

Reliability at work



49 Series Rotary Blasthole Drills Improved Safety & Productivity



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Blasthole Drill Operational Challenges



1. Drill bit & pipe change outs consume valuable production time and put employees at risk!
 2. Operator fatigue reduces drill productivity and impacts employee well being!
- * Design improvements can address both employee safety and productivity needs!

49 Series Drill – Key Specifications



- Built for high reliability Ultra-Class drilling requirements (137 operating units)
- 340,000# (154,221 kg) operating weight, electric or diesel power
- 94,500 # (42864 kg) pull down capacity/141,000# (63,957 kg) bit load
- Maximum 3800 cfm @ 60 psi (108 cmm @ 4.1 bar)
- 9.625" (245 mm) to 16.00" (407 mm) hole sizes
- 12,900 ft-lb (17,480 Nm) rotary torque
- 65' (19.8 m) single pass drilling depth, 135' (41.1 m) maximum depth



49 Series Drill - Bit Change Carousel



- Allows bit changes to be done remotely from the operator's cab
- Eliminates 7 manual lifts of 35# or more
- Eliminates operator exposure to suspended loads
- Reduces bit change time from 1 hour to 10 minutes (50 min. less)
- Allows the operator to hold up to 4 bit heads in the drill carousel (appr. 3-4 weeks supply)
- Available on new and existing 49 Series Blasthole drills



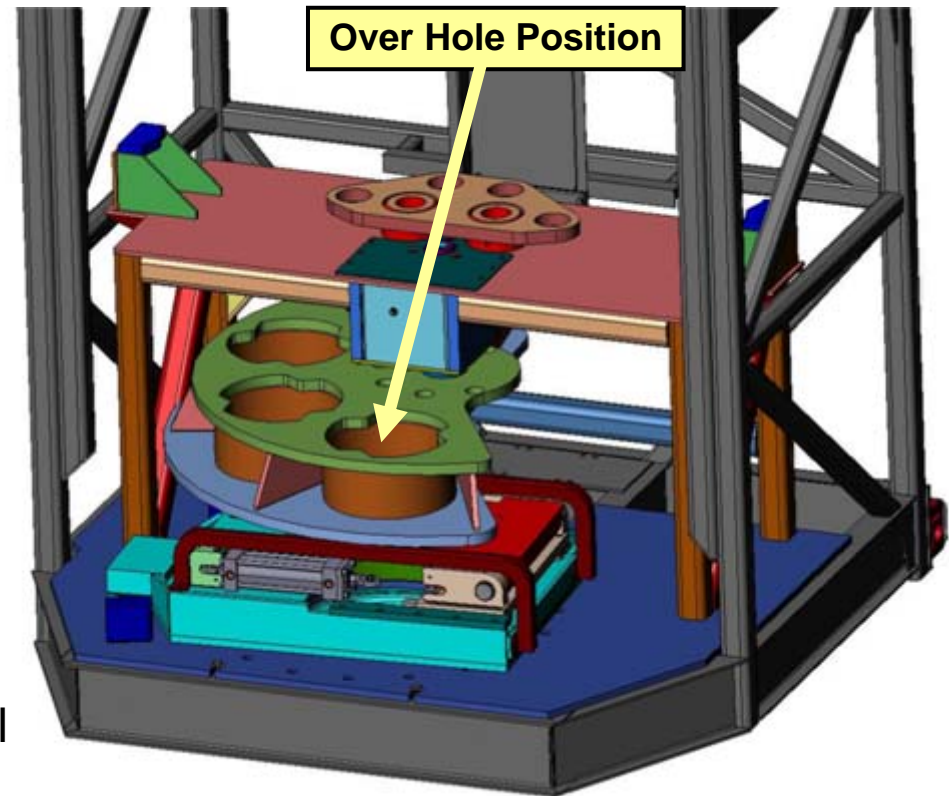
MINE expo 2008 Display

49 Series Drill - Bit Change Carousel



Carousel Bit Change Steps?

1. Swing carousel over the hole
2. Lower current drill bit into pot
3. Lock wrench cylinder/loosen bit
4. Drill string is lifted from bit
5. Carousel is rotated to new bit
6. Thread lube system greases bit
7. Drill string is threaded onto bit
8. Drill string raised to clear carousel

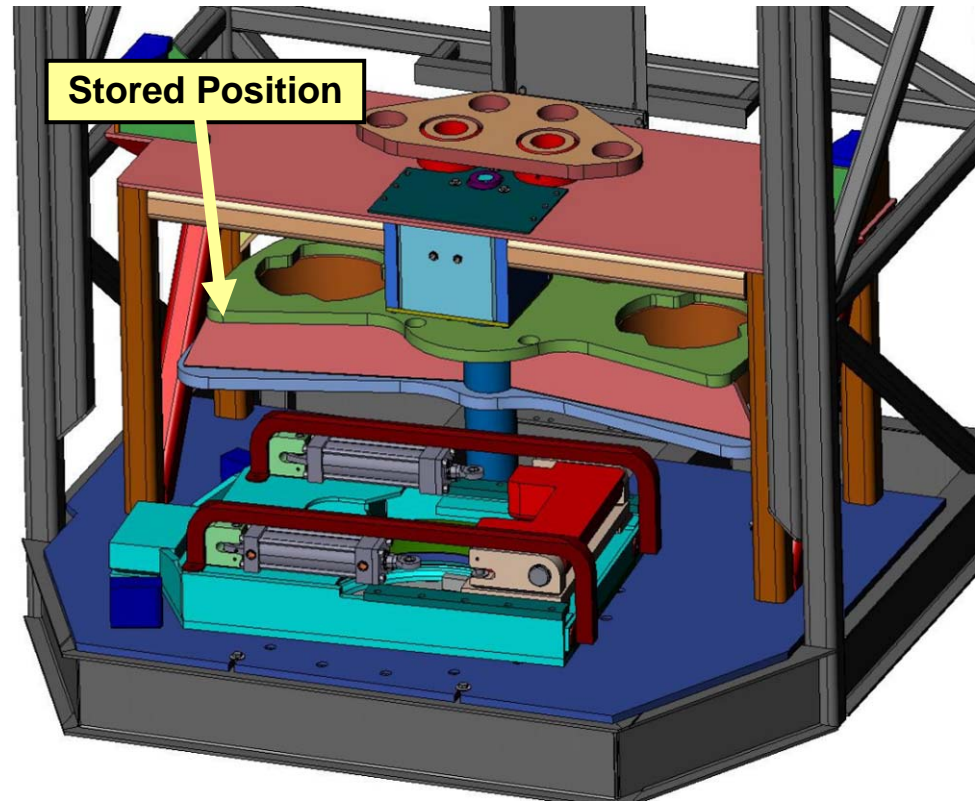


49 Series Drill - Bit Change Carousel



Carousel Storage Steps?

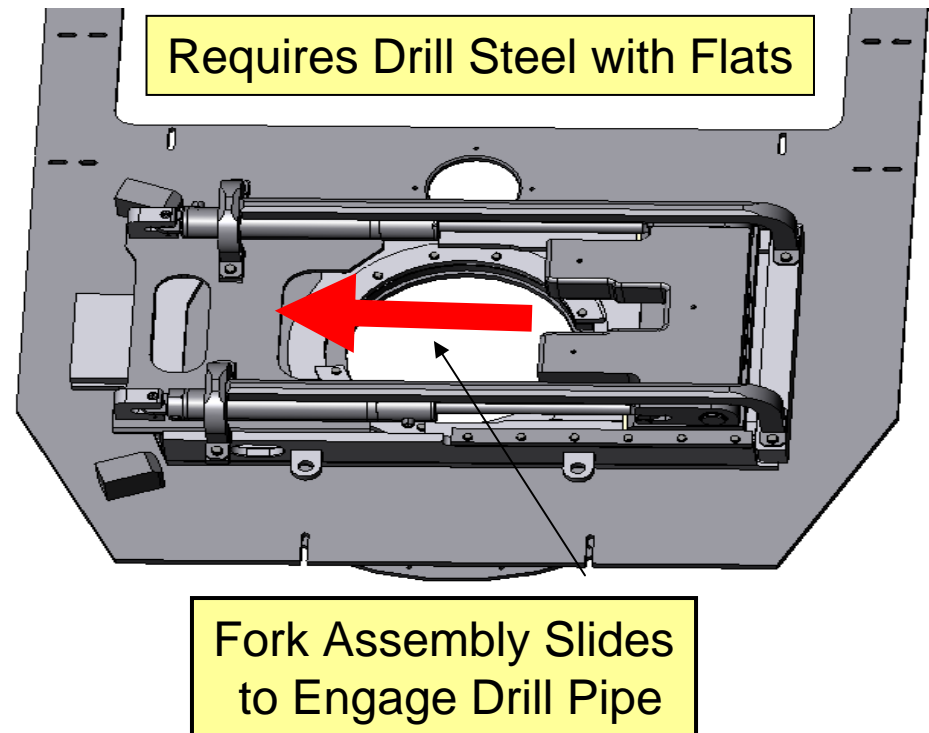
9. Clear bit from carousel
10. Rotate to the stored position
11. Lock stored position pins



49 Series Drill - Forked Tool Wrench



- Allows pipe changes to be done remotely from the operator's cab
- Reduces pipe change out time
- Minimizes operator safety risks associated with suspended loads
- Simplicity of design makes this tool very reliable
- Available on new and existing 49 Series Blasthole drills

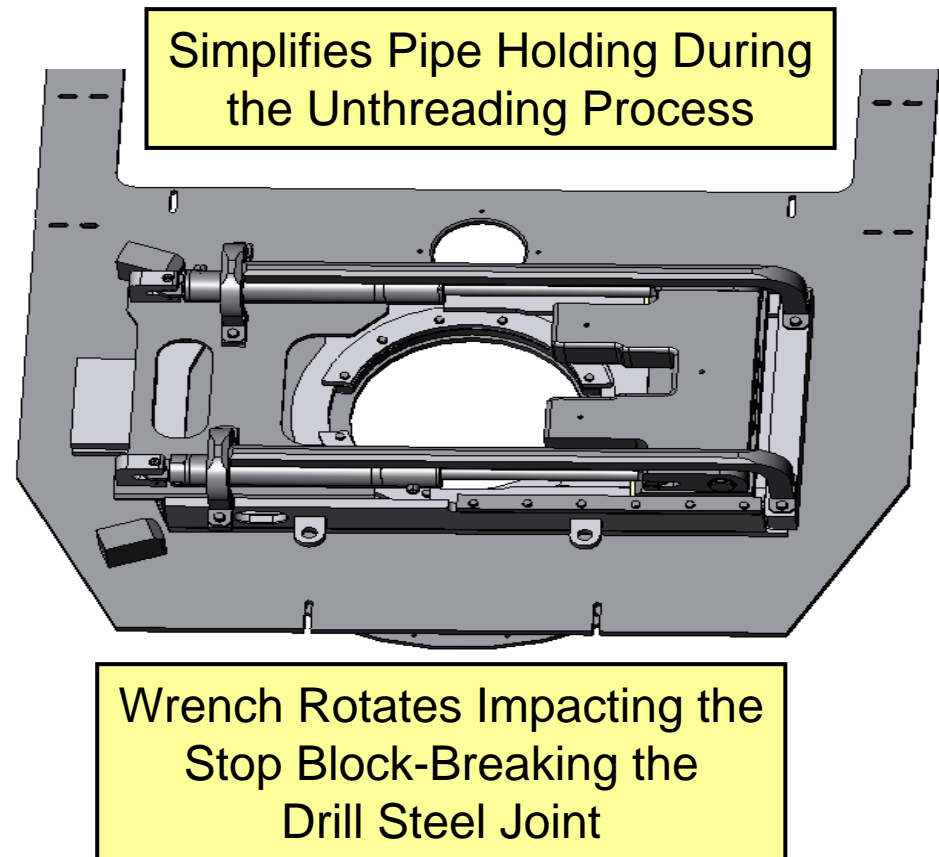


49 Series Drill - Forked Tool Wrench



Wrench Operating Steps?

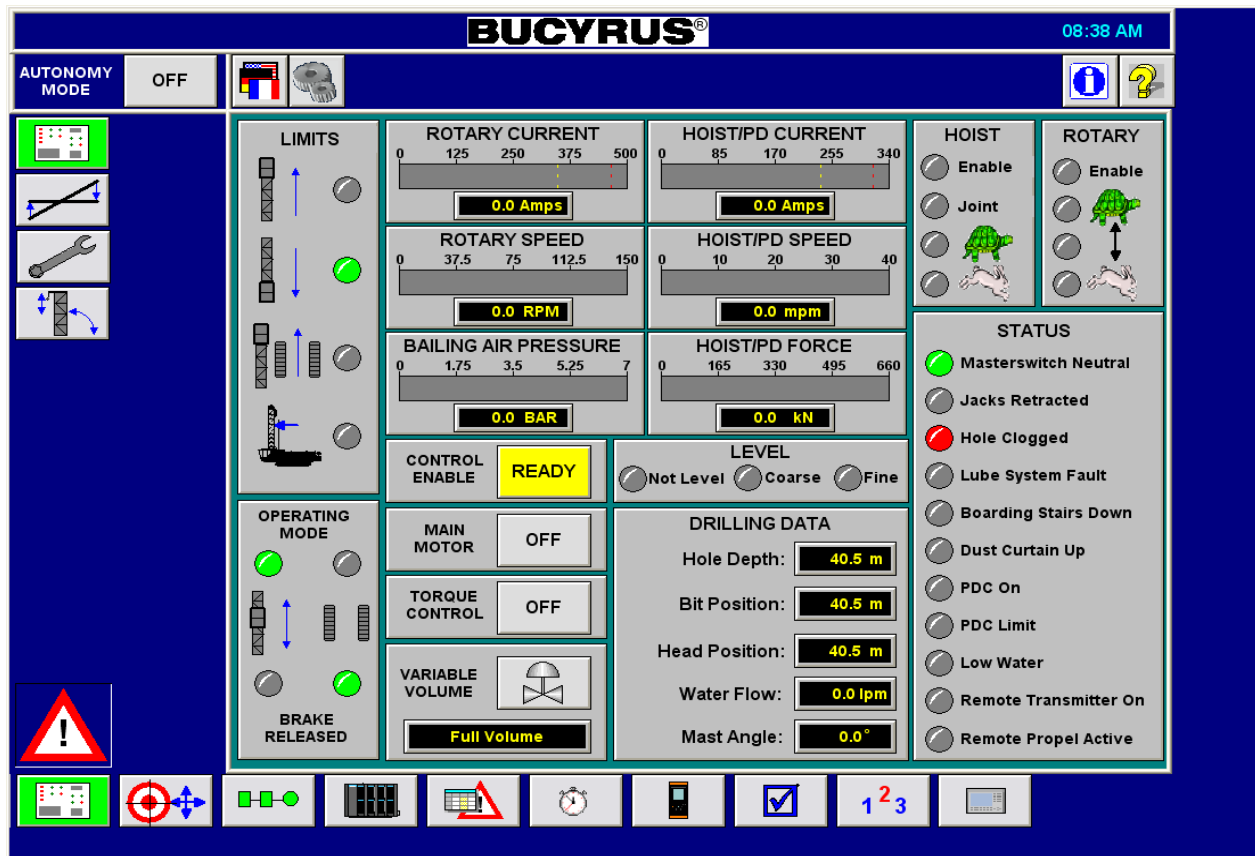
1. Requires drill pipe with wrench flats
2. The forked wrench automatically engages the pipe flats
3. The wrench rotates impacting the stop block, causing a break in the thread joint
4. A new pipe section is then removed
5. Flip up fork disengages pipe if string is raised



49 Series Drill - Reduced Operator Fatigue **BUCYRUS**



- HMI Screen for Better User Interface and Machine Control
- Allows Maintenance Manual Look Up & Advanced Troubleshooting



49 Series Drill – Financial Return



Bit Change Carousel	+ 52 Hours/Year	\$10,400/Year
Forked Tool Wrench	+ 32 Hours/Year & Labor	\$37,600/Year
New Cab/Controls	2% > Productivity	<u>\$21,000/Year</u>
		\$69,000/Year

Assumes 6000 hours/year in copper/no opportunity cost or safety savings

Reliability at work



49HR Series Rotary Blasthole Drills

Questions ?

