

The Indonesian army uses trailer-mounted rigs supplied by Dando for their manoeuvrability on narrow roads in areas where access is difficult



Moving rigs

Moving drill rigs between sites usually means towing them behind a vehicle or having them permanently mounted on a truck but which is the better option?

To discover more about the options for transporting drill rigs to operating sites GDI spoke to Dando Drilling's Ian Smith and Rutger van Goethem of Eijkkamp Soni-SangDrill.

Q What are the minimum requirements for towing a drill rig and do these vary depending on the size and type of rig being towed?

Van Goethem explains: "The requirements vary. We have clients throughout the world using rigs transported on trailers. A (dirt) road can usually be used to transport the drilling rig and other equipment. We have also seen clients preparing a path or pull the truck by dozers to make sure the drill gets to the job site.

"The truck selected needs to be suited for the type of terrain. In Europe and North America, the

roads are smooth and do not require a lot of special solutions. In mining areas, deep in the jungle, the truck selected needs to be able to drive on all terrain and steep slopes. Therefore, a lot of our mining clients purchase the complete package of drilling rig, trailer and off-road truck. The truck usually has storage for spare parts and tooling and carries water for drilling. This makes them self-supporting.

"If circumstances are really challenging, we select a truck that carries the drill rig directly on its back so there is no need for a trailer, which might get stuck easily."

Smith points out that the requirements can change depending on where in the world the rig will be used: "The requirements for a trailer mounted rig are that it complies

with the relevant legislation in the country of use, that it is fit for use and has the required safety features. Additional important requirements are stability and manoeuvrability when being transported with good weight distribution and a low centre of gravity, which enables easier positioning for drilling."

An example of how using a trailer to transport a rig can be a better option than truck mounting it can be seen with Dando's supply to the Indonesian army in 2014 of 18 trailer-mounted water well drilling rigs. "Due to the narrow roads and difficult access in Indonesia, together with the low axle weight requirements, the trailer mounted version was the perfect solution," says Smith.

"Dando has also introduced its new Dando Duke cable percussion rig, which is mounted on a

heavy-duty, twin-axle trailer with built-in road lights. The rig can be towed behind a regular pickup truck or appropriate van, with 3,000kg or greater tow capacity, for ease of transportation between drill sites."

Q What do you look for when considering using a truck to mount a drill rig on?

"When considering the make and model of truck on which to mount its rigs, Dando places the utmost importance on the quality, reliability and longevity of the vehicle, especially its ability to perform in harsh working environments where it may encounter high temperatures and battle with elements such as sand and dust," says Smith.

He continues: "In-country support is also a very important aspect. Many of Dando's large water well drilling rigs sold to Africa are mounted on IVECO Trakker 6x6 trucks, not just for their longevity and reliability, but because they are well supported in the region."

"At Egiokamp SoricSengDrill we always ask ourselves, will a truck be the best-suited solution for a client. A PTO drive from the truck to power the hydraulic system is recommended. This option saves on weight, costs and space of a deck engine, comes with the latest emissions and requires less maintenance. But it is important to know the full application of drilling, local roads as well as off-road conditions and the logistics between drilling projects. A truck-mounted rig is generally bigger than a crawler mounted rig with the same drilling capabilities and options. For real confined job sites the truck will bring challenges driving to the borehole location. A decision can also be made due to shipping possibilities. RORO shipment is more expensive and it makes clients choose crawler mounted rigs in some cases,"

notes van Grooten.

"All the rigs supplied are with off-road capabilities. The advantage of a truck-mounted drill is that as soon as the borehole is ready the client can easily move to the next job. Time is not lost loading the equipment or waiting for the transport firm to arrive.

"As mentioned above the terrain capabilities are important. If there is a lot of soft and slippery material at the surface, or there are a lot of steep slopes to be travelled, it is not easy to drive in there with a truck. A crawler mounted rig will make more sense in this case."

Q Which makes and models of truck do you prefer as rig carrying vehicles?

"Dando mounts its rigs to trucks which are known for their durability and support in the destination country. For these reasons, Watertec 12.8, 24 and 40 customers in Africa

often choose the IVECO Trakker 6x6 trucks as their preferred chassis," says Smith. However, he then notes that "Dando can offer its rigs mounted on any brand of truck specified by the customer."

Egiokamp SoricSengDrill tries to use trucks preferred by its clients. Van Grooten says: "The major truck manufacturers will have a model that will work as a carrier for the drill rig so, within reason, any make or model of truck can be used. The frame of the drilling rig is custom made to fit the truck. In most cases, the client selects the truck according to the spec of the drill and supplies it for production. When a client wants a turnkey solution we will help to find the right configuration. There is a large Mercedes Benz dealer close to our office that makes communication for us easier. We have been using several Mercedes Benz Unimog and Arocs 4x4, 6x6 and 8x8 trucks." ▶

"Major truck manufacturers will have a model that will work as a carrier for the drill rig"



► While Dando favours IVECO vehicles, Smith acknowledges that other vehicles may be better suited in some situations and to accommodate this Dando also provides the customer with the option of acquiring the rig without a carrier and mounting it locally on to a truck of their own choice. He notes, however, that "it is important that the truck acquired by the customer meets specific requirements provided in advance by Dando."

An example of this type of situation given by Smith is the Watertec 4000 which was supplied to the Department of Geology in Vanuatu to provide water to the local communities. It was shipped on a 20ft flat rack, without a carrier vehicle and then mounted on a four-wheel drive truck supplied locally in Port Vila.

Q What are the advantages/disadvantages of truck-mounted rigs, as opposed to crawler-mounted rigs?

"The truck-mounted rig is preferred for fast mobilisation between job sites. There is flexibility on transport. If it needs to go it puts the mast down and drives away. For track-mounted rigs there is always an external truck needed. If there is no room for the transport truck to be parked it needs to be stored somewhere else. The truck-

mounted rig will bring what he needs and can be used instantly. On smaller sites, a crawler is preferred due to the flexibility. Other advantages are cheap haul and a low footprint.

"The disadvantage of a truck-mounted rig will be that the driller or helper needs to be the driver as well. Therefore, they need a truck driver license and sometimes special permits or certificates. After a long day of drilling, the crew needs some rest before a big haul can be made. The mobilisation benefits will thereby be less applicable," says *van Gasteren*.

"Whether a truck-mounted rig is the most suitable option for a project or not, really comes down to the logistical and operational needs of the customer and conditions at the drill site," says Smith. "The truck-mounted option is particularly suited when drilling is required in remote locations, far away from infrastructure, to provide mobility and more flexibility without the need for additional haulage."

Another advantage of mounting a rig, especially a larger one, on a truck is that all the major components can be mounted onboard too e.g. heavy-duty mud pump, powerful air compressor and heavy-duty winch. Doing so makes the users less dependent on local support and eliminates the requirement for

additional vehicles for the ancillaries, therefore keeping costs down.

An example of how this works in the field can be seen with a Dando customer in Pakistan using a truck-mounted Mintec 18 on a job outside a small town in western Punjab near the mountainous Rakhi area. The rig was used within a large area of exploration with reasonable road connections, yet far away from the nearest big town or city, being mounted on a truck made it easy to move the rig over long distances.

However, Smith also notes "the truck-mounted option may not be suitable for a project when there is limited access to the drill site and ground conditions are challenging, for example having to travel through tight spaces or across difficult terrain." He then gives the example of Vale, the mining company, which in 2016, acquired two track-mounted Jackal 9000s for working in dense equatorial jungle located on a steep mountainside. The operator had to be able to easily manoeuvre the rig and equipment through thick jungle foliage, trees and muddy ground conditions. In a situation like that, a truck-mounted rig would not be to access the site. However, the compact design of Dando's smaller track-mounted rigs also allows them to fit within a container for easy and cost-effective transit.

Q What is the largest rig that can be towed behind a vehicle or be mounted on a truck?

"Dando," says Smith, "offers the trailer-mounted and truck-mounted option for all its drilling rigs from 4- to 40-tonne pullback capacity."

Whether it is towed behind or mounted on a truck the LRS FS250 LargeRotoSonic is the largest rig in the Eijkamp SomoSangDrill line-up. Weight and size will depend a lot on chosen options. ■



Photo: Dando
Dando trucks are
frequently
seen in the field
drilling sites
with rig mounted
on trucks