

The Technical Side

Purchasing a Used Instrument: Total Stations

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Topcon	GTS-302	Total
Station -	Extra Battery,	
Tripod,	Prism Pole,	2
years old.	\$3,500	Call
Larry (555)	555-9876	

Great deal? Good opportunity? You might be making that break from working for someone else to running your own company and looking for the most economical way to get started. Someone may have approached you with a deal that looks too good to pass up. In any event, you probably have questions about the condition of the instrument and how to decide whether it is worth the asking price. We'll assume you are purchasing the instrument from a private party. Many of these considerations change if you are purchasing a used total station from an instrument dealer you have a working relationship with.

You'll want a chance to evaluate an instrument you are considering for purchase. What should you look for? First, take a look at the exterior condition of the instrument. An accumulation of dirt and grime might indicate that the total station has not been well cared for. Look beyond any surface dirt for scratches or marred parts that might indicate the instrument has been damaged or abused. Also, it should be determined whether the instrument is a current product.

You'll want to do a basic function check of the total station. First, the mechanical checks. Make sure the tangents lock properly and don't have tight spots through the whole range of their motion. The telescope and standards shouldn't have any tight spots or play in their motion either. The optics should be clean and free from scratches and chips. If you look back through the telescope from the objective end you shouldn't be able to see any condensation or dirt on the optical surfaces. Turn the total station on and go through the basic angle and distance

measurement functions. If available, check the compensator or tilt display to ensure it is working correctly.

Always check the instrument adjustment. If some things you've found in your above inspections make you question the instrument's condition, you should double some angles to determine the instrument is close to being adjusted. If you trust the seller and everything checks out - WAIT, if possible, take the instrument to your local instrument shop to get the adjustment checked.

What should you look for?

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Now what about the price?

Your local instrument shop should be willing to check out a prospective instrument for a nominal charge. They can give you a complete evaluation of the instrument's condition and possibly its service history. This gives you a better picture of what you are purchasing and makes determining the price easier.

Every instrument comes with one or more batteries, charger, lens cap, sunshade, tool kit, rain hood, operation manual and so on. Obviously the batteries and charger should still be around but what about the rest of the accessories? And speaking of the batteries, what kind of shape are they in? If the instrument is more than three years old, the batteries may need to be recelled. If the batteries have been recelled, they should have a sticker or a recell date on them.

Depending on the seller, you may wish to investigate whether the instrument is stolen. Obvious signs are a seller that has no idea what the instrument is or what it is worth and someone that gets nervous when you ask for serial numbers or if you want to take it to the shop to get it checked out. Most stolen instruments

leave the area they are stolen in, so you should check with the instrument manufacturer or have their local dealer check before pursuing a purchase from an unknown party.

So, you've checked everything out and the instrument appears to be worthwhile. Now what about the price? How much is the instrument worth? Obviously there are going to be a number of variables involved. First is the age of the instrument. If it has been out of production for more than 5 to 10 years parts availability may be of concern to you. Is there a local shop that can perform most of the service on the instrument without sending it out? The condition of the instrument will also determine the selling price. Consider any service the instrument may need when negotiating the price. Market conditions have also changed in the last several years, the average total station price has dropped several thousand dollars and this drop has been reflected in the pricing of used instruments. So you want hard numbers? I've seen used total stations go for between \$3,000.00 and \$6,000.00 depending on all the factors mentioned above.

You now have a basic checklist to cover when evaluating an instrument. We can't cover every item you may need to check out but this article covers the major ones. Hopefully that instrument will be the deal that was too great to pass up and just the thing to get your fledgling business off the ground.

As always we at Ingenuity Inc. welcome comments, inquiries and future article topics for The Technical Side. Feel free to contact us at The Technical Side using any of the following methods. By mail: The Technical Side 1562 Linda Way Sparks, NV 89431, by fax:(702)359-6693, by email: ccothrun@ingenuity-inc.com, or our website:

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