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# JOB GUIDE

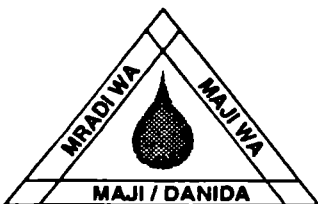
# FOR IWALA/IHOMBE GRAVITY WATER SCHEME



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FOR COMMUNITY WATER SUPPLY AND  
SANITATION (IRC)

**DEVELOPED BY:**

**OPERATION AND  
MAINTENANCE  
SECTION IN  
MBEYA WATER  
DEPARTMENT**



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# PREFACE

## **General**

A qualified and skilled Scheme Attendant is necessary in order to keep a water scheme operating properly.

It is therefore of utmost importance to facilitate the work of the scheme attendant in a best possible way.

## **The Job Guide**

This Job Guide shows step by step, with both text and illustrations, the different operations necessary to carry out maintenance work in the Iwala/Thombe gravity water scheme.

The primary use of the Job Guide is to assist the Scheme Attendant in executing his/her routine-duties in a correct way. The Job Guide will also serve as an instrument in the training and upkeep of necessary knowledge about the water scheme.

## **To the Scheme Attendant.**

A good and reliable water scheme is of great importance for all your fellow villagers.

They depend on how you perform your job. You are the ones in the village with necessary skills and knowledge to operate and maintain the water scheme.

This Job Guide will assist you in performing this job. Even though you feel you know how do your duties , it is important that you cross-check with the Job Guide.

**Good luck in your work!**

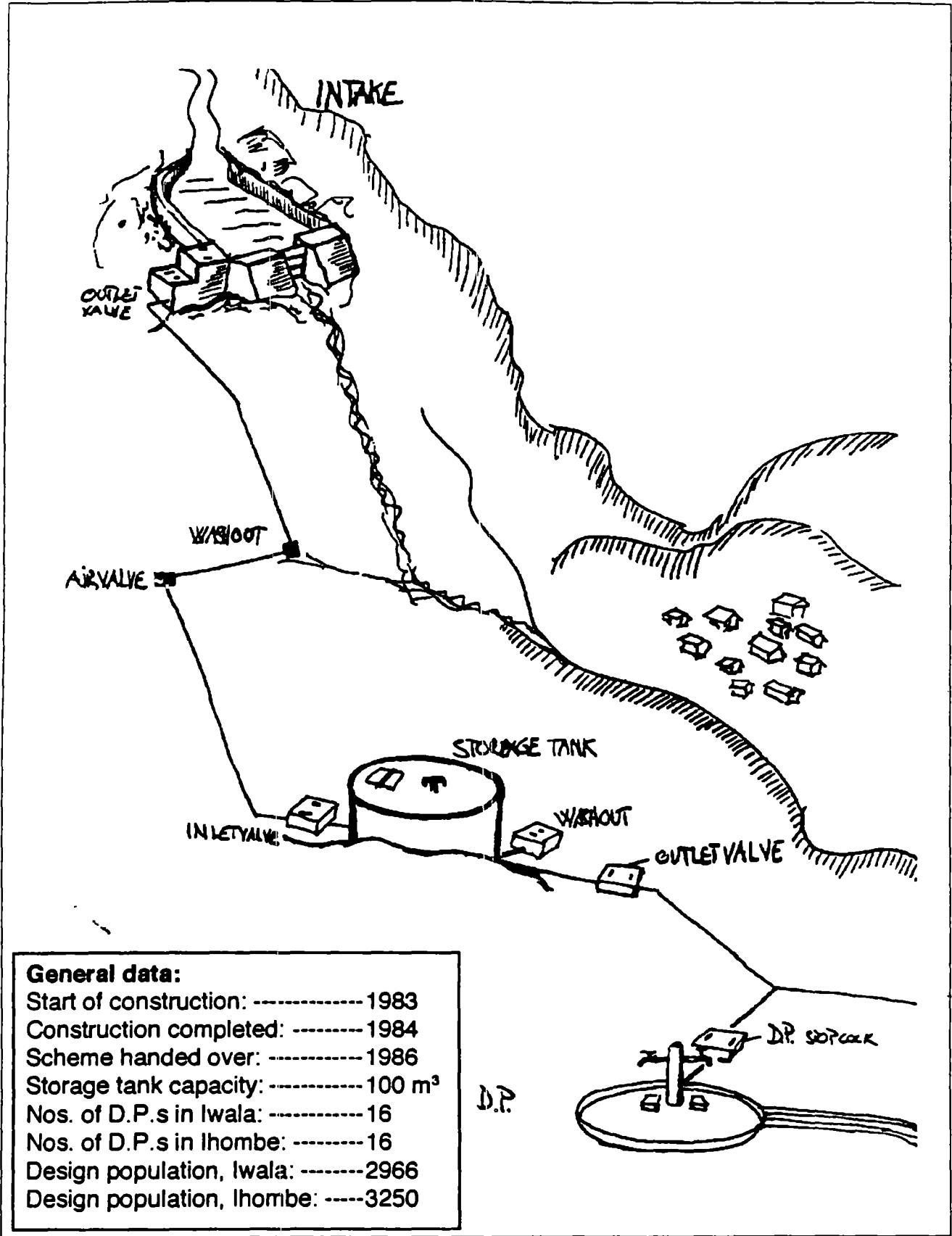
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CENTRE FOR COMMUNITY WATER SUPPLY  
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IR: ISN = 10523  
LO: 824 TZMB92

**Mbeya, December 1992**  
**Operation & Maintenance Section.**



# OVERVIEW OF IWALA AND IHOMBE GRAVITY WATER SCHEME



**General data:**

Start of construction: -----	1983
Construction completed: -----	1984
Scheme handed over: -----	1986
Storage tank capacity: -----	100 m <sup>3</sup>
Nos. of D.P.s in Iwala: -----	16
Nos. of D.P.s in Ihombe: -----	16
Design population, Iwala: -----	2966
Design population, Ihombe: -----	3250



# **MAINTENANCE SCHEDULE for Scheme Attendant**

## **EVERY 14 DAYS MAINTENANCE**

- 1 Inspect the scheme**
  - Look for leakages on the pipeline
  - Look for damaged taps (Page 16)
  - Check the storagetank. No water should flow from overflow.
  - Check the airvalve. Whistling sound should be heard.
  - Check the washout for leakage.
- 2 Clean the wiremesh and strainer at the Intake (Page 10)**
- 3 Supervise the cleaning of D.P.'s**
- 4 Inspect the catchment area. No activities from human beings should occur (Cultivation, tree cuttings, livestock etc.)**
- 5 Report to the water committee if any repairwork is required and if any activities from human beings is discovered in the catchment area (Page 4)**

## **EVERY THREE MONTH MAINTENANCE**

- 1 • Clean the Intake (Page 5)**
- 2 • Clean the airvalve (Page 12)**
- 3 • Clean the storagetank (Page 22)**



**REPORTING FORM  
to the Village Water Commitee**

**Description of the breakdown:**

**List of sparepart needed to repair the breakdown:**

**Date of reporting the breakdown:** \_\_\_\_\_

**Date when repairwork was carried out:** \_\_\_\_\_

**Observation from catchment area:**

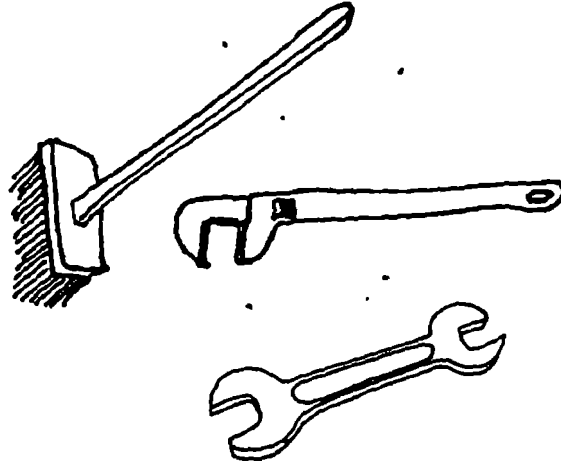
**Signature of Scheme Attendant:** \_\_\_\_\_



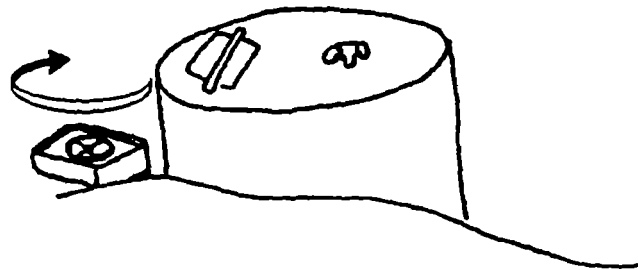
## CLEANING OF INTAKE

### Tools for cleaning:

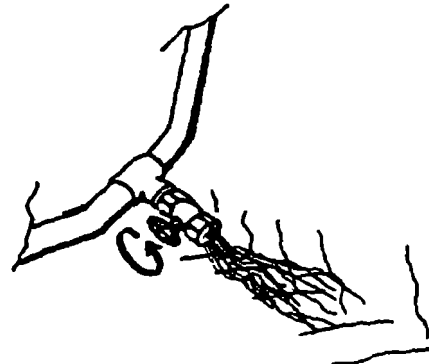
Broom  
Spanner  
Pipe wrench



### 1 Close inlet valve to storage tank.

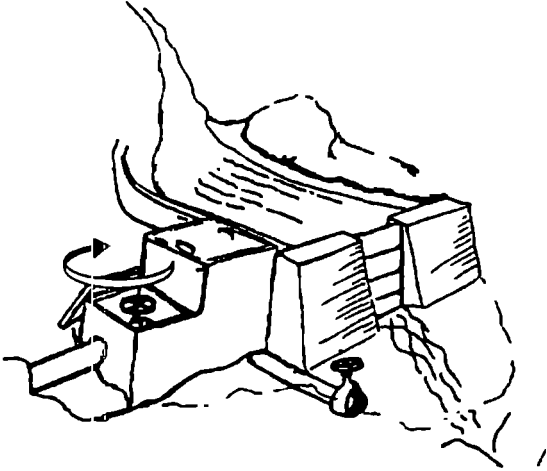


### 2 Open the washout.

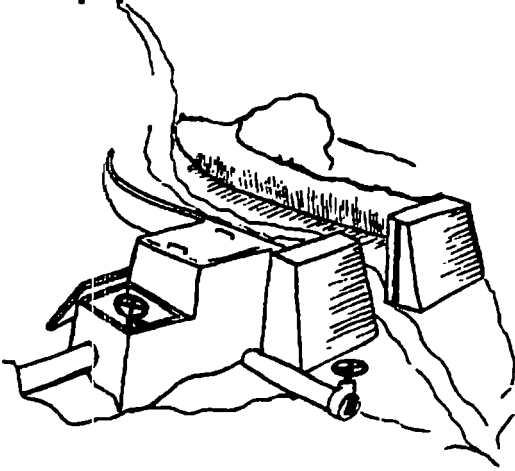


# CLEANING OF INTAKE

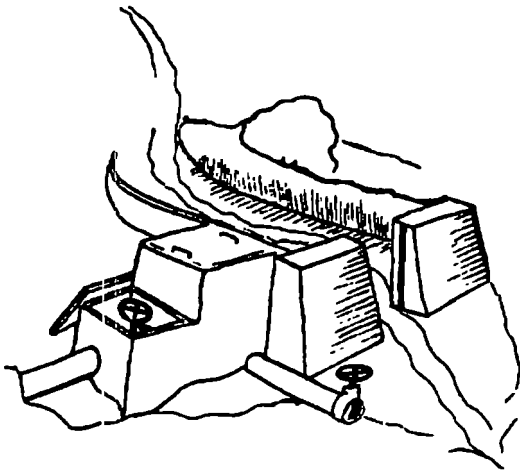
**3 Close outlet gate valve.**



**4 Open the weir and washout pipe.**



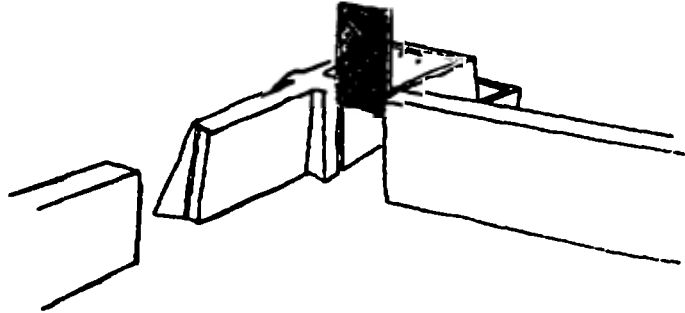
**5 Remove mud from intake.**



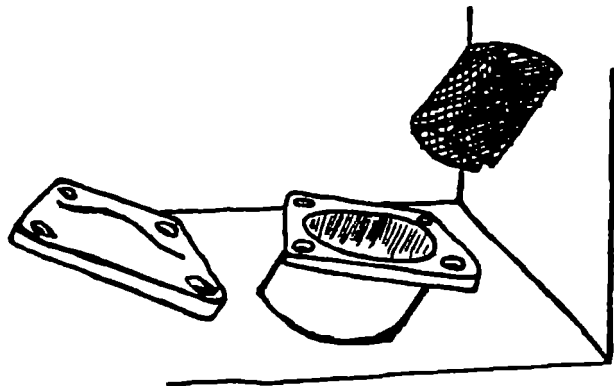


## CLEANING OF INTAKE

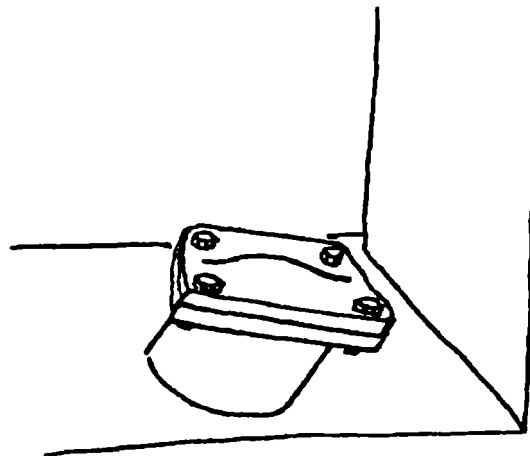
**6 Remove and clean the wiremesh.**



**7 Remove and clean the strainer.**

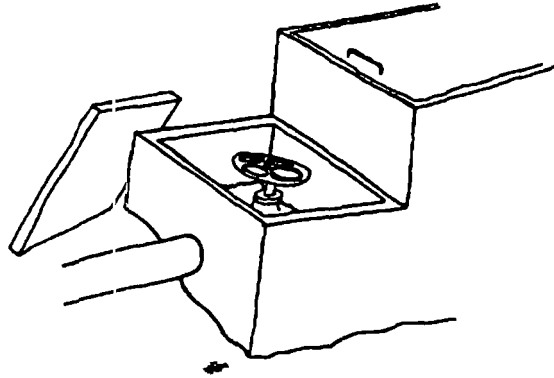


**8 Replace the strainer.**

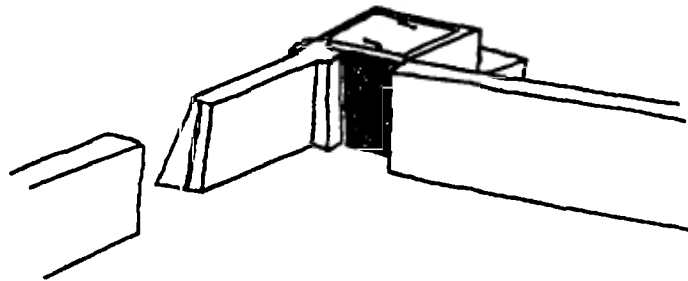


## CLEANING OF INTAKE

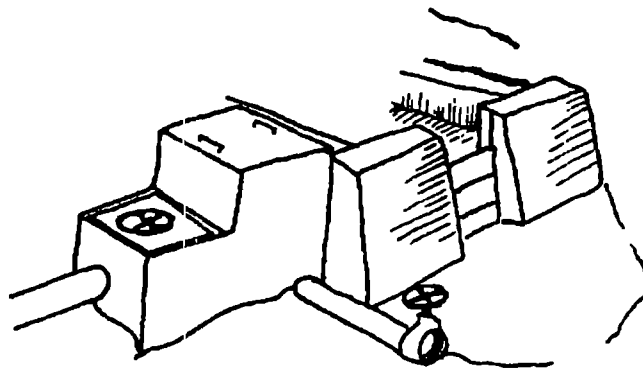
9 Clean the valve chamber.



10 Replace the wiremesh.

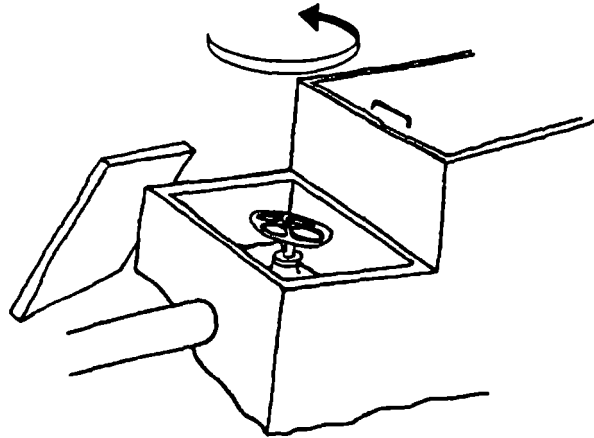


11 Replace the weir and the washout plug.



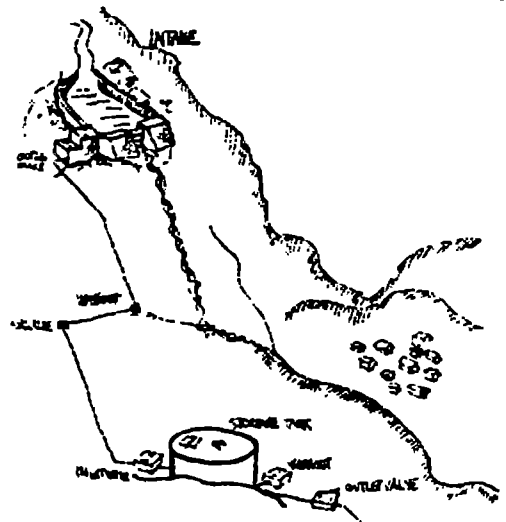
## CLEANING OF INTAKE

**12 Open the outlet after the chamber is filled with water**

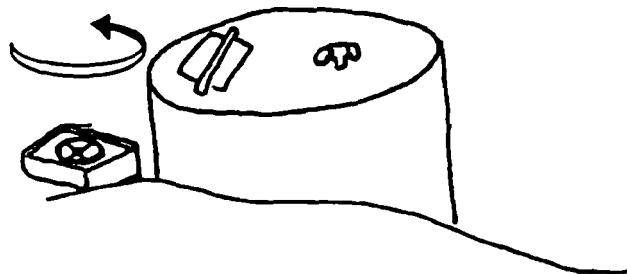


**13 Walk along the pipeline and:**

- close the washouts
- clean all the valve chambers
- check the air valves by listening for the whistling sound.



**14 Open the inlet valve to tank.**

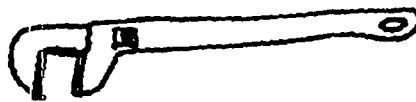
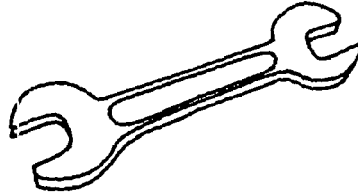


# CLEANING OF WIREMESH

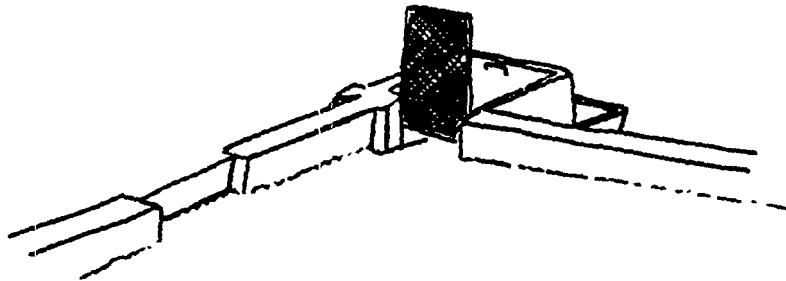
Tools for cleaning:

Spanner

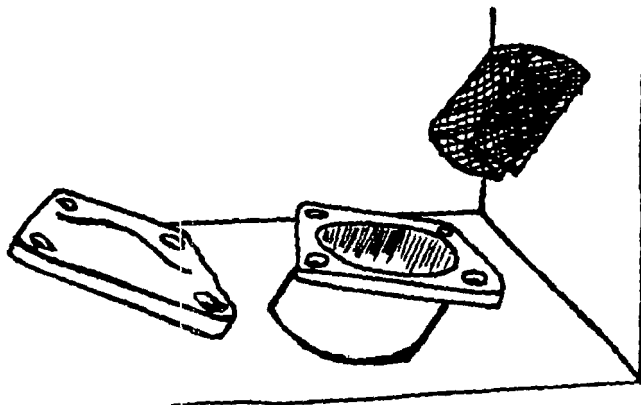
Pipe wrench



**1 Remove and clean the wiremesh.**

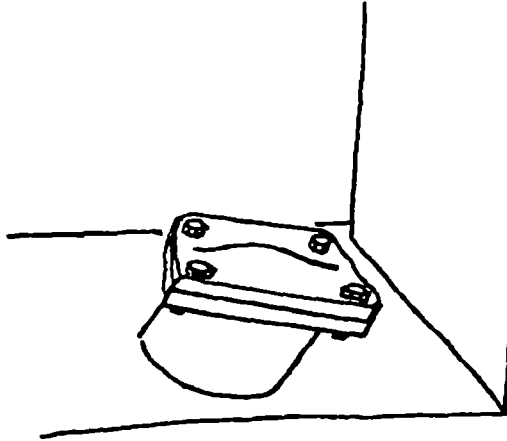


**2 Clean the strainer**

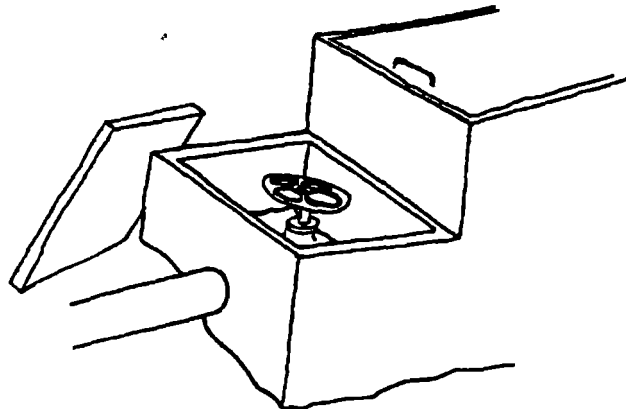


## CLEANING OF WIREMESH

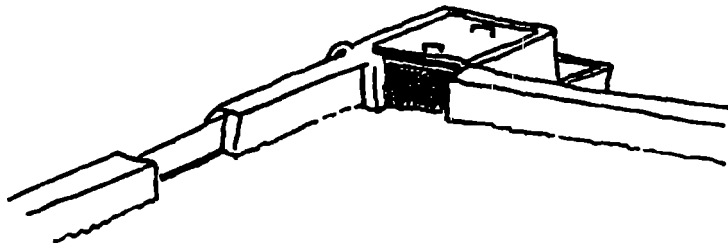
**3 Replace the strainer.**



**4 Clean the valve chamber.**

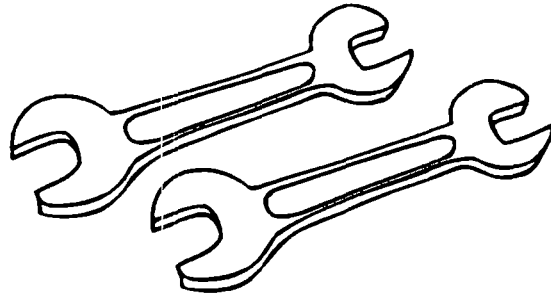


**5 Replace the wiremesh.**

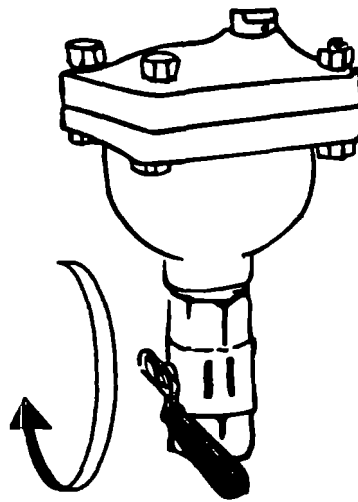


# MAINTENANCE OF AIRVALVE

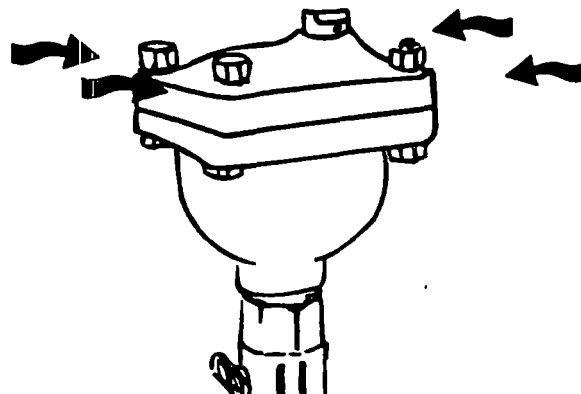
**Tools for servicing the air valve:  
Two fixed spanners, 20 m.m.**



**1 Close the stopcock**

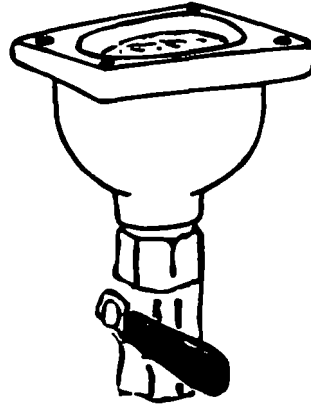


**2 Open the four bolts on top of air valve and remove cover**

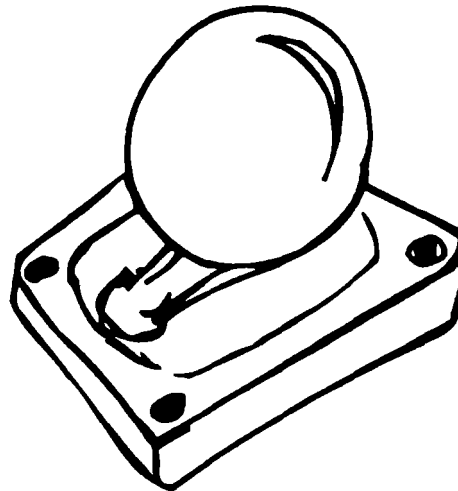


## MAINTENANCE OF AIRVALVE

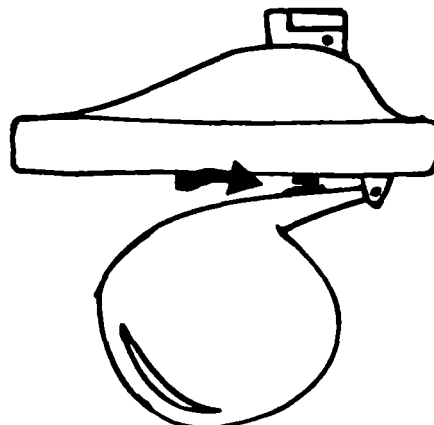
**3 Clean the valve housing by opening the stop cock carefully.**



**4 Clean the float**



**5 Check the rubber washer and air-valve seat for damaged. Replace if necessary**

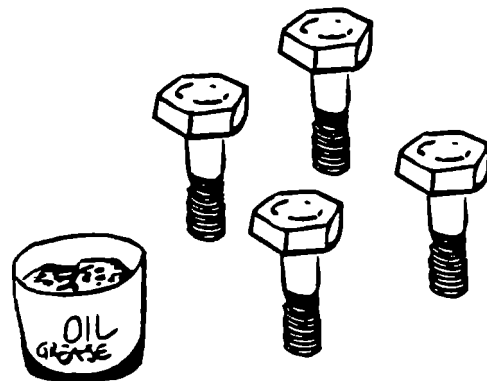


## MAINTENANCE OF AIRVALVE

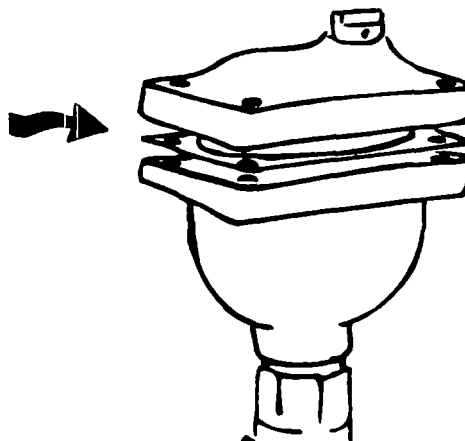
6 Check that air is goes through the hole by holding a finger in front of one hole and blowing through the other.



7 Lubricate the bolts with lubricant.



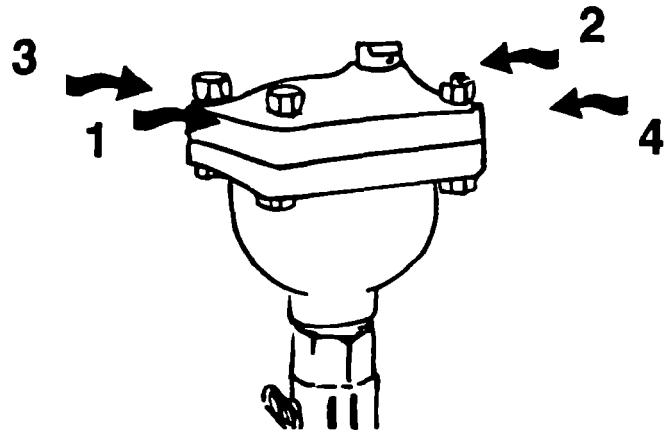
8 Check the gasket for damage. Replace if necessary.



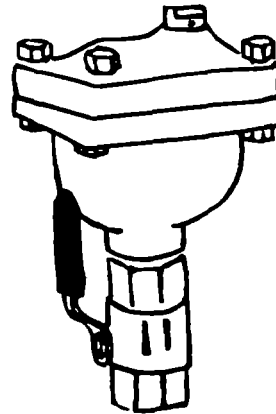


## MAINTENANCE OF AIRVALVE

9 Replace the cover by crosstighting the four bolts.



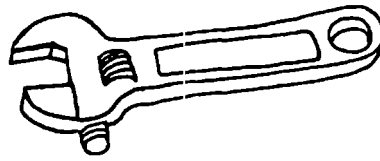
10 Open the stop cock.



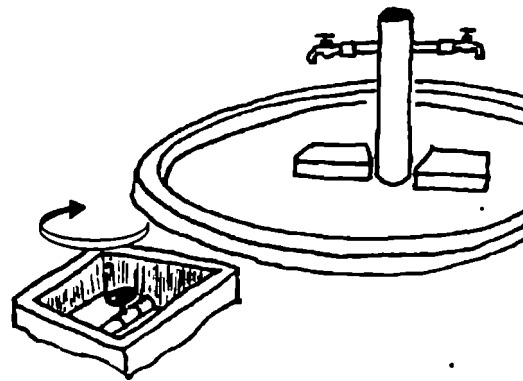
# TAP MAINTENANCE WORK

## D.P. tap leaking through spout

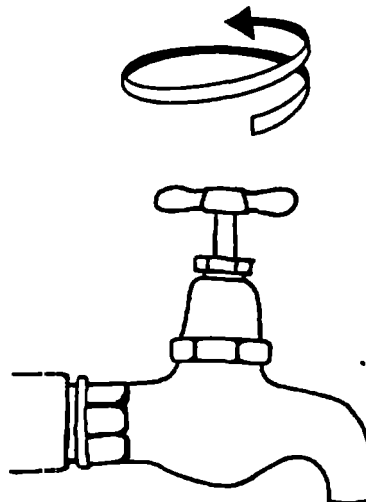
Tools for tap work:  
Adjustable spanner  
Teflon tape



**1 Close the D.P. stopcock**



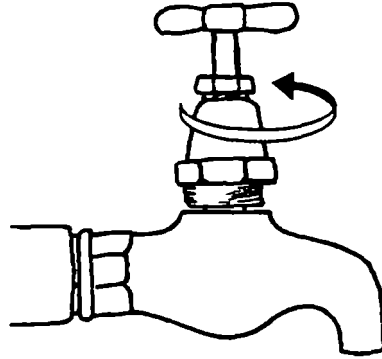
**2 Open the spindle fully.**



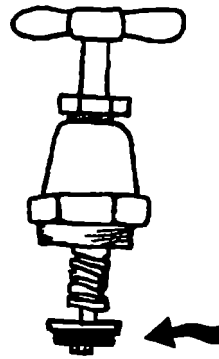
## TAP MAINTENANCE WORK

### D.P. tap leaking through spout

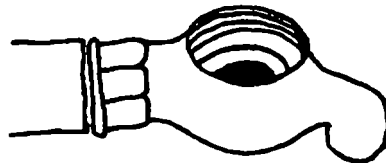
**3 Remove the head of the tap**



**4 Clean the rubber washer or if necessary, replace it.**



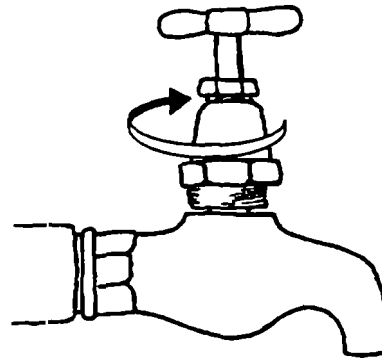
**5 Clean the valve seat**



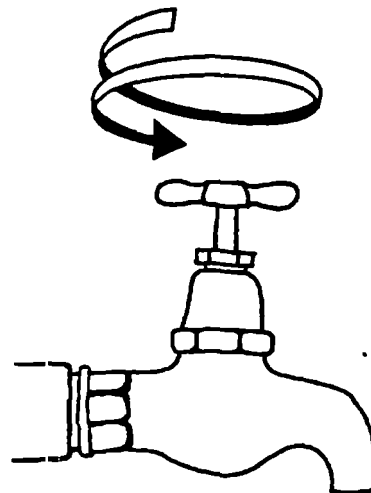
# TAP MAINTENANCE WORK

## D.P. tap leaking through spout

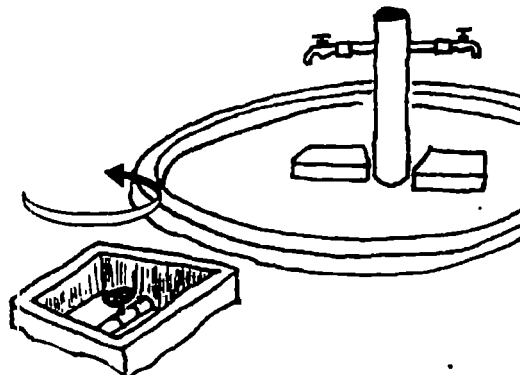
6 Replace the head of the tap



7 Close the tap



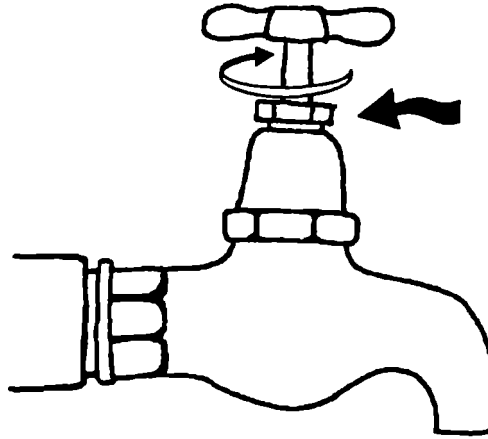
8 Open the D.P. stopcock



## TAP MAINTENANCE WORK

### D.P. tap Leaking through spindle

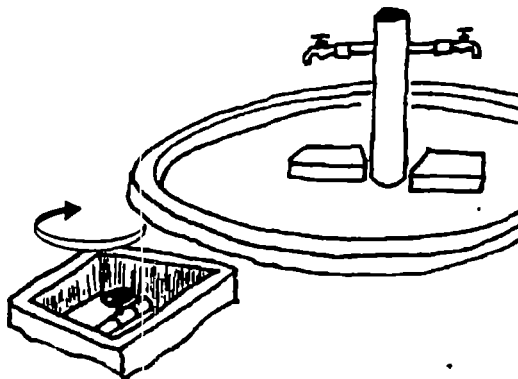
1 tight very carefully the spindle nut until leakage stops



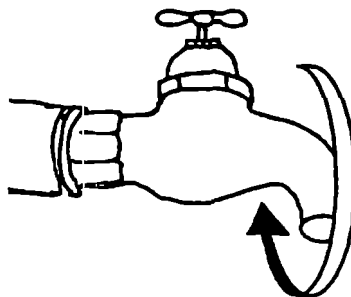
# TAP MAINTENANCE WORK

## D.P. tap don't close.

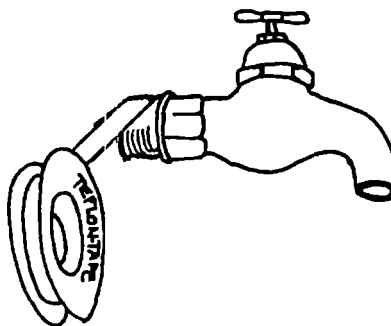
1 Stop the D.P. stopcock



2 Remove old tap



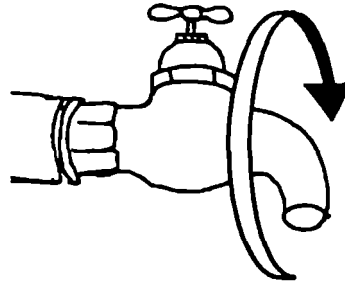
3 Wrap teflon-tape 5-6 times around the threads on the new tap



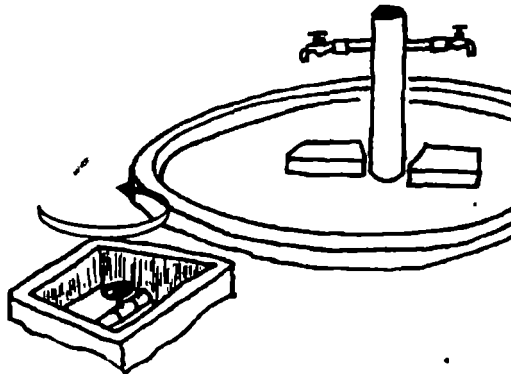
# TAP MAINTENANCE WORK

## D.P. tap don't close.

4 Screw the new tap onto the D.P.



5 Open the D.P. stopcock

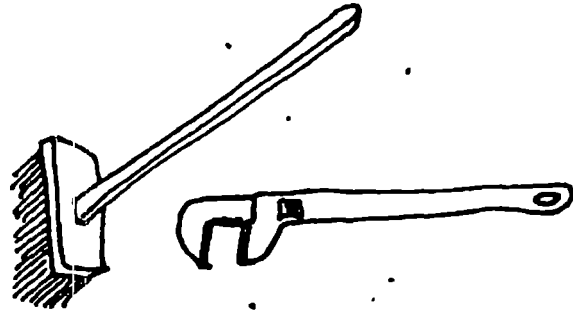


# MAINTENANCE OF STORAGE TANK

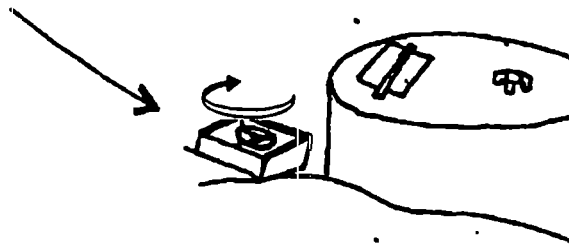
Tools for cleaning the storage tank:

Pipewrench

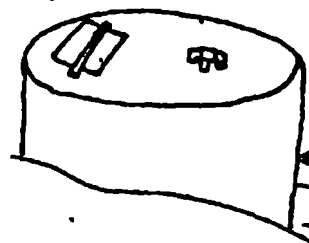
Broom



1 Close the inlet valve



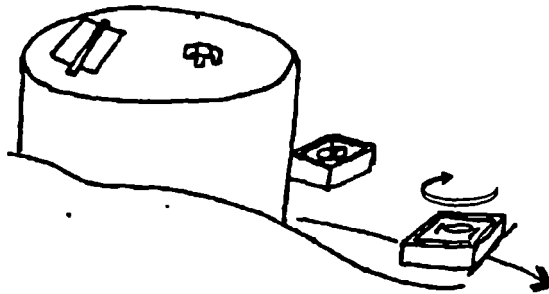
2 Wait until storage tank is empty.



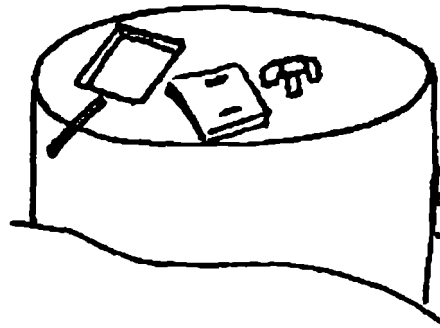


# MAINTENANCE OF STORAGE TANK

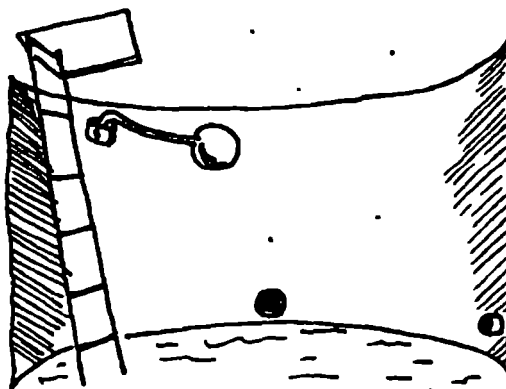
**3 Close the outlet valve.**



**4 Remove the tank cover.**

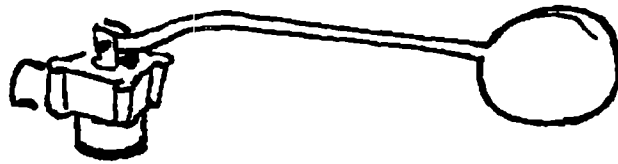


**5 Clean the walls and floor of the tank with brooms.**



## MAINTENANCE OF STORAGE TANK

6 Clean the float valve.



7 Open the washout and rinse tank with clean water.

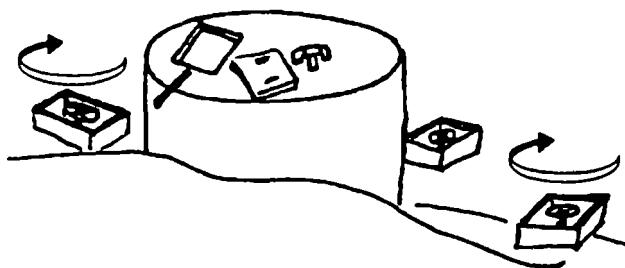


8 Close the washout.



## MAINTENANCE OF STORAGE TANK

9 Open the in- and outlet valves.



10 Replace the tank cover.

