STINGER OPERATION IMPROVEMENT

DOCUMENT	**STINGER OPERATION IMPROVEMENT**
MACHINE/ GROUP	**SIMBA M-L-E**
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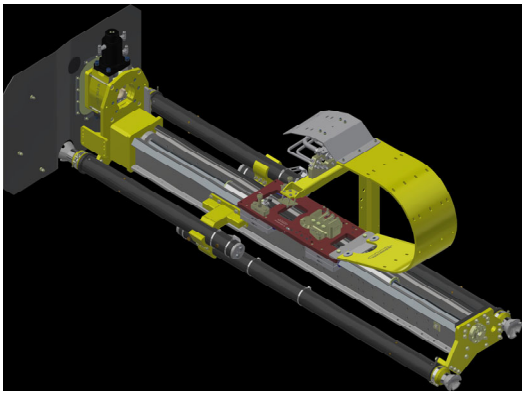
DATE	**11/09/2023**



Background.

All post-Mark 8 Epiroc Simbas with stinger cylinder stabilization were fitted with P port pressure reducers in hopes to assist the feed transition in ABC total operation to be as smooth as possible, while the pre-Mark 8, featured A port pressure reducers on all four stingers. According to the original equipment manufacturer (OEM) specifications, the front stingers should extend with a pressure of 30 bar, and the rear stingers should extend with a pressure of 60 bar.

On all machinery post-Mark 8, P port pressure reducers are limited to using this reduced pressure of either 30 or 60 bar to retract the stingers. In cases where the stingers accumulate cuttings from drilling, they may fail to return to their home position and become jammed. This situation necessitates the operator to either clean out the stingers or manually push them against the mine walls to retract them. This operational issue negatively impacts the drill's ability to maintain a continuous drilling cycle in ABC total, as the stingers fail to reach the anchor sensor position.

Alternatively, transitioning to A port pressure reducers enables the stingers to utilize the reduced pressure of 30 bar at the front and 60 bar at the rear for extension. However, it also allows for the full pump pressure to be employed for retracting the stingers. In most scenarios, this higher retraction pressure can effectively clear any cuttings ingress and aid the hydraulic cylinders in returning the stingers to the anchor position. This adjustment facilitates uninterrupted ABC total drilling operations. Maintenance Technique can also supply upgraded stingers with improved sealing to prevent cuttings ingress- contact parts@mtunderground.com for more information.

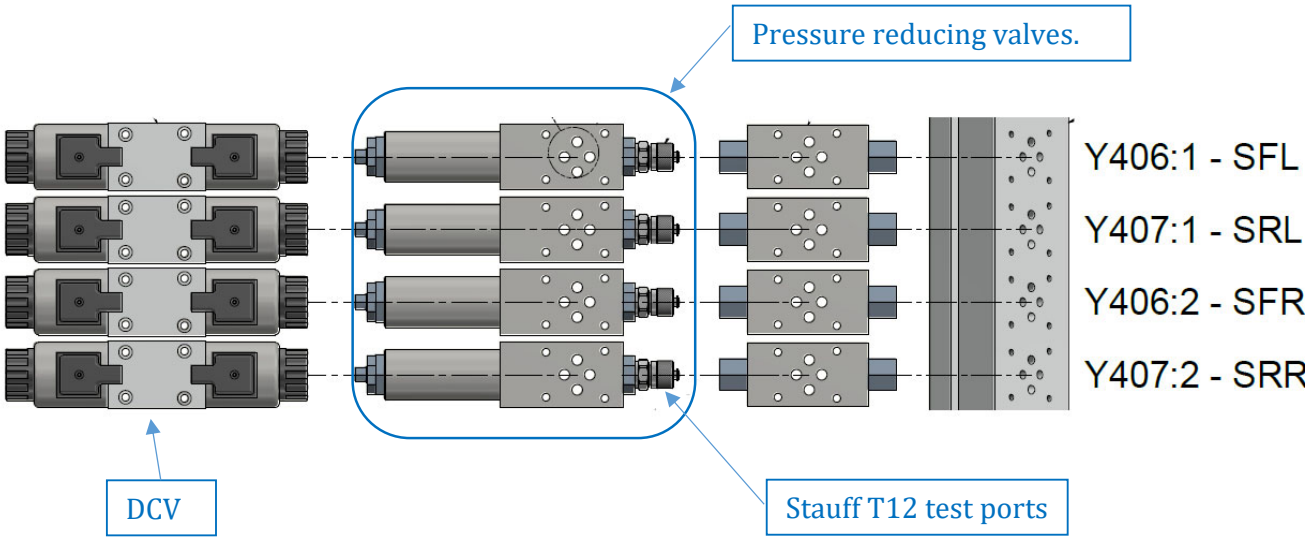
Instructions for executing the modification can be found in the following pages.

Items required

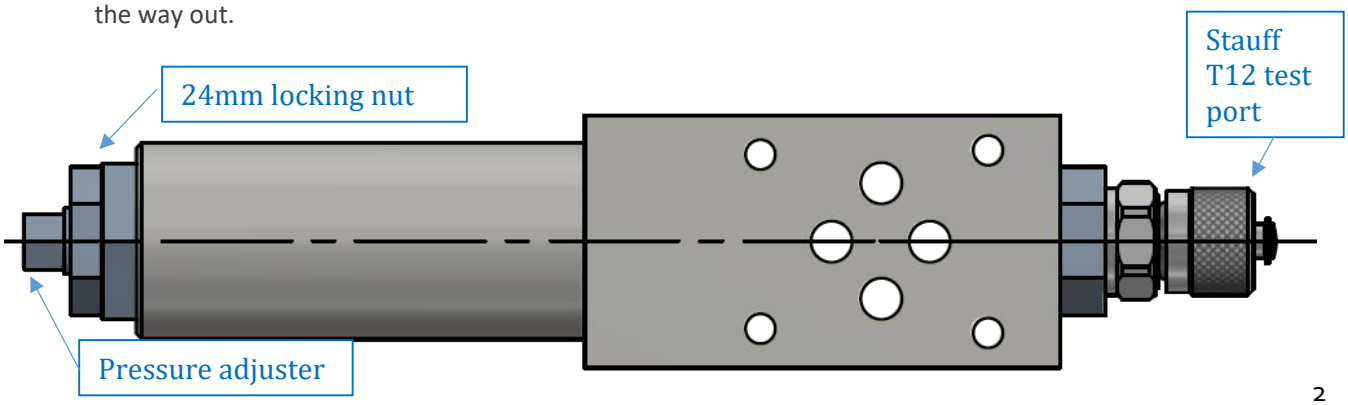
4 x **MT 3217 9341 60**-A port Pressure reducing valve
48 x **MT5507 8719 00**-0 dcv o rings
Pressure gauge with Stauff T12 adapter
Metric Allen key set
24mm spanner
19mm spanner
10mm spanner or multi grip pliers.

FOLLOW ALL SITE SAFETY PROCEDURES INCLUDING ISOLATION REQUIREMENTS BEFORE COMMENCING THIS TASK

1. Position the feed so that you can access the rod handling box safely and extend all stingers to their maximum stroke without contacting anything and isolate the machine.
2. Access the rod handling box and locate the Y406 and Y407 stinger valving.
3. Using a 5mm Allen key, remove valves one at a time and replace the P port pressure reducer with the **MT3217 9341 60** A port pressure reducer. Note these valves have an offset bolt pattern and can only be fitted in one orientation. Replace all O-rings **MT5507 8719 00** between mating faces. Warning- pressure can be retained at the valving due to the stinger check valves, care should be taken when removing valves from the manifold.

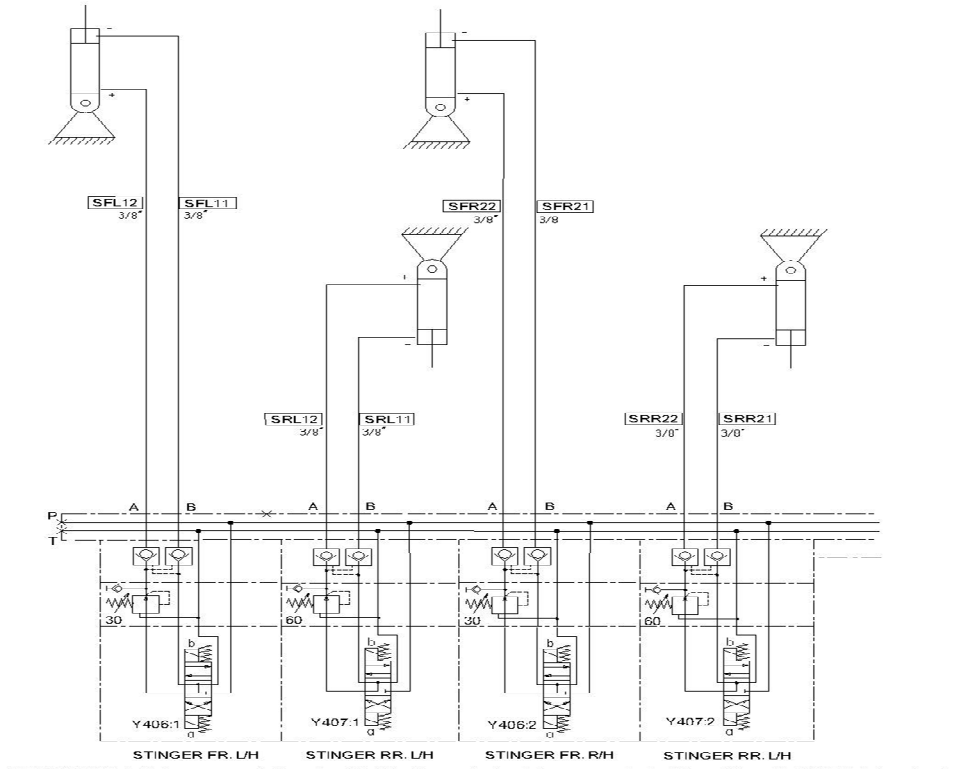


4. Remove all the Stauff T12 test ports from the P port pressure reducers and fit to the A port pressure reducer valves.
5. Loosen all four 24mm locking nuts and using a 10mm spanner or multi grips, wind the pressure adjuster all the way out.



6. Remove all isolations and access the pressure adjusters inside the rod handling box.
7. Connect a pressure gauge with a maximum pressure that exceeds 70 bar to the test port of Y406:1 and pressurize the valve by either using the RCS system or by “spiking” the manual override on the DCV. **(Care should be taken as the stinger may move when the valve is operated or during the adjustment)**
8. Wind in the pressure adjuster until your gauge shows 30 bar. The stinger should remain fully extended and not move during this adjustment.
9. Lock the pressure adjuster by tightening the 24mm locking nut.
10. Repeat steps 7-9 for y406:2 and set this pressure adjuster to 30 bar as well.
11. Repeat steps 7-9 for Y407:1 and Y407:2 but set these pressures to 60 bar.
12. Remove all tooling from rod handling box and refit the cover.
13. Place all removed P port pressure reducers into a sealed bag and keep for spares.

Check that stinger pressure is reduced for extending of the stingers and max pressure is available for retracting the stingers. Note- the test port will now only read the reduced pressure (A port) in one direction. If stinger pressure is reduced on retraction and not on extension it will be necessary to swap the hoses at the stingers. <u>Do not swap the DIN plugs at the valve.</u>



PLEASE NOTE: A-Port pressure reducing valves fitted to stinger cylinders to improvement retract times inline with ABC Total dependencies