

The logo for SIVER, featuring the word "SIVER" in a bold, white, sans-serif font with a thick red outline. The letters are set against a horizontal red bar that spans the width of the page. A registered trademark symbol (®) is located at the top right of the word.

SIVER[®]

That's what you need for efficient work!

Pulling system SIVER C

USERS MANUAL & PASSPORT

**CJSC «Siver»
Kaluga, Russia
2009**

WARRANTY & LIABILITY

Closed joint stock company Siver warrants for one year from date of purchase any of its products which do not perform satisfactorily due to defect caused by faulty material or workmanship.

Siver'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.

CJSC SIVER 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.

CLAIM INFORMATION

The consumer put in claim to manufacturer according with existing industrial products supply regulations.

No returned components will be accepted without damage claim with complete explanation of breakdowns reasons. Damage claim must include names of parts and assembly units, time and place of breakdown identification as well as the detailed circumstances of breakdown.

All returned merchandise must be shipped freight prepaid to:

Closed joint stock company Siver, 27 Novoslobodskya st., Kaluga, 248025, Russia tel.: +7 4842 79 18 04


Certified

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This manual is designed as an owners manual and as a training tool for SIVER C series frame alignment machines. It provides information on system components, assembly, basic setup, safe operation, maintenance, and general safety tips.



Complete safety information is highlighted throughout this manual and is identified using this safety alert symbol . Operator injury may result if these caution notes are not followed.



DO NOT attempt to operate SIVER C Series machine without first viewing the training video and completely reading the users manual.

1

GENERAL SAFETY TIPS

General



DO NOT operate this machine unless:

- You are authorized in writing by your employer.
- All towers are properly secured to machine.
- Load is 3000 kg or less.
- Field of motion of load carrying device is free of persons and obstructions.

Persons operating repair system must be at least 18 years of age, must be trained in the operation of SIVER C pulling system.

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

DO NOT move machine if a vehicle is on it.

Tower movement



Properly install locking pin of pulling tower on the mainframe to prevent tower movement during the pull or during raising or lowering procedure.



Keep hands away from all pinch points: roller assemblies on bottom mainframe plate and force clamp pinning location on top mainframe plate.

Pulling



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 serviceability of all bolts, nuts and clamps for prior start using pulling system.

Raising /lowering machine



Lifting of persons is prohibited.



Keep feet and objects clear of mainframe when lowering machine.

Loading /unloading machine

Prior to driving or winching vehicle on or off the machine make sure loading ramps are correctly installed.

When driving or winching a vehicle on or off machine, use helper to guide you. If vehicle's brakes are inoperable, use a winch and refer to packaged instructions with that accessory.

Position vehicle far enough onto mainframe so that wheels do not rest on loading ramps.

Remove ramps before raising machine.

DO NOT run over air hoses or hydraulic lines when loading or unloading vehicles.

DO NOT exceed the machine's 3000 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 10 t.

Chain must be clean.

Tower chains must be inspected for wear, nicks, gouges, stretched and bent links. If found, replace chain.

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

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

Hydraulics

Always release hydraulic pressure before disconnecting hydraulic hoses.



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.



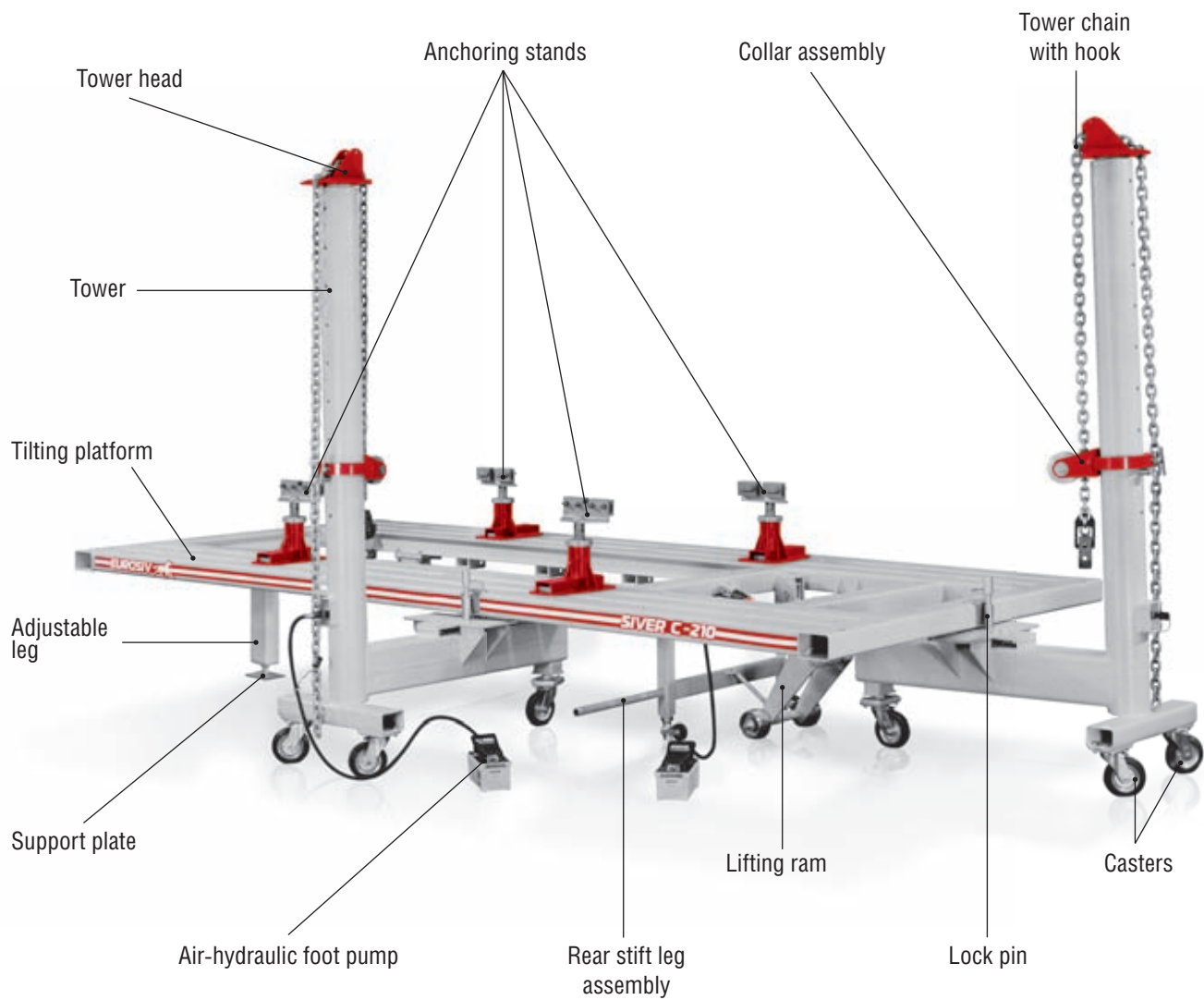
Keep foot pump in upright position. DO NOT turn foot pump upside down or lay on its side.



DO NOT overfill foot pump reservoir.

Pulling system SIVER C is intended for collision repair of passenger cars, SUV's and commercial vehicles.

For securing bodies without pinchweld of a rocker (sill) panel and frame vehicles using specially designed clamping adapters (available as an option).



	Siver C-105	Siver C-110	Siver C-205	Siver C-205/10	Siver C-210
Platform length, mm			4885		
Length with tower extended, max, mm			6600		
Platform width, mm			2100		
Width with tower extended, mm			3800		
Platform height, max, mm			2824		
Weight, kg	1470	1500	1680	1710	1740
Lift capacity, kg			3500		
Work height, mm			670		
Quantity of towers, p.	1	1	2	2	2
Hydraulics, t	5	10	5/5	5/10	10/10
Controls			hydraulic		
Operating rod stroke, mm			226		

Platform

Assemble the platform.

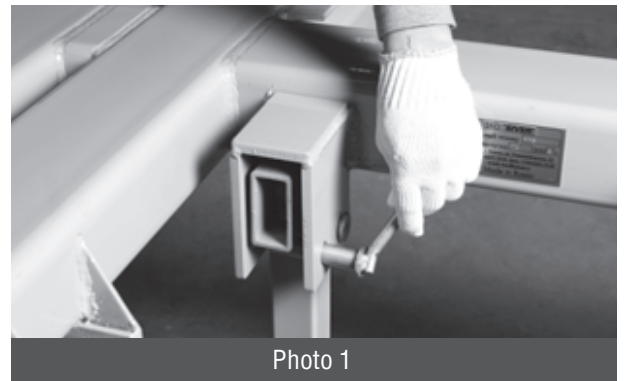
Required instruments: wrench kit and jack.

Put the platform on the floor where you want to install it. The rear part of the machine has to face the direction of car loading.

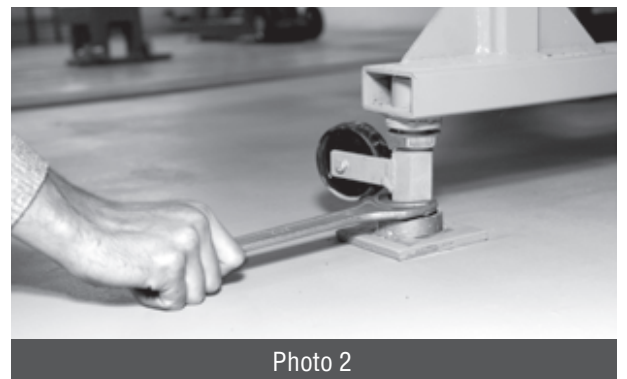
Raise the front of the platform until stiff leg off floor, using jack.

Install adjustable leg to the platform. Then lower the platform on support plates by removing jack. Attach foot pump's hose to hydraulic cylinder. Swing the lift ram until their upright/vertical position (see chapter "Pump"). Locate pump out of platform.

Remove safety clips and pins from the rear of stiff leg (photo 1), then lower it and fix in vertical position. Lower the lift ram until stiff leg is off floor and swing it in vertical position and fix it again, then raise the lift ram.



Level the machine, adjusting leveling bolts at base of the front and rear stiff leg assembly (photo 2).



Tower

Assemble the tower if was shipped disassembled.

Install three castor wheels to the tower's beam (photo 3).



To operate the tower ram, attach foot pump's hydraulic hose to tower ram. Then attach foot pump's air hose to the shop's air supply. Press «reward» on foot pump to exert pressure and press «forward» to release pressure. Male and female connectors must be fully seated and then tightly threaded together.

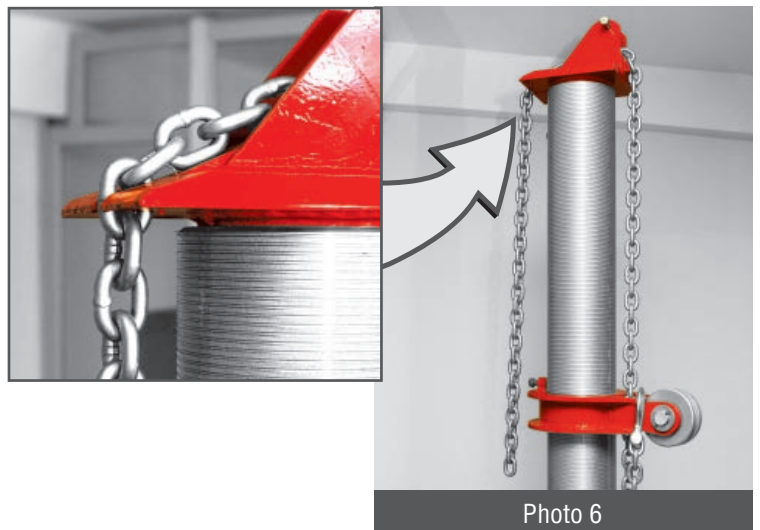
Fix the collar locking knob on tower in the middle position (photo 4).



Remove transportation bolt on tower's top (photo 5).



Pull on the tail of chain through the collar and elements of the tower head and engage the chain in the tower head lock (photo 6). Remove twist from the chain.



In the same manner assemble second pulling device.

 The 3/8" tower chain is proof tested to 10 t.

Standard configurations Siver C equipped by one or two towers. Optionally can be installed up to 5 towers.

Air hydraulic pump

- Take off all components of the foot pump from box.
- Apply teflon tape to threads of all fittings.
- Remove thread protectors from hydraulic fluid outlet port.
- Secure restrictor orifice and coupler to foot pump's hydraulic output port.
- Secure air coupler to air input port and then attach air hose to air coupler.
- To bleed air from the system press the pedal down (to open air intake valve) till oil comes out from the end of hose.
- Attach foot pump's hydraulic hose to quick coupler of tower ram or lift ram.



Before start using hydraulic pneumatic pump change red tap on black one.

The machine is ready for using.

4

SAFE OPERATION

Loading a vehicle

Before loading a vehicle:

- Roll the towers away the platform
- Make sure the wheel chokes are installed
- Attach foot pump's hydraulic hose to lift ram's quick coupler
- Swing lift ram until their upright/vertical position
- Remove safety pins from the rear of stiff leg
- Swing the stiff leg assembly out of the way and slowly lower rear of machine by tilting the lift ram
- Locate loading ramps

The machine is ready for loading a vehicle

Loading a vehicle on the machine:

- Using a helper, center the vehicle and drive up mainframe.
- Set the parking brake and put the gear selector in park (automatic transmission) or gear (manual transmission).
- Remove the loading ramps

Raising the machine:

- Raise the machine until stiff leg swings into upright position
- Lock stiff leg by safety pins
- Raise the lift ram

Installing the anchoring system

- Lift entire side of the vehicle high enough to install anchoring stands at both front and rear of center section.
- Position the anchoring stand below attachment points on pinchweld making certain anchoring stand base spans treadway slot.
- Lower the vehicle until the rocker panel seats firmly against top surface of pinchweld clamps, and the pinchweld fits completely into the clamps.
- Secure assembly starting with clamp jaw bolts and then mounting bolts, tightening each to 108 Nm torque (photo 7).



Photo 7

- On the underside of mainframe, position mounting plate and insert bolt upward through the plate and the treadway slot. Thread the bolt into the fastener bar inside the anchoring stand base (photo 8).

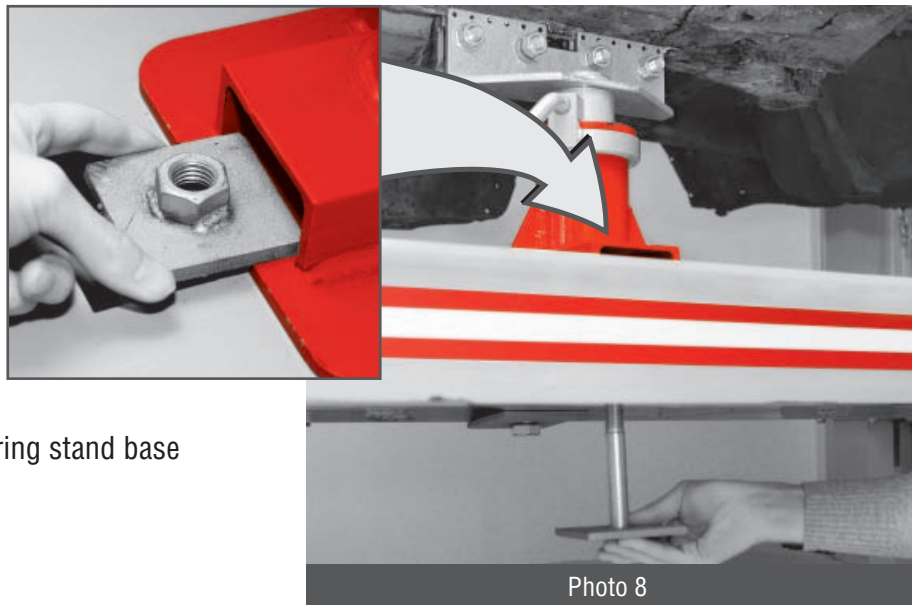
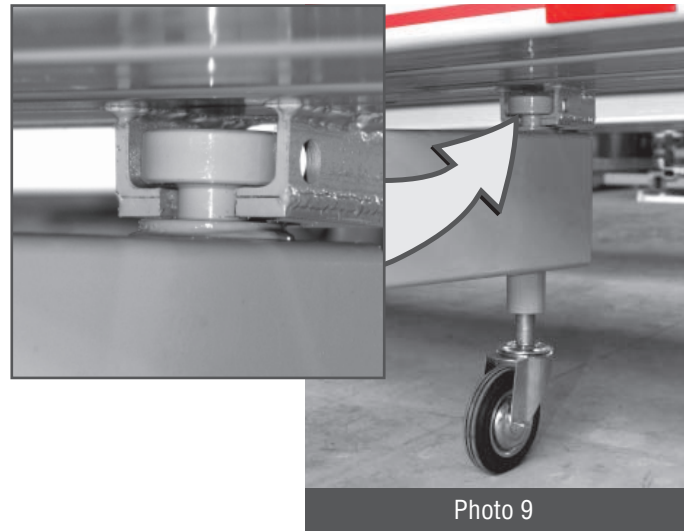


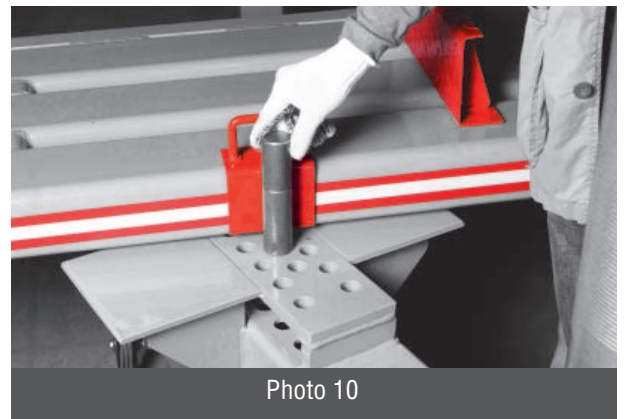
Photo 8

Fixing the tower

Drive up the pulling device under the platform to chosen location, using spring-loaded front caster. Make sure the lug is fully inserted in the mortise (photo 9).



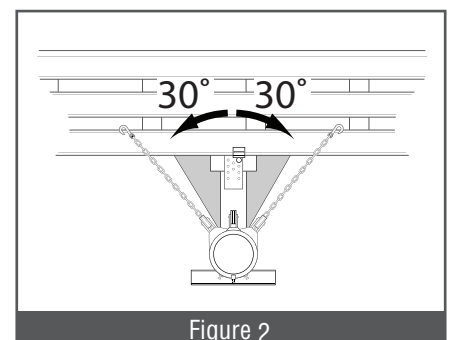
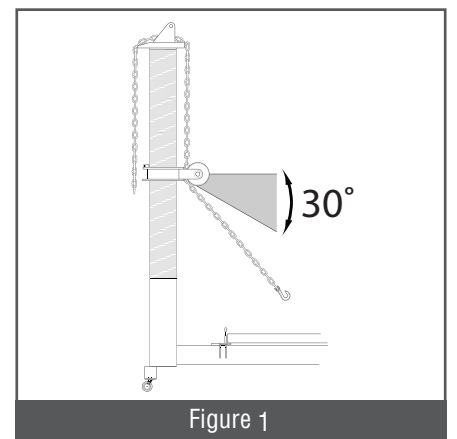
Secure the tower to the platform using a pin and a lock pin (photo 10).



Tower bolt and clamp installation procedures

There are two pulling situations in which you must use the tower bolt and clamp to secure the towers.

- 1) One is when making an upward pull at a 30 degree angle or more (figure 1). During this pull, the tower is forced downward when pressure is applied.
- 2) The other situation is when pulling from the side of the tower at an angle of 30 degrees or more, the tower is subject to twisting when pressure is applied (figure 2).



Position tower clamp in line with the edge of the mainframe and over the appropriate hole in the pinning plate.

Use the shims provided to remove the gap between the lip of the clamp and the top of the mainframe.

Install bolt, nut and washer, tightening to 163Nm torque (photo 11).

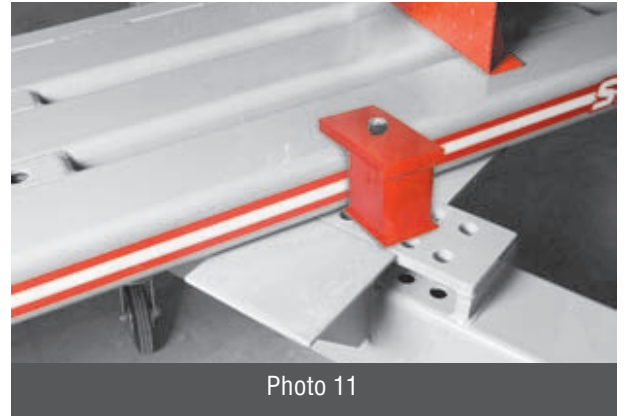


Photo 11

Adjusting the chains and roller assembly

- Pull the chain out at a 45 degree angle (1), disengage the chain from the tower head lock (2) and adjust to the desired length (figure 3).

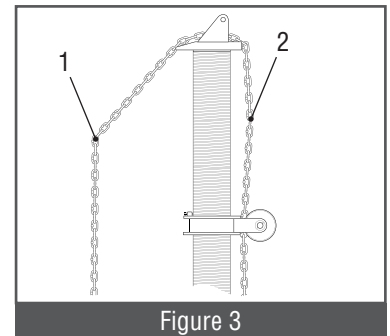


Figure 3

- Support the collar assembly with one hand and loosen collar locking knob. Position the collar at desired position for pull and tighten the collar locking knob (figure 4).

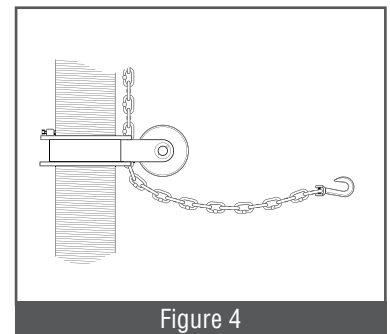


Figure 4

- Remove twist from chain.
- Attach desired clamp to the vehicle and attach hook to clamp.
- Pull on the tail of chain to remove slack and engage the chain in tower head lock (figure 5).

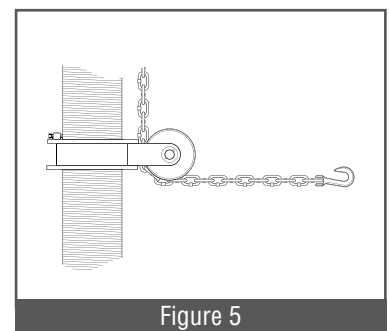


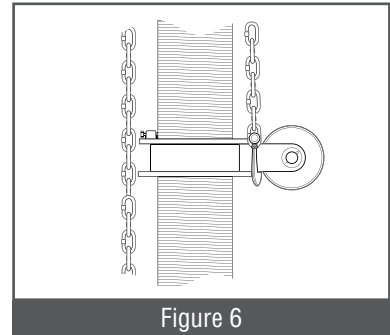
Figure 5

- Check the collar and tower head to make sure they are rotated to be in line with direction of pull.

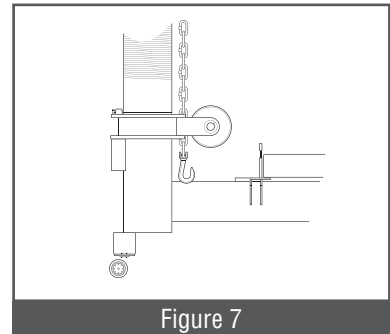
The machine is ready for using.

For storage of the collar and chain with hook choose one of the following positions:

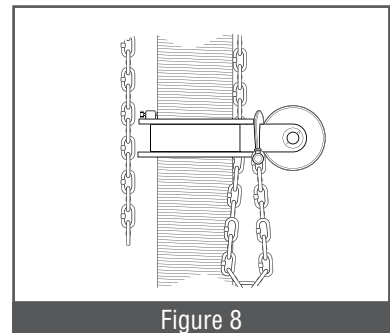
- The collar is supported by tower chain (figure 6).



- When the collar and chain are stored this way, collar locking knob must be tightened before removing tower chain and hook from vehicle (figure 7).



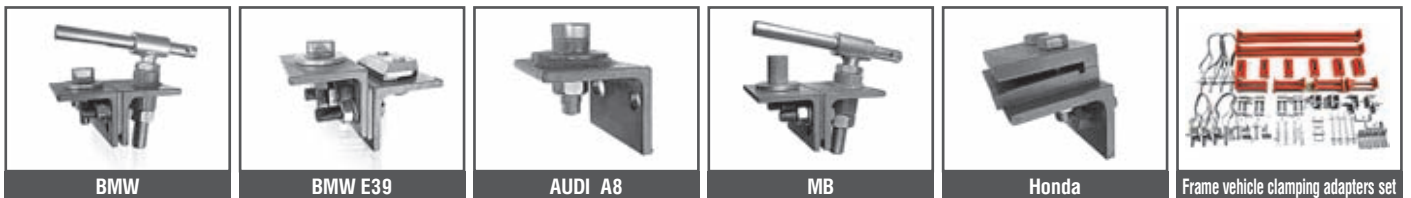
- The collar rests on tower base (figure 8).



5

OPTIONS AND ADDITIONAL ACCESSORIES

Optional anchoring adapters and clamps



Accessories



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

Chains

- Clean the chain before inspecting.
- Inspect each link for wear, nicks, gouges, stretched or bent links. If found, replace chain.



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

- Heat chain or hook while repairing vehicle. 316 degrees C of heat on chain will weaken it.
- Pull with twisted chain links.

Loading ramps

Properly locate loading ramps to mainframe before loading/unloading a vehicle and put them away before raising machine.

Lift assembly / stiff leg assemblies

Clean dirt and grease from all pivot points and lubricate every two months.

Collars

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



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

Tower heads

Clean tower heads every six months.

- Remove tower chain from tower head.
- Remove tower head from tower pipe.
- Clean dirt from tower head pipe and where tower head pipe rubs on inside of tower pipe.
- Reinstall tower head and tower chain.

			Siver C-105	Siver C-110	Siver C-205	Siver C-205/210	Siver C-210	
1	SP 02.01.00.000	Platform in gathering					1	
1.1	SP 02.01.01.000	Platform					1	
1.2	SP 02.01.04.000	Adjustable leg					1	
1.3		Fasteners for stiff adjustable leg (bolt M16*60, shim M16)					4	
1.4		Support plate					2	
1.5	SP 02.01.05.000	Lift ram					1	
1.6	SP 02.01.06.000	Stiff leg assembly					1	
1.7		Fasteners for stiff leg assembly (bolt M12*20, shim M12)					8	
1.8	SP 02.02.00.000	Loading ramp					2	
1.9	ARS 00.008.000	Chain anchor					1	
1.10	ARS 00.007.000	Down pull attachment					1	
1.11		Wheel chock					2	
2	ARS 18.000.000	Anchoring stand					4	
3	03.000.002	Tower	1	1	2	2	2	
3.1		10 t pulling tower		1		1	2	
3.2		5 t pulling tower	1		2	1		
3.3		Caster wheel	3	3	6	6	6	
3.4		Fastener for casters (bolt M10*15, shim M10)	8	8	16	16	16	
3.5		Dowel pin	1	1	2	2	2	
3.6		Pin	1	1	2	2	2	
3.7		Lock pin	1	1	2	2	2	
3.8		Bush	1	1	2	2	2	
3.9		Pin	1	1	2	2	2	
3.10		Platform guard	1	1	2	2	2	
3.11		Tower clamp	1	1	2	2	2	
3.12		Handle	1	1	2	2	2	
3.13		Tower bolt	1	1	2	2	2	
3.14		Air hydraulic pump		1		2	2	
3.15		Hand hydraulic pump	1		2			
3.16		Hose	1	1	2	2	2	
4	SIVER MAXI	Accessory package					1	
4.1	JTC Metal box	Metal box					1	
4.2	JTC-8P107	Chain with hook					2	
4.3	JTC-C903	Handy link					1	
4.4	JTC-C101	Small mouth pull clamp, 5 t					1	
4.5	JTC-C102NN	Box calmp, 3 t					1	
4.6	JTC-C302	Mini clamp, 3 t					1	
4.7	JTC-C601N	Frame rack clamp, 5 t					1	
4.8	JTC-YC105	Deep hook set					1	
5		Users manual & passport					1	

Pulling system SIVER C –

Serial number:

Issue date: « _____ » _____ 20 year

Collected by

Engineer of QCD

Date of sale: « _____ » _____ 20 year

Seller:

Contact information

Seller's signature

Seller's stamp:

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