

Lab Sheet : Total station set-up and temporary adjustment

Outcome :

- Students should know the operation of electronic distance measurement / total station
- Student can handle temporary adjustment of electronic distance measurement / total station

Purpose

- To understand the operation of electronic distance measurement / total station
- To undergo testing for the temporary adjustment

Field Work Procedure:

SETTING UP THE EQUIPMENT

Orientation of the equipment

1. Levelling the instrument (total station).
2. Use of the optical plummet.
3. Use of the clamp and tangent (slow motion) screws of the horizontal circle motion (lower motion and upper motion if appropriate) and the vertical circle motion.
4. Focus of the telescope eyepiece lens, objective lens, and removal of parallax.
5. Initialization of the instrument in preparation of use.
6. Placing the instrument in distance measurement mode (horizontal and vertical).

Setting up Over a Point

1. Set the length of the tripod legs to a height approximately equal to your chin height.
2. Spread the tripod legs out. Using a plumb or by your best estimate, position the tripod approximately over the point, with the tripod base plate as horizontal as possible.
3. Firmly plant the tripod legs in the ground.
4. Mount the total station to the middle of the tripod base-plate using the centering screw on the tripod. If the tribrach of the total station has an optical plummet, remove the instrument from the tribrach and place it back in the case until step 1.
5. Level the instrument using the three leveling screws.

6. Look through the optical plummet of the instrument or tribrach (which ever is appropriate) and center the reticule (cross-hair) on the point using the three leveling screws.
7. Center the bulls-eye bubble by adjusting the individual tripod legs. Note that the optical plummet has hardly moved off the point. If it moved significantly, then your tripod is not stable. Repeat step c.
8. Fine level using the three leveling screws.
9. Fine center the instrument over the point, translating the instrument on the tripod base plate.
10. Iterate steps "f" and "g" until the instrument is fine leveled and fine centered.
11. Tighten the tripod base plate screw.

Instrument :

No	Tools	Quantity
1	Total Station	1
2	Tripod	3
3	Prism	2
4	Pickets	3

Report :

At the end of this practical, student must within report as follows case:

- 1) Field work title/Content
- 2) Introduction
- 3) Purpose/Objective
- 4) Equipment used (with pictures/sketch)
- 5) Field work procedure
- 6) Outcome/Result
- 7) Comment/Conclusion
- 8) References
- 9) Timeless
- 10) Wording, spelling and report formatting