

The logo for TULLIK features the word "TULLIK" in a bold, white, sans-serif font. The letter "K" is stylized in a bright blue color and has a registered trademark symbol (®) to its upper right. The background consists of several glowing blue arcs that create a sense of depth and motion, resembling a tunnel or a futuristic interface.

TULLIK®

DOING WHAT NO ONE HAS DONE BEFORE

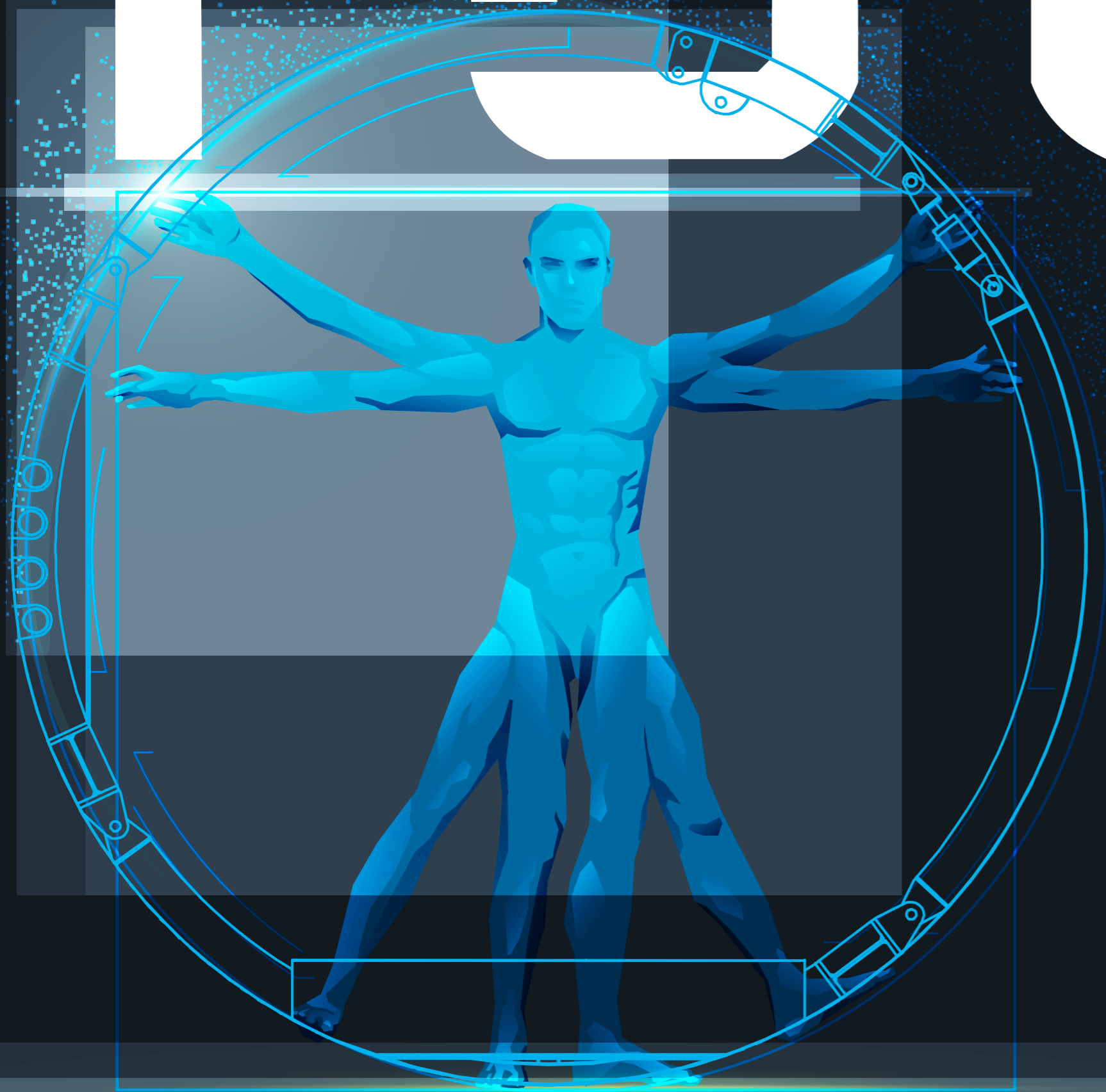
**TUNNEL
UNIT
LARGENESS
KEEPER**

FOR BYPASS
BETWEEN TUNNELS

VEXA

A STEP AHEAD. ALWAYS.

TULLER®



THE VITRUVIAN RIG

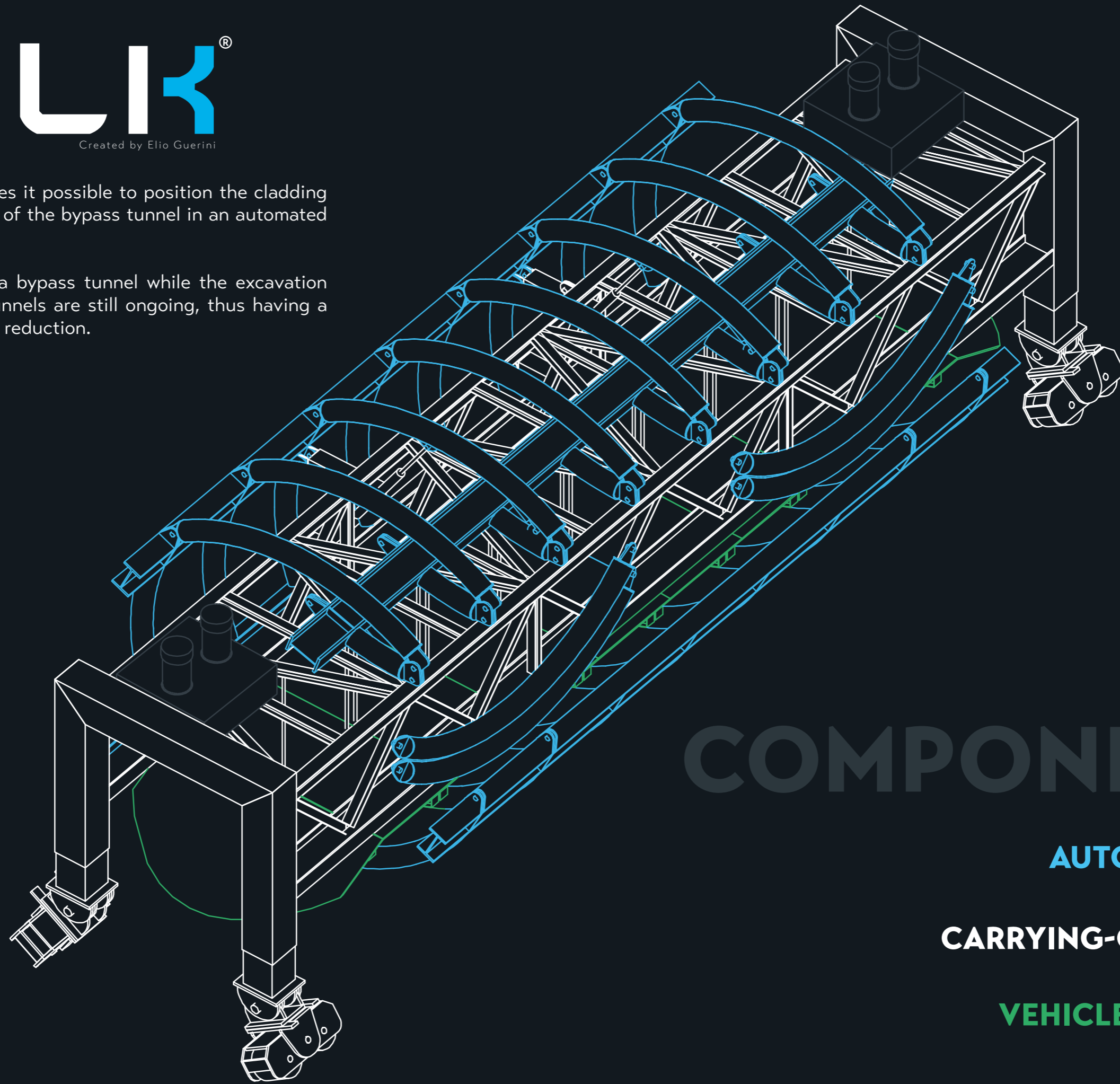
VEXA
A STEP AHEAD. ALWAYS.

TUUK[®]

Created by Elio Guerini

This new technology makes it possible to position the cladding panels during the making of the bypass tunnel in an automated and safer way.

The rig allows to create a bypass tunnel while the excavation operations in the main tunnels are still ongoing, thus having a considerable cost and risk reduction.



COMPONENTS

AUTOMATIC RIG <

CARRYING-CENTRINGS WAGON <

VEHICLES PASSAGE PLATFORM <

PATENTED SYSTEM

BENEFITS

WITHOUT

WITH TULK[®] Created by Elio Guerini

RUNTIME

Traditional

More than halved

PASSAGE OF WORKING VEHICLES

Restricted by frequent interruptions

Possible during every step

CONTINUITY OF THE EXCAVATION OF THE MAIN TUNNEL

Subject to interruptions

Ensured also during the excavation of the bypass

NUMBER OF PEOPLE INVOLVED

Traditional

Drastically reduced

SAFETY CONDITIONS OF THE STAFF

Higher risk factor

Considerable reduction of the risk of accidents

NUMBER OF VEHICLE INVOLVED

High, due to the supply of the centrings

No other vehicle beside TULK

CONCRETE-REINFORCING OPERATIONS

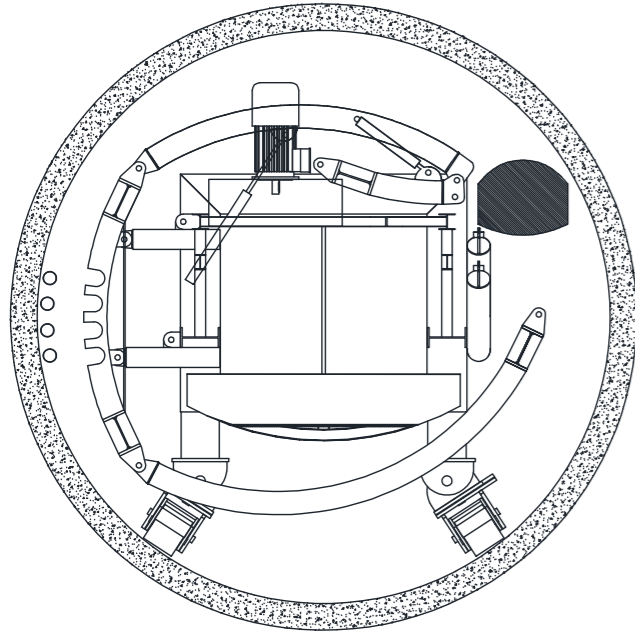
More complicated and expensive

Simplified by the passage of the second wagon through the first

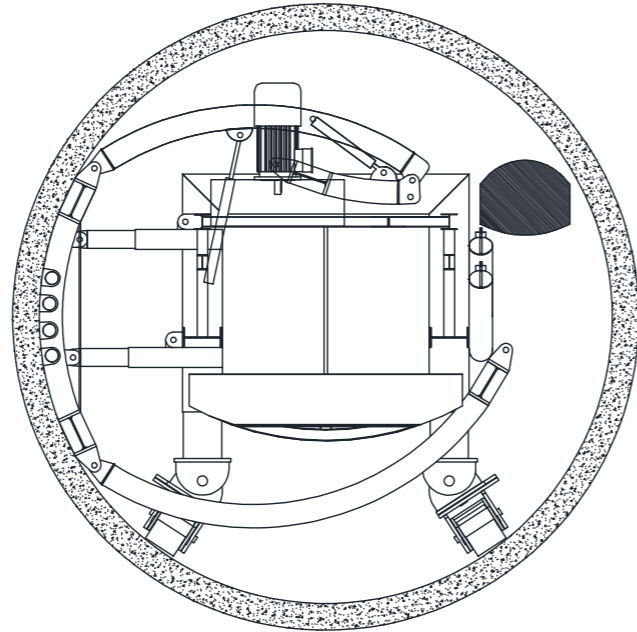
RE-USE OF THE CENTRINGS

Manual, with traditional runtime

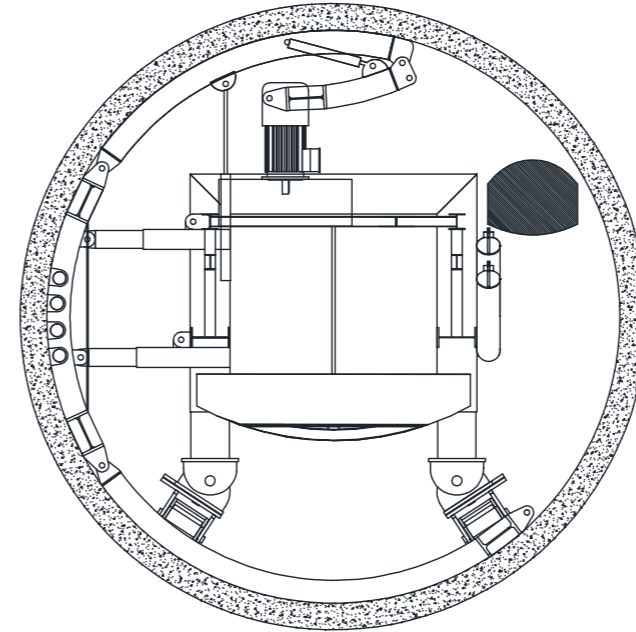
Automated, with shorter runtime



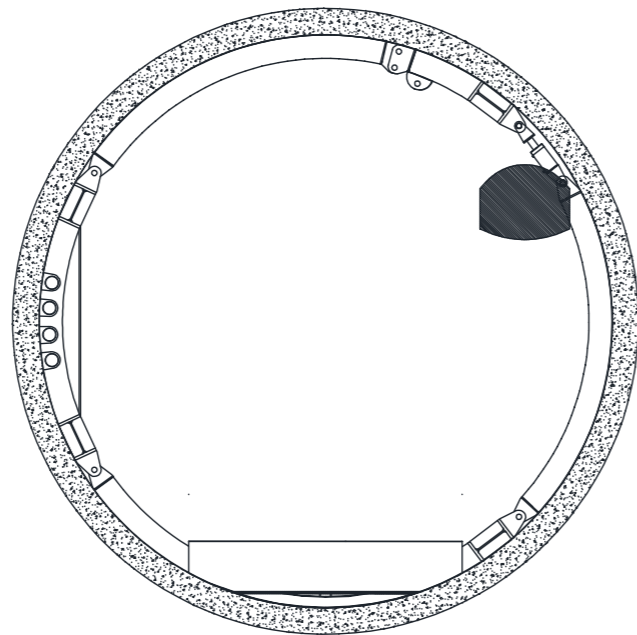
The rig with centring enters the tunnel



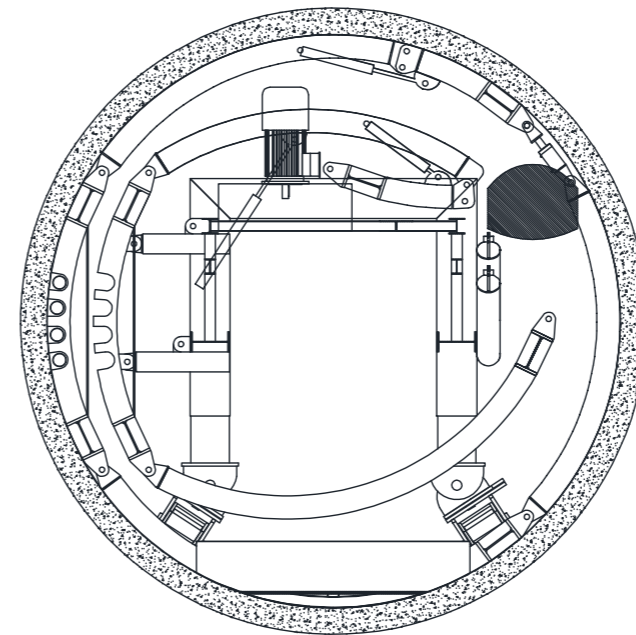
Centring opens and adheres to tunnel walls



Assembly operation ends, platform lowers and wagon disconnects



Wagon exits and leaves the passage free



Wagon with new centring goes through the structure for next bypass



FAQ

WHAT IS IT FOR?

This technology **guarantees the safety** of the tunnel cladding panels during the creation of the bypass tunnel between tunnels. The concrete-reinforcing system therefore makes it possible to create the bypass tunnel **while excavating the main tunnels**.

WHAT ARE THE BENEFITS?

TULK allows to consistently reduce the costs, thanks to the **drastic reduction of the time** necessary to complete the works, of the number of people involved on site, and to the possibility of rapidly **re-using the centrings** for a subsequent bypass tunnel.

With the rig method it is not necessary to frequently interrupt the passage of vehicles in the tunnels, as it otherwise can happen for weeks or even entire months; in this case instead, the passage is blocked only for those few hours necessary for transport and to proceed with the concrete-reinforcing operations.

The automation of the process on one side ensures a significant **reduction of the risk factor of falls and injuries** of staff people, since they do not have to manually install the metal support structures of the cladding panels (which are several meters above the ground); on the other side, the **lower number of transport vehicles** makes the risk of possible accidents at work drop.

It should be underlined that this technology makes it possible for construction vehicles to circulate during the excavation of the main tunnel and of the bypass. Moreover, if a second bypass becomes necessary, the system's shape allows the passage through the previously installed structure, making it **faster to carry on the work**.

TO WHICH KIND OF TUNNELS IS IT POSSIBLE TO APPLY THIS TECHNOLOGY

It is possible to apply this technology to **every vehicular and rail tunnel**.

HOW DOES THE WAGON WORK?

The wagon works thanks to a **remote-controlled and servo-assisted technology**. Two diesel engines (whose power can vary according to worksite needs) produce the about 400 kilowatts required for the system to work. On demand, it is possible to make the whole system explosion-proof.

WHAT SERVICES DO YOU PROVIDE?

Vexa takes care of **providing** the technology, the **assistance** or the **managing** of the operations until the complete executions of all works.

WHAT DOES THE PRICE DEPEND ON?

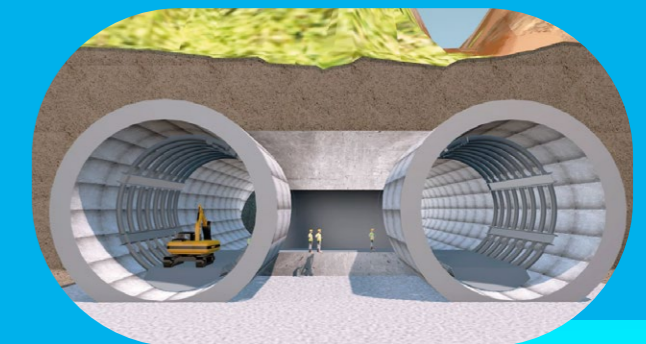
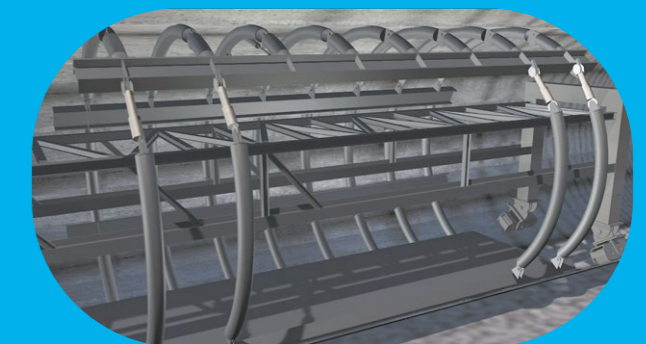
The price depends on the specific needs of the customer and on the own characteristics of the tunnel, considering:

- sections of the main tunnel and of the bypass
- ground reaction impulses
- dimensions of the cladding panels
- number of bypass openings simultaneously active

When the customer requires it, **it is possible to unbundle the price elements** related to:

- centrings (one for each access point to bypass)
- carrying-centrings wagon
- vehicles passage platform

It is also possible to rent the system with a long-term chartering contract, finding together the most suitable solution for the payment instalments.



VEXA

A STEP AHEAD. ALWAYS.

HEADQUARTER

Pisogne (BS), via Caggioli snc

PRODUCTION UNITS

Pisogne (BS), via Caggioli snc
Gianico (BS), via Carobe n13

T +39 0364 880668

executive@vexasrl.it

vexasrl.it

[in](#) [f](#) [@](#)

CERTIFIED COMPANY



CQOP  **SOA**
CONSTRUTTORI QUALIFICATI OPERE PUBBLICHE