



5,000 psi Blind Shear Ram Bolting Torque

Engineering Bulletin

EB – Engineering Bulletin - used to notify the customer regarding an issue involving an existing product that may adversely affect their operations. The EB recommends the customer take action at the next opportunity as determined at the customer's discretion.

Scope

This bulletin addresses a field installation occurrence, of which GE has been made aware, performed on 5,000psi (5K) Blind Shear Ram (BSR) blade to block attachment bolts that could lead to an attachment bolt (P/N 3149078) fracture, resulting in the inability to successfully contain well bore pressure.

Background

GE has reviewed two recent field events where a limited number of 5K Blind Shear Ram upper blade attachment bolts parted, leading to the fracture of the shear ram upper blade. These events occurred during preoperational surface testing after maintenance on 18 ¾" – 15,000 psi (18-15) Ram Blowout Preventers (BOP). GE was informed that, preceding the events, the blades were attached to the ram blocks and bolts torqued in situ on the operator. During the wellbore portion of testing, pressure was raised to 15,000 psi and observed to drop rapidly. Investigation of the equipment after the incident showed a fracture of the blind shear ram blade and missing heads on some of the shear blade bolting. GE has confirmed the blade and bolt material meet GE specifications. During post-event testing, GE fractured bolts after overtorquing the bolting in a laboratory setting.

Issue

A Root Cause Analysis (RCA) identified overtorquing during the blade to bolt torquing process to be the primary contributing factor to the events.

Solution

GE recommends, at the next maintenance opportunity, to verify that the bolt torque meets GE recommended values. If bolt torque history cannot be verified, GE recommends installing new attachment bolts and following the blade bolt torquing procedure (X-1007757 Rev E or later, as applicable). The blade should be NDE inspected per ASTM E165 prior to installing and torquing. The blade should be replaced if any indications are noted.

During the course of the RCA, interference was noted between the bolt head (P/N 3149078) and counter bore radius of the blade. This interference was identified as a potential contributing factor, but the interference alone would not cause the event. GE has a bolt that mitigates this interference that will be implemented on new assemblies. The new part number for this bolt is 3165670 (Table 1).

Contact your local GE Sales Representative for further assistance to order bolts and or blades.

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Bolts can be exchanged by opening an AskDrilling (Figure 1) case (<https://www.engagedrilling.com/>) to return existing bolt (P/N 3149078) and receive replacement bolting (P/N 3165670).

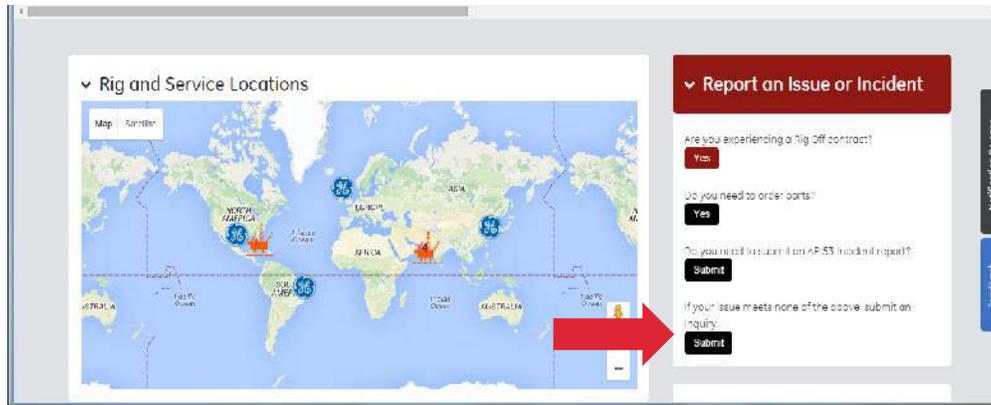


Figure 1. AskDrilling inquiry submission in engageDrilling.

The actions recommended in this Engineering Bulletin are considered complete when bolting is replaced and installed per X-1007757 Rev. E or later and retested as necessary, or torque has been verified per the above.

Table 1. For reference: 5K BSR Assembly bolting part numbers

	Part number	Quantity
Upper back bolt (Existing)	3149300	2
Upper front bolt (New)	3165670	4
Lower bolt (Existing)	3149262	2

5K BSR Assemblies Affected

- 3149285
- 3149285-01
- 3149285-02
- 3149285-03
- 3149285-04

Document Revision Chart

The following chart lists the revisions made to this document tracked by version. Use this to describe the changes and additions each time this document is re-published. The description should include as many details of the changes as possible.

Rev.	Section Modified and Revision Description	Date	Author
NC	First issue	January 15, 2016	
A	Corrected lower Blind Shear Ram bolt part number in Table 1	January 16, 2016	

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