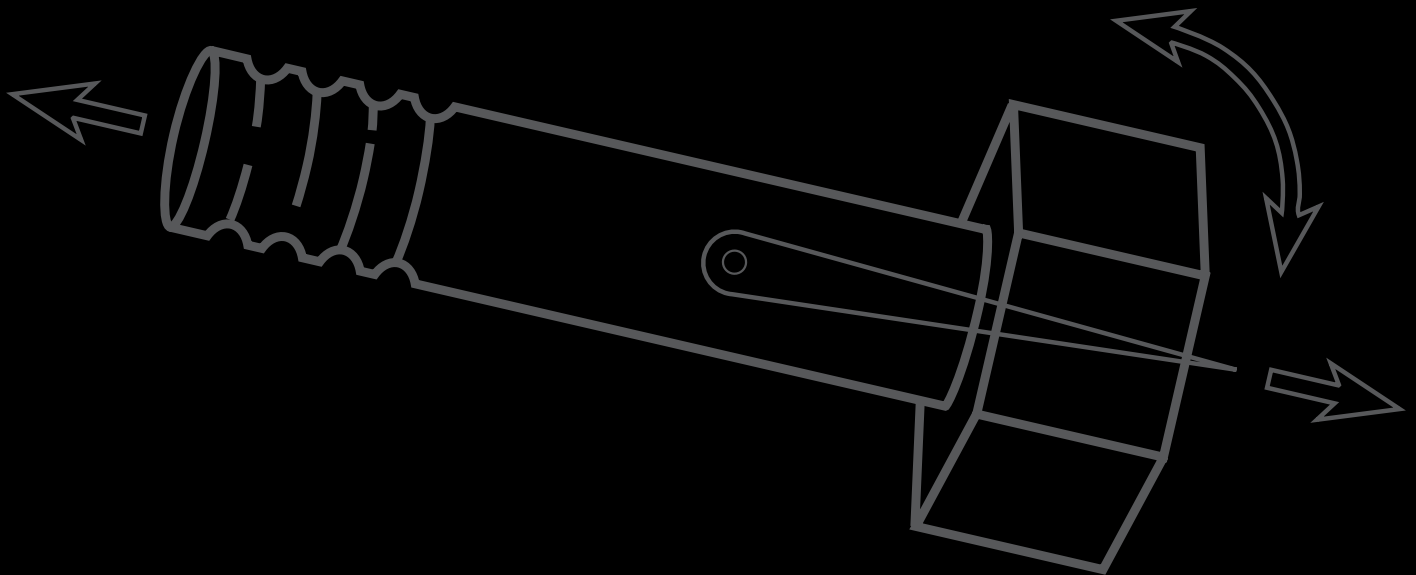


**MAXBOLT™**

**Load Indicating Fasteners**

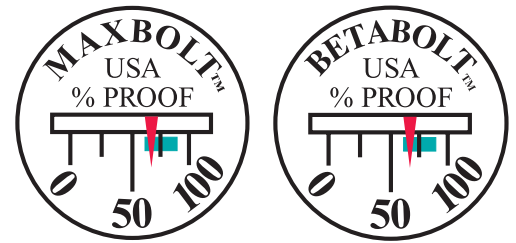
Assured tension accuracy at installation,  
continuous in-service monitoring.



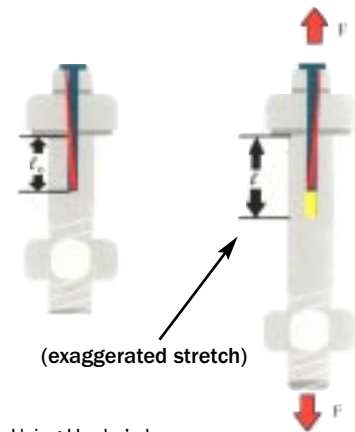
# MAXBOLT™ BETABOLT™ Load Indicating Fasteners



MAXBOLT and BETABOLT load indicating devices in standard and custom fasteners 1/2 inch and larger.



Red indicator continually displays fastener tension.



Using Hooke's law (Force = Constant x Elongation), a small mechanical amplifier (patent pending) continually monitors fastener elongation, converting it to tensile load and registering it on the easy-to-read scale on top of the bolt.

## The simple way to maximize joint integrity.

MAXBOLT and BETABOLT load indicating fasteners continuously display the amount of tension in a bolt or stud. They offer a simple method for accurate joint assembly, and it is the only product available (for most applications) that will continuously monitor clamping force while the fastener is in service.

MAXBOLT and BETABOLT fasteners are manufactured by inserting extremely accurate and durable load monitoring cartridges into high quality bolts and studs. Now, even inexperienced operators can complete complex assemblies with full assurance that fasteners are at the proper tension. The MAXBOLT and BETABOLT also provide in-service monitoring which will warn users of any loosening in order to avoid premature wear, unnecessary downtime, or catastrophic failure.

The integrity of a bolted joint is jeopardized when fasteners lose their tension. This loss of clamping force begins during assembly due to elastic interactions and joint relaxation. Self-loosening continues when the joint is put in service due to vibrations, temperature changes, shock, etc. Traditional tension indicating methods are expensive and provide no information on self-loosening. For a minimal investment, MAXBOLT and BETABOLT offer the maximum joint integrity.

## Add up the load indicating fasteners advantages for yourself.

**Accurate Assembly** Even inexperienced operators can assemble complex arrangements with uniform clamp loads within 6% of design specification. Because measurements are based on tension, the inaccuracies of torque control are eliminated, ensuring optimum initial conditions before an assembly is placed into service.

**Easy and Continuous Clamp Load Monitoring** One quick glance is all it takes to check clamp load status. Custom scales can show desired operating ranges using a green zone or pinpoint precise clamp load values.

**Reduced Costs** Accurate assembly and continuous monitoring capabilities reduce the potential for premature wear, expensive downtime, and catastrophic joint failure. In addition, load indicating fasteners are compatible with conventional tightening and tensioning equipment and eliminate the need for costly ultrasonics, strain gages, and torque measuring devices.

**Calibration Verification** This unique option allows the operator to quickly and easily verify that the load monitoring cartridge is calibrated to exact manufacturing standards.

**Durability** All American Bolting Technologies load indicating fasteners are sealed to withstand harsh environments and submersion, with models available to handle temperatures from -40°F to more than 400°F. Protective caps are provided in case of incidental contact to the fastener end, and for extreme in-service conditions, the load monitoring cartridge can be partially or fully disengaged.

**Exceptional Quality** Top quality, certified fasteners are supplied primarily by Valley Forge and Bolt Manufacturing Company. Each load indicating fastener is calibrated and tested to its proof load to assure that its performance will meet the designed tension requirements of the application. In most cases, load monitoring cartridges can be retrofitted into customers' bolts, provided the appropriate certification documents are available.

**Comprehensive Support** ABT load indicating fasteners are backed by the full technical support of American Bolting Technologies' engineering staff. Comprehensive assistance is available for all aspects of bolting including tightening, tensioning, and joint design.

**Bolting Products and Services** In affiliation with Valley Forge and Bolt Manufacturing Company, ABT load indicating cartridges are offered in a variety of bolts with many standard and custom head shapes. A full range of bolting products and services is available including:

- Failure analysis
- Bolt tightening and torquing level field checks, calibration, and methodology assessment
- Tightening equipment
- Design improvement for existing bolting/clamping modifications
- Field installation inspection
- Thread rolling



Load indicating fasteners assure the integrity of this flange for a large blast thermal simulator that carries gas under high pressure sufficient to simulate a nuclear explosion shock wave when released.



Every load indicating fastener is calibrated and tested to its proof load to assure accurate performance.



Bolting products manufactured by Valley Forge.

*For the Optimum in Bolted Joint Integrity*

# The SPC-4™ Electronic Load Indicating Fastener

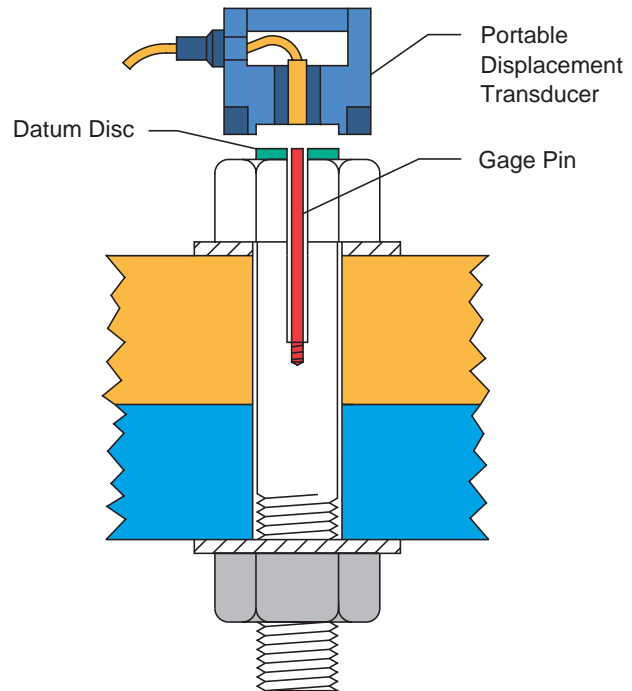
(Eliminate the Mystery of Torque Tightening)

## HOW IT WORKS

When a bolt is tightened, a portable displacement transducer senses the gage pin movement resulting from stretching of the bolt shank. The gage pin movement is then correlated to joint clamp load.

## FEATURES OF THE SPC-4 ELECTRONIC LOAD INDICATING FASTENER

- Electronic control of installation clamp load
- Shut-off capability of the installation tool at a predetermined clamp load
- Electronic monitoring of clamp load throughout the service life of the fastener
- Existing fasteners can be retrofitted with SPC-4 load indicators
- Reads zero to proof load
- Fasteners can be reused
- Operator friendly and easy to use - can be used by unskilled labor



**Minimal Modification to Bolt Assures Basic Bolt Design Integrity**

**The SPC-4 Electronic Load Indicating Fastener is ideal for structural applications, foundation bolting and for commercial vehicle wheelstuds.**



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