



Proper Screen Selection: What You Should Know

By Trevor Young

As a mud system manufacturer, probably the most asked and hardest question to answer I get on a day-to-day basis is "What screens should I use on my mud recycling system?" This question is hard for mud system manufacturers to answer due to several factors. Hopefully this month's report will help contractors better understand why we have difficulty answering it and give you some insight as to how to best choose screens for your next job.

The biggest problem with picking screens over the phone is that the manufacturers have no idea what the ground conditions are at your particular jobsite and more than likely you don't either. Are you in sand, rock, clay or a combination of all three?

Some of the other problems with answering this particular question is that you need the answers to several others first. What is the viscosity? What are the flow rates involved? Are you running linear or elliptical motion shakers or some other variance, and what are the percent solids being returned to the mud recycling system? All of these questions can be answered and a good educated guess as to what the screen selection should be can be made, but there is no guarantee that they will perform as desired in the real world environment where you are drilling.

So now that we know some of the problems associated with picking screen mesh, let's look at some of the different shaker setups and what screen mesh might be appropriate to run on these shakers.

Scalping Shaker: The scalping shaker is your first line of defense when it comes to solids entering your mud recycling system; screen selection is very critical here. The scalping shaker is the shaker that the returned solids

will pass over first, and as such should be given some real thought as to the screen mesh you will use. Typically, the scalping shaker will run anywhere from a 10 to a 75 mesh screen. Now, these mesh sizes are very far apart, but your flow rate, viscosity, ground being drilled, percent solids being returned and what type of shaker you are using (i.e. linear or elliptical) will dictate the

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screen mesh best for your condition. From here on, anything that we let get into the system we have to remove. Every time the solid we let in goes through a pump or a piece of pipe, it gets broken down to a smaller and smaller micron which makes it harder to get out of the system. That is why the scalping shaker screen selection is so important.

Desander Shaker: The desander shaker is basically just like the scalping shaker except the material going across it is from the underflow of the desander cones. Typically the screens selected for the desander shaker are 100 to 165 mesh.

Desilter Shaker: Again, the desilter shaker is basically the same as the others, except that the material being conveyed across the desilter shaker is from the underflow of the desilter cones. The typical screen mesh for the desilter shaker is 165 to 220 mesh.

The main rule of thumb here is to run as fine a mesh screen as you can, without any liquid loss over the end of the shaker. (This applies to all of the shakers.) If you are running a 74 mesh

screen on the scalping shaker and the fluid is being conducted through the screen two-thirds of the way down the shaker, then install a finer screen and see if you can get the fluid to run all the way to the end of the shaker before being conducted through the screen without having any liquid loss. If you can get this to happen, then you know you are running the finest screen you can for the conditions. If you are running as fine a screen as you can for the conditions and your sand content is too high, then you have to back the flow down so that you can run a finer screen and not have any liquid loss. This will probably mean you have to drill slower, but it may be worth it to keep the costly repairs down that are associated with running dirty mud.

A mud recycling system being run correctly will have the screens changed many times. Screens are expensive and fragile, and most contractors don't want these costly expendables lying around, waiting to get destroyed by someone stepping through them or driving over them with a backhoe. But if you want the system to perform at its optimum, then you need to have many different screen meshes available to you so that you can react when the ground conditions mandate it. If you only have a 100 mesh screen and you need a 200 mesh screen, then you might as well leave that \$100,000 to \$500,000 piece of equipment at home. It won't be doing you any good out on the jobsite with the wrong screens in it.

Trevor Young is president of Tulsa Rig Iron. All Drillmaster Reports are reviewed by the Drillmaster Advisory Board: Young; Frank Canon, Baroid Industrial Drilling Products; Ron Lowe, Myers-Aplex, a Pentair Pump Co.; Richard Levings, Ditch Witch; and Ed Savage, Vermeer Mfg. Co.