

TUNNEL HEADING & LOADING MACHINES models ITC

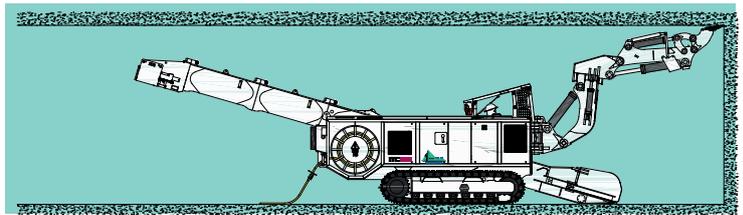
TUNNEL ARTICULATED DUMP TRUCKS models ITC

RECENT REFERENCES

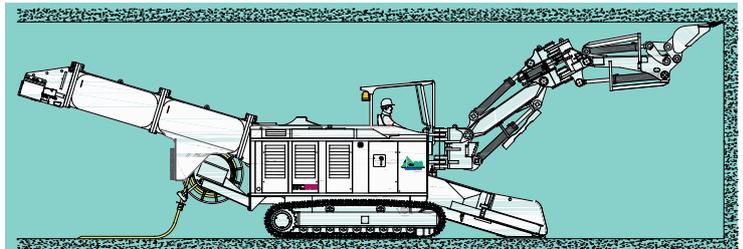
Overview

1. Digging with excavation page 2

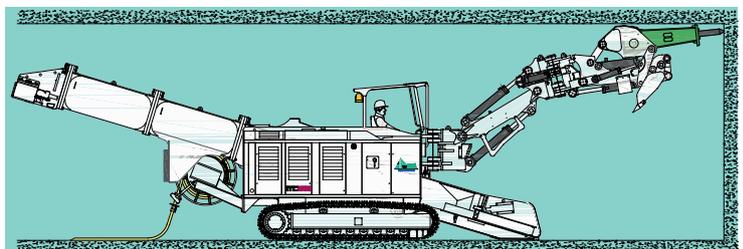
- 1.1 ROAD OR HIGHWAY TUNNELS
- 1.2 RAILWAY TUNNELS
- 1.3 SUBWAY TUNNELS
- 1.4 WATER SUPPLY
- 1.5 WASTE WATER AND RAINWATER
- 1.6 IRRIGATION
- 1.7 GENERAL SUPPLY



ITC 125 F3



ITC 312N H1



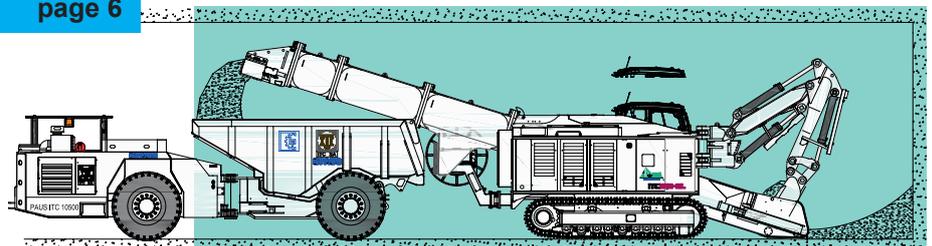
ITC 312N H6

2. HAMMER TUNNELLING page 4

- 2.0 HYDRO-ELECTRIC-PLANTS
- 2.1 ROAD OR HIGHWAY TUNNELS
- 2.2 RAILWAY TUNNELS
- 2.3 SUBWAY TUNNELS
- 2.5 WASTE WATER AND RAINWATER
- 2.7 GENERAL SUPPLY
- 2.8 MINING

3. Mucking page 6

- 3.0 HYDRO-ELECTRIC-PLANTS
- 3.1 ROAD OR HIGHWAY TUNNELS
- 3.2 RAILWAY TUNNELS
- 3.3 SUBWAY TUNNELS
- 3.4 WATER SUPPLY TUNNELS
- 3.7 GENERAL SUPPLY
- 3.8 MINING



ITC 10'500

ITC 315 SL

4. special tasks page 9

- 4.1 OTHER UNDERGROUND WORKS
- 4.8 OTHER LOADING WORKS



ITC 320 V45

Current Jobsites !! page 10

1. DIGGING WITH EXCAVATION BUCKET / RIPPER TOOTH

1.1 ROAD OR HIGHWAY TUNNELS

1.1.1 M40-ORBITAL HIGHWAY AROUND MADRID, (ES)

-> See Info

1.1.2 ROAD TUNNEL IN THE BUTMIR, SUBURB OF SARAJEWO

1.1.3 ROAD TUNNEL UNDER THE CITY OF BRNO

- Main traffic tunnel under the inhabited city.
- Joint Venture: Metrostav, ZS Brno, Subterra.
- 3 units model [ITC 112 M3](#) with TCU and [M4](#) (with TCU).
- Geology: Sand and gravels
- Heading system: NATM , currently, two side drifts and one pilot tunnel are driven. Mucking through railway and one through Paus Dumptruck (pilot tunnel).



1.1.4 AIRSIDE ROADTUNNEL AT T5 HEATHROW AIRPORT

- Tunnel under the Terminal 5
- Joint Venture: Miller Tunnelling and Vinci.
- 2 units model [ITC 112 E3/E7](#).
- Geology: London clay
- Heading system: NATM

1.1.5 ROAD TUNNEL IN HAUSMANNSTÄTTEN, (AT)

- Recognition tunnel for the diversion road of Graz.
- 1 unit model [ITC 312 H1](#)
- Heading system: NATM, mucking on dumptrucks Paus [ITC 10000](#)

1.1.6 A3 HIGHWAY TUNNEL IN HINDHEAD, (UK)

- Dual carriageway tunnel of 1.8 km
- Joint Venture: Balfour Beatty and Mott MacDonald.
- 2 units model Terex [TE 210](#) Electric.
- Geology: sedimentary deposit, sandstone, silt and clay
- Heading system: NATM

1.1.7 ROAD ESCAPE TUNNEL IN MANNHEIM GERMANY

- Saukopf Road escape tunnel.
- 1 unit model [ITC 120 F3](#)
- Contractor: Jäger Bau GmbH

1.1.8 HIGHWAY TUNNEL EKPTT

- Tunnels on the Highway from Athen to Thessaloniki.
- 1 unit model [TE210](#)
- Contractor: JV Vinci & Aktor

1.2 RAILWAY TUNNELS

1.2.1 ONE TRACK RAILWAY TUNNEL MIGLIONICO, (IT)

1.2.2 ONE TRACK RAILWAY TUNNEL EIDSVOLL CLOSE TO OSLO, (NO)

1.2.3 GERMAN HIGH SPEED RAILWAY, TUNNEL OF LIMBURG

1.2.4 SWISS PRIVATE RAILWAY

1.2.5 GERMAN HIGH SPEED RAILWAY RHEIN-MAIN, TUNNEL OF WANDERSMANN

1.2.6 GERMAN HIGH SPEED RAILWAY RHEIN-MAIN, TUNNEL OF SIEGAUE

1.2.7 BRENNER HIGH SPEED RAILWAY TUNNEL OF BRIXLEGG WEST

1.2.8 RAILWAY TUNNEL OF CHOMUTOV BY BREZNO IN THE CZECH REPUBLIC

-> See News N° 26

1.2.9 RAILWAY TUNNEL OF KORALM, (AT)

- Excavation of the recognition tunnel Mitterpichling according to the NATM.
- 2 units model [ITC 312 H1](#).
- Tunnel driven very efficiently from November 2004. Best performance in sandstone: 2.6 m/day. Best performance in schluff: 10.2 m/day, average advance rate: 5-6 meters a day.
- > See News N° 24, see video

1.2.10 RAILWAY TUNNEL WIENERWALD, (AT)

- The length is approx. 2,3 km with 75 m of it under divided cross section and 300 m under HDI tubing screen. Cross section 120 m². Geology: Flysch: Mixture from sandstone, clay stone, marl with storages of multicolored slates. The tunnel excavator TE



200 is used in the side wall, crown tunnel and into the emergency escape where bigger machines cannot operate. To break off machine equipped with a rotary cutting unit and hydraulic rock breaker to excavate the invert. -> See News N° 20

1.2.11 RAILWAY TUNNEL FRITZENS (INNTAL), (AT)

- Excavation of the recognition tunnel Fritzens according to the NATM.
- The length is approx. 5,2 km, 2,8 km of it driven under compressed air and of it 430 m under HDI tubing screen. Cross section 112 m². Geology: Inn crushed stone, gravel. (commencement of construction of the compressed air heading in March ' 06).
- 2 units model [TE 210](#) electric.

1.2.12 RAILWAY TUNNEL OF KORALM, (AT)

- Excavation of tunnel Leibenfeld according to the NATM.
- The length is 2300 m starting from a 60 m deep pit (Ø9m) in a 22 m² cross section. Geology is on approx. 8-900 m loose rock (machine works as excavator) and then the main drive as crystalline rocks, which will be headed in Drill and Blast method (machine works as continuous mucking machine).
- 1 unit model [ITC 120 F2](#).



1.2.13 RAILWAY TUNNEL OF KORALM, (AT)

- Excavation of the recognition tunnel Paierdorf according to the NATM.
- The length is 5600 m starting from a 120 m deep pit (Ø9m) in a 37-45 m² cross section (1100 m to the West, 4500 m to the East).
- Geology is silt, fine sand and gravelled sand. In the eastern drive after approximately 1 km the Lavanttaler disturbance has to be crossed and then the heading will be by Drill and Blast.
- 2 units model **TE 210**. -> See News N° 31, see video

1.2.14 RAILWAY TUNNEL LT31 MAXING, (AT)

1.2.15 RAILWAY TUNNEL OF KING'S CROSS, (UK)

1.2.16 RECOGNITION RAILWAY TUNNEL FOR THE BRENNER

- Recognition Tunnel Brenner North, Innsbruck.
- 1 unit model **ITC 312 H1** & 3 dump truck **ITC 10'000**
- Contractor: JV Strabag & Porr

1.2.17 HL NÜRNBERG-ERFURT, RENNBURG & FEUERFELSEN-TUNNEL

- Excavation of partial section acc. to NATM.
- Contractor: Marti Tunnel
- 1 unit **TE 210**



1.2.18 HIGH SPEED RAILWAY - SEMMERING BASRIS TUNNEL (AT)

- 3 dump truck **ITC 10'500**

1.2.19 HIGH SPEED RAILWAY - KORALM TUNNEL 3 (AT)

- 1 mucking unit **TE210**

1.3 SUBWAY TUNNELS

1.3.1 LONDON - JUBILEE LINE EXTENSION - CONTRACT 104 : LONDON BRIDGE -> See Info

1.3.2 FRANKFURT AM MAIN

1.3.3 LISBON (A.C.E.)

1.3.4 METEOR UNDER THE PAVEMENTS OF BERCY: THE FUTURE METRO IN PARIS. -> See Info

1.3.5 LONDON - JUBILEE LINE EXTENSION - CONTRACT 102 : WATERLOO STATION

1.3.6 MADRID – SUBWAY S.S. SEBASTIAN - ALCOBENDAS

1.3.7 STUTGART – SUBWAY AIRPORT-BERNHAUSEN -> See Info

1.3.8 BUENOS AIRES SUBWAY (REP. ARGENTINA) LINEA 'H', LOT 'B'

1.3.9 VIENNA SUBWAY (AUSTRIA) LINEA 'U2' WENDEPLATZ'

1.3.10 SUBURBAN RAILWAY MUNICH UNDER THE CITY OF GARCHING -> See News N° 11

1.3.11 SUBURBAN RAILWAY UNDER THE CITY OF BOCHUM

- Subway under the inhabited city.
- Joint Venture: Heitkamp and Beton&Monierbau.
- 1 unit model **ITC 312 H1**.
- Geology: Sand and gravels
- Heading system: NATM, mucking through suspended conveyor system -> See News N° 15



1.3.12 SUBURBAN RAILWAY UNDER THE CITY OF MUNICH

- Subway under the inhabited city.
- Joint Venture: Züblin and .
- 2 units model **TE 200**.
- Geology: Sand and gravels
- Heading system: NATM in compressed air.

1.3.13 U2/2 SUBWAY OF VIENNA -> See News N° 23

1.3.14 METRO OF PARIS -> See News N° 41

- Subway under the inhabited city, Extension of the line N° 4 at Porte d'Orléans.
- Joint Venture: Soletache Bachy.
- Pre-cutting heading with Perforex system
- 1 unit **ITC 312 H6**

1.3.15 METRORAIL DULLES AIRPORT, WASHINGTON

- Subway under the inhabited city, NATM section.
- Joint Venture: Bechtel, Beton & Monierbau.
- 2 unit **ITC 312 H1**

1.3.16 CROSSRAIL TOTTENHAM COURT ROAD

- Subway East-West under London in NATM.
- Joint Venture: Vinci BAM Nuttal.
- 1 unit **ITC 120 F3**

1.3.17 CROSSRAIL C510 WHITE CHAPEL

- Subway East-West under London in NATM.
- Joint Venture: Balfour Beatty, BeMo, Morgan, Vinci BMWV.
- 3 units **ITC 312 H1**
- 1 units **ITC 112**

- 1.3.18 CROSSRAIL C410 BOND STREET
 - Subway East-West under London in NATM.
 - Joint Venture: BFK, Bam Nuttal, Ferrovial, Kier
 - 1 unit ITC 120 F3 / F8; 1 unit TE210

- 1.3.19 SUBWAY LONDON, (GB) BSSU
 - Capacity; JV Costain, Laing, O'Rourk
 - 1 unit TC 125 E; 1 unit ITC 120 F3 / F8

- 1.3.20 U-BAHN VIENNA, (AT)
 - Extension Line U1/1-9; Contractor: Strabag
 - 5 units TE 210

- 1.3.21 U-BAHN STUTTGART, (DE)
 - Extension Line U12; Contractor: Zublin
 - 2 units TE 210; 3 units dumper ITC 10'500

- 1.3.22 U-BAHN NÜRNBERG, (DE)
 - Extension Line U3; Contractor: Bilfinger/Implema
 - 2 units dumper ITC 10'500

- 1.3.23 EDMONTON TRANSIED LRT PROJECT (CA)
 - 2 units ITC 312N H1

- 1.3.24 LONDON BSCU (GB), Contractor DRAGADOS UK
 - 1 unit ITC 120N F8
 - 1 unit TE210

- 1.3.25 TORONTO CROSSTOWN LRT (CA)
 - 2 units ITC 312N N1s

1.4 WATER SUPPLY

- 1.4.1 STEP ABDELMOUMEN (MA)
 - 1 unit TE210

1.5 WASTE WATER AND RAINWATER

- 1.5.1 RAIN WATER DISCHARGE CANAL IN MISTERBIANCO, (IT)
 1.5.2 SEWAGE TUNNEL IN HULL, UK



1.6 IRRIGATION

- 1.6.1 CANAL CARRION, (ES)

1.7 GENERAL SUPPLY

- 1.7.1 DISTANT HEAT CANAL F. HEATING PLANT TO AIRPORT

2. HAMMER TUNNELLING

2.0 HYDRO-ELECTRIC-PLANTS

- 2.0.1 HYDROELECTRIC PLANT CLEUSON - DIXENCE (VS, CH)
 -> See Info
- 2.0.2 DIGA DEL METRAMO, (IT)
- 2.0.3 HYDROELECTRIC PLANT PARADISO, (GT)
- 2.0.5 HYDROELECTRIC PLANT XCABAL, (GT)

- 2.0.6 HYDROELECTRIC PLANT SPILLVATN, SWEDEN
 -> See News N° 39

- 2.0.7 HYDROELECTRIC PLANT NIYET MEKTUBU, TÜRKY
 2.0.8 HYDROELECTRIC PLANT IN CRETE

2.1 ROAD OR HIGHWAY TUNNELS

- 2.1.1 HIGHWAY TUNNEL, SIERRE /VALAIS (SWITZERLAND)
 -> See News N° 04
- 2.1.2 HIGHWAY TUNNEL, ST. AUBIN (SWITZERLAND)
- 2.1.3 ROADWAY TUNNEL, BRANISKO (SLOVAK REPUBLIC)
- 2.1.4 ROADWAY DEVIATION TUNNEL IN SISSACH (CH),
 CHIENBERGTUNNEL -> See News N° 12
- 2.1.5 ROADWAY TUNNEL IN GUAYAQUIL (EC),
 'EL CARMEN' AND 'SANTA ANA' TUNNELS
- 2.1.6 ROAD TUNNEL OF GUAYAQUIL
 TUNNEL VIAL DE LOS CERROS

- 2.1.7 BYPASS BERTOLDSHOFEN
 - ITC312H1 #0398 + ITC312SL #0529
 - ITC120N F3
 - Contractor: BeMo tunnelling

2.2 RAILWAY TUNNELS

- 2.2.1 EAST-WEST-EXPRESS LINK IN PARIS (SEQUENCE 36 B)
- 2.2.2 RAILWAY IN SPAIN, TUNNEL OF VERINA
- 2.2.3 NEW HIGH SPEED RAILWAY IN SPAIN,
 TUNNEL OF RICLA (MADRID-BARCELONA)
- 2.2.4 RAILWAY IN SWITZERLAND,
 TUNNEL GRANDVAUD
- 2.2.5 SWISS HIGH SPEED
- 2.2.6 NARROW GAUGE RAILWAY IN SWITZERLAND
 TUNNEL OF ENGELBERG -> See News N° 17
- 2.2.7 TGV FRANCE SPAIN, TUNNEL LE PERTHUS
- 2.2.8 ÖBB RAILWAY TUNNEL WIENERWALD IN AUSTRIA
 INTERMEDIATE MUCKING TUNNEL
 - Machine model ITC 120 F2 with hammer S29, mucking on to
 Paus ITC 10000 dump trucks. -> See News N° 30, see video
- 2.2.9 REHABILITATION OF RAILWAY LINE LES CARPATES, FR
 - One unit model ITC 312 H6 equipped with the V32 Montabert
 rock breaker with 2 dump trucks ITC 10'000.
 - Contractor: Bouygues
- 2.2.10 EXTENSION OF THE HIGH SPEED RAILWAY LINE MA-
 DRID-BARCELONA, (ES)
 - One unit model ITC 312 H6 with the V32 Montabert rock breaker
 - Contractor: Nortunel

- 2.2.11 RAILWAY TUNNEL T48 IN JAMMU & KASHMIR, (IN)
 - Access tunnel & main drives and HRT
 - 2 heading machines ITC 120 F2
 - 2 tunnel excavators TE 210
 - Contractor: HCC Mumbai

- 2.2.12 SIMPLON RAILWAY TUNNEL, (CH)
 - Covering the invert
 - 1x heading machine ITC 320 V45



2.2.13 RHB - ENLARGEMENT GLATSCHERA TUNNEL, (CH)

- Hammer unit [ITC 320 V45](#)
- 1x Tunnel excavator [TE210](#)
- 40 m² x 340m
- > See News N° 51

2.2.14 SWISS FEDERAL RAILWAY-COLDRERIO TUNNEL, (CH)

- 2x unit [ITC 312 H1](#)
- 1x unit [ITC 320 V45](#)
- 1x unit [ITC 312 H6](#)

2.3 SUBWAY TUNNELS

2.3.1 SEOUL SUBWAY (SOUTH KOREA)

2.3.2 SUBWAY IN PUSAN (KOREA)

2.3.3 SUBWAY IN ATLANTA

2.3.4 PRAG SUBWAY IN THE CZECH REPUBLIC

- Excavation of the main tunnel, according to the NATM.
- Cross section of total approx. 40 m², total length abt. 2000 m.
- Geology: Clay, marl, very soft and weathered ground condition.
- 1 unit model [ITC 312 N1s](#).

2.3.5 SUBWAY OF MOSCOW, EXTENSION LINES, RU

- Access tunnels and stations
- 3 heading machines [ITC 120 F2/F3](#)
- 2 heading machines [ITC 312 N1/H6](#)
- Contractor: Mosmetrostroy

2.5 WASTE WATER AND RAINWATER

2.5.1 RESERVOIR TUNNEL AT BURTSCHIED AACHEN (DE)

2.5.2 MAIN SEWAGE IN WIESBADEN (GERMANY)

-> See News N° 06

2.5.3 PIPELINE TUNNEL IN DÄTTLIKON (SWITZERLAND)

-> See News N° 09

2.5.4 DRINKING WATER SUPPLY TUNNEL IN ERZURUM (TURKEY)

2.5.5 IRRIGATION SCHEME ON ISLE OF REUNION (FRANCE)

- Cross-section 21 m², total length 4'900 m.
- One unit [ITC 112 E5](#) equipped with the M300 Montabert.
- Geology: strongly weathered rock, Anglomera, Andesite and Basalt. The tunnel is completely under water income (sometimes more than 600 l/sec).

2.5.6 WATER TRANSFER TUNNEL IN CANARIAN ISLAND

- One unit model [ITC 120 F6](#) equipped with the S29 rock breaker.

2.5.7 WATER TRANSFER TUNNEL COBURG, (DE)

- One unit model [ITC 120 F2](#) equipped with the S29 Rammer rock breaker with 2 dump trucks [ITC 10'000](#).
- Contractor: Kunz Tunnelbau

2.7 GENERAL SUPPLY

2.7.1 PIPELINE TUNNEL PITELLI AT LA SPEZIA (IT) LENGTH: 1500 M

2.7.2 TECHNICAL TUNNEL LE LOCLE (CH) LENGTH: 320 M, CROSS-SECTION 10 M²

2.7.3 NATO HEAD QUARTER IN TURKEY

2.8 MINING

2.8.1 TALC MINE LUZENAC, VAL CHISONE (IT)

-> See News N° 03



2.8.2 MANGANESE MINE AT NCHWANING DECLINE ACCESS TUNNEL

2.8.3 CCB LIMESTONE QUERRY IN BELGIUM TUNNEL OF MILIEU - GAURAIN

2.8.4 CHROM MINE IN CHROMTAU, KAZAKHSTAN -> See Video

2.8.5 GOLD MINE IN VENEZUELA

2.8.6 JOUYANDEGAN SAFIR MINERAL, IRAN

- 1 unit [ITC 320](#) equipped with the Montabert V45 rock breaker.

2.8.7 METALL GROUP, BELGORD, (RU)

- One unit model [ITC 120 F2](#) equipped with the S29 Rammer rock breaker. Soft mineral production.

2.8.8 CADIA GOLD GROUP, GOSOWONG, (ID)

- One unit model [ITC 312 H6](#) equipped with the Montabert V32 rock breaker. Soft mineral production.

2.8.9 BARRICK GOLD GROUP, CORTEZ HILL NEVADA, (USA)

- One unit model [ITC 312 H6](#) equipped with the Montabert V32 rock breaker. Soft mineral production.

2.8.10 URANIUM MINE, CIGAR LAKE IN SASKATOON, (CA)

- Access tunnels and exploration drifts
- 2 heading machines [ITC 120 F2/F3](#)
- Contractor: Cameco Corp.

2.8.11 TALC MINE ORANI, SARDINIA, (IT), IMI FABI

- 1x Heading machine [ITC 120 F2](#)

2.8.12 GOLD CORP, GOLD MINE LOS FILOS, (MX)

- Telective mining trial
- 1x unit [ITC 120 F2](#)

3. MUCKING

3.0 HYDRO-ELECTRIC-PLANTS

3.0.1 OYACACHI, ECUADOR

3.0.2 HYDROELECTRIC POWER PLANT TRANSVASUR, GRAN CANARY, SPAIN

3.0.3 LOWER KIHANSI HYDROPOWER PROJECT (TANZANIA)

3.0.4 MUELA HYDROPOWER PROJECT (LESOTHO)



- 3.0.5 STORAGE WATER PUMP STATION GOLDISTAL IN THURINGE (D)
- 3.0.6 HYDROELECTRIC POWER PLANT CROT-ENEL, LANZA VALLEY , ITALY
- 3.0.7 HYDROELECTRIC POWER PLANT CHIMAY, PERU
- 3.0.8 HYDROELECTRIC POWER PLANT BASPA II, INDIA
- 3.0.9 HYDROELECTRIC POWER PLANT GIGEL GIBE NEAR JIKMA IN ETHIOPIA (CHEFFA PROVINCE)
- 3.0.10 HYDRO ELECTRIC POWER PLANT VENDA NOVA II HEADRACE TUNNEL IN PORTUGAL
- 3.0.11 HYDRO ELECTRIC POWER PLANT VISHNU PRAYAG HEADRACE TUNNEL IN INDIA
- 3.0.12 HYDRO ELECTRIC POWER PONT VENTOUX HEADRACE TUNNEL IN NORTH ITALY -> See News N° 21
- 3.0.13 HYDRO ELECTRIC POWER TYIN HEADRACE TUNNEL IN NORWAY
- 3.0.14 HYDRO ELECTRIC POWER ERMENEK DIFFERENT TUNNELS IN TURKEY
- 3.0.15 HYDRO ELECTRIC POWER PLANT JING PING DIFFERENT TUNNELS IN SOUTH CHINA
- 3.0.16 HYDRO ELECTRIC POWER FOLLAFOS HEADRACE TUNNEL IN NORWAY -> See News N° 17
- 3.0.17 HYDRO ELECTRIC POWER KOPSWERK II HEADRACE TUNNEL IN AUSTRIA
- 3.0.18 HYDRO ELECTRIC POWER INNVIK HEADRACE TUNNEL IN NORWAY -> See News N° 28
- 3.0.19 HYDRO ELECTRIC POWER BREIDALL WATERTRANSFER TUNNEL IN NORWAY
-> See News N° 32, see video
- 3.0.20 HYDRO ELECTRIC POWER NYGAARDSJOEN WATERTRANSFER TUNNEL IN NORWAY
- 3.0.21 HYDRO ELECTRIC POWER KJØSNESFJORDEN HEADRACE TUNNEL IN NORWAY
- Excavation of the several headrace tunnels, by Drill&Blast.
 - Cross section of 16 + 25 m², total length abt. 21 km.
 - Geology:micaceous granit-gneiss.
 - 2 units model **ITC 312 SL** and 1 unit **ITC 312 H3**
 - 3 dump truck **ITC 10'000**.
- World Record of Conventional Heading**
-> See News N° 40
- 3.0.22 HYDRO ELECTRIC POWER BLEIKVATN HEADRACE TUNNEL IN NORWAY
- 3.0.23 HYDRO ELECTRIC POWER SAUDA HEADRACE TUNNEL IN NORWAY
- 3.0.24 HYDRO ELECTRIC POWER BOULLANJAKKA HEADRACE TUNNEL IN NORWAY
- 3.0.25 HYDRO ELECTRIC POWER KAPRUN HEADRACE TUNNEL IN AUSTRIA
- 3.0.27 HYDRO ELECTRIC POWER BOUDHIL, HEADRACE TUNNEL, INDIA
- Excavation of the headrace tunnel, by Drill&Blast.
 - One unit **ITC 312 H3**
- 3.0.28 HEP PRINI, HEADRACE TUNNEL, INDIA
- Excavation of the headrace tunnel, by Drill&Blast.
 - One unit **ITC 120 F2**
 - Contractor: AD
- 3.0.29 HYDRO ELECTRIC POWER UTTARAKHAND, HEADRACE TUNNEL, INDIA
- Excavation of the headrace tunnel, by Drill&Blast.
 - Two unit s **ITC 120 F2**
 - Contractor: Lanco
- 3.0.30 HYDRO ELECTRIC POWER INGULA, HEADRACE TUNNEL, SOUTH AFRICA
- Excavation of the headrace tunnel, by Drill&Blast.
 - Two units **ITC 312 SL**
 - Joint Venture: CMC Ravenna and Impregilo
- 3.0.31 HYDRO ELECTRIC POWER AMOYA, HEADRACE TUNNEL, COLUMBIA
- Excavation of the headrace tunnel, by Drill&Blast.
 - Two unit s**ITC 120 F2**, 4 dumpers **ITC 10'000** and 2x **ITC 8'000**
 - Contractor: Conciviles
- 3.0.32 HYDRO ELECTRIC POWER LA CONFLUENCIA, HEADRACE TUNNEL, CHILE
- Excavation of the headrace tunnel, by Drill&Blast.
 - One unit **ITC 312 H3**, 7 dumpers **ITC 10'000**
 - Contractor: Hochtief
- 3.0.33 HYDRO ELECTRIC POWER DAGACHU, HEADRACE TUNNEL, BHUTAN
- Excavation of the headrace tunnel, by Drill&Blast.
 - Three units **ITC 312 H3s**
 - Contractor: Hindustan Construction Company
- 3.0.34 Hydro Electric power Huanza, Headrace Tunnel, Peru
- Excavation of the headrace tunnel, by Drill&Blast.
 - 3 units **ITC 112** and 10 units dump truck **ITC 10'000**
 - Contractor: JV Astaldi & Graña Montero
- 3.0.35 HYDRO ELECTRIC POWER GIGEL GIBE, REPAIR OF HEADRACE TUNNEL, ETHIOPIA
- 3 units **ITC 312**
 - Contractor: Salini
- 3.0.36 HYDRO ELECTRIC POWER GLENDOE, REPAIR OF HEADRACE TUNNEL, SCOTLAND
- 3 units **ITC 312 SL** and 6 units dump truck **ITC 10'000**
 - 1 unit **ITC 312 H6**
 - Contractor: JV Bam - W&F
- 3.0.37 HYDRO ELECTRIC POWER LINTH-LIMMERN, CH
- Mucking on 6 units dump truck **ITC 10'000**
 - Contractor: Marti Tunnelling
- 3.0.38 HEPP EIRISKDAL BY HØYANGER, NO
- Inclined shaft 20% slope
 - 1 superloader **ITC 312 SL**
 - Contractor: Skanska

- 3.0.39 HYDRO ELECTRIC POWER, PK
 - 1 mucking unit [ITC 312 H3](#)
 - Contractor: Universal Drilling
- 3.0.40 HYDRO ELECTRIC POWER VENDA NOVA 3, PT
 - 3 mucking unit [ITC 312 SL](#)
 - Contractor: JV Mota, Somague
- 3.0.41 HYDRO ELECTRIC POWER KWO GRIMSEL, CH
 - 1 mucking unit [ITC 312 H3](#)
 - Contractor: Gasser Felstechnik
- 3.0.42 HYDRO ELECTRIC POWER KAISERSTUHL, CH
 - 1 mucking unit [ITC 312 H3](#)
 - 3 units dump truck [ITC 10'000](#)
 - Contractor: JV Gasser Felstechnik, Strabag
- 3.0.43 HYDRO ELECTRIC POWER KÜHTAI, AT
 - 1 mucking unit [ITC 312 H1](#) and 2x [ITC 10'000](#)
 - Contractor: Alpine BeMo Tunnelbau
- 3.0.44 HYDRO ELECTRIC POWER WALDECK 2, DE
 - mucking on 1x [ITC 10'000](#)
 - Contractor: Feldhaus Bergbau
- 3.0.47 HYDRO ELECTRIC POWER CHEVES, PE
 - 1 heading unit [ITC 312 H6](#)
 - 2 mucking machine 1x [ITC 312 H3](#), 1x [ITC 312 SL](#)
 - Contractor: JV Hochtief
- 3.0.49 HYDRO ELECTRIC POWER KWO INNERTKIRCHEN
 - Access tunnel for TBM Lauch
 - Joint Venture: Gasser Felstechnik & Strabag
 - 1 Superloader [ITC 312 SL](#)
- 3.0.50 HEPP BROKKE SØR BY RYSSTAD, NO
 - Access tunnel + HRT
 - 2 mucking machines [ITC 312 H3](#)
 - 5 dump trucks PAUS [ITC 10'500](#)
 - Contractor: Veidekke
- 3.0.51 HEPP KWO, HANDECK 2, GRIMSEL, (CH)
 - Access, power house, HRT, derivation tunnels
 - 2 Superloader [ITC 312 SL](#)
 - Contractor: Gasser Felstechnik
- 3.0.52 HEPP TANGNU ROMAI IN HIMACHAL PRADESH, (IN)
 - Access, head race tunnels
 - 1 mucking machine [ITC 120 F4](#)
 - Contractor: NSL Power
- 3.0.53 HEPP ALTO MAIPO, (CL)
 - Contractor: Strabag, Strabag Chile
 - 6 units Superloader [ITC 312SL](#)
 - 1 unit loading machine [ITC 120 F2](#)
 - 2 unit tunnel excavator [TE210](#)
- 3.0.54 HEP RENACE, (GT)
 - 3x units Dumper [ITC 10'000](#)
- 3.0.55 HEPP ISTAK IN TORBOTN, (NO)
 - 1x Mucking machine [ITC 312 SL](#)
- 3.0.56 HEPP BAJOLIHOLI, (IN)
 - 2 mucking units [ITC 312 H3](#)
 - Contractor: Gammon - GMR
- 3.0.57 HEPP RAMMAN, (N.E. INDIA)
 - 2 mucking units [ITC 120 F4](#)
- 3.0.59 HEPP RINGEDALEN (NO)
 - 1 mucking units [ITC 312 H3](#)

- 3.0.60 HEPP RHONE OBERWALD (CH)
 - 1 mucking units [ITC 312 SL](#)
- 3.0.61 HEPP AMSTEG URI (CH)
 - 1 units [ITC 112](#)
- 3.0.62 HEPP BERSCHNERBACH (CH)
 - 1 mucking unit [ITC 120N F4](#)
- 3.0.63 HEPP Østerbø (NO)
 - 1 mucking unit [ITC 312 SL](#)



- 3.0.64 HEPP GOUVAËS (PT)
 - 1 mucking unit [ITC 312N H3](#)
- 3.0.65 HEPP Obervermuntwerk 2, (AT)
 - Mucking in 1:5 upstream tunnel
 - 1x unit [ITC 312 SL](#)
- 3.0.66 HEPP KW Gere (CH)
 - Mucking in narrow tunnel
 - 1x unit [ITC 120 F4](#)

- 3.0.67 HØYANGER
 - 1x unit [ITC 312 SL #0547](#)

[3.1 ROAD OR HIGHWAY TUNNELS](#)

- 3.1.1 RECOGNITION TUNNEL S6, SEMMERING MOTORWAY
 -> [See News N° 05](#)
- 3.1.2 ANDORRA ROAD TUNNEL, ENVALIRA
- 3.1.3 SUBURBAN ROAD TUNNEL, FREIBURG (D)
 -> [See Info](#)
- 3.1.4 YAN MEN GUANG ROAD TUNNEL IN SHANXI PROVINCE



- 3.1.5 XUEFENGSHAN HIGHWAY TUNNEL FROM HUAI HUA TO ..IN HUNAN PROVINCE (CHINA)
- 3.1.6 SAFETY TUNNEL FOR NATIONAL HIGHWAY SISTO (CH)
 - 1 mucking units [ITC 112](#)
- 3.1.7 SAFETY TUNNEL FOR NATIONAL HIGHWAY BÄRENBURG (CH)
 - 1 mucking unit [ITC 120N F4](#)

- 3.1.8 EMERGENCY TUNNEL FOR HIGHWAY LEISSINGEN (CH)
- 1 mucking unit ITC 120N F4

3.2 RAILWAY TUNNELS

- 3.2.1 SEMMERING RAILWAY RECOGNITION TUNNEL, AUSTRIA
-> See News N° 05
- 3.2.2 ERPAIPO TUNNEL, RAILWAY CONNECTION BETWEEN NANNING AND KUN MING, (YUNNAN PROVINCE) CHINA
- 3.2.3 RAILWAY THROUGH THE QIN LING MOUNTAIN, CHINA



- 3.2.4 RAILWAY CONNECTION BETWEEN BEIJING AND HONG KONG, CHINA
- 3.2.5 TUNNEL MIHUALING, PROVINCE GUANGXI, CHINA
- 3.2.6 ALPTRANSIT - ST GOTTHARD TUNNEL - ACCESS TUNNEL TO THE SHAFT
- 3.2.7 TUNNEL YAN LING, XIKANG RAILWAY, CHINA
- 3.2.8 TUNNEL YUAN TANZI, XIKANG RAILWAY, CHINA
- 3.2.9 TUNNEL SHAN TOU, PROVINCE GUANGDONG, CHINA
- 3.2.10 TUNNEL SHUI BO, PROVINCE GUIZHOU, CHINA
- 3.2.11 RECOGNITION TUNNEL BRIXLEGG OST
- 3.2.12 NEW BRENNER HIGH SPEED RAILWAY TUNNEL OF VOMP
- 3.2.13 NEW GERMAN HIGH SPEED RAILWAY TUNNEL OF EUERWANG AND IRLAHÜLL
- 3.2.14 ALPTRANSIT - ST GOTTHARD TUNNEL – ACCESS TUNNEL AT BODIO
- 3.2.15 CHINA RAILWAY CONSTR. CORP. TUNNEL OF TAO HUA PU (SHANXI)
- 3.2.16 CHINA RAILWAY CONSTR. CORP. TUNNEL OF CHONG QING-HUAI HUA, (SICHUAN-HUNAN)
- 3.2.17 CHINA RAILWAY CONSTR. CORP. TUNNEL OF WU SHAOLING -> See News N° 16
- 3.2.18 CHINA RAILWAY CONSTR. CORP. TUNNEL OF WAI-YI, (CHONG QING-SHANG HAI)
- 3.2.19 QIYUESHAN TUNNEL / HUBEI, YICHANG-WANZHOU RAILWAY,
- 3.2.20 TIANSHAN TUNNEL /XINJIANG, JINHE-YILI-HUERGUOSI RAILWAY
- 3.2.21 DINGSHUIBA TUNNEL / GUIZHOU GUIYANG-GUILIN RAILWAY
- 3.2.22 TAIHANGSHAN TUNNEL / SHANXI TAIYUAN-SHIJI-AZHUANG HIGH SPEED RAILWAY -> See video
- 3.2.23 XIAPU TUNNEL / FUJIAN WENZHOUL-FUZHOU RAILWAY /L=13 KM
- 3.2.24 TUNNEL RAILWAY(SILK LINE) QINGHAI - TIBET RAILWAY
- 1 mucking units ITC 312 H3
- 3.2.25 TUNNEL RAILWAY GAUTRAIN, SOUTH AFRICA
-> SEE NEWS N° 36

- 3.2.28 RAILWAY Brenner Basis Tunnel, (AT)
- Excavation of several access and exploration tunnels
- 2008: ABN: 1x ITC 312 H1
- 2013: Padastertal: 1x ITC 312 H3
- 2014: ATP: 1x ITC 312 H1; 2x ITC 312 SL; 2x TE210

- 3.2.29 Rehabilitation of old Kaiser Wilhelm Tunnel, (DE)
- 3 Dumpers ITC 10'500 for ballast transport.

- 3.2.30 RAILWAY TUNNEL NETTPLAN, (NO)
- 1x unit ITC 312 H3

- 3.2.31 NARROW GAUGE SWISS RAILWAY (CH)
ALBULA TUNNEL
- 1 mucking unit ITC 312 SL

- 3.2.32 DB RENEWAL PETERSBERGTUNNEL (CH)
- Marti Tunnel Special Excavation equipment
- 2x unit ITC 112 E7 loading machines
- 1x unit ITC 10'000

3.3 SUBWAY TUNNELS

- 3.3.1 TRI-MET LINE, PORTLAND, OREGON (USA)

3.4 WATER SUPPLY TUNNELS

- 3.4.1 TRAVERSE ISLA LA PALMA, SPAIN
- 3.4.2 GHILINA IRRIGATION NETWORK DIVERSION TUNNEL METRAMO RIVER
- 3.4.3 IRRIGATION PLANT ACHELOOS IN GREECE
- Excavation of the main tunnel through a complementary adit by Drill&Blast.
- Cross section 30 m², length abt. 17 km originally driven by TBM.
- Geology: mixed rock and limestone.
- 1 unit ITC 312 H3 and one unit Superloader operated by Impregilo.
- 3.4.4 IRRIGATION PLANT JUCAR IN SPAIN
- 1 unit model ITC 312 H3

3.7 GENERAL SUPPLY

- 3.7.1 CONVEYOR TUNNEL FOR A CEMENT PLANT, PALERMO, LADIES ISLE , ITALY
- 3.7.2 GAZ PIPE TUNNEL FOR GDF, DEVIATION OF JOUQUES
- 3.7.3 FRESH WATER SUPPLY FOR BODØ INTAKE TUNNEL IN LAKE HAGGMOEN IN NORWAY
- 3.7.4 NUCLEAR WASTE DEPOSIT BATAAPATI, HUNGARY

- 3.7.5 TECHNICAL TUNNEL KISTA (SE)
- 1 mucking units ITC 312 H3
- 22 m² in hard granite

- 3.7.6 NETTPLAN OSLO (NO)
- Tunnel for electrical cables
- 1x unit ITC 312 H3

- 3.7.7 MIGA (FR)
- ITC 120 F4

3.8 MINING

- 3.8.1 COPPER MINE LOS PELAMBRES, CHILE
- 3.8.2 INCLINED SHAFT AS ACCESS TO A AMPLATS MINE PROJECT MANDAAGSHOEK IN SOUTH AFRICA
- 3.8.3 MINE PROJECT MAROELABULT IN SOUTH AFRICA
- 3.8.4 LIMESTONE QUARRY ACCESS, BLAUSTEIN, GERMANY
- Excavation of the development tunnel, by Drill&Blast.
- One unit ITC 312 H3
- Contractor: Schachtbau Nordhausen

3.8.5 COPPER MINE AGUA TENIDA, SPAIN
 - Excavation of the development tunnel, by Drill&Blast.
 - One unit [ITC 312 H3](#)
 - Contractor: Inersa
 - 2015: One unit [ITC 312 SL](#)

3.8.6 GOLD MINE CADIA EAST, ORANGE, AUSTRALIA
 - Excavation of the development tunnel, by Drill&Blast.
 - One unit [ITC 312 SL](#)
 - Contractor: CadiaEast

3.8.7 IRON MINE MO-I-RANA, NO
 - One mucking unit [ITC 312 SL](#)
 - Contractor: Leonhard Nilsen & Söhner

3.8.10 CHROME MINE IN CHROMTAU, KZ
 - Exploration tunnel
 - 1 mucking machine [ITC 120 F4](#)
 - Contractor: Too Schachtbau, KZ

3.8.11 RAKITA COPPER MINE, (XS)
 - Mucking the acces tunnel decline
 - 1x unit [ITC 312 SL + ITC 312 H3](#)

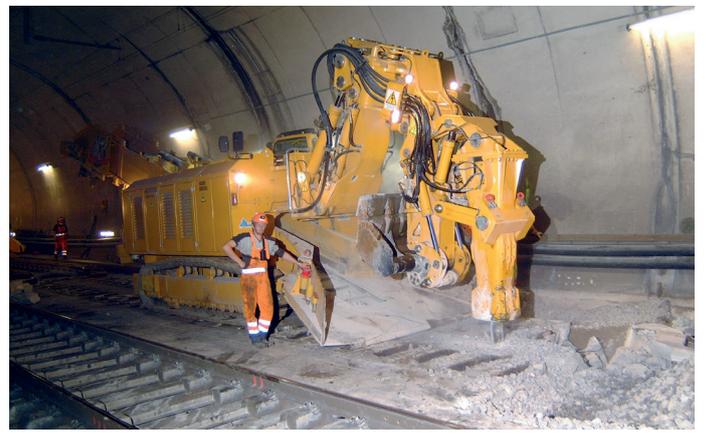
4. SPECIAL TASKS

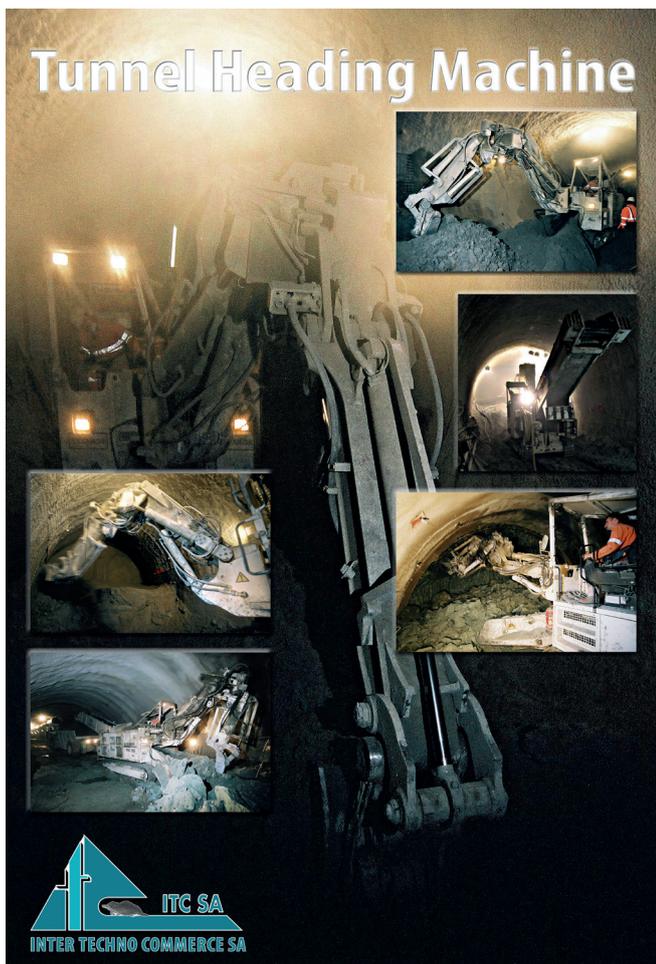
4.1 OTHER UNDERGROUND WORKS

- 4.1.1 ROAD-BRIDGE-PROJECT, KIEL - HOLTENAU
- 4.1.2 WATER TUNNEL PLANFAYE, FREIBURG (SWITZERLAND)
- 4.1.3 SOTRAMA - ISLAND REUNION
- 4.1.4. WATER-CONNECTING-TUNNEL FROM THE SINNO-RIVER TO THE STORAGE LAKE SARMENTO, POTENZA, CAL-ABRIA

4.8 OTHER LOADING WORKS

- 4.8.1 RAILWAY : BALLAST LOADING
- 4.8.2 PRIVATE RAILWAY SOB
- 4.8.3 SWISS FEDERAL RAILWAY -> See News N° 13
- 4.8.4 PRIVATE RAILWAY SOB -> See News N° 22
- 4.8.5 RAILWAY TUNNEL RENEWAL, BULLE, SWITZERLAND
- 4.8.6 RAILWAY TUNNEL RENEWAL, ARLBERG, AUSTRIA
- 4.8.7 RAILWAY TUNNEL RENEWAL, LES CARPATES, FRANCE
- 4.8.8 RAILWAY SWITCH RENEWAL, UK-RAIL (UK)
 - 1x unit Ballast loading machine rail/road [BL4](#)
- 4.8.9 RAILWAY TRACK RENEWAL, (FR)
 - 1x unit Ballast loading machine [ITC 120 F4LS](#)
- 4.8.10 RAILWAY LÖTSCHBERG (CH)
 - 1x unit [ITC 120N F3](#)
- 4.8.11 RAILWAY BRIENZ (CH)
 - 1x unit [ITC 312 H6](#)



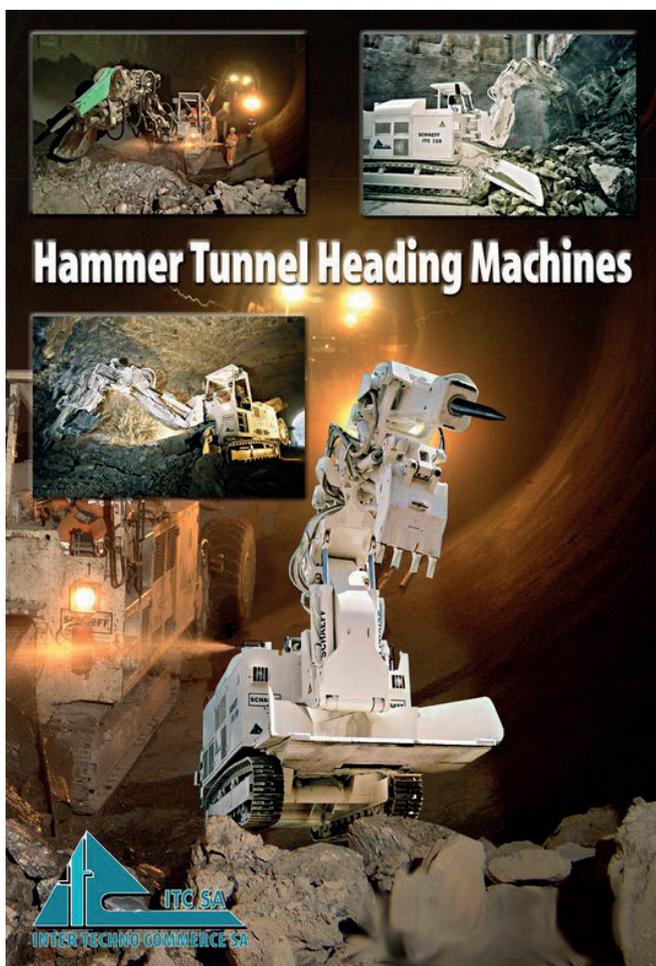


Tunnel Heading Machine

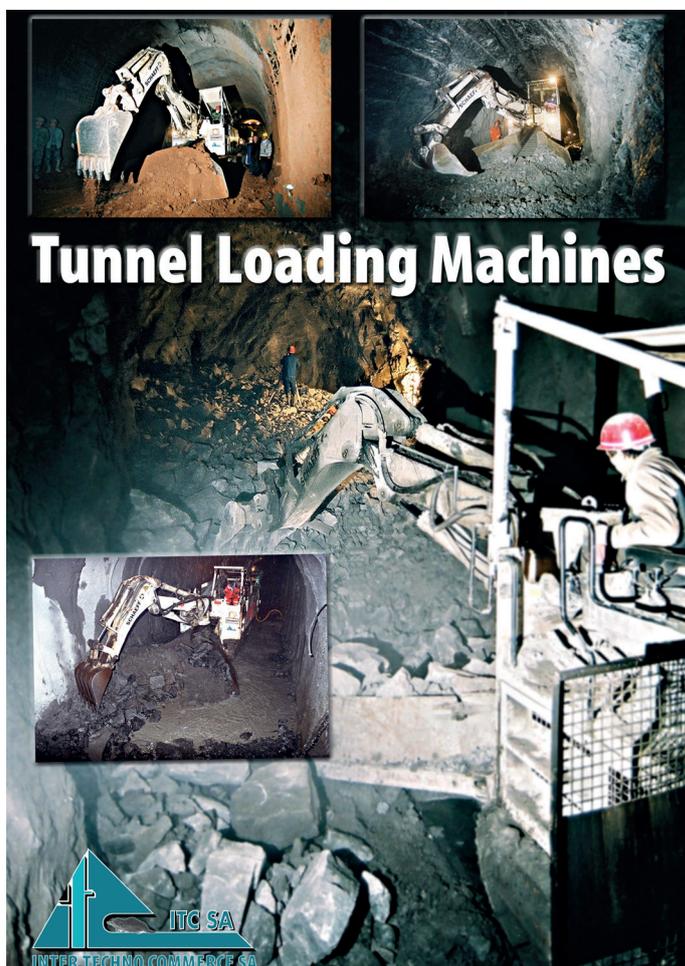


A few current jobsites:

AT	High Speed Railway Koraml Tunnel 3 1x unit TE210	1.2.19	FR	Colas rail - Grand Paris ITC 120 F4LS	4.8.9
CA	Edmonton TransEd LRT project 2x units ITC312 H1	1.3.23	FR	MIGA 1 ITC 120 F4	3.7.7
CA	Toronto Crosslinx 2x units ITC312 N1s	1.3.25	GB	London BSCU 1 unit ITC120 F8 1 unit TE210	1.3.24
CA	Uranium mine, Cigar Lake ITC 120 F2/F3	2.8.10	IN	Railway in Jammu & Kashmir ITC 120 F2 / TE210	2.2.11
CH	HEPP KW Gere ITC312 SL	3.0.60	IR	Jouyandegan Safir Mineral ITC 312 G80	2.8.6
CH	HEPP Berschnerbach 1x mucking unit ITC120 F4	3.0.62	KZ	Chrome mine in Chromtau ITC 120 F4	3.8.10
CH	Safety Tunnel for National Highway Leisingen 1x mucking unit ITC120 F4	3.1.7	IN	HEPP Ramman 2x ITC 120 F4	3.0.57
CH	Narrow gauge Swiss Railway Albula Tunnel 1x mucking unit ITC 312 SL	3.2.31	RU	Subway of Moscow 3x ITC 120 F2/F3 2x ITC 312 N1/H6	2.3.5
CH	Railway line renewal 4x ITC 312 VL	4.8.4	MA	Water supply in Maroc 1 TE210	1.4.1
CH	Railway Lötschberg 1 unit ITC 120 F3	4.8.10	NO	HEPP Østerbø 1 mucking unit ITC312 SL	3.0.63
CH	Railway Brienz 1 unit ITC 312 H6	4.8.11	NO	HEPP HØGANGER 1 mucking unit ITC312 SL	3.0.67
CL	HEPP Alto Maipo 6x ITC 312 SL 1x ITC 120 F2 2x TE210	3.0.53	NO	Railway Tunnel Nettplan ITC 312 H3	3.2.30
DE	BYPASS BERTOLDSHOFEN 1 unit ITC 312 H1 1 unit ITC 312 SL	2.1.7	PT	HEPP Gouvaês 1 mucking unit ITC312 H3	3.0.64
ES	Copper Mine 1 unit ITC 312 SL	3.8.5	US	Arizona mine - Fa. Cementation 1 mucking unit ITC312 SL	3.0.64
			XS	Decline Tunnel Rakita 1 mucking unit ITC312 SL	3.8.11
			XS	Decline Tunnel Rakita 1 mucking unit ITC312 H3	3.8.11



Hammer Tunnel Heading Machines



Tunnel Loading Machines

