

# NIRA AF-85 HANDPUMP MANUAL



# NIRA AF-85 DIRECT-ACTION HAND PUMP

Internationally acknowledged to be the best hand pump for shallow wells!

NIRAAF-85 Direct-Action Hand pump is the no. 1 hand pump and the most recommended for shallow wells.

The pump has been manufactured in Africa since the beginning of the 1990's.

The design principle of NIRAAF-85 has been to develop a simple pump with a minimum number of wearing parts following the VLOM-requirements (Village Level Operation and Maintenance).

NIRA AF-85 can reach the maximum depth of 20 metres.

NIRA AF-85 Direct-Action Hand Pump is High-Low technology for the rural people in Africa.



NIRA PUMPS · SINCE 1919

## INTRODUCTION

This manual is to serve as a guide for proper use and maintenance of NIRA AF-85 pumps, so that in case of breakages, the users shall independently carry out repairs.

Read this manual before installing your pump and follow the instructions.

Keep the manual for future reference.

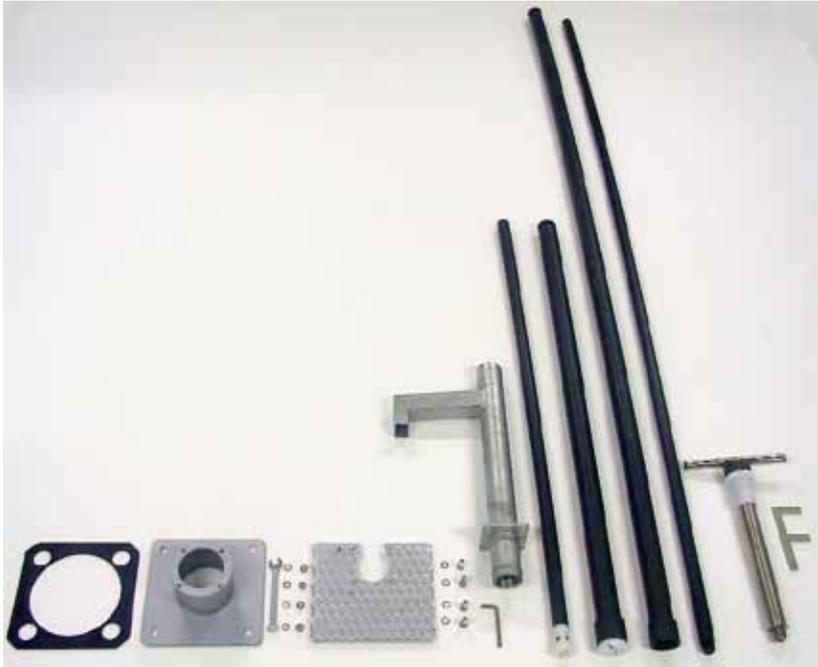
## PROPER USE AND MAINTENANCE OF A WELL

Water plays a very important role and it is necessary to use clean and safe water for healthy life.

Livestock should be barred off the well site to avoid animals from damaging the slab or the pump and dirtying the well site. It is also not good to wash laundry, utensils or bath on the slap or very close to the well. The pit latrines should not be constructed upstream and the well should be more than twenty meters away from the house. Children should not be allowed to play at the well and with the pump.



INSTRUCTIONS AND  
ILLUSTRATIONS TO NIRA AF-85  
HAND PUMP INSTALLATION.





1. Place the gasket on the anchor bolts setting.



2. Place the base plate on the gasket.



3. Fasten the base plate to the well cover with M12 or M16 nuts and flat washers.



4. Tighten the nuts alternatively by using the spanner provided with the tool kit.



5. Connect the riser pipe to the cylinder pipe, to be hand-tighten only.



6. Enter the connected cylinder and pipe to the well and continue connecting riser pipes to each other until the specified installation depth.



7. Place the smaller gasket on the base plate. (Ghana model only).



8. Connect the pump stand on to the last riser pipe.



9. Place the standing plate on the pump stand by sliding it from the top of the pump stand.



10. Place the standing plate on the corresponden holes of the flange and fasten the standing plate and the pump stand to the base plate by using M12 hexagonal head bolt, don't forget to place the spring cotters under the bolt head.



11. Tighten the all four bolts alternatively by using the allen key



12. Connect the plunger rod (already assembled) to the pump rod.



13. It is advisable to connect the rod in the same order as the riser pipes were done earlier.



14. Enter the connected plunger in to the pump, the plunger pipe first, continue connecting pump rods until the desired depth (same length with the riser pipe connection).



15. Connect the pump handle (already assembled) to the last pump rod.



16. Fasten the sleeve bearing on to the pump head by using the F-key.



17. Pump water out until it is clean enough for use.

REPAIRS AND MAINTENANCE: Bottom valve assembling



18. Place the plunger/bottom valve (bobbin) in the bottom valve body.



19. Slide the limiter over the bobbin.



20. Fasten the bottom valve assembly to the coupled Riser pipe using the F-key.

## Plunger valve assembling



21.-22. Place the bobbin in the plunger nipple and fasten the plunger body to it.



23. Hold the plunger body firmly in hand and use the F-key.



24.-25. Stretch the plunger ring and force it on to the plunger body assembly with the flat face downwards.



26. Fasten the plunger assembly to the pump rod using the F-key.

## Pump handle assembling



27. Place the o-ring in the grooved part of the handle T-bar.



28. Placle the o-ring in the grooved part of the handle nipple



29. Slide the shockabsorber to one end of the handle pipe, note to lubricate the pipe and the shockabsorber with water before assembling.



30. Slide the handle pipe with shockabsorber over the handle T-bar.



31.-32. Slide the sleevebearing on the handle pipe.



33. Connect the handle nipple to the handle T-bar.



34. Fasten the handle nipple to the handle T-bar using the F-key.

# NIRA in AFRICA

## Water Hand Pumps

- NIRA AF-85 for shallow wells down to 20 mts
- NIRA 9, NIRA 6B hand pumps for domestic use
- NIRA 2 barrel pump.



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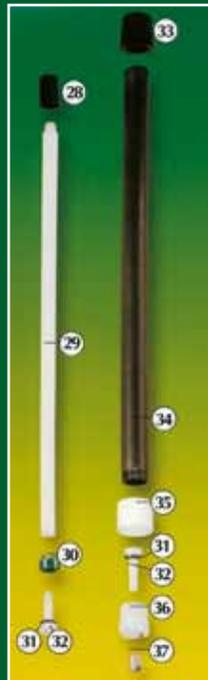
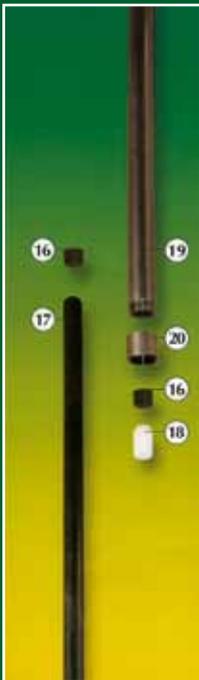
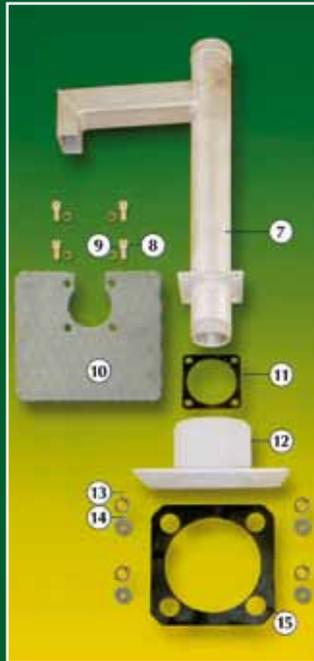
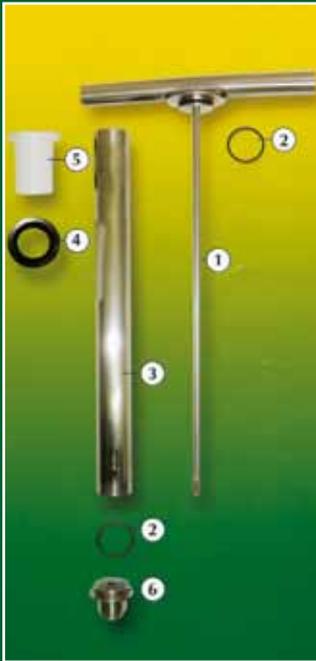
# NIRA AF-85 GHANA

List of parts:

NR	DESCRIPTION	CODE	MATERIAL
1.	T-bar	A6102NH	stainless steel
2.	O-ring	R278383	rubber
3.	Handle pipe	A6334	stainless steel
4.	Shock absorber	R22075	rubber
5.	Sleeve bearing	A8104	plastic
6.	Handle nipple	A6336	stainless steel
7.	Pump head	A8101 G	hot dip galvanized
8.	Hexagonal bolt M12x25	R2061225	stainless steel
9.	Spring cotter	R23212	
10.	Standing plate	A6106	sand blast/ zinc coated
11.	Gasket	R1208	rubber
12.	Base plate	A6108	sand blast/ zinc coated
13.	Nut M12 or M16	R22812	stainless steel or brass
14.	Flat washer	R230122	
15.	Gasket	R4314	rubber
16.	Rod plug	R4836	Natural rubber
17.	Pump rod 0,75	M2130B	HDPE
	Pump rod 1,50	M2332B	HDPE
	Pump rod 2,00	M2432B	HDPE
	Pump rod 3,00	M2532B	HDPE
18.	Plunger/Rod nipple	RS9104B	HDPE
19.	Rising main, 0,75	M2130	HDPE
	Rising main, 1,50	M2331	HDPE
	Rising main, 2,00	M2431	HDPE
	Rising main, 3,00	M2531	HDPE
20.	Riser coupling	M3301B	HDPE
21.	Cylinder rod	M2332B	HDPE
22.	Plunger/bottom valve	R22229	urethane rubber
23.	Plunger body	S0302B	plastic
24.	Plunger ring	RS0303	plastic
25.	Cylinder pipe	M2331	HDPE
26.	Bottom valve limiter	RS0203K	plastic
27.	Bottom valve body	S0301K	plastic

## Parts for Deep Cylinder

28.	Rod Coupling	MD105	HDPE
29.	Cylinder rod	MD103	plastic
30.	Plunger seal	R22064	Urethane rubber
31.	Bobbing seal	R5639	Rubber
32.	Plunger/bottom valve	MD100	plastic
33.	Cylinder pipe/ riser coupling	MD104	HDPE
34.	Cylinder pipe	M2100	HDPE
35.	Cylinder pipe/ bottom valve coupling	SD106	HDPE
36.	Bottom valve body	MD102	plastic
37.	Bottom valve nut	MD101	Stainless steel



# **NIRA Water Hand Pumps in AFRICA**



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**NIRA PUMPS OY**

**PL54**

**38201 SASTAMALA, FINLAND**

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