOT allow anyone or anything to ride on machine or be under machine during lowering procedures.
3. Position optional cross-member immediately ahead of rear fixed crossmember to avoid damage to the machine.



Figure 27b

To Raise Machine After Loading

1. Open both lift control valves and close all tower valves or disconnect towers from hydraulic system
2. Activate pump by depressing “UP” button on hand-held pendant. Rear lift will rise until machine is level. Once machine is level, both lifts will rise together
3. Lower machine into locks by depressing “DOWN” button on hand-held pendant.



Figure 28

CAUTION:



1. Before raising machine, clear all obstacles from under and around machine.
2. DO NOT allow anyone or anything to ride on machine or be under machine during lowering procedures.



Figure 29

Adjust Working Heights

The impulse-VHT has six (6) working heights from 19 inches to 40 inches

To Raise Machine Working Height

1. Open both lift control valves and close all tower valves or disconnect towers from hydraulic system. (See Figure 30.)
2. Activate pump by depressing "UP" button on hand-held pendant. Raise machine until both lifts are above desired working height. (See Figure 31.)
3. Lower machine into locks by depressing the "DOWN" button on the hand-held pendant. (See Figure 32.)



Figure 30



Figure 31



Figure 32

To Lower Machine Working Height

1. Open both lift control valves and close all tower valves or disconnect towers from hydraulic system. (See Figure 33.)
2. Activate pump by depressing "UP" button on hand-held pendant. Raise machine until both front and rear lift lock arms are released. (See Figure 34.)
3. Disengage safety lock arms by depressing and holding "UNLOCK" button on hand-held pendant. (See Figure 35.)
4. Lower lifts by depressing "DOWN" button on hand-held pendant until machine is slightly above desired working height. (See Figure 35.)
5. Release "UNLOCK" button on hand-held pendant to re-engage safety lock arms. Continue to press "DOWN" button on hand-held pendant until machine settles into locks.



Figure 33



Figure 34



Figure 35

Machine Maintenance

Check And Inspect

These components should be checked prior to use and anytime a problem is suspected.



CAUTION: To avoid personal injury when performing any maintenance function, always wear safety glasses and safety shoes.

Tower Chains, Tie-Down Chains

1. Clean chain before inspecting.
2. Inspect each link for wear, nicks, gouges, stretched or bent links. If found, replace chain.
3. Inspect tower hooks for twist and stretched openings. If found replace chain.



CAUTION: To avoid personal injury or damage to property, DO NOT:

- Heat chain or hook while repairing vehicle. 600 degrees F (316 degrees C) of heat on chain will weaken it.
- Tip load chain hook.
- Pull with twisted chain links.

Loading Ramps

Inspect loading ramps making sure loading ramp pins mate with pinning holes at rear of machine each time mainframe is raised or lowered.

Inspect inside and outside tower roller wheels for damage. The inside and outside roller bearings are lubrication free. Use compressed air to clean. DO NOT lubricate.

Power and Control Cords

Inspect hydraulic hoses and air hoses for leaks or other damage. If found, replace hose(s).

Cleaning and Lubricating

Clean and lubricate these components as specified for trouble free and extended service. When lubricating use the following:
Oil — Use 30 weight motor oil for all components requiring oil.

Grease — Use a SUS750 Lithium type grease such as lubricate #630-2 for all components requiring grease.

Tower Heads

Clean tower heads every six months.

1. Remove tower chain from tower head.
2. Remove tower head from tower pipe.
3. Clean dirt from tower head pipe and where tower head pipe rubs on inside of tower pipe.
4. Reinstall tower head and tower chain.

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 In System At Quick Coupler

1. Separate quick coupler.
2. Place male end of quick coupler in container and hold rag over container and quick coupler.



CAUTION: Wear safety glasses to protect eyes from hydraulic oil in the event it squirts out of container and past the rag.

3. Depress ball check at end of quick coupler against bottom of container.



CAUTION: DO NOT have any pressure on the system when pressing ball check on quick coupler.

4. Press the "UP" to button pump air out of system and continue until only hydraulic oil is being pumped out.
5. Reconnect quick coupler.
6. Refill hydraulic fluid reservoir as per manufacturer's recommendations packaged with foot pump.

Bleeding Air From System Beyond Quick Coupler

Contact an authorized Chief Automotive Technologies Service representative.

Refill Hydraulic Fluid Reservoir

The hydraulic pneumatic pump contains 5 liters of hydraulic oil. When refilling reservoir or adding oil, fill to within 1" (25mm) of top using SUS215 viscosity @ 100° F (38° C) 10W hydraulic oil.



CAUTION:

1. Fill pump reservoir with all cylinders retracted.
2. DO NOT overfill pump reservoir.

Machine Maintenance (cont.)

Lift Assembly Porta-Frame Assembly

All lift leg pivot points are permanently lubricated and do not require maintenance except for occasional cleaning.

Unlock Unload System

1. Position towers at front of machine and secure the “Sure-Lock” force clamps to front pinning holes.
2. Fully raise machine past top working height. Place wood block or jack stands under deck.
3. Clean the unpock and unload components before inspecting.
4. Activate the unlock bars by depressing the “UNLOCK” button on the hand-held pendant. Both the front and rear lock arms should smoothly disengage from the porta-frame sawtooth. After releasing the “UNLOCK” button on the hand-held pendant, unlock bars should smoothly drop down and the lock arms to re-engage the porta-frame sawtooth. If the unlock bars do not drop smoothly, contact your authorized Chief service representative.
5. Activate lock arm release by stepping on the tilt button on the lift control valve enclosure, or by depressing tilt button on the hand-held pendant (see figure 28). The front unload bar should smoothly rise and disengage the front lock arms from the sawtooth. The rear unlock bars should also smoothly raise and disengage the rear lock arms from the sawtooth. After releasing the tilt switch (or button on the hand-held pendant), both the front unload and the rear unlock bars should smoothly drop allowing both lock arms to engage the sawtooth.
6. Inspect all fasteners and hardware to verify it is properly tightened and undamaged.

Clean and inspect Sure-Lock force clamps monthly

1. Use compressed air to blow out all dirt or dust that collects in Sure-Lock.
2. Inspect handle retaining bolt on tower and all retaining rings.
3. Clean and inspect Tower rollers if tower movement becomes difficult.

Pneumatic Control System

1. Clean and inspect all pneumatic lines for damage or leaks.
2. Verify that overload switch is correctly adjusted.
3. Verify that level switch is clean and functioning correctly.

Leveling Machine

1. Position towers at front of machine and secure the Sure-Lock force clamps to front pinning holes. (See Figure 36.)
2. Raise machine and lock into top working height.
3. Place level across porta-frame front stabilizer bar and adjust leveling bolts until bar is level. (See Figure 37.) To adjust the leveling bolt, first loosen the top nut as show in Figure 38. Then adjust the lower nut to raise the porta-frame as shown in Figure 39 and then re-tighten top nut.
4. Place level on porta-frame side tube and adjust front to back level of porta-frame by adjusting third level bolt on right side of machine. (See Figures 40 & 41)
5. Place level across width of porta-frame even with leveling bolts and level machine side to side. (See Figure 42.)
6. Adjust front lift leveling bolts down until they contact the floor. Then turn an additional 1/4 turn. (See Figure 43.)
7. Adjust rear lift leveling bolts down until it contact the floor. Then turn an additional 1/4 turn.
8. Adjust rear overload leveling foot down until in cotacts the floor. Then turn an additional 1/4 turn. The ball plunger switch mounted to leveling foot should contact the floor and be fully depressed. (See Figure 44.)



Figure 38

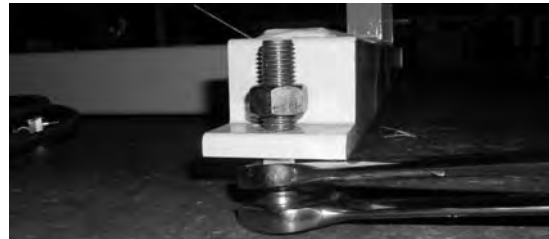


Figure 39



Figure 40



Figure 41



Figure 42



Figure 43



Figure 44



Figure 36



Figure 37

Troubleshooting

Problem	Cause	Possible Solution
Pump will not run	Insufficient supply air	Verify that supply airline is properly connected to 100 psi source and free from obstructions and kinks
	Damaged pendant or pendant lines	Contact Chief Automotive Technologies service representative
Pump builds pressure slowly	Hydraulic fluid is low	Fill fluid reservoir to within 1" of top with SUS215 viscosity @ 100 10W hydraulic oil with all rams and lifts in lowest positions
	Air in system	Bleed tower lines
Pump will not hold pressure	Contamination in valve	Operate pump and release pressure several times to flush valve
	Hydraulic leak	Check hoses, fittings and quick couplers and tighten or replace
Ram Jumps	Air in hydraulic system	Bleed air from system. See page 13
Ram will not extend	Valve not open	Open valve one turn
	Loose quick coupler	Tighten quick coupler
	Pump will not build pressure	See "Pump Problems"
	Deck partially tilted	Raise machine to level
Ram will not retract	Loose quick coupler	Tighten quick coupler
	Dirt in quick coupler	Clean male and female halves
	Overload switch not working	Clean and adjust
Hydraulic oil leakage	Hose leaking	Replace hose
	Loose quick coupler	Tighten quick coupler
	Loose fitting	Tighten fitting
	Inadequate sealant in pipe threads	Apply Teflon tape to pipe threads after properly cleaning and retighten
Machine will not lift	Lift valves not open	Open lift valves one turn
	Tower or auxiliary valves open	Close tower or auxiliary valves
	Vehicle weight exceeds capacity	Do not attempt to load vehicle
	Tilt switch not adjusted properly or is damaged	Contact Chief Automotive Technologies service representative

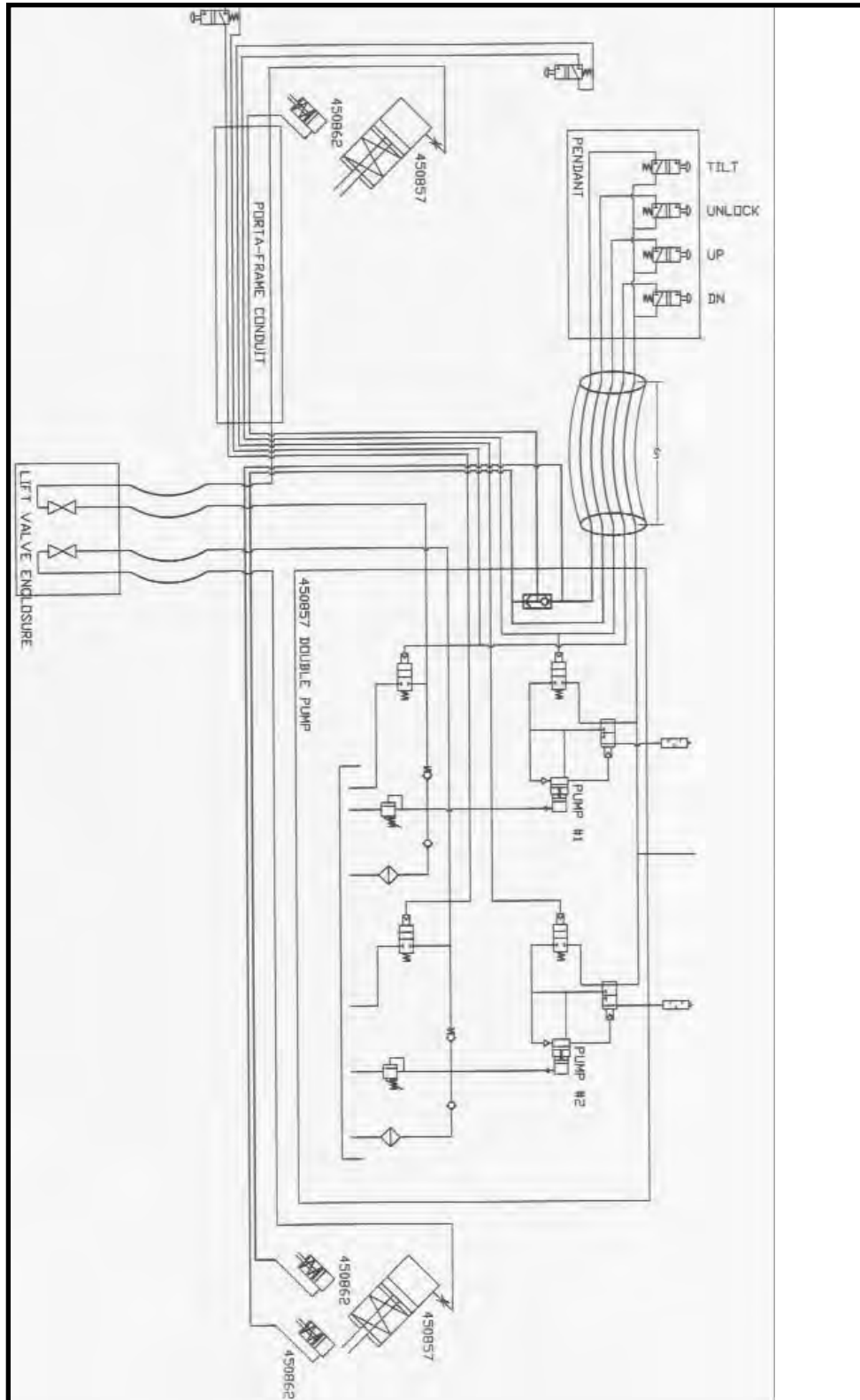
Troubleshooting (cont.)

Problem	Cause	Possible Solution
Machine will not lower	Lift valves not open	Open both lift valves one turn
	Tower obstructing downward travel of machine	Position towers to front of machine
	Optional crossmember interfering with lift leg	Position optional crossmember immediately in front of rear fixed crossmember
	Overload switch not adjusted correctly	Adjust overload switch as per page 15, step 8
	Overload switch dirty	Clean overload switch
	Damaged pendant or pendant lines	Contact Chief Automotive Technologies service representative
Tower rolls hard	Tower wheel bearings dirty	Clean wheel bearings
	Tower wheel bearings are loose	Tighten wheel bearings
	Tower wheel bearings are damaged	Contact Chief Automotive Technologies service representative
	Inside tower rollers dirty	Clean inside tower rollers
	Inside tower rollers damaged	Contact Chief Automotive Technologies service representative
	Track damaged	Contact Chief Automotive Technologies service representative
	Sure-Lock difficult to engage or disengage	Deck surface not clean
Outrigger shims out of adjustment		Contact Chief Automotive Technologies service representative
Inside tower rollers damaged		Contact Chief Automotive Technologies service representative
Inside track damaged		Contact Chief Automotive Technologies service representative
Sure-Lock does not securely hold tower in place	Outrigger shims out of adjustment	Contact Chief Automotive Technologies service representative
	Tower hook bolts loose	Tighten bolts
	Sure-Lock tower bushings worn	Contact Chief Automotive Technologies service representative
	Inside tower rollers damaged	Contact Chief Automotive Technologies service representative

impulse-VHT Specifications

	<u>impulse-18' VHT</u>	<u>impulse-20' VHT</u>
Weight	5,000 lbs (2,270 kg)	5,840 lbs (2,650 kg)
Power Required	115 psi Air Supply (8.0 BAR)	115 psi Air Supply (8.0 BAR)
Hydraulic Power	10,000 psi hydraulics (700 BAR)	10,000 psi hydraulics (700 BAR)
Hydraulic Fluid	5L-SUS 215 Viscosity 100 degrees F (38 degrees C) 10W hydraulic fluid	5L-SUS 215 Viscosity 100 degrees F (38 degrees C) 10W hydraulic fluid
Radius of Pull	360 Degrees	360 Degrees
Controls	Central Double Hydraulic Pneumatic Pump with Pneumatic Hand-Held Pendant	Central Double Hydraulic Pneumatic Pump with Pneumatic Hand-Held Pendant
Deck Length	18' 0" (5,490mm)	19' 10" (6,050mm)
With ramps	19' 8" (6,000mm)	21' 6" (6,560mm)
Towers at one end with ramps	21' 8" (6,600mm)	23' 6" (7,160mm)
Towers on both ends	22' 0" (6,700mm)	23' 10" (7,260mm)
Deck Width	6' 9" (2,060mm)	6' 9" (2,060mm)
With towers extended to both sides	10' 8" (3,250mm)	10' 8" (3,250mm)
Width of treadways	0' 23-3/8" (595mm)	0' 23-3/8" (595mm)
Width between treadways	0' 33-1/2" (850mm)	0' 33-1/2" (850mm)
Tower Height	7' 6" (2,290mm)	7' 6" (2,290mm)
Clearance (recommended on all sides)	2' 2" (660mm)	2' 2" (660mm)
Working Heights	19" (485mm) 22-1/2" (570mm) 28-1/2" (720mm) 31" (790mm) 34-1/2" (880mm) 40" (1,016mm)	19" (485mm) 22-1/2" (570mm) 28-1/2" (720mm) 31" (790mm) 34-1/2" (880mm) 40" (1,016mm)
Tie Down Openings	172 178 with optional crossmember	192 198 with optional crossmember
Lift Capacity	6,000 lbs (2,722 kg)	6,000 lbs (2,722 kg)
Sound pressure level at Control Position	81 db (A)	81 db (A)
Optional:	Removable Crossmember Additional Towers (3)	Removable Crossmember Additional Towers (3)

impulse-VHT Hydraulic / Pneumatic Diagram





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**Chief reserves the right to alter product specifications
and/or package components without notice.**