



# Upgrading to High G Shakers Reduces Drilling Costs

A major operator drilling in Kennedy County, Texas compared the performance of a Derrick Flo-Line® Cleaner 2000 equipped with original LX20 motors operating at 5.0 g's to another Flo-Line® Cleaner 2000 upgraded with Derrick Super G™ motors operating at 7.0 g's.

The rental Super G motors were installed on one of the rig owned FLC 2000 3 panel shakers. The deck angles of the test shakers were adjusted to 2 1/2 degrees uphill. Since the flow rate to each shaker could not be measured, the flow was adjusted so the fluid endpoint was at the junction of the second and third screen panel of the shaker being tested. Derrick Pyramid™ DX™ 175 screens were installed on all the shakers.

Timed samples from each shaker were caught, weighed and retorted. The discharge rates and oil on cuttings for each shaker were calculated. The results of the tests were as follows:

	<b>Shaker #1 Super G™ FLC</b>	<b>Shaker #2 Original FLC</b>
Drill solids discarded (barrels per day)	<b>9.2</b>	4.1
Mud losses per barrel of drill solids discarded	<b>1.31</b>	4.63
Oil on cuttings (by weight)	<b>10.15%</b>	11.65%
% Removal of drilled solids by shaker	<b>29.80%</b>	15.26%
G-force	<b>7.0</b>	5.0

## The Results:

The Super G shaker processed a higher flow rate than the standard shaker which resulted in the removal of more drilled solids. The Super G shaker provided a substantial reduction in mud losses per barrel of solids discarded, 1.31 barrels vs. 4.63 barrels, compared to the standard shaker. The difference in the physical appearance of the cuttings was dramatic. The Super G shaker's dryer discard provided a substantial reduction in barite loss, 29.63% by volume vs. 42.14% by volume, compared to the standard shaker. In this example for 100 barrels of hole drilled, the Super G shaker would discard \$1,020 of barite and the standard shaker would discard \$2,660 of barite, assuming barite costs \$6/sack.

*(Additional Results and Conclusion on back page)*

For a hole diameter of 10 5/8", as on this well, 110 bbls of cuttings are generated per 1000 ft. drilled. By using an oil based mud cost of \$50/bbl and using the actual values achieved during the test, the following can be calculated:

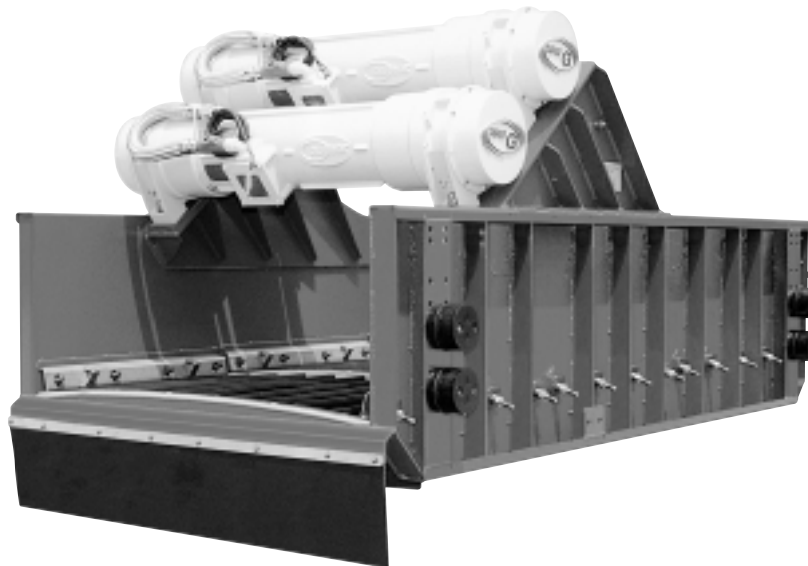
	Shaker #1 Super G™ FLC	Shaker #2 Original FLC
Mud lost with cuttings per 1000 ft. of 10 5/8" hole	144 bbls	509 bbls
Savings with Super G shaker per 1000 ft. of hole drilled	\$18,265.00	

**Conclusion:**

The shaker equipped with the Super G motors discarded almost twice the volume of solids while providing lower oil on cuttings, lower mud losses, and lower barite losses.

Upgrading rig shale shakers to Super G motors will allow for finer screening which will further reduce dilution requirements and total drilling mud costs. Screening finer also reduces wear on pump parts, increases rate of penetration and lengthens bit life. Overall, converting to High G's results in reduced total drilling costs.

**FLC 2000  
3 Panel  
Upgrade Kit**



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