Valley Forge & Bolt Mfg. Co.

Product Specification Sheet

Load Indicating Liner Bolts

TWO OPTIONS FOR LOAD READING
MAXBOLT™ & SPC4™

Maxbolt™ Reading:

- Maxbolt™ equipped fasteners display load with a mechanical dial mounted directly into the fastener.
- Display 0 - 100% in 25% increments, as percentage of total capacity. Default is equal to 100% of minimum yield load.

SPC4™ Reading:

- SPC4™ equipped fasteners require the use of an external load reader device to attach to the fastener and display load as a percentage of total capacity, default is equal to 100% of minimum yield load.
- Two load reading meter styles available; an analog display and digital display.
- For more detailed information on the SPC4™ Readers, please refer to the SPC4™ Reader Specification Sheet.

Load Indicator Install Location:

- Thread-end installation will be preferred for all liner bolt applications, but head-end installation is available upon request.
- For installation on the thread-end of a liner bolt, a fixed position Maxbolt or SPC4 indicator is required. This means that in order to achieve correct operation of the Maxbolt/SPC4 indicator, the position of the nut must be measured and a quick calculation performed to ensure that the correct indicator reading is targeted to achieve proper clamp load. The calculation can be performed using the provided factory-set nut position, bolt's rated minimum yield strength.
- Valley Forge has developed an Android App for mobile devices which can perform the required calculation, or we can calculate per your request.

Protection from the elements:

- All Maxbolt™ indicator assemblies are sealed to prevent moisture/contamination from entering the device.
- All SPC4™ equipped fasteners sold will have threaded metal caps installed over the SPC4™ attachment point to protect from damage.
- A Maxbolt or SPC4™ indicator is a precision measurement device and should be treated with care. Any damage sustained from mechanical impact corrosion or contamination from foreign matter can render the device inoperable. Prior to installation with load indicator equipped fasteners, any risks to indicator damage, which may be present in the service environment, should be assessed.

De-ration:

- Occurs as a result of the removal of material required for SPC4™ installation.
- De-ration will be present for all thread-end liner bolt installations. Any SPC4™ fastener which has been de-rated will be scaled accordingly, meaning that 100% on the indicator will not exceed the de-rated minimum yield load of that particular fastener unless otherwise specified.

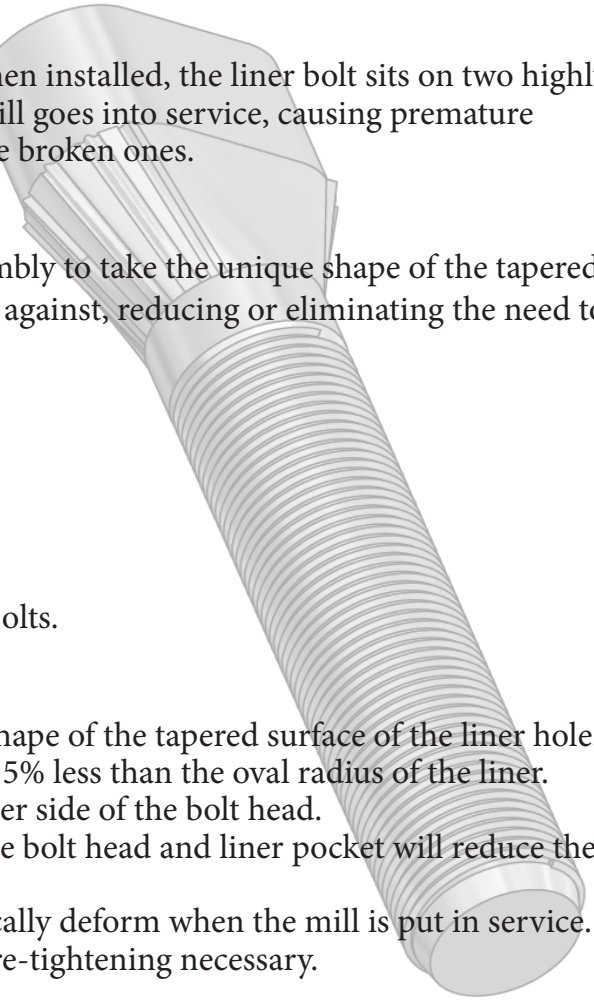
RIDGEBACK®

Seating Problem

Liner bolts are 1/8" smaller all around than the liner pocket. When installed, the liner bolt sits on two highly stressed points of contact. Poor interface yields as soon as the mill goes into service, causing premature failure which results in shutdown to tighten loose bolts or replace broken ones.

Ridgeback® Solution

Ridges along the taper of the bolt plastically deform during assembly to take the unique shape of the tapered liner pocket. Firmly seated bolt creates a solid surface to tighten against, reducing or eliminating the need to re-tighten bolts and saving hours of expensive downtime.



Ridgeback® Advantages

- Holds liners more securely than conventional liner bolts
- Head shape conforms to liner pocket for better fit
- Needs re-torqued only once to assure a secure fit.
- Helps prevent costly downtime, increasing profits
- An upgrade that is priced to compete with standard liner bolts.

Technical

- Bolt head increases contact surface by conforming to the shape of the tapered surface of the liner hole.
- In conventional liners, the oval radius of the bolt is about 15% less than the oval radius of the liner.
- These differing geometrics lead to only line contact on either side of the bolt head.
- Furthermore, any difference between the taper angles of the bolt head and liner pocket will reduce the contact area to only a point contact.
- Small contact area leads to high local stresses which plastically deform when the mill is put in service.
- Plastic deformation causes loosening and makes frequent re-tightening necessary.