NOVOMET

Case study

1500 series leaves behind the system with several pump units of smaller series

Challenge

Pump with a capacity of **16000 m^3/day at head of 850 m.**

Solution

Development of 1500 series pump unit with high performance:

- Nominal pump capacity 16000 m^3/day
- Thrust chamber with high load capacity (**up to 30 tons**)
- Space-saving design (shortened length) with electric motor power 1700 kW

Results

- Innovative pump has been developed, which became a unique solution for market of surface pumping equipment.
- Complete cycle of works has been carried out including development, manufacturing, bench testing to prove performance data.

1500 series compared to 217

Background

In 2021 Novomet won a tender for development of a pump. It must be said, that there are no analogues or similar equipment on the market and it has not been developed before.

Process

Manufacturing required to test both separate units and assembled system as finished product. This testing can be perfomed by means of test bench with power consumption of about 1700 kW at 60 Hz, which Novomet possesses, and that separated Novomet from the competition.

Manufactured pump not only meets the Customer's requirements, but also goes beyond and exceeds required values.

For example, technical design assignment requires efficiency to be at least 80%, but Novomet specialists have reached higher results.

Improved performance helps the Customer to cut power consumption costs and as a consequence to reduce emission release.

Rubiales oil field, Colombia

Current injection rate of each pumping system is 19 000 m³/day under design pressure, which exceeds initially planned and required value of 16 000 m³/day. The challenge is completed due to wide operating range of this pump type.

Under standard conditions the total injection rate is 76 000 m³/day, which exceeds initially planned and predicted value of 64 000 m³/day, which enables higher production rate of extracted oil and turns the oil field into the efficient one.

Advantages of 1500 series:

- Less quantity of pump units required for liquid disposal or transportation in comparison with process involving pumps of 905, 1000 or 1240 series.
- Small overall dimensions (length) reduce construction cost, expenditures on foundation, pipework, etc.
- High efficiency, which leads to reduced power consumption.

Particular project data:

- The length of pump unit is two times less than the length of pumping system equipped with smaller series pump.
- Power consumption is 1700 kW, which is almost 200 kW less than power consumption of pumping system equipped with smaller series pump.
- Construction work cost is also reduced by 21%.