

TBM EPB

Boring Diameter 9.402 mm



Lining Current Configuration:

- Internal segmental lining diameter= 8.300 mm
- Segment thickness= 400 mm
- Outside segmental lining diameter= 9.100
- GAP= 302 mm
- Number of segment/ring= 6 + 1 plus one invert segment

Contacts:

MAIN TECHNICAL SPECIFICATION

MODEL: SELI/Lovat EPB 0940.134 (Drawing NDF.05.100)

Year of manufacture: September 2011

Boring Diameter

9402 mm

Cutterhead

➤ Cutters type (Double Disc)	15.5"
➤ Number of Disc Cutters (or double picks)	13
➤ Maximum Individual Cutter Load	200 kN
➤ Number of Rippers/Scrapers	54 + 24 / 120
➤ Opening ratio	30%
➤ Copy-cutter number/Stroke	2 / 100 mm
➤ EPB cells	8
➤ Working pressure max	6 bar
➤ Spraying nozzles	8
➤ Cutterhead Drive	12 Hydraulic motors
➤ Cutterhead Power	2700 kW (9x300 kW)
➤ Cutterhead Speed	0 to 2 rpm
➤ Cutterhead Torque	12,000 kNm (2 rpm) 25,000 kNm (<1 rpm)

Main Thrust

➤ Stroke	2251 mm
➤ Number of Main Thrust Cylinders	36
➤ Thrust force	72,500 kN @ 276 bar
➤ Max thrust	90,000 kM @ 345 bar

Articulation

- Active articulation number **1**
- Cylinders **32**
- Stroke **305 mm**
- Max Thrust **96,600 kN @ 414 bar**

Screw Conveyor

- Diameter **1118 mm**
- Length **14 m**
- Torque **213 kNm**
- Capacity **1000 m³/hr**
- Variable speed **0 - 32 rpm**
- Installed power **300 kW**

Hydraulic System

- Maximum System Pressure **345 bar**
- Working pressure **250 bar**

Grout System Two component type

- Lines for A component **6 + 6**
- Lines for B component **6 + 6**
- Lines type **removable**
- A component pumps **6 (Moyno)**
- B component pumps **6 (Moyno)**

Erector

- Rotation speed slow **0,2 rev/min**
- Segment claw **vacuum type**
- Lifting capacity **10 ton**

Machine Conveyor

- Installed power **45 kW**
- Belt speed **0 - 2,5 m/s**
- Capacity **2300 t/h**
- Width **1000 mm**
- Length **45 m**

Electrical System

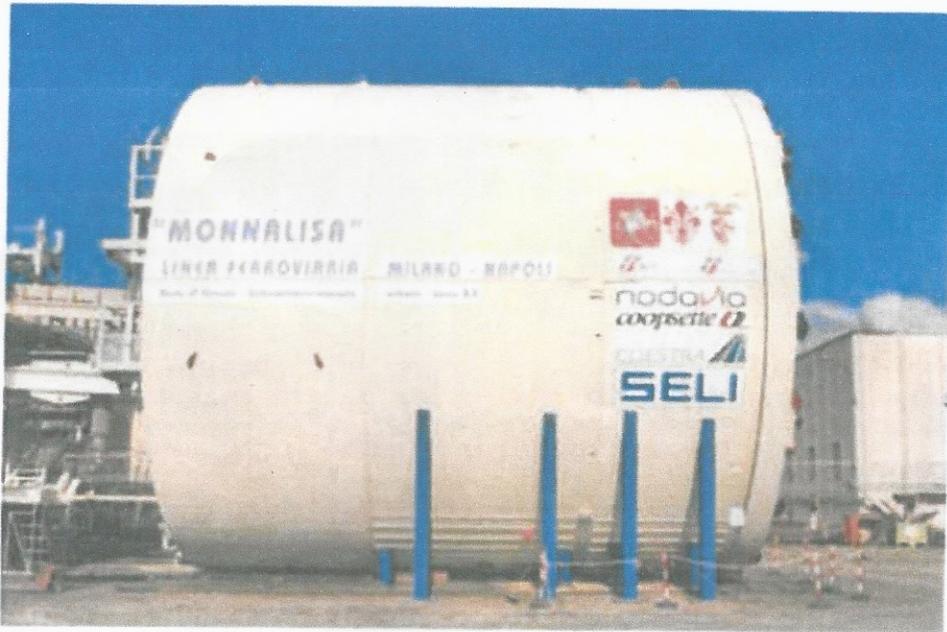
- Frequency **50 Hz**
- Transformer Size **2 x 3000 kVA = 6000 kVA**
- Primary Voltage **15,000 V, 50 Hz**
- Secondary Voltage **600 V, 400 V**

This machine was manufactured by SELI for the excavation of the two double pipes tunnels for the High Speed Train line under passing Florence project. The machine was manufactured using the existing used shields from the EPB Lovat TBM that has excavated the Bologna High Speed train line under pass in 2005. The rest of the machine is completely new manufactured by SELI, only the main drive and the main bearing were new manufactured by Lovat.

The TBM was erected end dry tested in the starting shaft in Florence during the 2012, but, for contractual reasons, the tunnel excavation never happens.

Due to financial reasons the Main Contractor (Nodavia) sell the contract to a new contractor. The new contractor decides not use SELI as subcontractor. On the same time SELI suffers an important financial crisis and cannot follow to pay the bank loans on this TBM. The TBM was disassembled, removed from the site and stored in our yard near Florence, where it is now.

Below some more Photo of the TBM.



The Day of the inauguration in SELI yard



