Quick Reference Guide
Basic Procedures

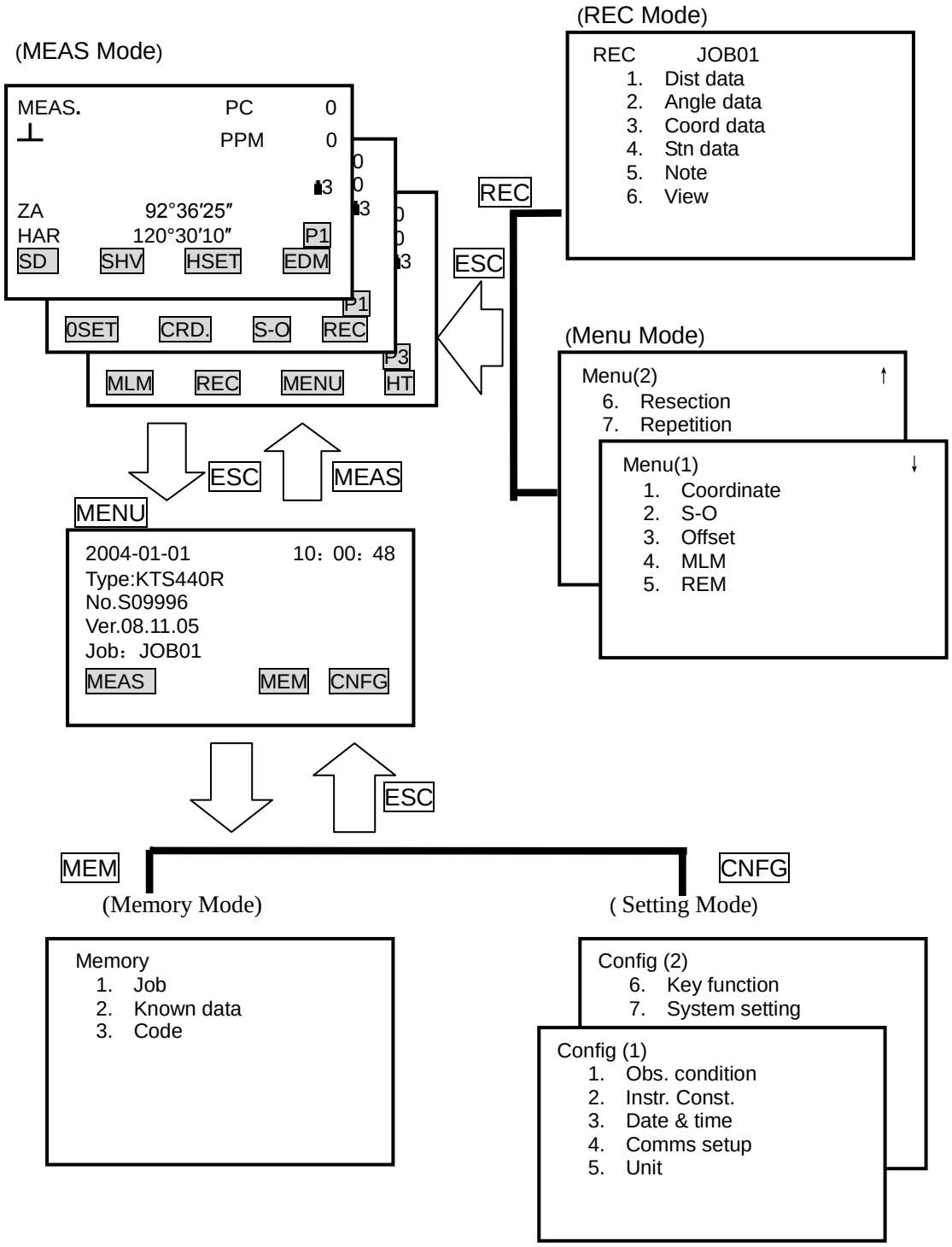
for Total Station KTS440L/R Series

GUANGDONG KOLIDA INSTRUMENT CO., LTD

CONTENTS

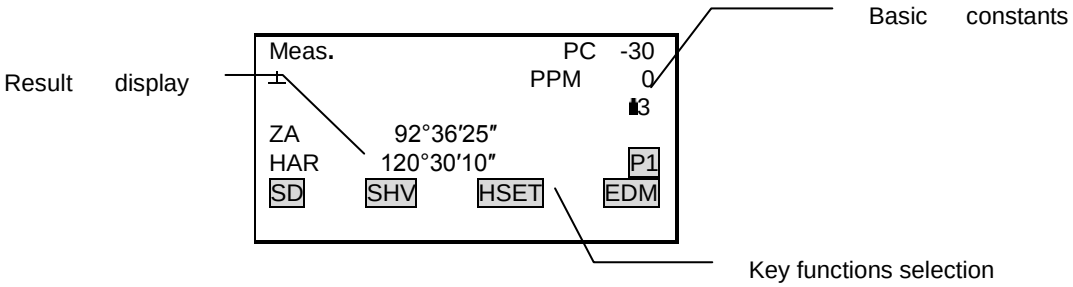
1. INTERFACES SIMPLE CHART

For KTS-440 Series

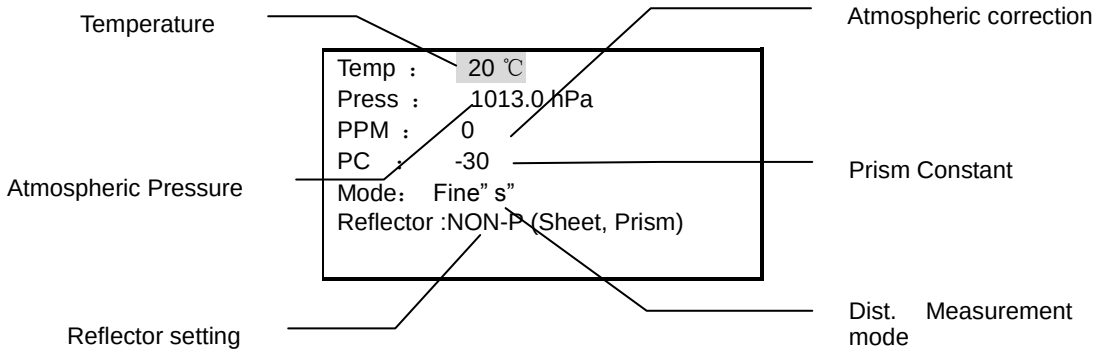


2. BASIC MEASUREMENT

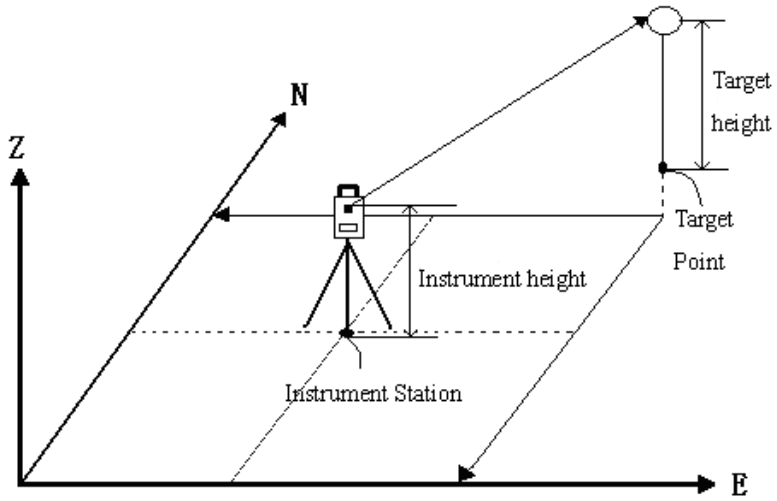
2.1 Angle and distance Measurement



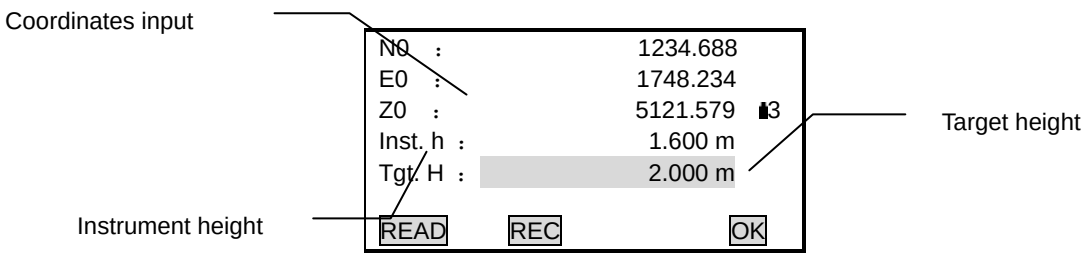
EDM settings



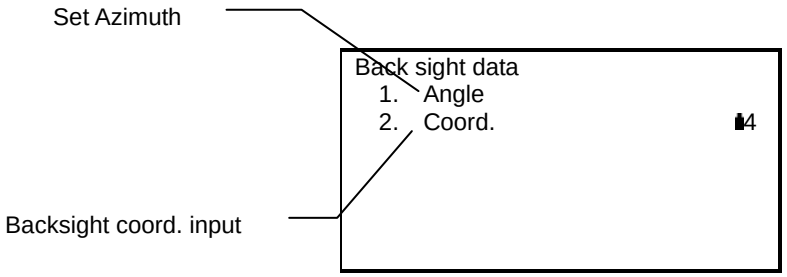
2.2 Coordinate Measurement



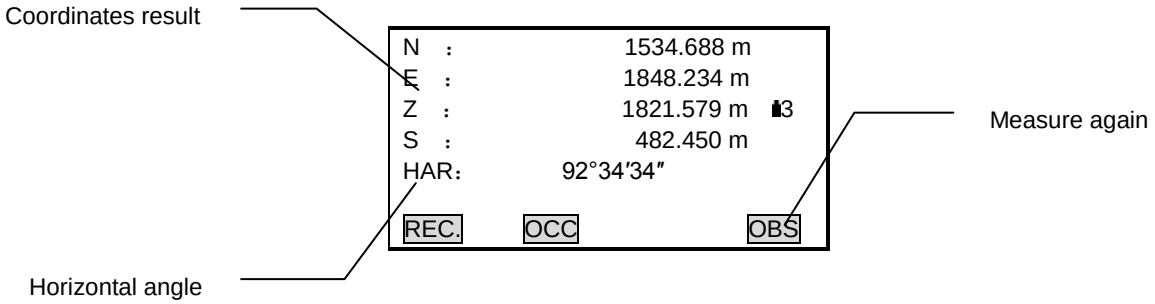
Station Settings



Backsight Settings



Coordinates result display

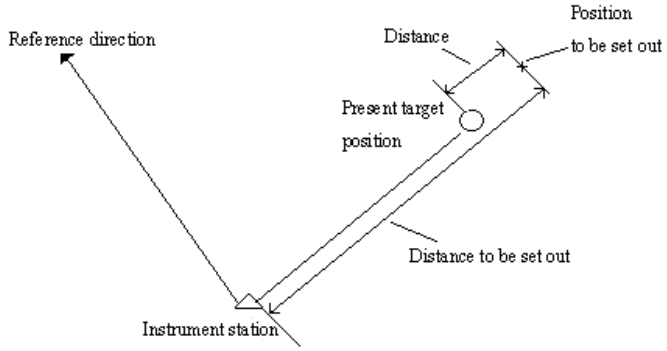


3. SETTING-OUT MEASUREMENT

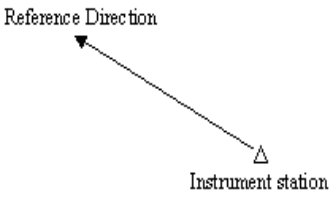
Note:Each time press SHV, setting-out measurement mode changes:
SD → HD → VD → COORD → REM

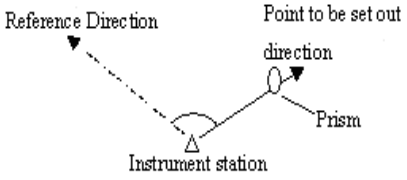
3.1Distance Setting-Out Measurement

The point can be found based on the horizontal angle from the reference direction and the distance from the instrument station.

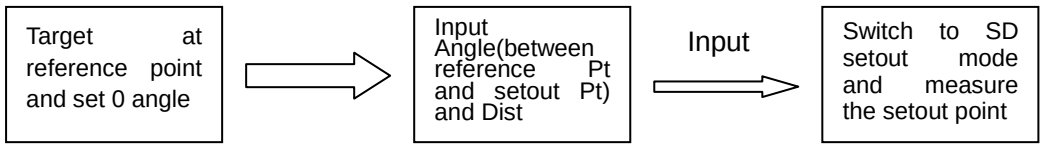


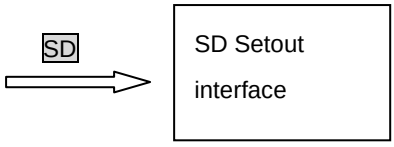
Procedure





Operation Procedure:



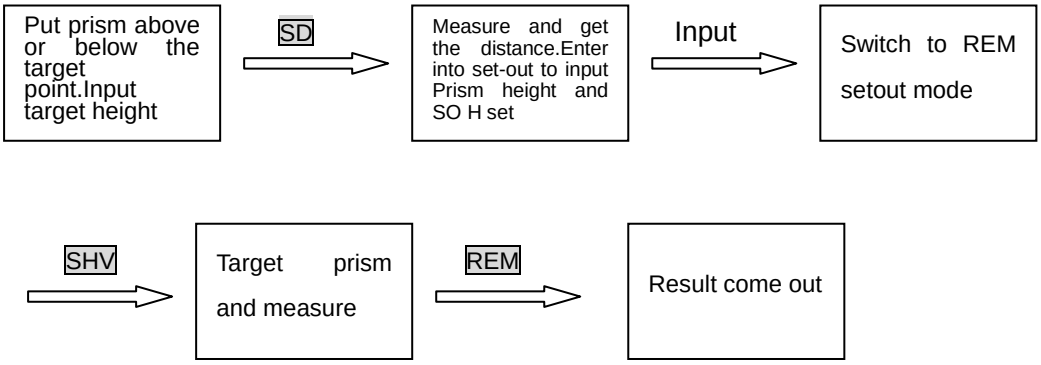


3.2 REM Setting-Out Measurement

.

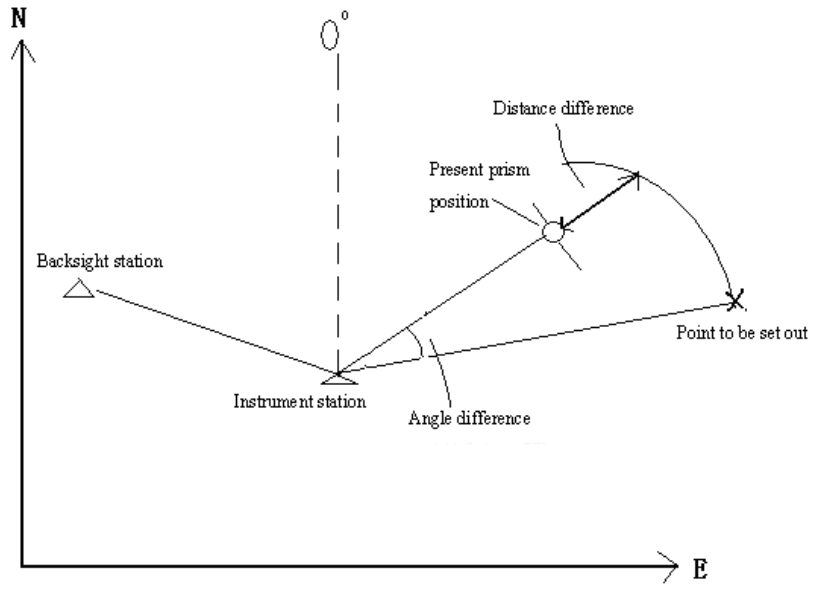
To find a point where a target can not be directly installed

Operation Procedure:

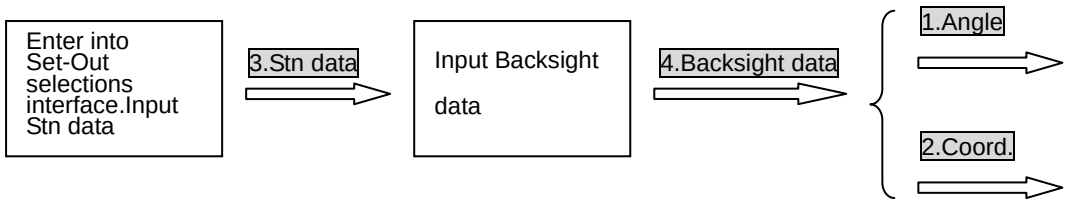


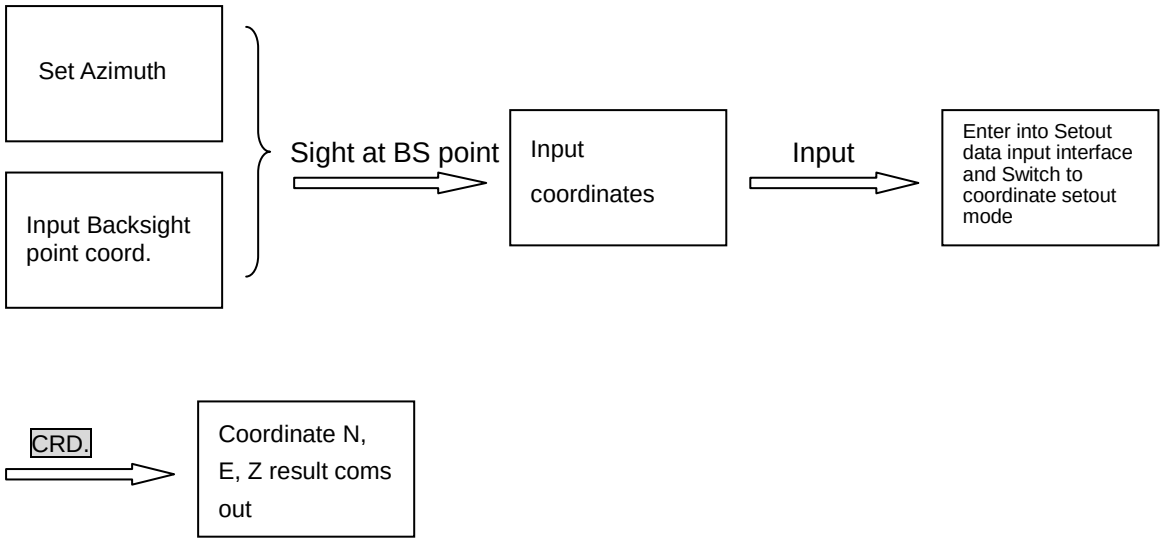
3.3 Coordinates Setting-Out Measurement

·To set out the point of a certain coordinate away from the reference point.



Demonstration flow chart:

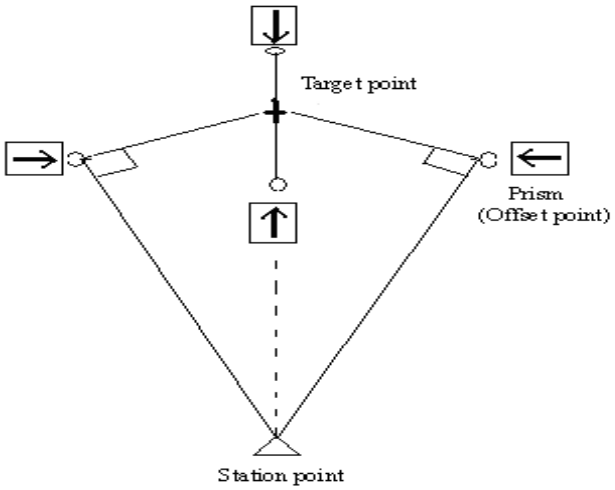



Set Azimuth
Input Backsight point coord.
Sight at BS point
Input coordinates
Input
Enter into Setout data input interface and Switch to coordinate setout mode
CRD.
Coordinate N, E, Z result coms out

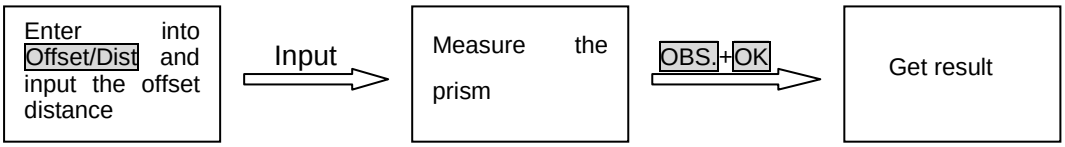
4. OFFSET MEASUREMENT

4.1 Single-Distance Offset Measurement

·When the offset point is positioned to left or right of the target point, make sure the angle formed by lines connecting the offset point to the target point and to the instrument station is almost 90°. When the offset point is positioned in front of or behind the target point, install the offset point on a line linking the instrument station with the target point.

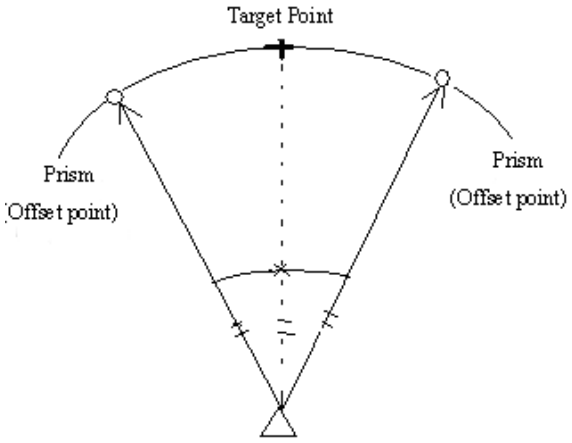


Operation Procedure:

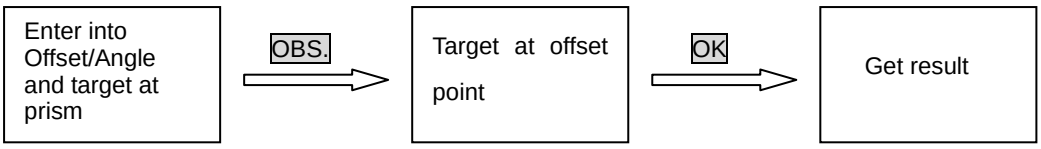


4.2 Angle Offset Measurement

· Install offset points for the target point on the right and left sides of and as close as possible to the target point. The target height and the height of offset points should be identical.

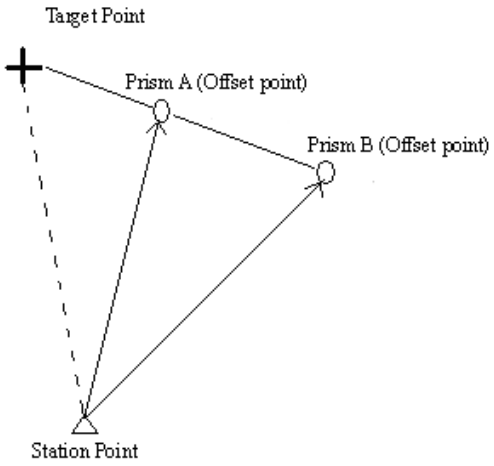


Operation Procedure:

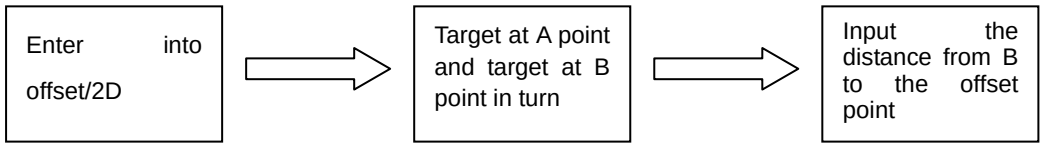


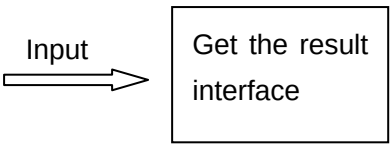
4.3 Two-Distance Offset Measurement

·Install two offset points (1st target and 2nd target) on a straight line from the target point, observe the 1st target and 2nd target, then enter the distance between the 2nd target and the target point to find the target point.



Operation Procedure:

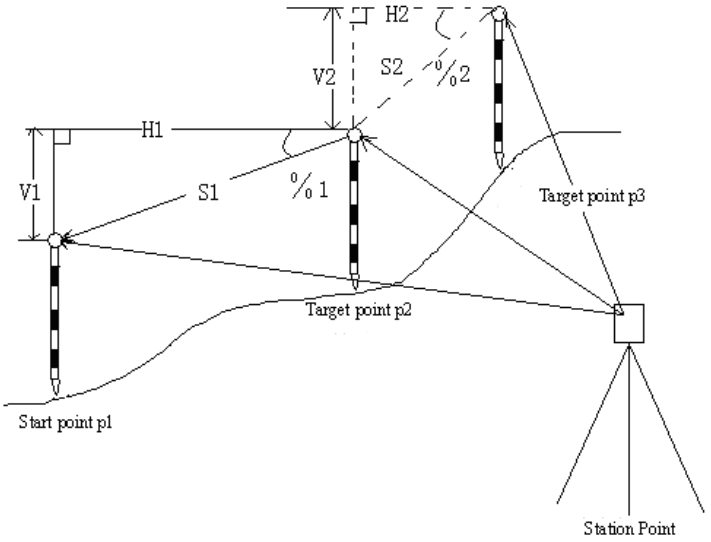




5. MISSING LINE MEASUREMENT

5.1 MLM

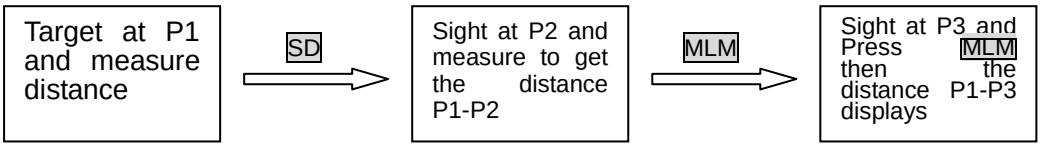
·To measure the slope distance, horizontal distance, and height difference to a target from the reference (point 1) without moving the instrument.

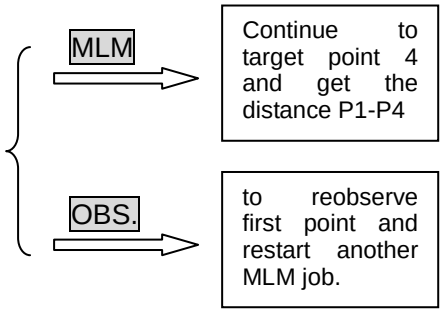


· To find the height difference between 2 points, use a pole to make the target height of all the targets

· It is possible to perform Missing Line Measurement by selecting “4. MLM” from the Menu mode.

Operation Procedure:

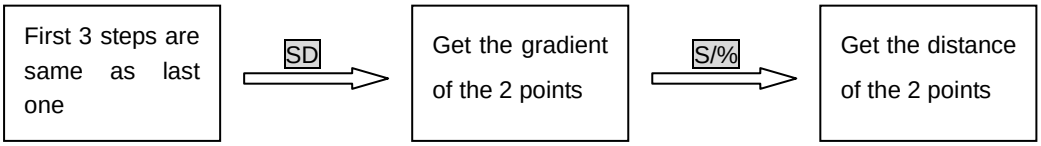




5.2 Slope between 2 points

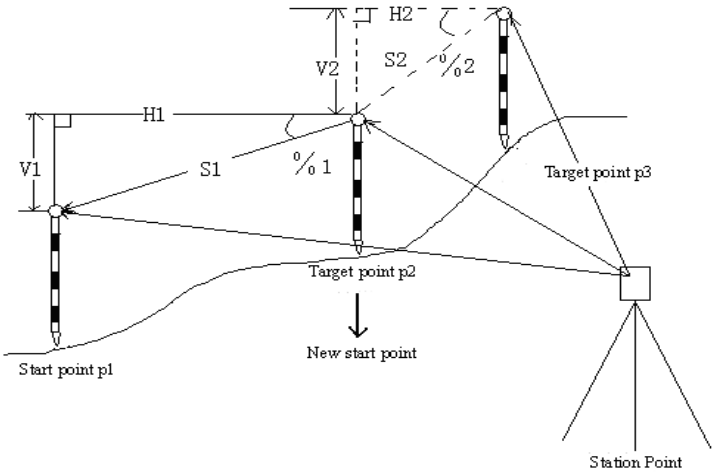
·It is possible to display the gradient of the starting position and target as a %.

Operation Procedure:

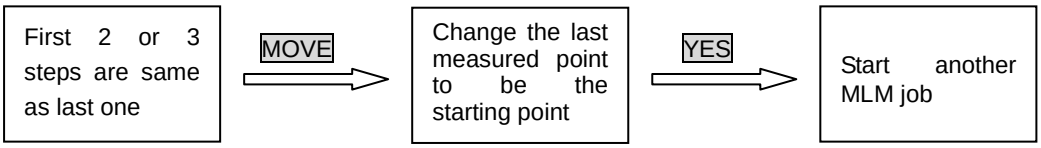


5.3 Changing the Starting Point

· It is possible to change the last measured point to the next starting point.

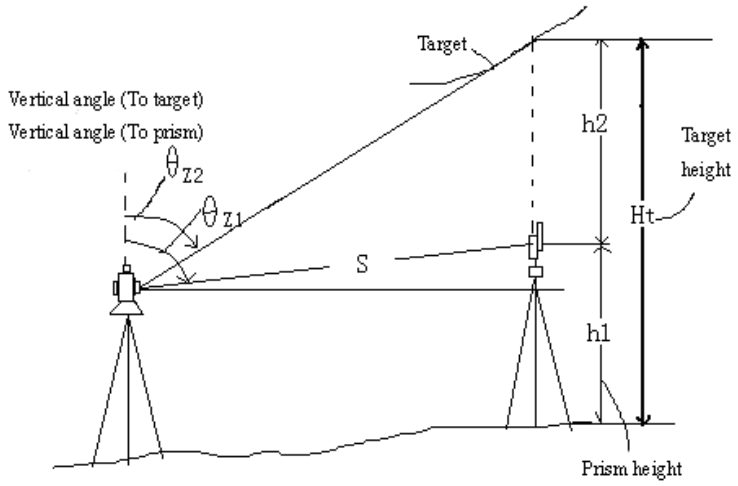


Operation Procedure:

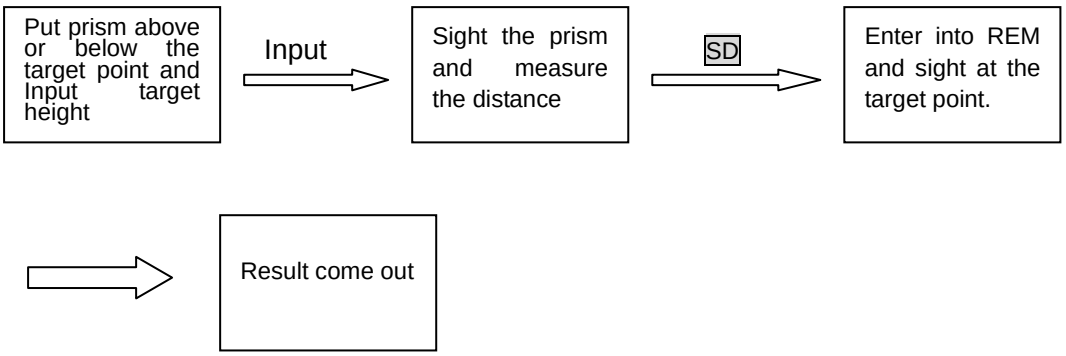


6. REM MEASUREMENT

To measure the height to a point where a target can not be directly installed, for example a electrical wire, bridge, etc.



Operation Procedure:



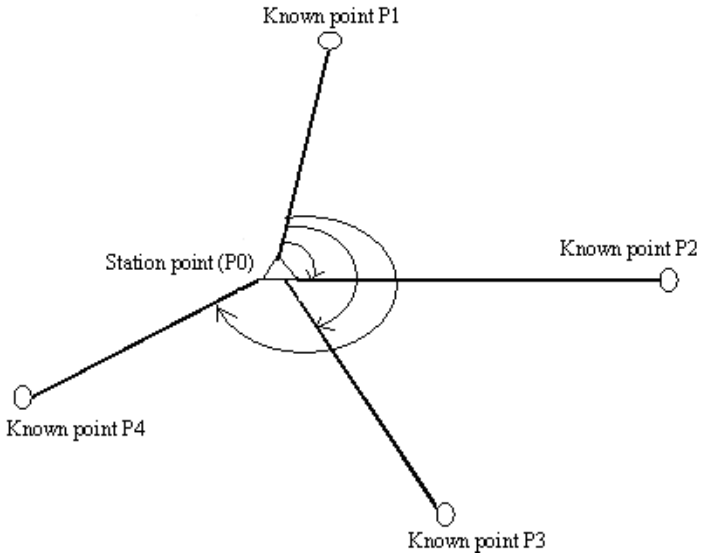
7. RESECTION MEASUREMENT

7.1 Resection

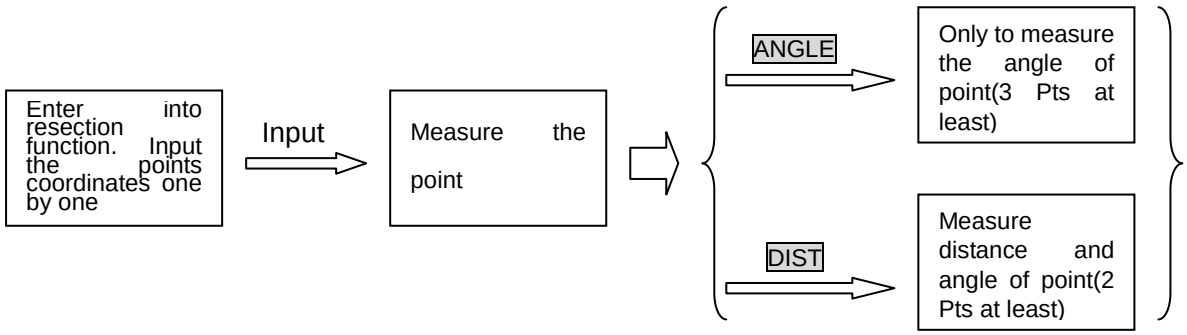
Resection is used to determine the coordinates of the instrument station by measuring the known points.

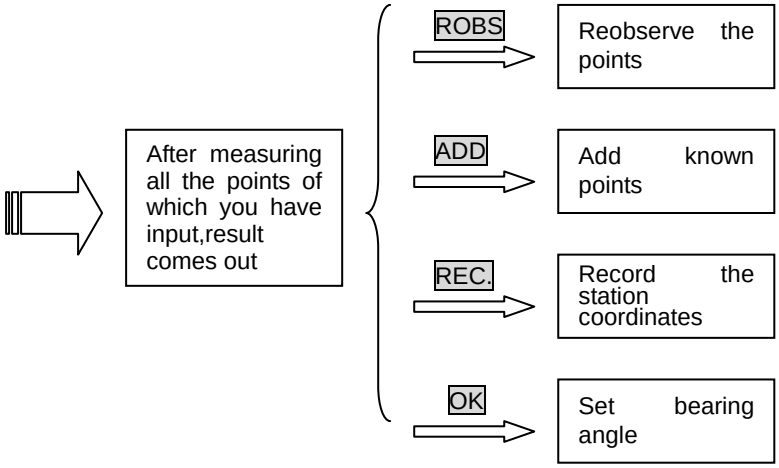
Caution:

1. When the distance can be measured, at least 2 known points are required.
2. When there is even one point which can not be measured, at least 3 known points are required.



Demonstration flow chart:





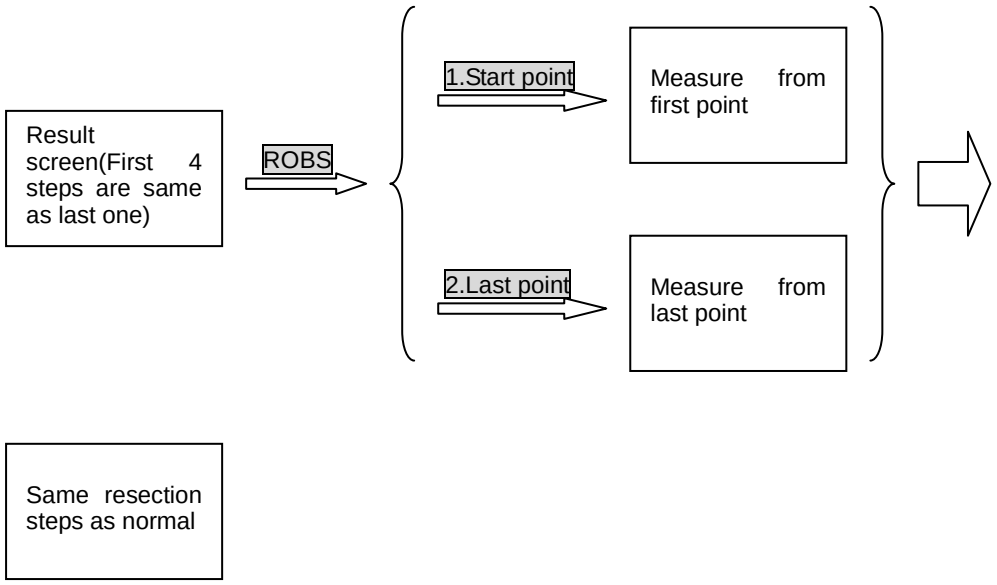
NOTE：Angle and distance can not be used crossways. When angle is in measuring, the known point direction should be clockwise or anticlockwise, the angle between near 2 points should be within 180°.

The KTS-440 can calculate the instrument station coordinates by observing 2 to 4 known points.

7.2 Re-Observing

·It is possible to perform re-measuring from the first known point or only the last known point.

Operation Procedure:



Same resection steps as normal

8. AREA CALCULATION

It is also possible to calculate the area of land enclosed by three or more known points on a line by manually inputting or reading the coordinates of the points.

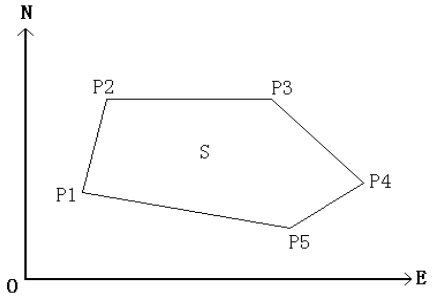
Coordinates(Known value)：P1 (N1, E1)　　Area (calculated value)：S

P2 (N2, E2)

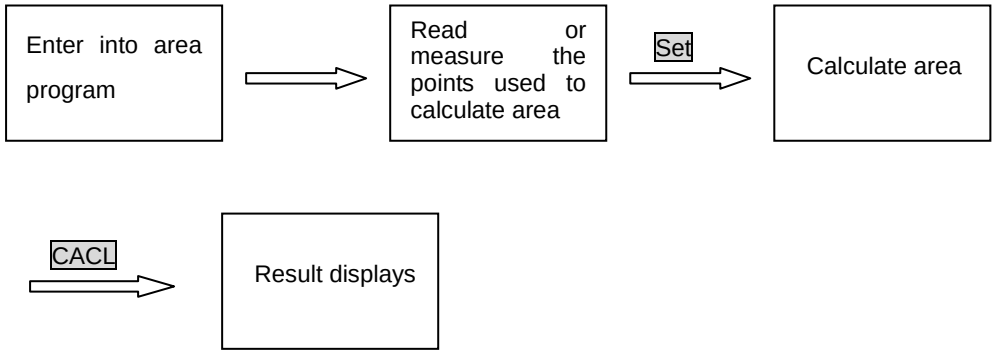
P3 (N3, E3)

P4 (N4, E4)

P5 (N5, E5)



Operation Procedure:



Note: Number of specified coordinate points: 3～20

9. Data storage and management