



European Union



Inter Aide
Sierra Leone



**MAINTENANCE
GUIDELINE FOR
KARDIA HANDPUMP**

Step by step illustrated manual
for major maintenance on Kardia
Handpump.



1. Preparation



Before starting the maintenance, be sure to have all necessary tools and spare parts. Store them close to the place your work. So you can find them easily. Keep them away from dust.

2. Preparation of body pump



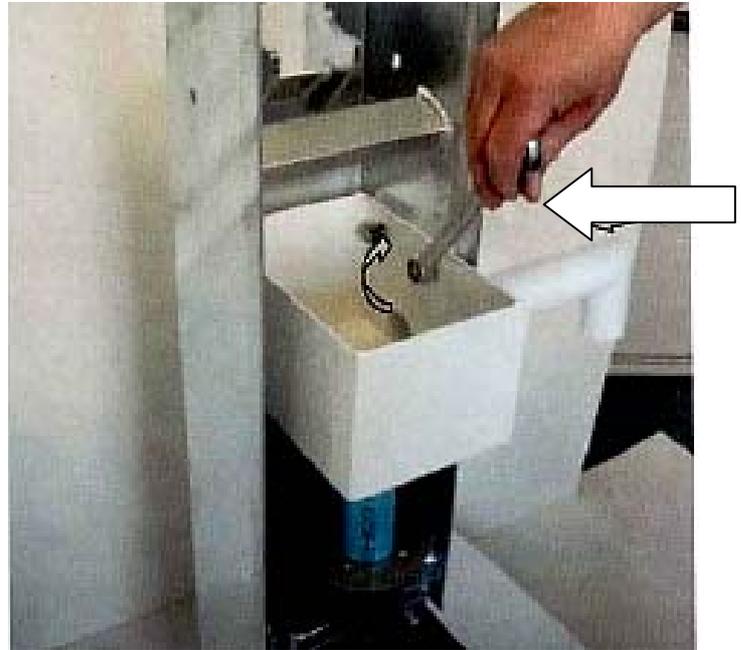
1) Unscrew Allen screw from pump body



2) Take off cover part



3. Dismantling the water outlet pipe



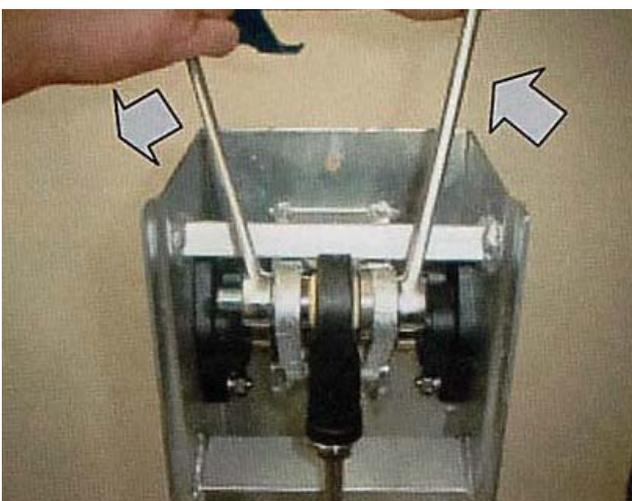
1) Once the cover part is removed, take care not to let fall tools or spare parts in the well

2) Put a towel under the clamp to fill the hole

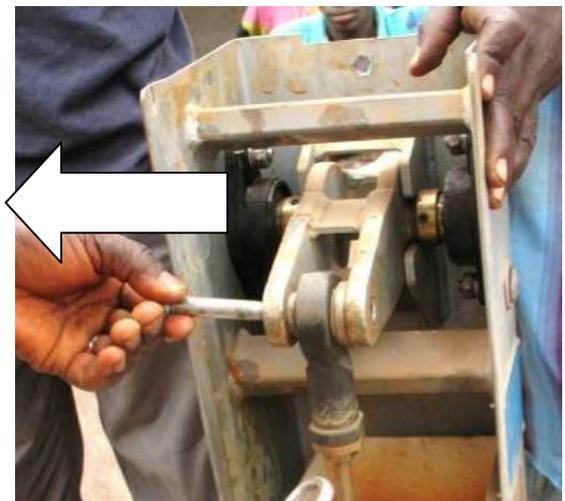
3) Unscrew the 3 screws of the water outlet pipe

4) Remove the water outlet pipe

4. Disconnection of the hand lever



1) Unscrew the 2 hexagonal bolts



2) Remove the screw from the lever socket



Once the hand lever is disconnected from the linkhead, unscrew the linkhead from the rod

5. Removing the water tank



1) Unscrew screws and washers,
2) Remove seal and flange



3) Remove the water tank



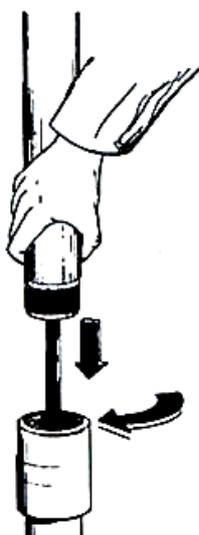
6. Dismantling the riser pipe



- 1) Dismantling the riser pipe is made with the help of the steelclamp fixed at the bottom of the pump body
- 2) Before releasing the clamp be sure that some people hold the pipe

- 3) Raise the first section of the riser pipe.
- 4) The double socket of the second section of the riser pipe should be at the level of people's shoulders
- 5) Tighten the steelclamp

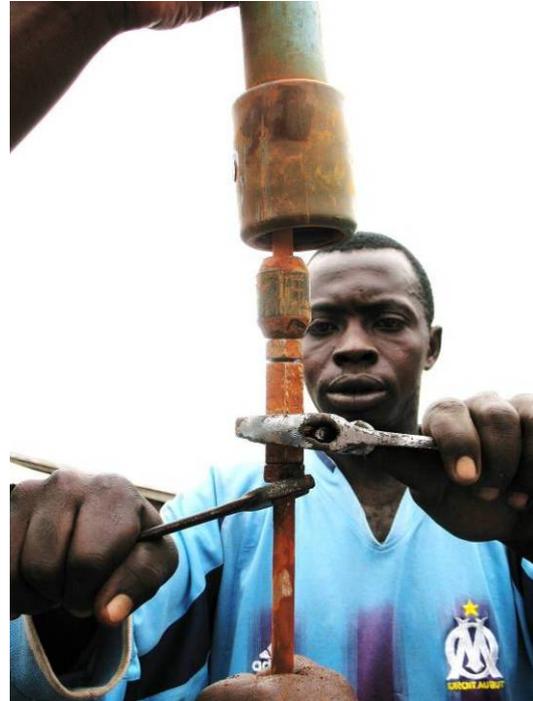
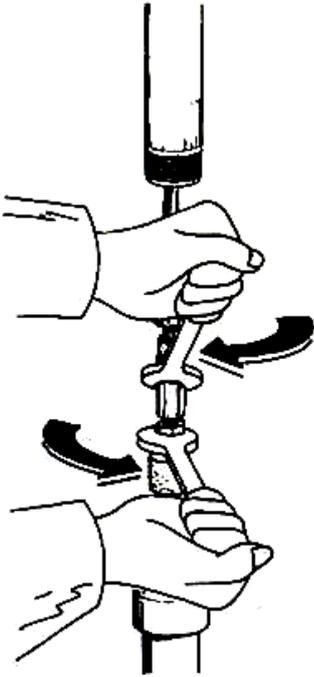
6.1. Disconnection of riser pipes



Unscrew riser pipe from double socket.
Be careful not to damage the threads.
Therefore, always hold riser pipe vertically



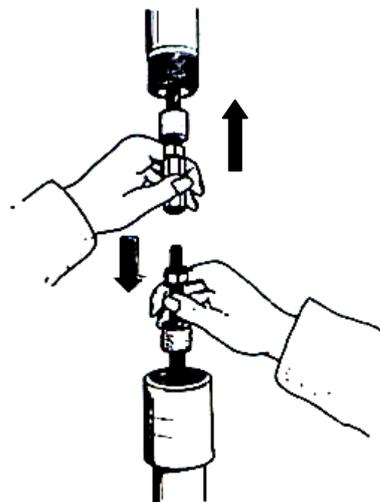
6.2. Disconnection of rods



1) Unscrew the foot locknut from the longnut



2) During the disconnection of the rod, make sure that someone hold the upper riser pipe section and upper rod vertically



3) Unscrew longnut of lower end of rod

Proceed the same way to disconnect all the riser pipe sections and rods.



7. Dismantling and cleaning the cylinder pump unit



1) Once the last riser pipe section and rod is dismantled. Lay down the cylinder of the pump unit. Keep it away from sand and dust.



2) Dismantle the whole unit.



3) Check individual component



4) Clean it in water, use a towel or a brush if necessary

Recommendations:

Check the filter and its screen holes. Clean them. Increase the size of the holes if necessary. Remove all gravels. Clean the screen.

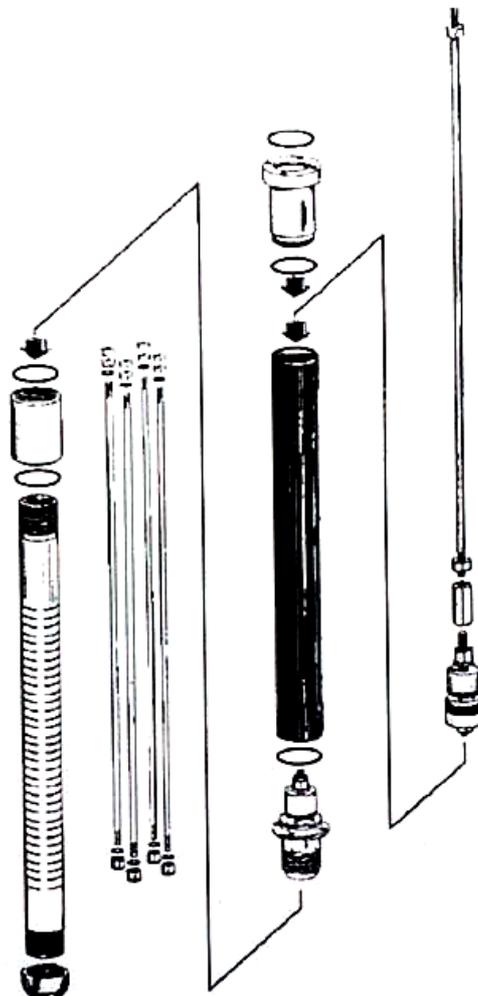
Check the foot valve and the piston to. Remove any piece of gravel. Control that all joints and buckets are still correct. Change them if necessary.



8. Reassembling the cylinder pump unit



1) Once all cylinder components have been checked and cleaned, reassemble them

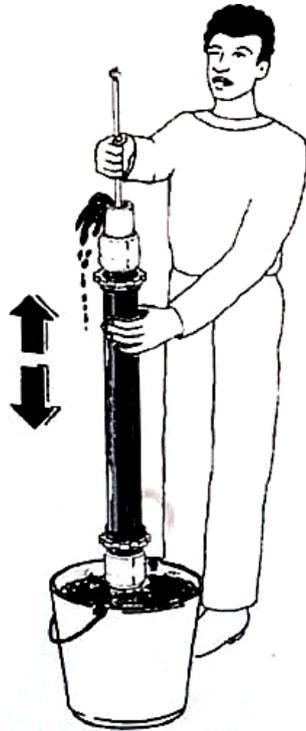


2) Make sure that all sealing rings are placed in their proper position

3) Check all connections if they are tight.



9. Functional test of the pump unit



1) Place preassemble cylinder unit in a bucket filled of water. When operating the piston, water must come up.

2) The foot valve has to close completely

3) In case of leakage or other problems, dissemble unit again and recheck

10. Cleaning the riser pipe and rods

1) Clean every riser pipe units to remove sediment and deposit

2) Clean the rods too. Pay attention to clean correctly the connecting parts: screw, longnuts and locknuts

3) Keep them away from dust. Then grease every screw.

4) If one bolt look old or damage, replace it

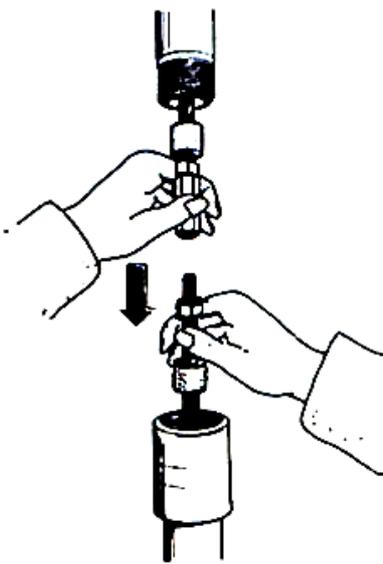




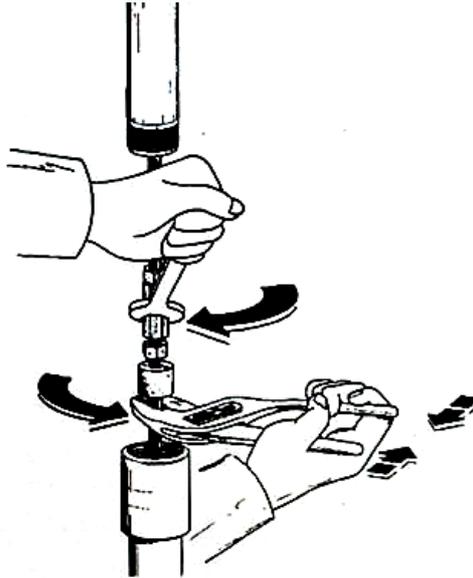
11. Reassembling the riser pipe

WARNING

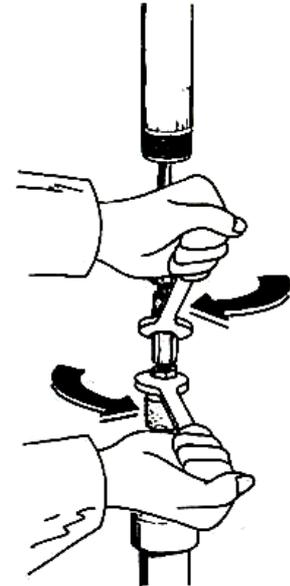
Always tighten the clamp on the riser pipe before connecting rods and riser pipe sections



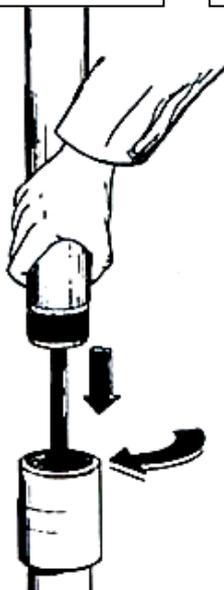
1) Screw longnut on lower end of rod.



2) Screw both rods half way into the longnut.



3) Tighten locknuts against longnut



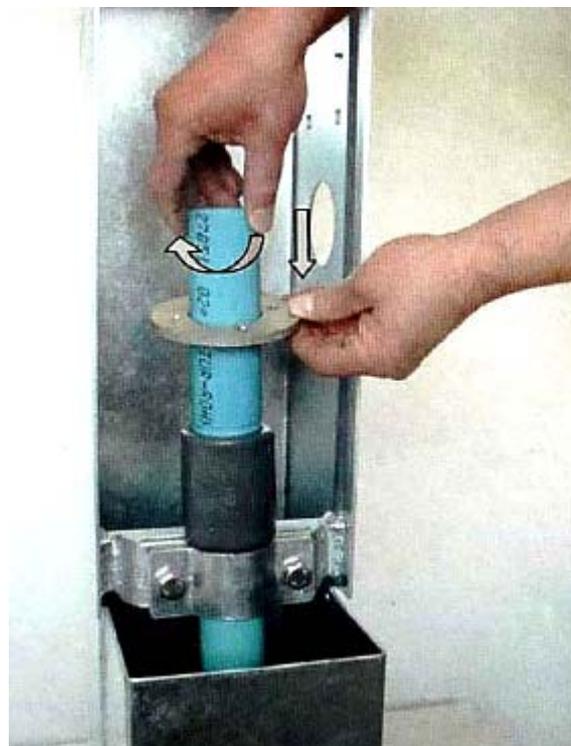
4) Screw riser pipe into double socket. Be careful not to damage the threads. Therefore, always hold riser pipe vertically. Screw slowly into double socket. Connect hand tight only



12. Installation of the connecting pipe



1) Push riser pipe and clamp into pump body and tight both screws



2) Screw connecting pipe for water outlet on last riser pipe unit

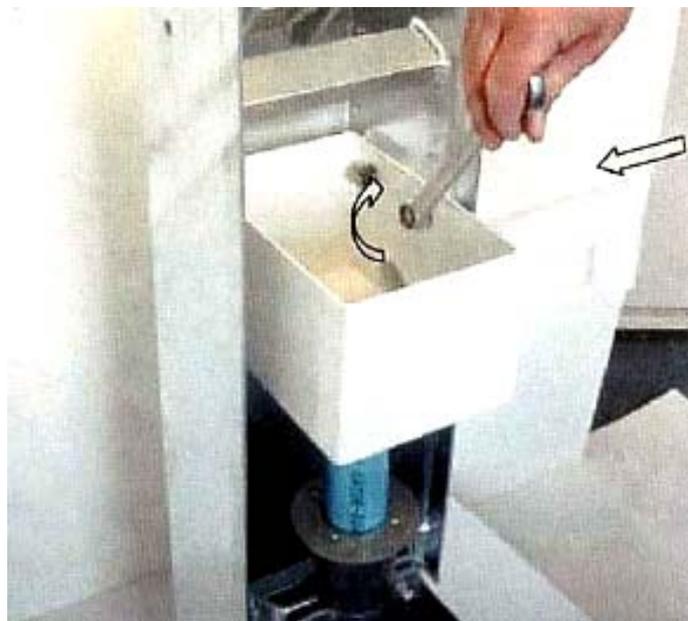
3) Place the counter flange from the riser pipe connection over the connecting pipe



13. Installation of the water tank

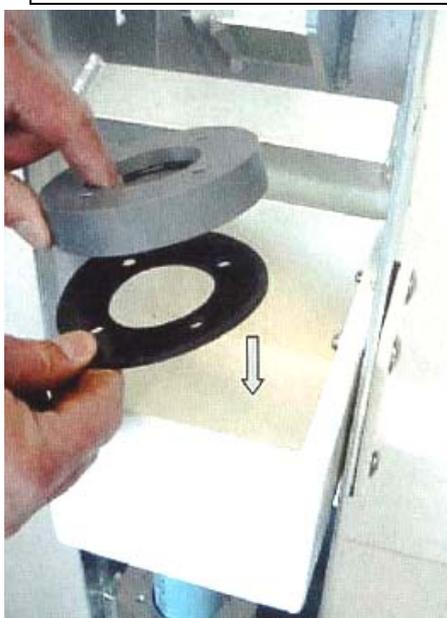


1) Position the water tank into pump body

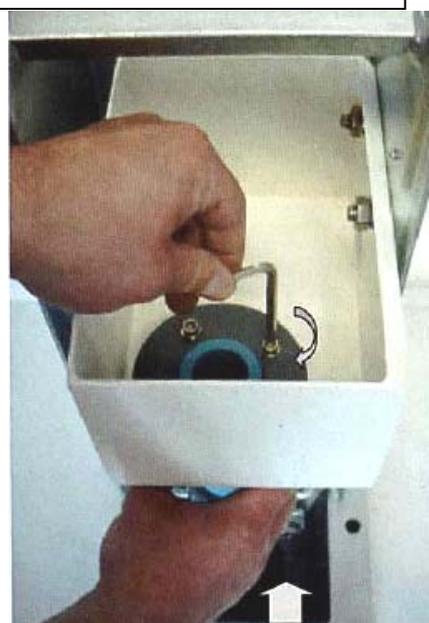


2) Push the three screws from outside through the flange of the water outlet pipe and seal, and into the water tank

3) Place washer, spring washers and hexagonal nuts on screws and tighten them.



4) Place seal and flange into the water tank.



5) Tighten flange with screws and washers

Make sure that sealing elements are properly in place.



14. Connection of rods with hand lever



1) Screw T-bar onto the rod.
Raise T-bar and lift the rod



2) Secure rod with pliers



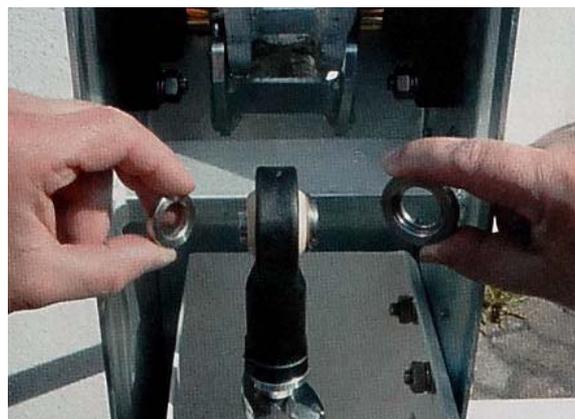
3) Connect adapter from linkhead with rod



4) Connect linkhead with adapter



4) Place bushing into eve of linkhead



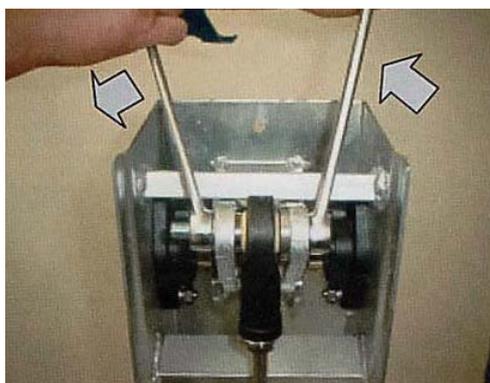
5) Place the small and the larger



6) Place screw into lever socket and linkhead with bolt



7) Take pliers off and place washer and one hexagonal nut on bolt



8) Tighten them



9) Place the second hexagonal nut on bolt and tighten it



15. Testing the pump

Before closing the body pump. Test it.

Pump at moderate speed using the full stroke length.

If the water don't come. There is a problem.

Look if the riser pipe is not leaking. If not you have to dismantle the pump again and find the problem.

16. Closing the body pump



1) Take on the cover par



2) Screw Allen screw on the pump body



Maintenance advices

Short and quick strokes yield only little water and damaged pump components. Pump at moderate speed and using the full stroke length

Do not bang handle against stop

Open the pump body every 2 weeks: Keep all nuts and bolts tight, grease the moving parts.

Keep pump and surroundings clean

Keep animals away from well

Preventive and regular minor maintenance avoid serious breakage to happen.

Maintenance is cheap compare to a serious breakage repairing

A well kept pump live longer.

A pump give pure water and pure water avoid illness and diarrhea

Drawing and technical pictures extracted from « Installation Manual and Instruction for handpump SBF-KARDIA 2000 » Pdf document by PUMPENBOESE GMBH&Co.



European Union



Inter Aide Sierra Leone