sts3D Immersive VR Drill Rig simulator

In this age of digital solutions, do you still need heavy, cumbersome, steel-framed containers laden with rows of projectors and computers to act as simulators for your mining equipment training?

Expensive simulators - with fidgety electronics, troublesome maintenance, and exorbitant upgrade costs…. and taking up a lot of space.

Really?

If you are serious about cost effective TMM or mobile equipment training solutions, why not consider the sts3D range of immersive VR equipment simulators….

Take, for example, the sts3D compact, mobile and

***immersive VR DD321 drill rig simulator**,*

and consider its features.

1. Easy to use

Using a VR HMD with a custom-built robotics control panel has the following benefits:

- easy to relocate and set up
- no heavy lifting, no major calibration
- easy to install, operate, facilitate, and maintain
- small sized hardware – fitting in the boot of your car
- compact – with the computer fitted into console of the drill rig
- modular - swap out the drill rig for a bolter in just a few minutes
- with first time VR head set users mastering the controls within minutes.

2. 'As close to real as you can get'

Immersive Virtual Reality provides you

with an uncanny sense of realism, of 'being there'

- examine the mining environment in 360
- walk around the machine
- inspect the components
- complete the pre-use checklist
- start up, and later, tram the drill rig

with depth perspective, you experience

- drill accuracy, drill hole depth, and drill hole collaring

while real hydraulic physics

- provides a real time display of the force exerted on the drill rod
- enabling the learner to feel the force that each piston is taking during operation
- and even the 'jiggle' on the drill arms - allowing the operator to learn tricks of the trade
- and seeing how the drill rod bends and breaks when the operator applies too much force.

3. Sharpening drilling skills

with surgical precision, like an orthodontist

With relentless focus on mastering the core skill of drilling
our immersive VR drill rig training program provides learners with a fully
captive opportunity to

- practise various drill patterns without distraction
- master safety and standard operating protocols through repetition
- react to changing mining conditions, machine faults and emergency scenarios
- encounter life-like scenarios such as the drilling of crosscuts; uneven faces; faces with geological feature; declines and inclines; correcting over and under blast; drilling to avoid pillar robbing, and many more…

with the facilitator able to manage
- the extent of computer assistance such as drill alignment guides assisting novices to align the drill arm and determine the depth of the drill hole
- or throw a few curve balls – trigger hazards and machine faults to test the reaction of the learner under pressure

supplementing the drill skills training with an interactive pre-use checklist
- enabling the learner to identify and inspect components, check indicators, and complete the checklist and when missing faulty items on the checklist, experience the consequences when operating the drill rig

reinforcing the link between operating performance and machine maintenance with hydraulic fault finding
- training operators and maintainers to read and interpret the schematics and doing interactive fault finding

rounding off the learning experience with a link to the sts3D Survey Note programme
- assessing the ability of the learner to understand and interpret survey notes, take line and grade, check drill direction and determine emulsion densities to avoid over-blasting.

4. The sts3D immersive VR drill rig simulator training programme boasts

1. A learning and an assessment mode

The learning mode will take a learner from the basic operations right through to advanced skills and even 'tricks of the trade', providing step-by-step standardised instruction.

The assessment mode will
- analyse data for effective and correct machine operation
- check for excessive machine strain or abuse
- determine an efficiency score based on time taken to complete the specified task
- log and highlight delayed reaction time to problems & triggers during simulation, and
- identify specific problem areas where the trainee may need extra training.

2. Drill alignment analysis provide data on
- speed and efficiency of boom or hole alignment
- trends which boom or hole placements takes longest or is least accurate
- predicted advance shape in 3D visualisation – operator can immediately see cause and effect
- operations that generally strain the machine most and unnecessary
- which machine operation tasks are more problematic to master.

3. Full 360 degree depth perspective - complete immersion, zero distraction.

4. Tracking learner responses and compiled into an assessment report drawn from the web-enabled, cloud-based, sts3D XRS platform.

5. Our footprint

Several mines are using our tactile VR drill rig simulators – MRTA, Unki, Styldrift, Marula (Implats), and Thorncliffe (Glencore), as well as the University of Johannesburg. Importantly, we have recently upgraded our offering for VR drill rigs, LHDs, roof bolters, UVs and mud guns with the latest cutting-edge VR headsets used for training jet fighter pilots, as well as using unrivalled, super-realistic VR mine environments to minimise any form of user discomfort.

For more information, please contact:

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