

TERRA-JET 8522 S world-wide in action

The TERRA-JET 8522 S is currently the largest HDD machine of the TERRA sortiment. With a torque of 8'500 Nm (6'250 ft.lbs) and 220 kN (48'400 lbs) of pullback force it drills 400 m (1'300 ft) long directional bores, which can be backreamed up to Ø 1'000 mm (40"). Today the TJ 8522 S successfully operates world-wide. The costumers storngly appreciated the high drilling fluid volume of 400 ltr/min (105 gpm). Please read more about the fascinating work at the job sites in Japan, Russia and Turmenistan.

Japan

The contractor Iwashita Sangyo from Hachiken Nishi-Ku, Japan has layed a HDPE pipe OD 560 mm (22") with his directional HDD drill TERRA-JET 8522 S Premium. The length was 60 m (200 ft). The underground was good drillable clay.

The pilot bore was expanded in several steps up to ø 800 (32"). Afterwards the HDPE pipe 560 mm (22") was pulled in. The big advantage was the high drilling fluid volume of 400 ltr/min (105 gmp).

The Premum model is equipped with a comfortable driver's cabine and an on-board computer with large touch screen. All relevant drilling data are saved and printed later on in the drilling protocol.



Japan: The TERRA-JET 8522 S lays a HDPE pipe OD 560 mm (22") over 60 m (200 ft).



Russia: The company Reljef during their longest HDD bore. Die pilot bore runs over 324 m (1'070 ft) under the forest. A HDPE pipe OD 225 mm (9") is pulled in.

Russia

The drilling specialist OOO Reljef from Petrosawodsk in the North of Russia has specialised in trenchless pipe and cable laying. For pipe replacement they use their rods burs-ter TERRA-HYDROCRACK HC 600 C+. New pipes are layed with their HDD machines TERRA MINI-JET MJ 1600 and TERRA-JET 8522 S.

Their TJ 8522 S has no driver's cabine – like most HDD machines. The control station provide all relevant data during the bore. The drill master sits relaxed in his comfortable seat and can navigate through the required operations.

Up to now the longest bore of M/s Reljef was 324 m (1'070 ft) long. It was done in Karelia. The pilot drilling required one full working day. The next day they expanded the bore channel to 300 mm (12") and pulled the HDPE pipe OD 225 mm (9") simultaneously.

Turkmenistan

JSC IA Vozrojdenie from Ashgabat are one of the largest contractors in Turkmenistan with approximately 2'000 workers. The holding

company from St. Petersburg employs another 3'000 workers.

In Ashgabt a new ring highway is being built. One section had to be finished before the last winter. At that time the corresponding pipes could not be delivered. Therefore all new pipes underneath this highway are laid by HDD. This trenchless pipe laying is done by Vozrojdenie with their TERRA-JET 8522 S Premium.

The drilling lengths are between 25–80 m (80-240 ft), the new pipes are HDPE pipes OD 110-225 mm (4"-9"), corrugated pipes and steel pipes Ø 300 mm (12").

Turkmenistan consists to 80% of desert, therefore it is quite hot in the summer. Under this conditions the powerful air conditioning of the driver's cabine with a cooling power of more then 6 kW proves itself to be efficient and comfortable.



Turkmenistan: The backreamer Ø 420 mm (16.5") and the steel pipe Ø 300 mm (12") reach the target pit.



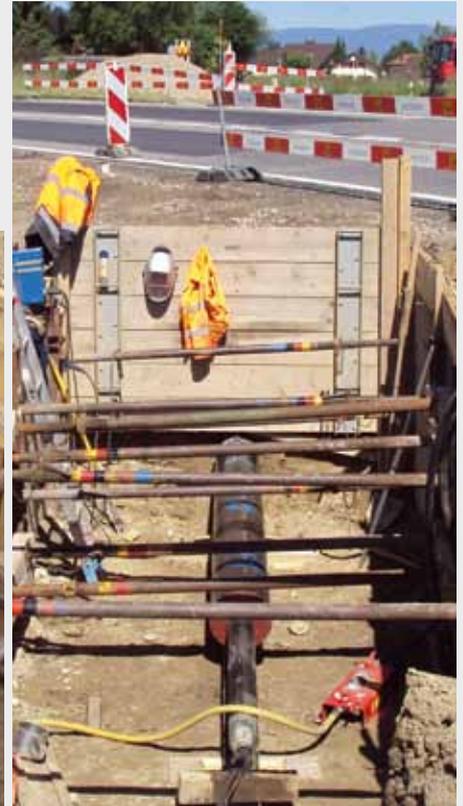
Turkmenistan: The TERRA-JET 8522 S Premium during the pipe pulling. Just now Bentonit is mixed in.

T 135 F rams steel pipe ø 300 mm (12")

In the Swiss city Alchenflüh nearby Kirchberg the existing main road had to be undercrossed with a steel pipe. This main road is an important connection to the highway A1 in the direction to Burgdorf and Entlebuch. Thereby open cut was not an option. The contractor Sollberger Bau GmbH of Oberbipp decided to do this road crossing by steel pipe ramming with a TERRA-HAMMER

T 135 F. The ground consisted of gravel and stones up to ø 150 mm (6"). Therefore steel pipes with a diameter of 300 mm (12") and a wall thickness of 7.1 mm (0.3") were chosen. The ramming length was 26 m (86 ft). The ramming speed was 4 m/h (13 ft/h). It dropped down to 1 m/h (3 ft/h), if rock or boulders were hit. Both steel pipes were cleaned by high pressure water with 150 ltr/

min (40 gpm) and 150 bar (2175 psi). The complete steel pipe ramming project was successfully finished within two days.



Mini HDD lays six parallel pipes in the Black Forest

The specialist for pipe and cable laying F. Weichner GmbH laid six parallel pipes OD 160 mm (6") underneath a country road in the Black Forest in Germany. To realize this challenging task the directional HDD pit ma-

chine TERRA MINI-JET MJ 1600 was used. This pipe laying project was successfully finished within one working day. The sewer pipe on the middle of the road had to be crossed in a curve. The underground

consisted of clay, gravel and boulders. Each 20 m (66 ft) long pilot bore was completed within 20 minutes. The backreaming to Ø 215 mm (8") and the pipe pulling required 30-35 minutes for each bore in this difficult ground.



New roller cutter for cable burster X 400

The cable burster TERRA-EXTRACTOR X 400 replaces old pipes in lengths up to 150 m (500 ft). This can be done from pit-to-pit or from manhole-to-manhole. Its special advantages in comparison to rod bursters are the requirement of a small pit and the fact that you can pull in 150 m (500 ft) long sections continuously without any interruption by rod changing. Following the wish of an Austrian customer the roller cutter was optimised to a level where a pulling force of 400 kN (40 tons) is sufficient even for ductile cast iron pipes DN 100 (4"). In the following you find job site reports from Brazil, Germany and Switzerland.

Sao Paulo, Brazil

SABESP from Sao Paulo, Brazil is the largest water supplier in the state Sao Paulo, which consists from 364 communities and a population of 27.1 million people. In the urban district Barra Funda a new fresh water line had to be replaced trenchless. The old pipe with OD 125 mm (5")



Sao Paulo: The new roller cutter cuts a ductile cast iron pipe 5" first in Brazil.

from ductile cast iron had to be replaced by a new HDPE pipe OD 125 mm (5") over a length of 35 m (115 ft). This was realized with the cable burster TERRA-EXTRACTOR X 400. The cable burster X 400 has solved this technical problem successfully and is, according to SABESP, the first machine which could burst a ductile cast iron pipe OD 125 mm (5") with joints in Brazil.

Düsseldorf, Germany

In Mettmann nearby Düsseldorf an old 60 m (200 ft) long cast-iron pipe ID 125 mm

(5") and 45 m (150 ft) long asbestos pipe ID 100 mm (4") had to be renewed. Due to the high traffic of a nearby freight forwarder this pipe replacement had to be realized trenchless and fast. The Stadtwerke Düsseldorf Netz GmbH used the cable burster TERRA-EXTRACTOR X 400 for this project.

Both sections were replaced within one day. The pulling forces of the cable burster went up to 360 kN (36 tons). The Stadtwerke Düsseldorf Netz GmbH is one of the largest energy providers in Nordrhein-Westfalen, Germany. They look back to 140 successful company years. They have around 2'500 employees.



Crailsheim: The automatic cable drum X 400 rolls up the pulling cable simultaneously to the pipe pulling.



Mühlethurnen: The new roller cutter DN 100 mm (4") with expander cone Ø 324 mm (12.75") and HDPE pipe OD 250 mm (10").



Düsseldorf: The cable burster X 400 replaces an old cast iron pipe over 60 m (200 ft) and pulls in a new HDPE pipe OD 110 mm (4.3").

Crailsheim, Germany

The German contractor Leonhard Weiss renewed the old broken fresh-water lines in the city Crailsheim. These old cast iron pipes had to be replaced by new HDPE pipes OD 63 mm (2.5"). M/s Leonhard Weiss decided to use the cable burster TERRA-EXTRACTOR X 400. Three sections in lengths up to 25 m (150 ft) were replaced within 2 working days.

Mühlethurnen, Switzerland

In the Swiss city Mühlethurnen the old water line from cast iron had to be replaced by a new HDPE pipe. A challenging task that was performed by the specialist M/s Rudolf Frutig.

The first section of the old pipe had a diameter of 100 mm (4"), all other sections were 125 mm (5"). The new HDPE pipe OD 250 mm (10") served as a protection for the 180 mm (7") product pipe. The cable burster X 400 had to expand an old channel Ø 100 mm (4") with an expander cone to Ø 324 mm (12.75"). Simultaneously the cast iron pipe had to be burst. The pulling forces went up to 380 kN (38 tons).

TERRA in-house: Congratulations!

Martin Siegrist
20 Years of TERRA



In August 1991 Martin Siegrist started his apprenticeship with us as a polymechanic. Thereafter he was trained as a drilling specialist for our HDD machines. He demonstrated the TERRA-JET Europe wide. Later on he became the head of the Assembly Department. Today Martin Siegrist is our Sales Manager in Switzerland and a well-recognized partner for Swiss contractors.

Lorena Nocera
Graduation from apprenticeship



Lorena Nocera has completed her advanced apprenticeship in sales (KV). At the moment she works in our Export Department. She is an important contact to our customers. Ms. Nocera speaks four languages and she has very good communication skills which qualifies her good for her current position.

Bora Akdogan
Graduation from apprenticeship



We would like to congratulate Bora Akdogan on his successful graduation as a CNC polymechanic. During his 4 year apprenticeship at our company he has learned programming, installation and operation of complex parts with CNC lathing and milling machines. Today he works in our Production Department.

Social Media: 30'000 Clicks @ YouTube

Today's global social network changes the communication with our customers. All the world speaks about "Social Media" and TERRA is happy to announce the successful usage of the first "TERRA TV" channel.

YouTube

With daily up to hundred thousand new videos YouTube is the largest video platform of the world. Since beginning of 2009 TERRA uses the YouTube channel "TerraTV". Un-

end of this year we expect 30'000 calls of the TERRA videos in YouTube.

Facebook and Twitter

Since 2011 we inform you in Facebook and Twitter about interesting job sites and product novelties.

You find us at www.facebook.com/terra.ag and www.twitter.com/terra_ag. Follow us and post your own comments!



der www.youtube.com/TERRAREiden you find more than 10 TERRA videos. In the "Terra Video Centre" you can see more videos about TERRA products, even a TV report about TERRA-JET bores in Belovo in the Russian television. Until the



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