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TECH TALK 0072
MES5MS ENGINE STRANGLER
POSSIBLE JAMMING ISSUE
5/2/2007

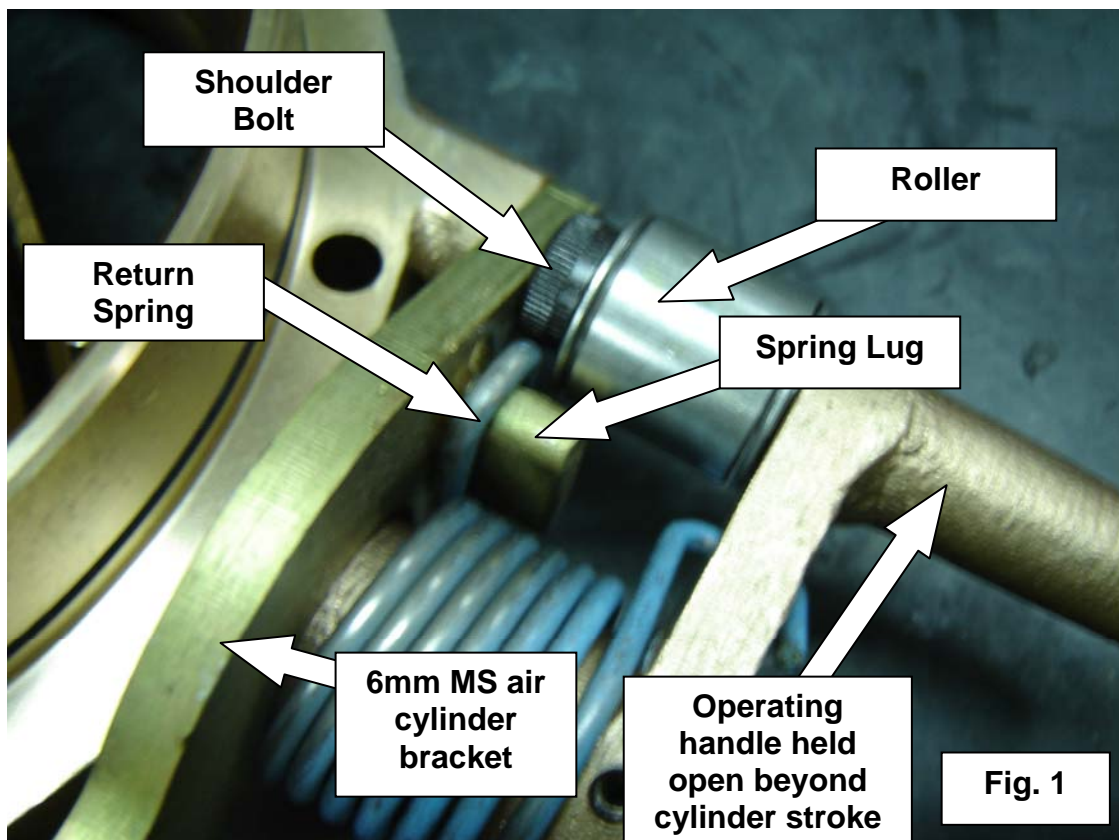
Area of concern:

In response to a visit to Sanvik's plant at Tomago by David Kal on 28/3/2007, it is apparent that a small quantity of the MES5MS engine stranglers may jam in the open position if the following two scenarios are met.

- The inertia of the air cylinder is enough to force the disk to continue to travel beyond the air cylinder stroke, causing the butterfly disc to open further than 180°.
- Several machining / fabrication processes are concurrently carried out to the limit of the allowable tolerances, allowing the shoulder bolt head to contact the return spring, and / or the roller to contact the spring lug on the air cylinder bracket, if the above scenario a) occurs. Refer to Fig1.

Engine Stranglers Affected:

Any MES5MS engine strangler delivered from January 2007 will require testing. These are easily identifiable as the air cylinder bracket is 6mm thick (gold zinc plated) mild steel, as opposed to 2.5mm thick stainless steel (silver finish).





Testing Of Stranglers.

To determine if the Engine Strangler is at risk of jamming, a simple test needs to be carried out. This test is to be carried out to all stranglers described above.

- a) Rotate the operating handle by hand in a clockwise direction until the roller and shoulder bolt travel past the spring lug as shown in Fig. 1, noting if the roller contacts the spring lug and / or the shoulder bolt head contacts the return spring. A very light contact is acceptable.
- b) Allow the handle to *slowly* return to its resting position, noting if the roller contacts the spring lug and / or the shoulder bolt head contacts the return spring. A very light contact is acceptable.
- c) If the contact is heavy, or if the handle jams open, the strangler will require modification. If there is any doubt as to if the contact is light or heavy, it is safest to presume the strangler will require modification.

Modification – Description

By replacing the existing shoulder bolt with one 5mm longer and adding a new spacer bush, any chance of jamming is eliminated as the head of the longer bolt acts as a positive stop against the bracket edge. This positive stop restricts the roller from travelling too far beyond the cylinder stroke. This design has been successfully cycle tested by Liquip International and will be implemented on all new MES5MS stranglers.

Modification Parts Required

The following parts are required from Liquip International to carry out the modification as required:

- 7843 shoulder bolt – Ø8mm shoulder x 25mm long – one off per unit.
- 7900 bush – one off per unit.

Modification Procedure.

Refer to fig.2 & Fig.3

1. Rotate the handle slightly in a clockwise direction so that the roller is not resting against the cylinder rod end. Hold in this position.
2. Unscrew the original shoulder bolt and remove the shoulder bolt, roller and two flat washers. Discard the shoulder bolt and one flat washer.
3. Fit the 7900 bush onto the new 7843 shoulder bolt, and then fit the roller, then one existing flat washer.
4. Apply adequate Loctite 262 to the shoulder bolt thread.
5. Tighten the shoulder bolt using a torque wrench to 7 Nm.
6. Release the handle, allowing the roller to contact the cylinder rod end. Rotate the handle in a clockwise direction, ensuring the travel is smooth and comes to a positive stop when the head of the shoulder bolt contacts the bracket edge.



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