Installation Manual

KT-299U



Auto Body Collision Repair System

Ⅰ.Equipment transportation and preparation: before installation.

1. Please keep safe and protect the large machine and accessories included during the transportation.

2. Crane or forklift (≧3tons) would be used when transferring and lifting. Front and rear legs should be locked before fork lifting at the basement of the machine to avoid any injury.

3. Equipment shall be installed in a prescribed place:

A Concrete ground which is solid and flat.

B The area is at least 8M×5M.

C Compressed air must be equipped with drying equipment and be filtered again before getting into the equipment with oil-water separator (triplets) and oil mist lubricating is necessary for gas too. Air pressure should be at least 0.7-0.8Mpa

Ⅱ. Installation

Space requirement:

Min.4m×7m smooth cement ground is required

A. Installation for the equipment (when you receive the equipment)

Step 1: (1).Make sure the position for installing the platform

(2).



Use the crane or other lifting tools to put the machine on the required place.
At the same time put four square tubes or wood under the machine for later convenient operation

(3).



And the side with cylinder is for driving car on the frame machine when it's tilt.

Step 2:



Take out the tilt lifting parts from the wooden case.
And unload the axis, oil pipe shouldn't unload

Step 3:







Insert the bigger axis into the tilt lifting ,mount the 2 wheels on the axis from both sides, mount the 2 gaskets, finally mount the 2 circlips.

Mount the circlips on the smaller axes from one side



Install the oil cylinder with axis on the platform , the way of mounting circlip as above



mount another circlip



Put the tilt lifting part in platform, by locking the axis



Connect the oil cylinder with tilt lifting part by inserting the axis. The way of mounting circlip as above



Install the big spring



The installation finish



Connect the cylinder and the pipe before the tilt lifting work





Put the throttle on the connected pipe

Step 4: install the flexible leg



Press the “Bench Up” on the centralized control cabinet or on the remote, raise the platform



Put the flexible leg under the platform and fix the bolts to link on the platform.



Use the spanner to tight the bolts



Install the spring locker by fixing the bolts

Unload the male joint and female joint, and then connect them across the lock nose on the leg







pull down the flexible leg. till it vertical to ground (Note there is a safety device, spring locker, to fix leg position. Before move the leg, draw out the hand bar a little sideward and release it when the leg goes to the position required. Armed with the spring on the bar, it automatically moves back to original position as a locker. See such hand bar)



press the “Bench Down” on centralized control cabinet or on the remote. So the cylinder piston goes back and the support wheel can left ground going upward.

Step 6



Raise the other side of the platform by the jack or fork.



Put the fixed leg under the beam of platform



Tight the bolts



The installation finish

Step 7



Put the tower lie down on the ground, pulling out the top tower rod



take out the hydraulic cylinder inside



Inverse the oil cylinder to release the air. (note the connector hole for the cylinder close top now)



Take out the cylinder connector from accessory box. Add some hydraulic oil inside it and if possible also add some oil into cylinder.



Put the cylinder back into the tower



Tight the joint between the cylinder and the cylinder connector (add some tape on the end) via the hole on the tower post.

Step 7



Make the in-built adjustable collars cover on the tower. Then put the tower rod back into the tower.

Step 8

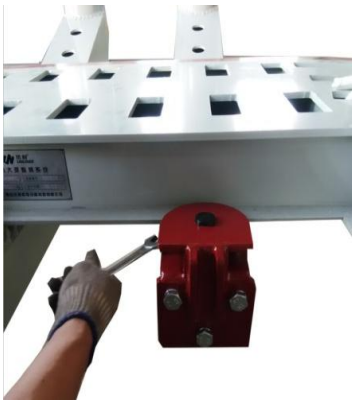






Fix the 4 bolts and nuts at the ends of the towers

Use crane or forklift to lift the tower , put the wheels on the track between the upper and lower plates.



Tight the bolts with the spanner



Tight the bolts with the professional tool



Align the flute of the hook plate to the bolts.



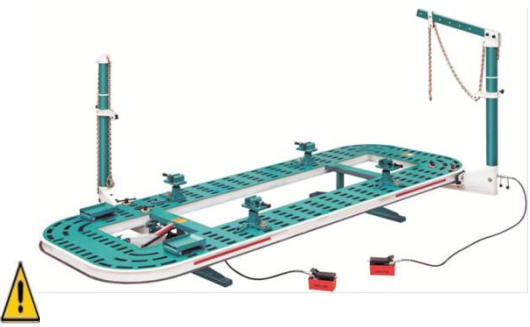
The installation finish



Push the pulling tower around the platform to make sure the towers move smoothly



Keep the distance no mare than 3 mm between the 2 wheels' inside ends and the outside end of the track in case of the towers falling down to hurt people.





Machine is ready for the damage car move

Now lie down the platform and put the two ramps on side and link the ramps with the platform with hook avoiding the ramp moving while car move over them

Tips: Adjust the screws under the ramps feet to fix when ground is not so flat

B. Installation of tool cart and placement of tools(Any time you can install it)



Firstly, install the two fixed wheels by tight the screws



Secondly, install the two universal wheels by tight the screws

Caution: the fixed wheels must be installed in one short side of the tool board. You can't install one fixed wheel and one universal wheel in the same short side of the tool board.



Turn over the down plate of the tool board, and install the triangle board by tighten the screws.



Put the upper parts of the tool board to connect with the triangle board by tighten the screws.



The installation finish

C. Installation of anchoring system (main clamp)(After drive on the car)

Introduction of anchoring system

A.



The vehicle anchoring system of the body repair system is a set of main clamps with two-connectors, which is universal and suitable for most of unibody vehicles with an edge at the bottom. This kind of clamp features great joggling power and strong fastness, which can support large pulling power and assures the safety of pulling work.

B. **The detailed installation for main clamps**



Put the main clamp on the required place



Adjust the distance for the jaw.



Anticlockwise, rotate the big screw by smaller moon spanner to raise the required height to touch the beam of car



And then to rotate the bolt to tight the chassis by adjusting the distance of the jaw teeth.



Clockwise, rotate the below screw by the big moon spanner to fix the clamp



Put the elevating screw across the platform from the bottom of platform like this showed



When the lower side of the elevating screws touches the platform, turn it for 90 degree to limit the main clamp.



Set the nut connects the elevating screw from the upper side of the platform



Use the big spanner to tight the nut

To install the hold-plate: first, put its' nose in the hole of the main clamp; second set the T-screw across the platform from the bottom of the platform. Third, set the nut connect the T-screw from the upper side of the platform, and tight with hand or spanner. The way of installation is same with the elevating screws





The effect after installation

D. The fixation of the pulling tower: (After drive on the car)



Push the pad which is on the tower in line with the tower nut, at the same time both of them should on the space of the platform



Put the tower bolt into the tower nut, pad. And tight



The finishing showed .And each pulling tower should attach two fixed points over the platform before it works

E. Installation of Towers chains (After drive on the car)

When needs pulling, then join to the pulling chain, adjust the length and direction of the chain to get every section into a line, and assure the other end of the chain is locked on the tower ram. Start the oil pump, when the chain is getting tightening, loosens the tower collar, and then continue to do pulling









Make chains cross the tower push rod, in-built adjustable collars one by one

The installation finish

Note, very important, all chain should be go straight, no bending when it suffering drawing force avoiding the chain broken due to wrong force direction suffering

Ⅴ. Equipment operation

A. Drive on the frame to position（Caution: the max lifting weight is 3.5T）

1. Make sure the distance between the car and the frame is suitable to guide the car onto the frame

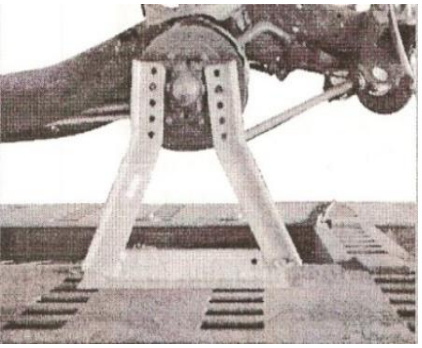
Special case: drive on the frame

1). Use of the accessories



A. Dead car dolly----When one or more wheels are dead during a collision. Put the dolly under the dead wheels, this work should be done with a jack. And then drive the car onto the bench with the possible equipment

Wheel dolly installation of each model acts same.



Wheel stand(optional)

---- Adjust the extension bolt of the wheel stand. Find the right on the wheel stand, and get the two bolts on the wheel boss into holes, then fasten them with the nuts





install the winch on the collar by link the axis again, then open the switching then crank, loose the steel rope which link to the vehicle, then draw the vehicle to the platform by operating the winch(optional)

Loading vehicle by using of Winch

Take out the axle of the collar mounted on the pulling tower.(optional)

2) Driving off the frame operation

A. Link the centralized control cabinet to the flexible leg.

B. Press the 'Bench Up' to lift the bench till the movable support leg leave the ground, then pull out the handle bar and collected the flexible leg

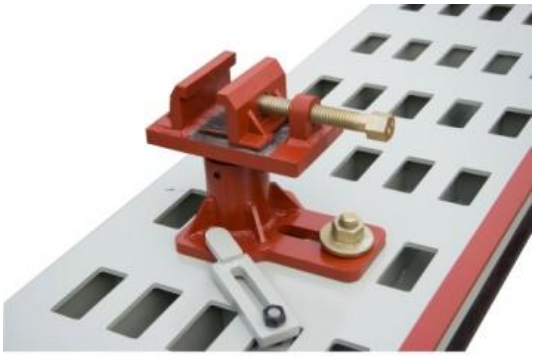
C. Press the 'Bench Down', make the platform slowing touch the ground, put ramp side then unload the vehicle to the ground

2. Raise the frame

Press the 'Bench Down', slow down the incline holder to the ground, then put down the legs of the frame, this moment if there is still a gap between the legs and the ground, reduce the pressure of the pneumatic pump, make the incline holder down until it touches the ground.

Notice: when press the 'Bench Down', pay attention to the gap between the incline holder and the ground, if no gaps loose the pneumatic pump.

B. Fix chassis and beam





Rotate the main clamp to clamp the beam. If the beam could not be tightened or not rotated higher, you can use moon wrench for tiny adjusting.

2. If beam is lower than main clamp, jack or air jack can be used to lift the car, then lower the car steadily when clamp jaws aligned with sill, fix the jaws and take out of jacks. Finish the other three clamping in the same way. If the vehicle has no beam, you can clamp by welding two pairs of steel plates at right points of chassis, and then take it off after alignment.

3. Tighten the screws. Fix the main clamp on the frame with bolts, nuts and the hold-down plates.

4. When one side of the beam is broken：

When the broken sill could not be clamped or only one clamp could be used because of heavy collision, now you could clamp and fix the beam without damaged. Clamp and fix in front of the beam or back by adjusting height of main clamps to repair the damaged beam. After repaired, the beam can be clamped to repair other parts of the vehicle

5. Cautions during loading and clamping：

1） The vehicle's longitudinal axis should be coincided with the frame's. The max deviation should be less than 100mm.

2） The gravity of the vehicle should be coincided with the frame's. And the max deviation is less than 500mm.

3） If the vehicle is longer than 5200mm, you can move it to make sure it is in the working square

C. Straightening

Stretching Caution:

1. The chains should be flat and straight.(twisted straightening is forbidden).
2. Stretching: after the chains tighten, all the bolts should be tight again.
3. The protective wire should be used when stretching. Or twine the chains by soft package when it's tight. Or hang a weight on it, in case it bursts and hurts people.
4. Remember that people should not stand the right in front or rear of the tower when it is working. And make sure all bolts are tightening when tower is working.



Put the tower at the stretching point and fixed with bolt and hold-down plate. The detailed info sees the part of: The fixation of the pulling tower" above

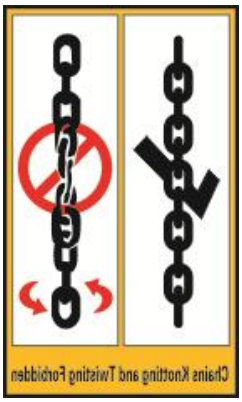
Keep the stretch point, adjustable collars and tower hat in a horizontal line. And the worker should stand one side of the stretch point in case of damaged by the chain



Stop to stretch when the warning line is out. Get the better repair effect by shorting the chains after power off

Important tips：







You must clamp and fix the bolts of the two towers when you do any stretch.
Clear all the winding and the twisting of the chains

The second clamp of the clamps is needed during the stretch in case of hurting others. The in-built adjustable collars must be set on the bottom of the towers to make sure the safety.
Caution：You should give full attention to the fixation and the traction; otherwise it could make the overall deformation of body structure even personal injury. The fixation of the auto body must bear and distribute the power to protect the undamaged parts from damage.
A basic principle：Keep traction in the opposite direction of the input force. But we must add some stretch points to control the direction of resultant force because of the thin steel plates nowadays. A one-way force easily pulled the parts damaged.

VI. Operating regulations of body alignment system

A. Be sure to wear work clothes and gloves when you are in the working area, no slipper or high-heel shoes

B. Inspection before operation:

a. Before operating the machine, please clean the working area and keep all the sundries away from the platform, tidy the air and oil hoses to protect them from being crushed

b. Check the air and oil route to make sure all the adapters are connected well and there is no damage of the hoses.
c.Replace the hydraulic oil of the pump after 3 working months, and do it every 3000 working hours. Some quality hydraulic oils are recommended, such as G-46#, Gulf-46, Mobil-30, BP-32, Shell-32, Esso-32, Caltex-32. Remember to eliminate the deposits in the oil box when replacing oil.

d.inspect the anchoring bolts of the tower roller, and make sure the bolts are tightened well

Regulations of driving on & off

a. Nobody is allowed to stand by the platform during the platform up & down; and some instructions are needed when driving on & off.
b. Be sure to anchor the pulling towers during the platform up & down.
c. When the vehicle is on the platform, be sure to lock the shift and also block the wheels with some wood.
d. Be sure that the safety legs are fully locked by the blocks at the base

D. Regulations of anchoring the vehicle

a. inspect the clamp top and clean up the smears and dusts
b. Be sure that there is no distortion and cracks on the clamp
c. Tighten the anchoring bolts of the clamps before pulling

1.Regulations of pulling operation

a. Before pulling, inspect the chain, pulling tools and pulling ring, and make sure there are no cracks or damages on them
b. Tighten the tower anchoring bolts during pulling, and do not position the tower collar above the red precaution line.
c. Be sure of loosening the tower collar.
d. Do not exceed the rated load of the pulling tools during pulling.
e. Do not touch the pulling tools and chain during pulling
f. No one is allowed to stand behind the pulling tower during pulling.
g. Anchoring the vehicle at the opposite side with chain when doing the great pulling work

When there are any problems with the parts or hydraulic system, please repair them as stipulated by the suppliers

VII. Caution about the hydraulic

1. The max working pressure of all the hydraulic system is 25MPa.
2. The max working pressure of intake pipe is 0.8-1.5MPa. And the air must keep clean and dry, should use the air filter.

3. As the fuel tank is one way, its actual work load is 80 percent of its marked for longer longevity. First, make the fuel tank; keep a distance with gear ring and bearing surface to reduce the bearing surface for stability. Second, avoid damage to the gear ring.
4. The pipe of the hydraulic

CAUTION ⚠

(1) Don't knot and bend the pipe excessive and the min bending radius is12cm;
(2) Force evenly all when tight the joint parts as it's the most vulnerable.
(3) Put the pipes in order to avoid the weight and hitting.
(4) Don't pressure when pipes be knotted and bent.
(5) If the parts of the pipe are inflated, change it for new

VIII. Safety precautions

1). Platform lifting and descending

a. If there is no flow control valve on the end of lifting cylinder, it is prohibited to open pressure discharge valve at full speed

b. When lifting or descending platform, the towers must be fixed at the other end to prevent slide

c. When lifting or descending platform, put the car's shift at parking position, block the wheels with triangle wood; no person is allowed to stand behind the car

d. Keep the platform and surroundings clear, oil hose and air hose must be well protected

e. Make sure the movable stand is fixed after platform is lifted.

2). Vehicle anchoring

a. Check and clear clamp jaws before anchoring vehicle.

b. Check the clamp to see if there is any deformation or crack

c. The locking bolts must be fully screwed

3). Pulling operation

a) Check tower rolling bearing anchoring bolt before moving tower

b) Move towers by pushing instead of pulling.

c) Tower fixing bolts must be fully screwed before pulling.

d) Check and clear clamp jaws before anchoring vehicle

e) DO NOT twist the chain; Make sure the chain is locked on the top of the ram.

f) Turn and loose the tower collar hand wheel. Do not screw it

g)Never hammer or beat the chains or clamps when pulling. It is recommended to use protection carpet over the chains

h) Pay attention to the pulling tools to prevent over pulling or tear.

i) Do NOT over pull the accessories

No irrelevant persons or untrained persons are allowed to operate the pump.

IX. Maintenance

1) Maintenance of the hydraulic system

•Keep a cleanly environment for the hydraulic system.

•Keep the hydraulic parts away from dusts, chippings and caustic liquids, and protect the oil box and gauge.

•Inspect the hydraulic circuit, and make sure there is no oil leak.

•Check the oil quantity in the oil tank periodically. Replace the hydraulic oil of the pump after 3 working months, Some quality hydraulic oil are Recommended: such asG-46#,Gulf-46,Mobil-30,BP-32,Shell-32,Esso-32,Caltex-32. Remember to eliminate the deposits in the oil box when replacing oil.

•Protect the oil adaptors with a rubber cover, when they are unconnected.

•When there are any problems with pump or cylinders, please do repair them as stipulated.

2) Maintenance of pulling tools

A.Keep the joggling parts of the pulling tools clean from dusts and smears.

B.Do not knock the pulling tools and chain during pulling.

C.Do not exceed the rated load of the pulling tools during pulling.

D.Protect the pulling tools from caustic liquids.

E.Clean the pulling tools with some dry cloth after finishing pulling work.

Question: if the pulling tower doesn't work,

First, check if the quick coupler is tight tightly.

Second, press the male joint on the frame to take oil out. If without oil out, please check if the oil cylinder is lack of oil. Add oil and then to release the hexagon bolts which is between the motor of control electric cabinet and the middle of the oil cylinder until the oil out. And then to tight the hexagon bolts.