

Pile drivers at work

## Kilometres of safety

**What does the laying of highway guard rails involve when executed at the state of the art? First, the personnel who conduct the work must be ready to use their experience to manage and solve problems of any kind, whether organizational or technical. Then machinery at the forefront, manufactured based on two main priorities: the safety of operators and the efficiency of the machines. Added value: Close cooperation between the installing company and equipment manufacturers, conducted with the objective of ensuring customers and users increasingly higher quality standards. A current example? The "alliance" between the company Fratelli Conte snc from Padua and Orteco from Emilia, which has expanded its historic range of highly technological machines, with a brand new model.**

It is a journey from the heart of Emilia, the cradle of the national flag, to the borders of Europe on a pile-driver machine. Easy to say, but, specifically, how can it be done? First you have to start from a history of excellence, built on research and experience, passion and technology. An Italian story, emblematic, of small businesses which, through work, create their niche. Appreciated and recognized in every corner of the continent, from nearby Switzerland to the distant Russia. In this case it is the story of Orteco, headquartered in Anzola nell'Emilia, 10 km from Bologna, holder of prestigious certifications (one of them, UNI EN ISO 9001, has the TÜV Management Service seal), specializing in the design, construction, distribution and use of pile driving equipment, a critical technology for installing safety barriers on roadways, with 60% of the turnover coming from foreign orders. Mr. Sergio Tassinari, manager of Orteco srl tells Le Strade: "We Italians hold the leadership in the field, partly because, starting from a high quality standard product, we can meet the needs of each customer. Thanks to our approach, there are many examples of customers who resolved technical problems that seemed impossible to resolve before".

The influential World Highways seems to confirm this distinguishing quality. The magazine recently dedicated an article to Orteco, which last April introduced a brand new series of hydraulic pile drivers. The new machine, the SMART, has a lighter frame than the traditional HD version which was especially developed to complete the range of Orteco's solutions". Mr. Tassinari adds that "The two versions are different in volume and weight. The SMART has a smaller crawler, a two instead of three cylinder engine, and it has a 600 and 800 joule hammer. In short, we tried to develop a machine with the same characteristics of our classic models in terms of quality, but more agile and cheaper, so as to also be aligned with what our competitors are doing". That is, keeping the highly technological and innovative "roots" well ingrained (we will have the opportunity later to illustrate its characteristics), while putting in motion a series of "variations" to better respond to the needs and requirements of the market. Yes, the market. A key factor, first, to really understand the secret of success of a business enterprise such as Orteco and, second, to examine in depth a topic ever more important for the sector operators: carrying out the work.

From Anzola nell'Emilia they say that "Our customers who are competent and skilled, with extensive experience in the specific job of pile driving for guard rails are indeed our best product consultants."

So, following this thread, let's look more in depth at the cooperation mechanisms between the supplier of road equipment (in this case Orteco) and the company executing the work (the customer), telling the story of an infrastructure installation from a partial, but still very interesting, point of view: That of a pile driver machine and the men using it.

## **"BARRIER INSTALLER" AS A PROFESSION**

This is a partnership linking the heart of Emilia to that of Veneto, specifically in Villanova, province of Padua, where Fratelli Conte snc, specialized in guard-rail installation and emergency interventions is headquartered and led by Emilio Conte since 1971. Its mission: "To establish its presence in the market with the experience, skill and proven professionalism of a qualified workforce operating with state of the art equipment". Over thirty years of experience, all things considered, in the "art" of installing safety barriers. An eternity, if we consider the parallel history of the reference standards. It is, of course, a guarantee.

Emilio Conte tells us: "We used to install the first guard-rails digging by hand, then we built a pile driver by ourselves from a demolition jack hammer, then we built a compressed air machine and installed our pile drivers on trucks. All homemade, all handmade. For a year and a half now, we started a technological partnership with Orteco, buying two of their machines from the HD and SMART series. The two machines are part of a small fleet which began to "sail" along the routes of a prestigious maintenance operation, one of the many the company in Padua has been and continues to be involved in, that is the installation of safety barriers along the A31 motorway called "Valdastico". The complexity and, especially, the scope of the intervention (consider, among other factors, the coordination between the different companies and the special safety measures to be adopted in the work site in the presence of traffic) require that the best companies be put in the field. This is achieved with the right mix of traditional skill and technological innovation that Fratelli Conte is proud to possess. Lionello marcato, a technician of Fratelli Conte snc explains "Our job, in some respects, is performed with technologies not yet adequately developed. I think, for example, of the fastening of the bolts into the hole of the barriers. Thus, to resolve certain installation problems, we must necessarily draw on the wealth of experience that each operator has accumulated". Mr. Conte adds, "As regards pile driver technology we are at a far more advanced level: the machines we use are very fast and above all quiet". Fast and quiet. This means production efficiency and environmental protection, critical for those working with the machines. With the words of Emilio Conte, we got to the point of two central topics.

We will explore them further in the next two sections.

## **OPERATOR PROTECTION**

Noblesse oblige, the human factor comes first. Tassinari comments "Our production has always made operator safety top priority". From words to facts: Orteco machines are equipped with a

guard behind which the hoses are mounted (two, external are on the other side of the machine with respect to the operator), so that any blast would occur at a distance from the operator. In addition, the translation has separate commands, that is not in line with the other commands of the pile driver, and placed so as to ensure good ergonomics: Tassinari adds that "This way the pile driver loading and unloading operations can be performed safely, without the operator adopting unnatural positions."

Another crucial factor: noise. Limiting the damage has always been a real mission for Orteco.

The engine is soundproof and totally encapsulated, and its output noise is similar to that of a common vehicle. In addition, the body of the hammer is separated from the metal frame by means of adiprene capsules, resulting in the disruption of noise transmission (3 decibel reduction). What is more difficult to reduce, however, is the noise coming from the contact between the iron pile and the ground, which actually decreases as the pile is inserted.

The device introduced by the Orteco experts relates to the possibility for the operator to lock the hammering lever and then move away even 4-5 m, since the process stops completely automatically at the end of the job.

However, in matters of safety and environment the Orteco objective is decidedly more ambitious and not so far from becoming a reality (in technical terms, the question is more complex on the marketing side).

The intended design aims to fully protect the operator and at the same time further innovate equipment, ensuring greater efficiency. But it is not technology that actually slows progress down (the Orteco laboratory has focused on innovation for over 30 years to the point that it has also filed a series of patents) rather it is the economy, or even better still the savings to be pursued at all costs, in work paid based on production and not on quality.

The operators in the sector say that hope may come once again from technology, of course, as well as from hoped for maturation of the entire system (legislative, organizational, environmental sustainability) in the direction of introducing more solid principles of planning.

## **EFFICIENT MACHINERY**

Speaking of technology, let's take a closer look at the strengths of Orteco's range of machines. The first feature to highlight is the ability of the equipment produced by the company of Anzola nell'Emilia (especially the HD series) to execute a post driving which keeps the pile vertical, even in uphill or downhill conditions (the correction is allowed thanks to a rotating pivot and a hydraulic ram). The same efficacy is provided in extraction operations, effected by means of a "Made in Orteco" system to better coordinate the lifting of the piston and the striking of the hammers. A unique aspect of this type of machine, then, is that the plates are not welded, but bent. This means less weight and strength together, because the welding, explain the experts, however well executed, "can never be as compact as a single piece"

All the components of Orteco's machines (for more technical information, see the website [www.orteco.com](http://www.orteco.com)) are also replaceable. This flexibility in terms of spare parts is also replicated as regards the product more in general since the crawler and pile driver are "separable" and can even be purchased individually or at different times. Mr. Tassinari concludes "Together with the safety

of the operator, the efficiency of the equipment is our other main priority. The result is machines that are always in step with the needs of individual customers (because in the process of production, we consider a comparison between manufacturers and end users essential) but also satisfying what is requested of us by the market, which for Orteco is all of Europe. This means having to also focus firmly on factors such as reliability and simplicity". One example among many is the hydraulic system of the Emilian machines which is committed to simplicity, because in case of any breakdown, it must be repaired even where Orteco's personnel are not immediately available. "In that case all we need is a telephone consultation and the problem is solved" says Mr. Tassinari.

From the heart of Emilia to the borders of Europe on a pile-driver. As we have seen, putting forth real commitment is not only easy to say but also to do.

1. Operation A31:

HD at work

2. Piles prepared

for driving and blade ready

for mounting

3. Emilio Conte

and Sergio Tassinari

at the installer's

headquarters

4. The SMART pile-driver

600SC, Orteco's latest

release

5. Detail

of a pile:

Orteco's machines

are equipped to

ensure vertical post driving

in all terrains

6. Pile driver

"history": One of the

first tools for manual post driving

7.- Progress:

Pile driver mounted on a truck

8, 9. The two Orteco machines (HD and SMART) at work on the "Valdastico": maximum safety (and hearing protection) for the operators of Conte

10 The Hatz Silent Pack diesel engine

11. The pile driver commands are indicated with simple symbols so as to be easily identified by operators across Europe

12 Once again the Orteco machine: crawler and pile driver are separable and all components can be replaced easily