

ACCURACY AND
PRODUCTIVITY
FOR MECHANICAL,
ELECTRICAL,
AND PLUMBING
CONTRACTORS

TECHNICAL SALES INTERNATIONAL

the next generation of software

MEP INDUSTRY CHALLENGES

- ✓ Expensive field labor
- ✓ Cost of rework is high
- ✓ Advancements in architectural and structural design software enable more complex designs
- ✓ Tape measurements to locate critical positions do not work well on these complex designs
- ✓ Increasing pressure to compress timelines compounds problem
- ✓ Smaller time windows reduce field crews' ability to check work
- ✓ Cost of rework increases because impact on project schedule is greater

TSI JOB-Site SOLUTIONS

- ✓ Increased productivity and reduced costs increase profits
- ✓ A modern tool for layout and collecting point & line data
 - More accurate
 - Faster
 - Less labor requirements
- ✓ Built in error-checking & as-built of layout locations
- ✓ Designed for construction field layout personnel
- ✓ Not focused on automated sets, topo, volumes, datum transformations, etc.
- ✓ Flexible lay out procedures
- ✓ Distances in feet & inches

TSI JOB-SITE SOLUTIONS

"Quotable"

"It's often difficult to get people to use new technology and though industry methods are shifting, there is resistance to change. However, when we first started on a crescent-shaped building, the **JOB-Site system was terrific. Other contractors were scribbling arcs on the floor trying to lay out their hangers, and there were so many arcs on the floor that no one knew whose arc lines were whose. Meanwhile, our guys just breezed right along and laid everything out seamlessly.** No one had any doubts after that!"

Tom Boniface

Independent Sheet Metal, Hawthorne, NJ

"With JOB-Site Solutions and the Trimble Total Station, I **saved approximately 16 hours** of me and another guy taking measurements. Instead, it was me alone and took 2 hours and it's all drawn up."

Jonathan Marsh, CPD

Wm. T. Spaeder, Erie, PA

"Using the Trimble and concrete inserts versus measuring and drilling shields, **we save approximately 69% per hanger**, based on a 3/8" shield/insert (sample size of approximately 15,000 concrete inserts laid out over 3-4 months). **As the sizes go up, it jumps to 73%** for a 7/8" shield/concrete insert."

Joe Mierzejewski, PM

Coordination Dept. Mgr., J.C. Cannistraro, Watertown, MA

"**It takes one guy a single day** to do the same work it used to take week to do with a whole crew."

MEP Contractor, Washington, DC

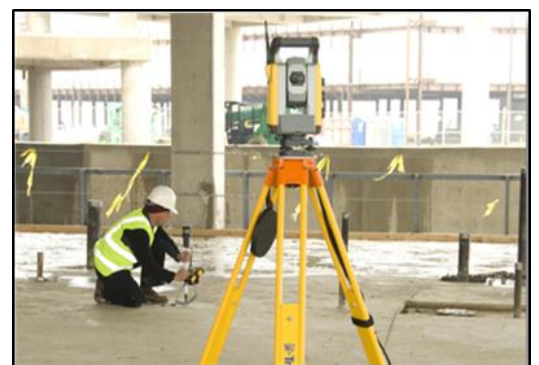
"TSI JOB-Site Solutions and Trimble Total Station not only **saves time for dropping hangers**, but also lets other contractors know if mistakes are made. For instance, usually before hangers are installed, the studs must be placed to get measurements for hanger locations. On one particular project, not only were we able to set hangers and install duct prior to studs being installed, but when the radius wall was installed 12 inches out of location by the stud guy, **we were able to catch the mistake with the Trimble unit.** Not only was he shocked being out 12 inches, he was also grateful!"

Ron Lapin, President

Lapin Sheet Metal, Orlando, FL



One person can accurately lay out hundreds of points in a single day.



Increase productivity and simplify the layout of HVAC ductwork sleeves and hangers.

Cannistraro estimates that there is approximately a 70% material and labor savings, per hanger installed, with substantially more precision.

- ✓ Layout of points
- ✓ Equipment bolt down locations
- ✓ Underground piping and ductwork
- ✓ Floor penetrations for duct, piping and electrical
- ✓ Wall penetrations for duct, piping and electrical
- ✓ Anchor and hanger locations for suspended equipment
- ✓ Lay out of lines and arcs
- ✓ Measure points
- ✓ Locate existing floor and wall penetrations
- ✓ Locate existing anchor and hanger locations for suspended equipment
- ✓ Measure lines and arcs
- ✓ Locate existing equipment boundaries
- ✓ Locate existing structural duct, piping and electrical items

TSI JOB-Site Solutions Features

TSI JOB-Site Solutions is a labor saving tool with bi-directional connectivity of point data between the office and field personnel, **as well as real-time updating of the BIM model**, eliminating the costly, on-site hand layout and tape measurement process. One Texas sheet metal contractor commented, *"We saved thousands of dollars in materials and hundreds of hours of labor on sheet metal duct sleeves due to real-time updating of the BIM model for existing field conditions. The system paid for itself in less than six months."*



TSI JOB-Site Solutions is an MEP-specific turnkey solution provided by Technical Sales International that includes software, hardware, training and support. TSI's software solutions—**CADmep+**, including **PointBuilder**, and **FABmep+**—provide rich and accurate data content for locating items in the field, and **Trimble MEP** hardware provides the job-site hardware to complete the labor saving process.



TSI JOB-Site Solutions connects the industry's most widely used design and drawing tools: AutoCAD®-based **CADmep+**, including **PointBuilder**, and **FABmep+**, to **Trimble MEP**, the industry leader in total station hardware and software. The ruggedized hand-held Nomad unit works in conjunction with Trimble MEP Robotic Total Station to deliver hanger and penetration locations to the field.

TSI JOB-Site Solutions eliminates the need for contractors to produce costly, dimensioned paper layout drawings and sleeve/canning sheets. **TSI JOB-Site Solutions** reads a specific **Trimble MEP** point file format and creates a digital plan in **CADmep+**, or **FABmep+**, with item locations and detailed descriptions. No tape measures. No paper drawings. No coffee-stained, marked-up, as-built drawings. **Trimble MEP** hardware is a one-person operation that saves field labor and increases installation accuracy. *"Gone is the need to have two workers measure with tape measures and line up each and every point on the ground. Instead, one man can consistently layout over 700 points per day."*



Features Include:

- Seamless interface with **CADmep+** and **FABmep+**
- Seamless interface with **PointBuilder** for Autodesk® products (AutoCAD® 2D and 3D, AutoCAD® MEP and Revit® MEP)
- On-site training and consulting
- **Trimble MEP Direct Reflex** technology for pinpoint laser location to the underside of deck, floor or wall points for fast layout