Some time ago we acquired two Star Drilling Machines, both in poor condition, basically boilers on wheels, but one better than the other and we decided to build one good one out of the two. The link below will take you to our original story back in May 2022 when first got the machines and set the scene.

https://www.sandstone-estates.com/images/pdf/May2022/18/The_Star_Drilling_Machine.pdf

The project was not one that we could easily achieve at Sandstone so we decided to commission Keith Stevens to work the magic. Followers of Sandstone will know of Keith and the number of steam locomotives and road steam vehicles that he rebuilt for Sandstone over the years. Keith is now resident in the Western Cape and the two Star Drilling Machines were despatched to his workshop. It has been a long process as many new parts needed to be manufactured. As ever, with such old machinery, there were no drawings for Keith to follow, just his knowledge of how such machines work. We will let Keith take up the story.

**Rebuilding the Star Drilling Machine by Keith Stevens.**

Restoration of this Machine has been a rather lengthy project and had to be done when gaps appeared whilst doing other work and a great deal had to be learnt to ascertain what was required for the restoration. As luck had it and with my knowledge of steam in various capacities it finally all fell into place as you will be able to see from the video attached.

One of the biggest tasks was the rebuilding of the Boiler. After a full inspection it was decided to replace the firebox, foundation ring, boiler barrel (which included the smoke box) and lastly a new front tube plate. Obviously all the tubes were replaced also but as one can imagine there was an enormous amount of riveting and all stays for the boiler were replaced
The Star engine was fully overhauled and tested after many new parts were manufactured which were missing on the valve equipment etc

Fortunately where I am currently operate there is a Woodworking Shop next to my Machine Shop and after I drew up the plans for the woodwork that was needed, the Woodwork Shop was able to manufacture the parts required

A great deal of work needed to be carried out on the Winches, Spudding mechanism and main drive pulley. There was also a lot of steel work done on the Mast and Mast Supports along with the Walking Beam. An enormous amount of steel work was put into the main frame, overhauling the front and back axles and the disselboom along with setting the shafts and bearing housings on the main frame for the Winches, two Clutches and the Spudding Shaft and equipment and also mounting the Boiler. Now came the first run and steaming test and apart from one or two small problems and manufacture of the Drill itself, all went very well. Finally the rigging had to be redone to finalise the job.
This has been the biggest challenge of all the steam equipment I have restored and I must say one that I am very proud of. Sandstone is also proud of Keith's workmanship in putting this complex machine back into action with virtually no reference material to work from.

Keith has done a splendid job as you can see from our photo and video gallery.