

# HOW TWO SHIPPING CONTAINERS WITH VAN DER ENDE-LOGO ENDED UP IN THE SOUTH AMERICAN JUNGLE

Outdoor temperatures up to 40 degrees Celsius. Humidity between 70 and 80%. Pieces of rock flying around. These aren't the conditions in which twelve Grindex submersible pumps and their control units would usually operate. And this isn't exactly a usual location either – at least not for Van der Ende Group: a gold mine, somewhere in the South American jungle. The handover of the project in early 2020 was the successful conclusion of a formidable internal task. It required not only inventiveness and improvisational talent – standard ingredients in Maasdijk – but also some smart climatological solutions, which we were able to devise.

## PRODUCTS SUPPLIED:

- 12 Grindex Mega Inox 100 kW pumps
- Floats
- Switch boxes with Vacon FLOW frequency converters, transformers and sine filters
- Custom-furnished containers



Around three thousand tonnes of gold are still found every year, mainly in China. Production today has lost the charm of the Gold Rush that swept America in the mid-nineteenth century. Professional gold mining is big business, as in this case: the customer is a corporation with 860 employees looking for the precious metal in an area of 70,000 hectares. Test drillings reveal whether it might be present. Then enormous excavators and large quantities of explosives are used to dig out an area. First on the surface, when the deepest point of the 200-metre wide pit has been reached via mine galleries

## GRINDEX PUMPS

Rainwater that finds its way from the jungle to the pit needs to be pumped out. Grindex is one of the few suppliers offering pumps that are suitable for mining: heavy duty pumps that can handle brackish or acidic water and sludge. When we received the first order for six of these pumps, including control cabinets, we soon reached the conclusion that additional measures would be needed. Pieces of rock flung around by explosions can damage the equipment. The scorching sun (up to 40 degrees Celsius) is a significant factor. And humidity of 70 to 80% does not promote a long service life. Our advice was to place the control cabinets in a shipping container, but the customer chose to use its own construction.



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## TWO SHIPPING CONTAINERS

The six pumps including control cabinets were being transported to South America and after commissioning a few weeks went by. In the meantime, a similar order was placed for the second phase. Then one evening – because of the time difference – we got a phone call from the customer: its provisional solution for the control units wasn't satisfactory. In no time at all, two colleagues booked their flights to the project. At the location, the decision was made to actually use shipping containers for the second phase. Two containers to be precise, because the heat generated by six pumps is simply too much for one container. Once our engineers were back in the Netherlands, the project proceeded at a rapid pace.

## OWN POWER PLANT

Two 20-foot shipping containers were brought from China and prepared for their unusual purpose by a company in Botlek. Each container provides space for three control cabinets, frequency converters, a distribution box and a transformer room. The transformer converts the high-voltage electricity supplied by the customer's own power plant (!) to the right voltage. The space has deliberately been separated, because giving unauthorised persons access to 500 kVA can endanger life.

## AIR CONDITIONING

But even with only three control cabinets per container, extra cooling measures are needed. Insulation keeps out most of the external heat. To regulate the heat generated by the equipment in the cabinets, the containers have air conditioning, with both an inside unit and an outside unit. Grilles in the walls serve as outlets. To cool the transformers, they are provided with fans. Our engineers found a smart solution for achieving a natural air flow in the containers.



We never say: we won't do it. We will always try to find a solution. It's just great that we could put so much energy and creativity into this. It turned out to be a fantastic product. And we've also gained an excellent customer.





## ASSEMBLED AT OUR OWN LOCATION

All the cables for the cabinets, as thick as an arm, are tidily concealed under a computer floor. The control cabinets are operated from outside the containers, so that no-one needs to go into the containers and their climate remains constant. The containers have a sloping roof, which allows any debris to simply fall off. The external controls are accessed via a platform, covered with a canopy to protect against the scorching sun.

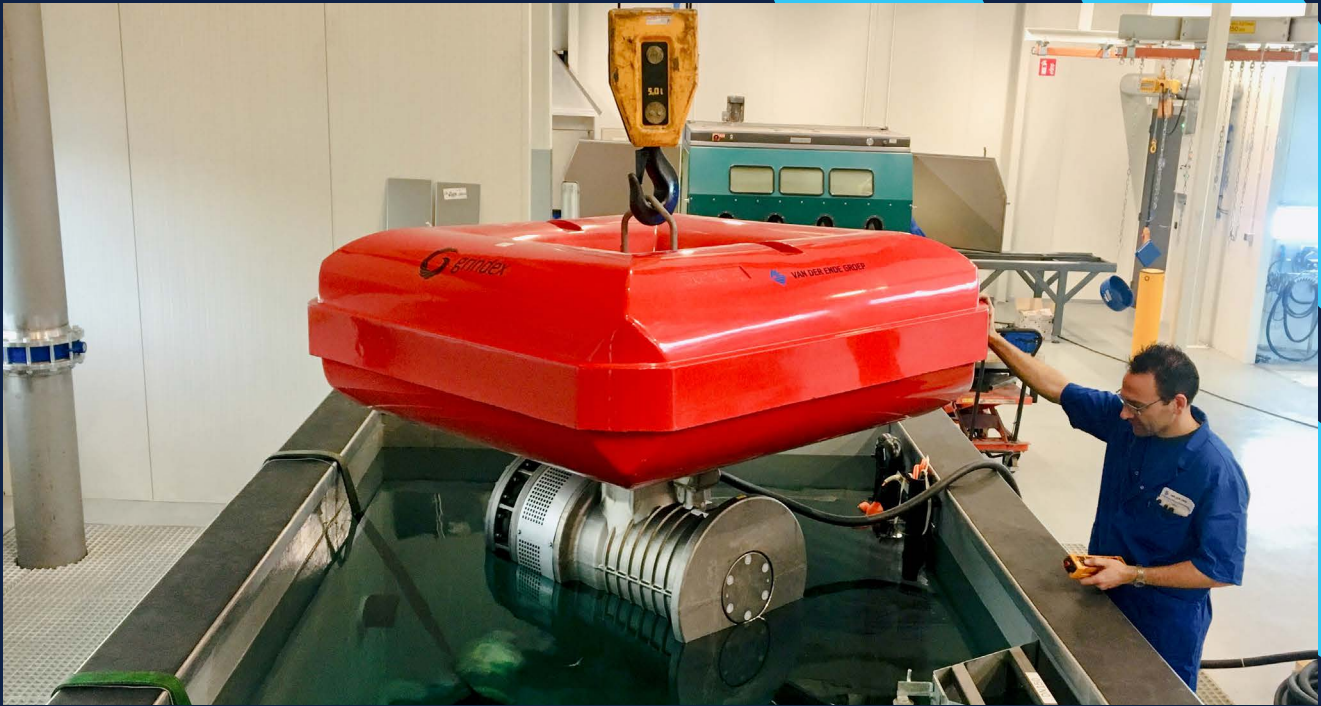
The complete project was assembled at our own location in Maasdijk and made ready for the ocean crossing. This required the assistance of our field service engineers for two whole months. Because the pumps will need to be constantly moved to different places, two custom-made trailers were also supplied.

## START-UP

In January this year, the project was ready for start-up. We gave a detailed explanation of how it operates to the customer's head of electrical engineering, who came to Maasdijk for two weeks for this purpose. And, apart from a couple of minor teething troubles, the pump systems did exactly what they were supposed to do. A new obstacle emerged, however: how to protect the polyester floats of the Grindex pumps. The customer once again requested our Westland inventiveness to find a solution.



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## AIRBAGS FOR NASA

And we succeeded: we found a company that develops airbags, including for NASA and the aviation industry – but also for motorcyclists who perform stunts for Red Bull. The pumps are now covered with a pyramid-shaped airbag made of kevlar with a special filling. At this point, it was three years since the first contact with the customer, and the project had finally been completed more or less as shown on the first drawing. So if someone happens to be in the South American jungle and comes across two Van der Ende-blue shipping containers with our company logo, they now know the history.

## 'WE NEVER SAY: WE WON'T DO IT'

Chris Bogaars, project development coordinator at Van der Ende Group, organised the project and also went to South America. 'They can explain it to you, you can see photographs, but you only know what happens if you're there yourself. What's the intended use of the system? How will it be treated by that customer?' The system was ultimately engineered to be as easy-to-use as possible and to comply with strict American standards. 'We normally supply these pumps to the manufacturing and civil engineering sectors. For us, this was a big project on unknown territory. But we never say: we won't do it. We will always try to find a solution. It's just great that we could put so much energy and creativity into this. It turned out to be a fantastic product. And we've also gained an excellent customer.'

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