

OUR MISSION IS BEING WITH YOU TILL BREAKTHROUGH

Design, **Manufacturing**
Consulting & Equipment supply

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TUNNEL SAZ MACHINE (L.T.D)

تونل
ساز
ماشین

TUNNEL SAZ MACHINE (L.T.D)



ABOUT US

The Tunnel Saz Machine Company has been registered in the Industrial Property and Registration Organization by the No. 218371 in 2003 and has started its activities in the field of tunneling and mechanized drilling.

By collecting the experienced experts and engineers in the field of mechanized drilling, the company intends to, concurrent with the advancement of the tunnel industry in the world, provide effective technical and strategic services in the development and success of this industry domestically and overseas.

Due to the increasing number of tunnels being accomplished by full mechanized machines and the economic justification of this method, it seemed absolutely necessary to form a set of skilled and capable personnel and use their valuable experiences to pave the way for economical, rapid, and standard execution of such tunnel projects.

Further, the company has the ability to supply the equipment and spare parts of TBM and MTBM machines with the precise knowledge of these equipment as well as the market which is capable in providing reliable, fast and valuable services for leading executives and employers in this field.

Based on the valuable experience gained from its executive activities in this field, Tunnel Saz Machine has entered in the field of designing and manufacturing of mechanized excavating machines and related equipment in recent years. Moreover, by pursuing a policy of stage by stage production, it's targeting to gain about 70 percent of TBM and Micro TBM Machines' manufacturing knowledge by 2020, in order to reduce the dependency of the industry to abroad and take a step toward the self-sufficiency of this industry in the country.

In order to develop the knowledge-based economy and commercialize the results of research and development in the field of superior and high value added technology, the company succeeded in registering its products as knowledge-based products, and becoming a member of Qazvin Science and Technology Park.

Furthermore, the company is using the services of Italian company 'Tunnel Consult' which has valuable experience in the field of geological studies, tunnel design and calculation, selection of boring machines, and presenting appropriate implementation solutions.

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DESIGN AND MANUFACTURING

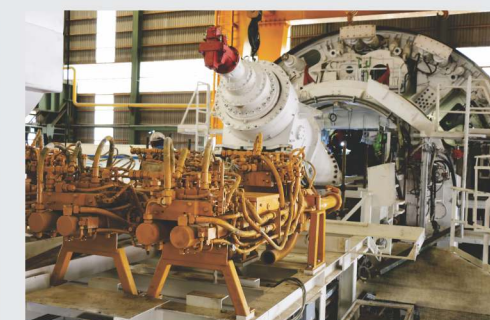
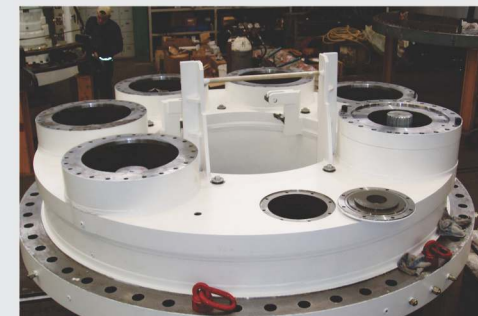
The Tunnel Saz Machine, relying on its valuable experience of 15 years in mechanical excavation and operation with TBM machines, started to design and manufacture such equipment in order to take another remarkable step in the self-sufficiency of this industry and to meet some demands of the country in recent years. In this regard, the company has started to equip a factory with an area of more than 10,000 square meters that is located near to Qazvin city, which has the possibility of manufacturing and assembling the devices up to the diameter of 14 meters.

The activities of the company, in the field of design and manufacture, are divided into four sections as below:

- Design and manufacture of full mechanized TBM and Micro TBM machines
- Design and manufacture of tunnel conveyor system
- Design and manufacture of locomotives and rolling stock equipment
- Design and manufacture of cutting tools and tunnel equipment

The company's policy in design and construction is to increase the percentage of the own made production of these devices step by step, so that in addition to ensuring the correct operation of the provided products, it can also compete with similar foreign products in terms of the price and delivery time.

The company is committed to design and manufacture more than 70 percent of the equipment by the year 2020, by using the technical knowledge of experts in its design and implementation sections, and identifying and exploiting the existing potentials of the country in this industry.

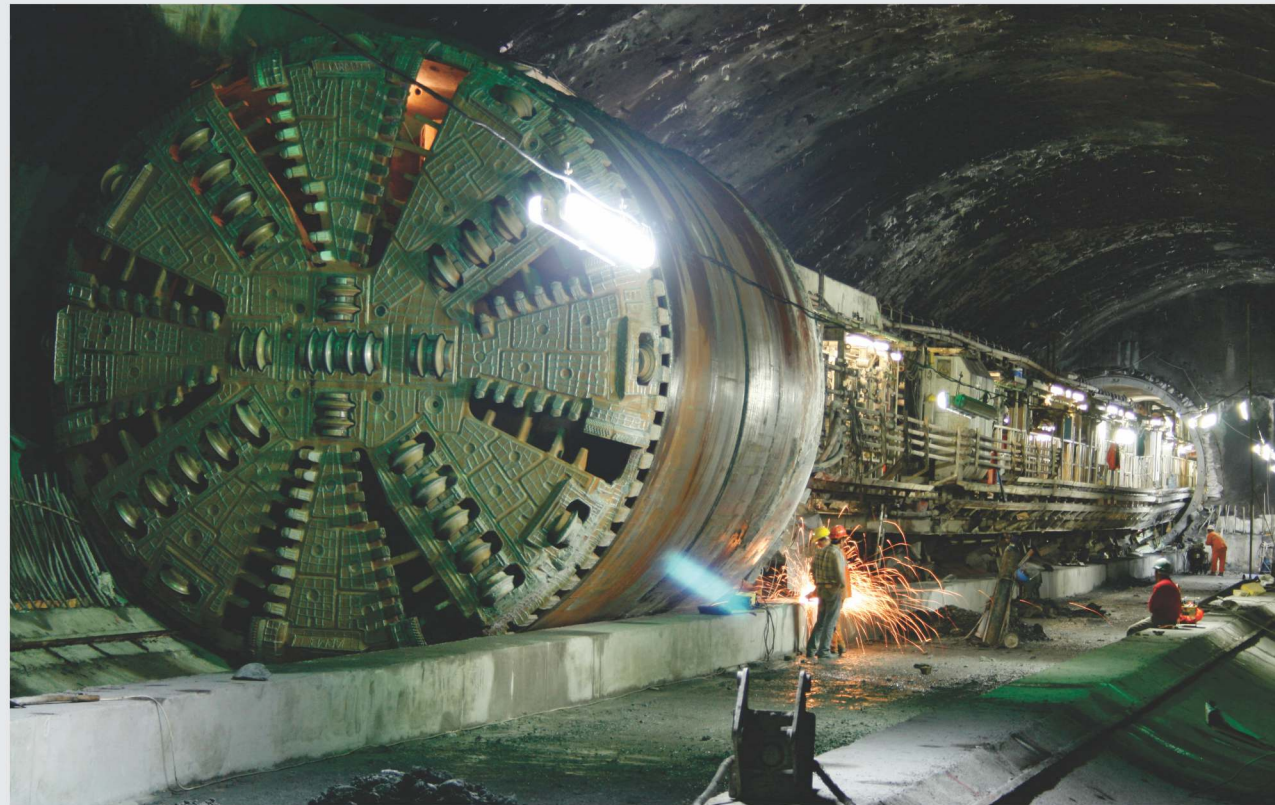


TECHNICAL SERVICES PROVIDED BY TUNNEL SAZ MACHINE COMPANY

TECHNICAL AND ENGINEERING SERVICE

The company, by using experienced experts, is able to provide a wide range of technical services required by the employers, including the following services:

- Refurbishing, assembling, commissioning and operation of mechanized tunneling machines
- Consultation
- Training



REFURBISHMENT, ASSEMBLING, COMMISSIONING AND OPERATION

- Planning and controlling executive projects
- Complete refurbishing, modifying, testing and commissioning of full mechanized excavation machines (TBM)
- Operating mechanized drilling machines
- Troubleshooting, repairing, and specialized electrical and mechanical services, initiating, and delivering
- Periodic inspection of tunneling equipment, and presenting complete reports of the devices' status
- Estimating the list of required spare parts and equipment for the project
- PLC Programming, recording the device's data, and monitoring
- Design and implementation of specific systems (such as Dewatering, Ventilation, Material conveying and etc.) to enhance the capabilities of the boring machines, in order to reach to maximum efficiency in operation.



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CONSULTATION

Providing appropriate technical and executive consultations to the administrators of tunnel projects is counted as one of the major factors affecting the final result of the project and the implementation of the work according to the predicted schedule and budget.

In this regard, consulting services offered by Tunnel Saz Machine are as follow:

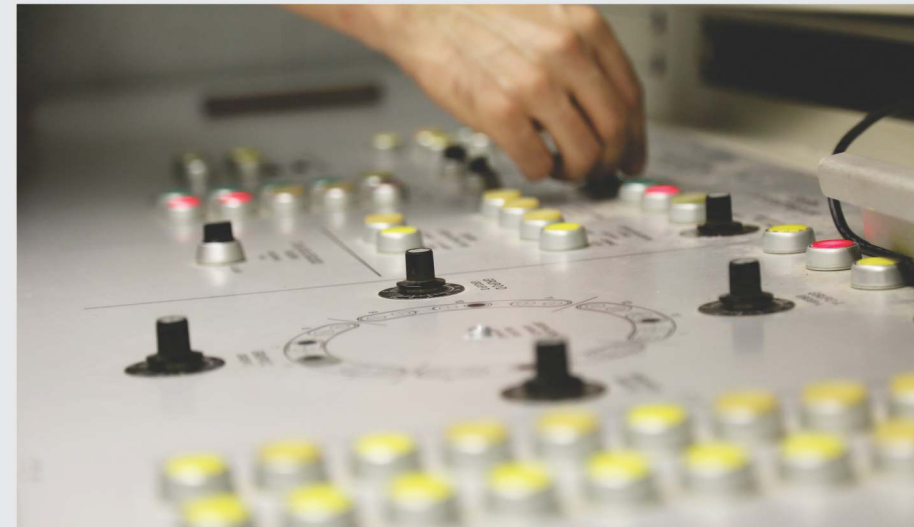
- Selecting of equipment and machine, in accordance with the condition of the project
- Providing site arrangement consulting in order to achieve maximum efficiency in operation time
- Commercial assistance to purchase TBM machines and tunneling equipment
- Technical assistance to operate mechanized tunneling machines and adjustment of operational parameters according to the condition of different grounds
- Providing solutions to overcome technical problems caused by encountering with challenging geological conditions
- Consultation in the field of procurement and supply of spare & consumable parts
- Consultation on procedures of preventive maintenance and service



TRAINING

The increase in the number of mechanized tunnels in recent years has required more specialized and efficient training in this field.

The hardships of the tunnel's executive operation has led to a decline in the duration of work time of personnel in this field, which will double the problem of specialist personnel shortage in this section. Therefore, training new forces, aimed to get used in the projects, is one of the chief needs which Tunnel Saz Machine, as the only leader ship company in the field of mechanized tunneling in the country, marks itself to meet that.



In this regard, the company is ready to provide the following trainings to the applicants by providing classroom and practical training in accordance with the needs of mechanized drilling under the supervision of professors who are familiar with tunnels and mechanized drilling systems:

- Providing basic trainings on various excavation techniques and types of mechanized drilling machines
- Providing elementary and advanced training courses in the field of hydraulic and mechanical engineering related to mechanized drilling machines
- Providing elementary and advanced training courses in the fields of PLC programming and electronics related to mechanized tunneling machines
- Practical trainings of drilling machines' operational techniques



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SUPPLY AND PROCUREMENT SERVICES

The largest center of equipment and spare parts related to mechanized excavation in Iran

The Tunnel Saz Machine Company, with the largest stock of new and used equipment and components related to TBM machines and tunneling equipment, is an appropriate source for prompt response to the needs of its customers. In addition to the existing equipment and parts, having access to a wide range of devices, equipment and OEM suppliers, enables the company to meet the needs of its customers at reasonable prices and suitable delivery times.

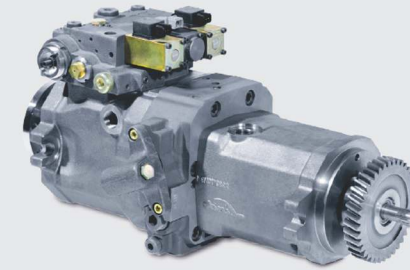
In general, the activity of this part of the company can be classified in three distinct cases:

Supplying Tunneling Equipment

- TBM and micro TBM machines (brand new and second hand) as complete package
- Tunnel Conveyor System
- Segment moulds
- Rolling stock equipment including: locomotives, muck wagons, mortar cars, and etc.
- Ventilation System
- Batching plants



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Supply of mechanical and hydraulic parts

- All kind of hydraulic and pneumatic parts and systems
- Special kind of bearings such as Main bearings, and erector bearings, as well as special gear reducers
- Cutting tools



Supply of electrical and electronic parts

- Different central control systems (PLC) and related spare parts
- Various sensors, monitoring systems and their related parts
- All kind of frequency inverters and related control boards and cards



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Tunnel Saz Machine Company Projects

Water Conveyance Project (Bazideraz - T4)

TSM ACTIVITIES

- Supplying of the TBM machine and spare parts
- Refurbishment, assembly and commissioning of TBM machines
- Supervising the excavation activities
- Supplying locomotives, tunnel conveyor system

Project Specification

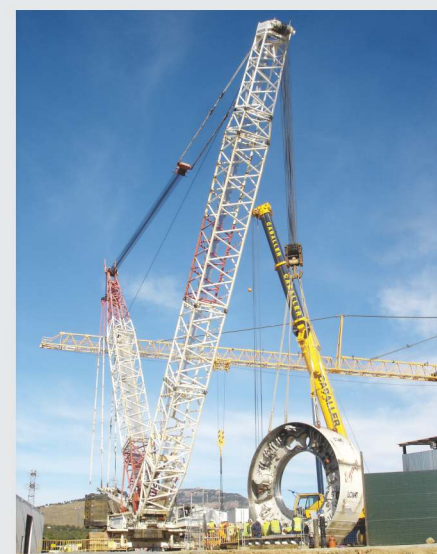
Tunnels Length: ≈ 9500+4400 meter

Tunnel Diameter: Φ 6800 mm

Machine Specification

Machines Type: EPB

Made by: : LOVAT RME270SE



TSM ACTIVITIES

- Complete refurbishment and modification of the TBM machine
- Assembling and commissioning the TBM machine
- Supervising the excavation activities
- Periodic inspection and supplying technical assistance



Project Specification

Tunnel Length: ≈ 14000 meter

Tunnel Diameter: Φ 5275

Machine Specification

Machine Type: Double Shield Hard Rock

Made by: Herrenknecht-S357

Nosoud Water Conveyance Project (Lot B1)

TSM ACTIVITIES

- Full refurbishment of the TBM
- Modification and updating of the TBM machine due to the severe geological conditions of the area (high water pressure and H2S gas rush)
- Supervising the excavation activities during project's implementing time

Project Specification

Tunnel Length: ≈ 20000 meter

Tunnel Diameter: Φ 6730 mm

Machine Specification

Machine Type: Double Shield Hard Rock

Made by: Herrenknecht – S157



Project Specification

Tunnel Length: ≈ 6000 meter

Tunnel Diameter: Φ 6125 mm

Machine Specification

Machine Type: Double Shield Hard Rock

Made by: SELI-Robbins



TSM ACTIVITIES

- Full refurbishment and modification of the TBM machine
- Operating TBM machine for 4.5 km length in extreme challenging geological conditions
- Supply, installation and commissioning of a tunnel conveyor system



Qatar Micro Tunneling Projects

TSM ACTIVITIES

- Supplying 3 Micro Tunneling Machines with 1600, 1200 and 800 mm ID
- Supplying equipment for local companies
- Supplying technical services for local companies
- Operating MTBM machines

Project Specification

Pipeline Length: ≈ 5000 meter

Tunnel Diameter: Φ1600-1200-800mm

Machine Specification

Machines Type: AVN 1600-1200-800

Made by: Herrenknecht



Project Specification

Pipeline Length: ≈ 500 meter

Tunnel Diameter: Φ1000 mm

Machine Specification

Machines Type: TSM 1330 mm

Made by: Tunnel saz machine



TSM ACTIVITIES

- Design and manufacture of Micro Tunneling Machine
- Technical engineering supply
- Spare parts supply
- Operating and commissioning of MTBM machines

Tehran's Subterranean Water Conveyance Project (Abuzar Tunnel)



Lovat Made, EPB TBM, ME 170SE, Φ 4300 mm, Tunnel Length≈ 4000 meter

Fath Highway Pipe Jacking Project



HK Made, MTBM, AVN 1600 mm, Tunnel Length≈ 2500 meter

Sri Lanka's Uma Oya Project



HK Made, Double Shield Hard Rock, Φ 4200 mm, Tunnel Length≈ 3500 meter

Mashhad Metro Project (Line 2)	NHI Made, 2x EPB TBM, Φ 9400 mm
Tehran and Hamadan Micro Tunneling Projects	HK Made, MTBM, AVN 1200 & 1800 mm
Rasht Micro Tunneling Project	ISEKi Made, MTBM, Φ 800 & 1400 mm
Tehran Metro Project (Line 7)	SELI-Lovat Made, EPB TBM, Φ 9400 mm
Tehran – Karaj Water Conveyance Project	HK Made, Hard Rock Double Shield, Φ 4300 mm
Istanbul Metro Project (Turkey)	HK Made, 2x EPB TBM, Φ 6300 mm
Azerbaijan Micro Tunneling Project	MTS Made, MTBM, Φ 800 mm

