

BUTOR

TOOLS CARRIER ROBOT

RADIO CONTROLLED OR REMOTE CONTROLLED

METALLIANCE

SALE

RENTAL



DIFFERENT BUTOR CONFIGURATIONS

| CHASSIS | MOTORIZATION | ARM | CONTROL TYPE |
|---|---|--|---|
| <ul style="list-style-type: none"> - On tracks 1 blade | <ul style="list-style-type: none"> - Electric 55 KW | <ul style="list-style-type: none"> - Type B Reshaping Pulling down | <ul style="list-style-type: none"> - Cabin |
| <ul style="list-style-type: none"> - On tracks 2 blades | | <ul style="list-style-type: none"> - Type TEM Excavation Demolition | <ul style="list-style-type: none"> - Radio control |
| <ul style="list-style-type: none"> - On wagon | <ul style="list-style-type: none"> - Diesel 75 KW | <ul style="list-style-type: none"> - Type SD Sawing | <ul style="list-style-type: none"> - Remote control |
| <ul style="list-style-type: none"> - On carrier | | | <ul style="list-style-type: none"> - Assistance through trajectory visualization |



BUTOR

TOOL CARRYING ROBOT FOR INTENSIVE WORK IN SEVERE ENVIRONMENT

Our BUTOR machines are particularly compact, robust and powerful, they have been designed to meet most severe working conditions.



A very elaborated multi-axis cinematic, a maximum power at the end of the arm enables BUTOR to carry out the following tasks :

- drilling
- percussion
- milling and knocking down
- demolition
- excavation – mucking
- concrete projection
- crushing
- stump grinding

in aggressive environment such as heavy steel works industry, siderurgy, cement factories, underground works, forestry jobs

TECHNICAL CHARACTERISTICS

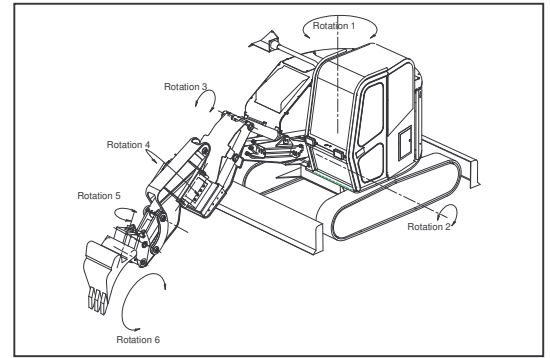
| Model | B75 ER / TEM 75E | B100 TR / TEM 100T |
|--------------------------|--|---|
| Weight | 7,5 T | 7,5 T |
| Traction speed | 4 km/h | 4 km/h |
| Rotation speed | 8 tr/mn | 8 tr/mn |
| Ground pressure | 0,5 kg/cm ² | 0,5 kg/cm ² |
| Width | 2100 mm | 2100 mm |
| Maximum working grade | 100 % | 100 % |
| Engine | Electric : 55 KW (75 HP) at 1500 RPM | Combustion : 75 KW (108 HP) at 2400 RPM |
| Hydraulic tank capacity | 200 Liter | 200 Liter |
| Hydraulic pump : | | |
| • Output flow L/mn : | 150 | 170 |
| • Pressure setting bar : | 220 | 280 |
| Fuel tank capacity | 200 | 200 L |

OPTIONS

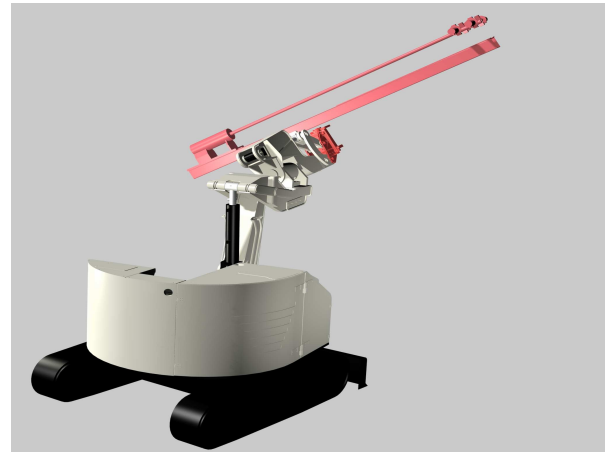
| | | |
|-------------------------------|------------|-------|
| Radio control : | yes | yes |
| Power available at the tool : | 55 KW | 75 KW |
| Flow / pressure : | On request | |

FURTHER EQUIPMENTS

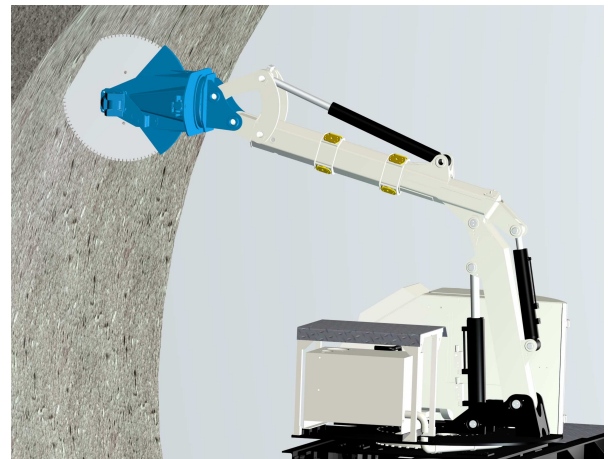
| | | |
|-------------------------------|---|-------------------|
| Grinding head : | KW | 45 |
| Diameter | mm | 615 |
| Width | mm | 630 |
| Saw | KW | 45 |
| Diameter | mm | 1200 |
| Hydraulic rock breaker | 400 kg (study on request) | |
| Drilling arm | Drilling diameter from 36 to 50 mm | |
| Concrete spraying nozzle | On request | |
| Steel rib erector | Maximum rib : 950 kg (design on request) | |
| Rock and concrete jaw crusher | Force 80 T | |
| Metal shearing | Shearing force 90 T | |
| Crusher | On request | |
| Stump grinder | On request | |
| Bucket / mucking : | | |
| Width | mm | 650 800 900 |
| Capacity | L | 166 212 350 |
| Excavation bucket | On request | |
| Force on the bucket | 3 tonnes 200 | |
| Force on the balancing arm | 3 tonnes | |



Butor TEM rotations 1 to 6 for excavation works (cross-passages)
BUTOR B rotations 12-3-5 tunnel reprofiling and concrete sawing



Drilling arm



Sawing

METALLIANCE reserves the right to modify the content of this document which is not contractual



METALLIANCE
ZI La Saule - BP 111
71304 MONTCEAU Cedex
Tél : +33 (0) 3 85 57 01 34
Fax : +33 (0) 3 85 57 88 73
E-Mail : info@metalliance-tsi.com
Site : www.metalliance-tsi.com



B 75 E with Ø 1280 sawing disk



B75 E arch erector pliers



B 100 T with demolition head





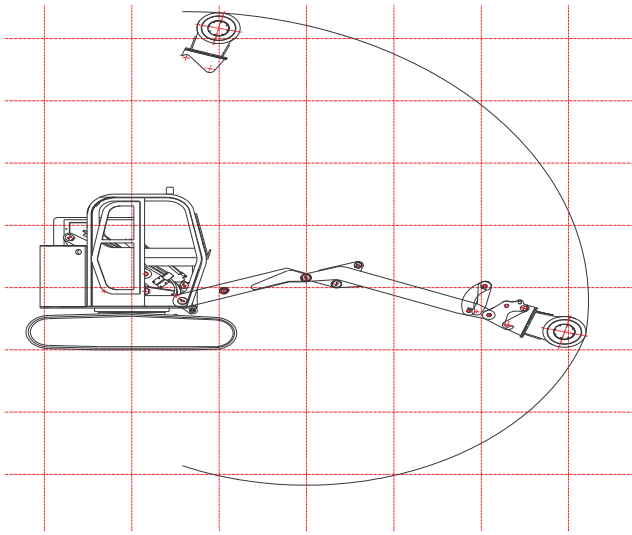
B 100 T with demolition head



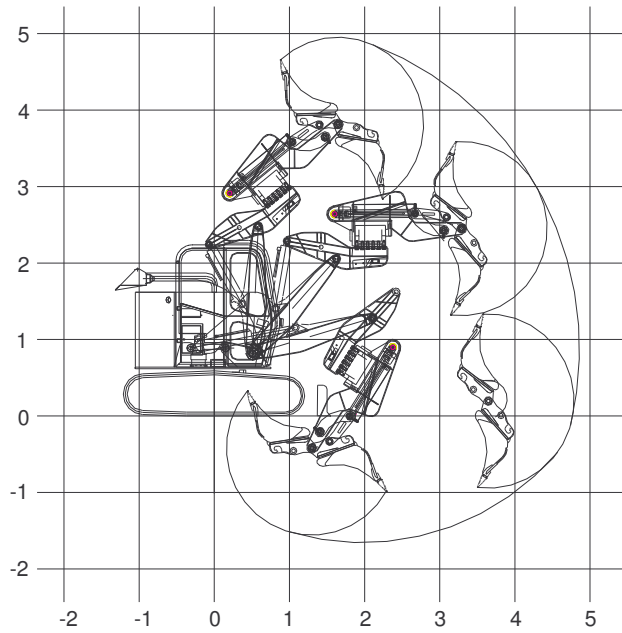
TEM with Hydraulic Rock Breaker on rotary arm



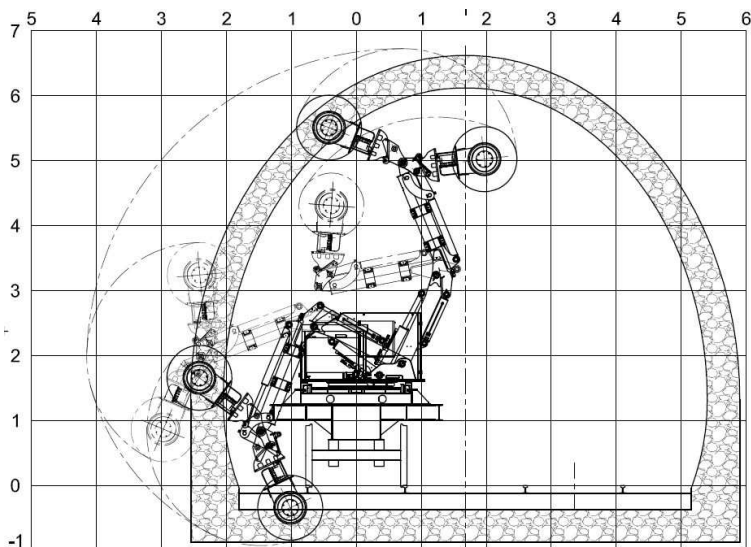
B 75 E with Hydraulic Rock Breaker



Kinematic Butor B



Kinematic Butor TEM



Kinematic Butor SD





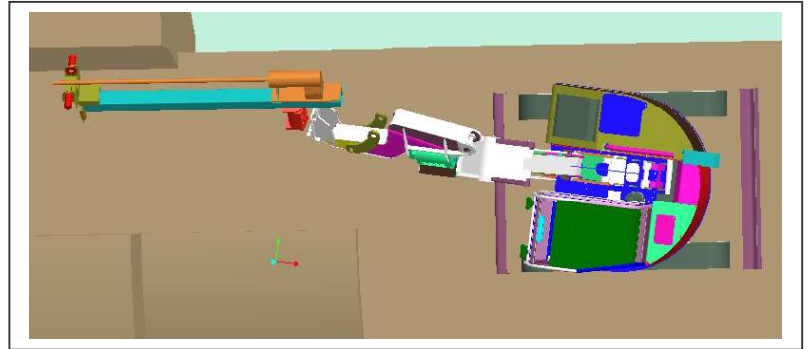
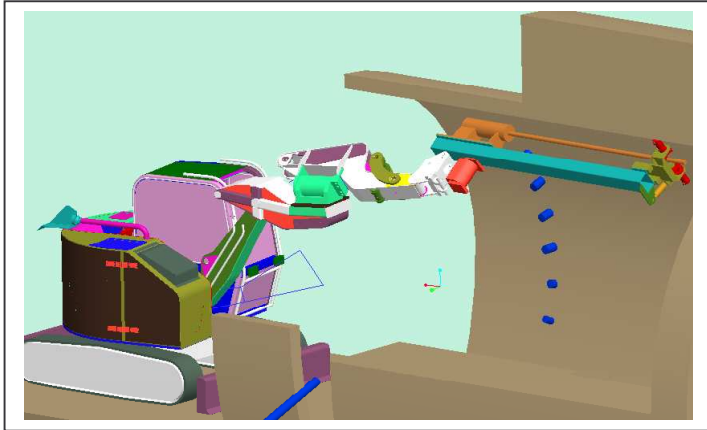
Butor SD

METALLIANCE COMPANY RESERVES THE RIGHT TO MODIFY AT EVERY MOMENT THE CONTENT OF THE PRESENT NON-BINDING DOCUMENT

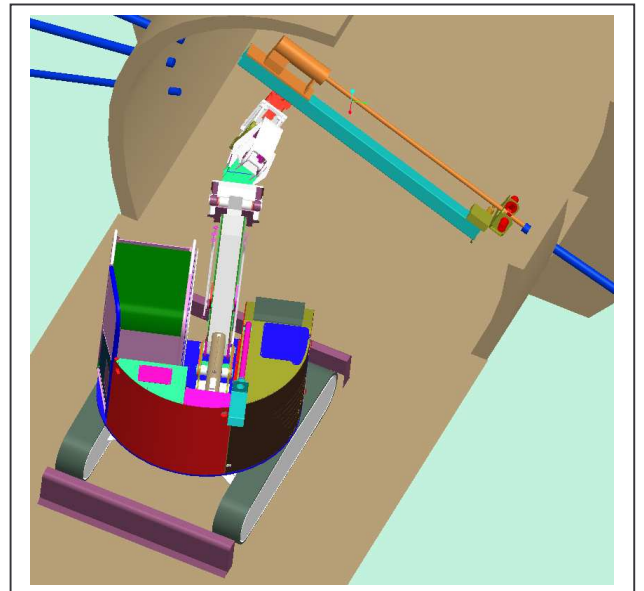
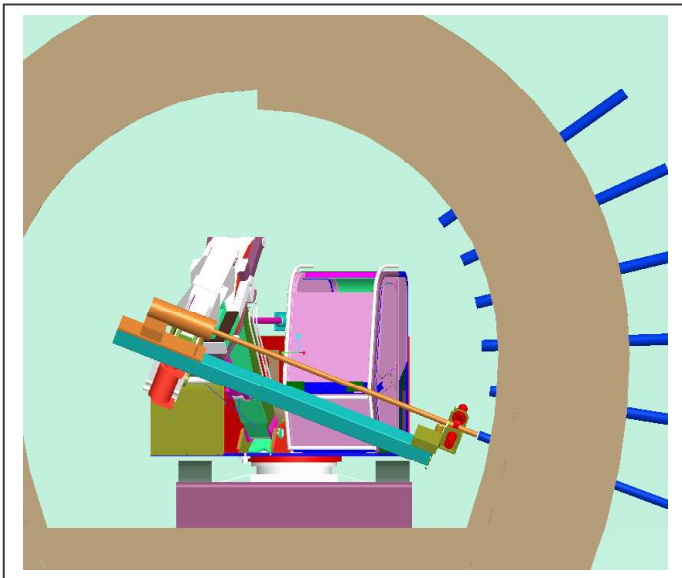


METALLIANCE
Z.I. La Saule – BP 111
71304 MONTCEAU Cedex
Tél. : +33 (0)3 85 57 01 34
Fax : +33 (0)3 85 57 88 73
E-mail : info@metalliance-tsi.com

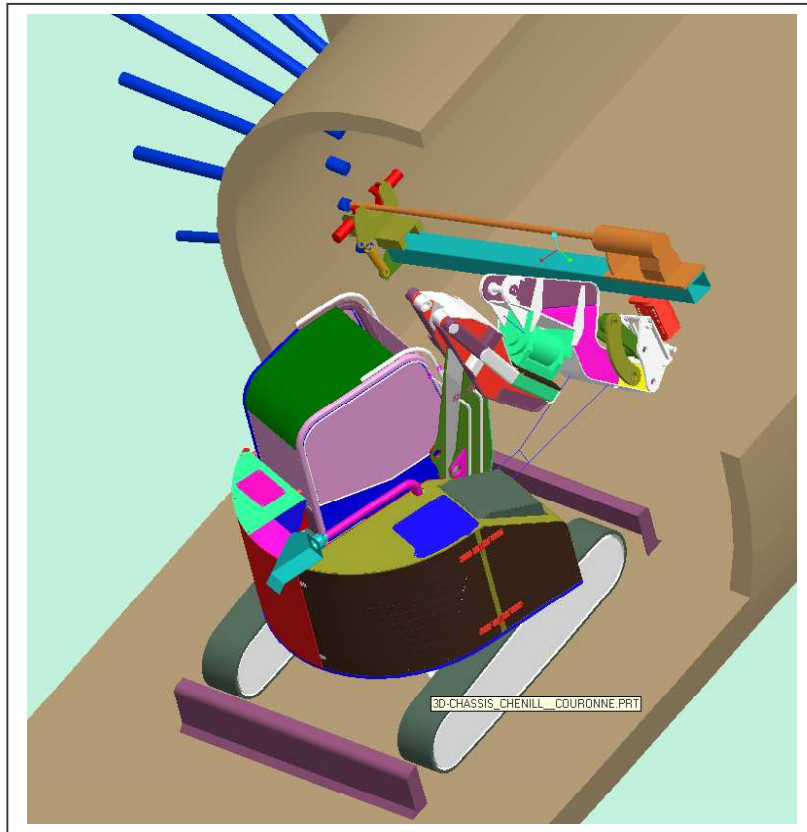
BORING OUTLINES



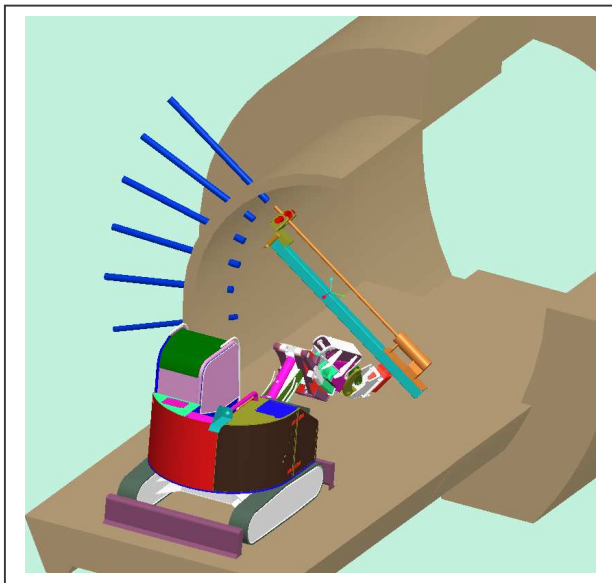
Boring parallel to tunnel axis



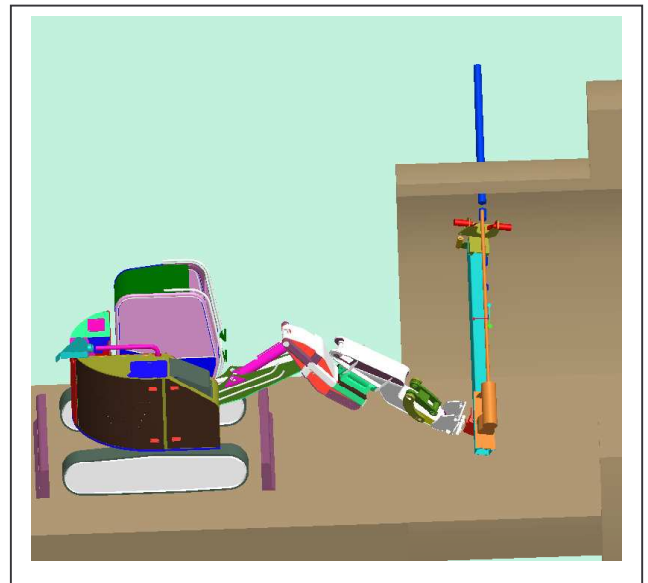
Lateral boring, low position



Lateral boring with minimal size



Lateral boring, upper position



Key stone boring

METALLIANCE COMPANY RESERVES THE RIGHT TO MODIFY AT EVERY MOMENT THE CONTENT OF THE PRESENT NON-BINDING DOCUMENT



METALLIANCE
 Z.I. La Saule – BP 111
 71304 MONTCEAU Cedex
 Tél. : +33 (0)3 85 57 01 34
 Fax : +33 (0)3 85 57 88 73
 E-mail : info@metalliance-tsi.com

BUTOR 75E and 100T



100 – GENERAL POINTS :

Butor, powerful, robust and compact machine, makes your most demanding underground works in hard atmosphere.

BUTOR is especially developed for exception works, like excavation, demolition, sawing and handling thanks to equipments such as dippers (mucking or excavation), cutter, hydraulic rock breaker, boring arm, sawing disk, pliers...

The Butor, with its different arms types (6 possible rotary axis) is able to make 3 to 6 m height tunnel excavation and to operate in multiple positions in small space.

The operator has an optimal work ergonomics by choosing to drive from the cabin or outside with radio control (optional). It can also be equipped with a remote-control.

The quick tool change system allows the user to get from one to another in few minutes.

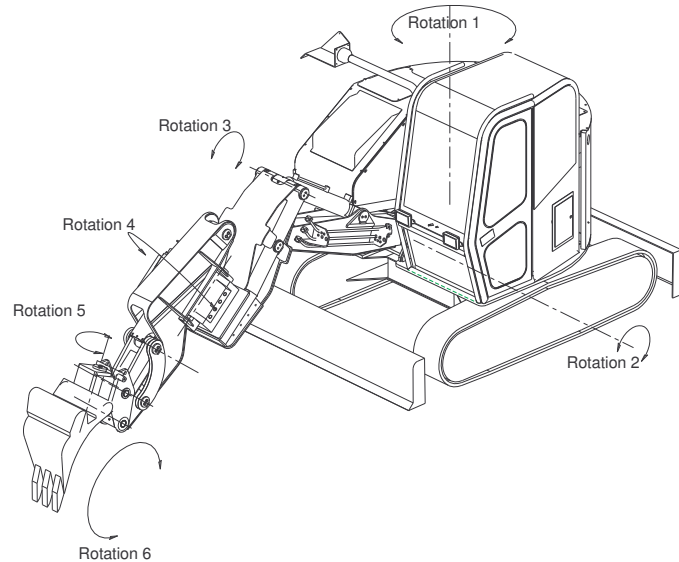
BUTOR

In demolition and/or disassembly, the Butor can be equipped with special handling systems, or with shears for iron or concrete.

In order to avoid a human intervention near the machine, the BUTOR can, upon request, be equipped with a quick mechanical attachment with hydraulic and electric automatic connection. The robot command recognizes automatically the type of coupled equipment.

Equipped with diamond type sawing disks, the BUTOR can cut cleanly every kind of material.

METALLIANCE has developed its own motion assistance and automation system. This system allows the Butor robot to make the planned trajectory, either as an automation or as a help to the operator (virtual trajectory / real trajectory).



Size :

| | | |
|---------------------------------|---|----------------|
| - Width | : | 2 100 mm |
| - Length | : | 2 815 mm |
| - max height with cabin | : | 2 300 mm |
| - max height without cabin | : | 2 000 mm |
| - weight | : | About 8 000 kg |
| - lifting capability at arm end | : | 1500 kg |

Performance with electric version 75E :

| | | |
|--------------------------------------|---|------------------------|
| - dipper strain | : | 3,5 T |
| - hydr. power, available at the tool | : | 45 KW |
| - transfer speed | : | 2 km/h |
| - turret rotation speed | : | 8 Rp/mn |
| - slope crossing | : | 100% |
| - ground pressure | : | 0,5 kg/cm ² |

Performance with Diesel version 100T :

| | | |
|-------------------------------------|---|------------------------|
| - dipper strain | : | 4 T |
| - hydr. Power available at the tool | : | 60 KW |
| - transfer speed | : | 4 km/h |
| - turret rotation speed | : | 8 Rp/mn |
| - slope crossing | : | 100% |
| - ground pressure | : | 0,5 kg/cm ² |

200 – BASE MATERIAL :

210 – A tracked chassis including :

- a main chassis composed with :
 - A mechanically welded stand chassis.
 - Two tracked ends lead by two gear motors with static brakes.
 - A big size slewing ring, with inner gear teeth, lead by a slow motor and gearwheel.
 - The ring is braked in position with hydraulic unlocking. A hand adjustable end stop limits the ring rotation angle.

- A turret (Mechanically welded construction, with strong iron sheet and cowling and access doors) is mounted on the slewing ring. The powerful engine of the ring allows to work, in particular, with rotary milling.
- one or two blades increase the stability of the machine and allows to make some occasional leveling operations.

220 – Hydraulic equipment :

a- with electric version 75E

- a load sensing hydraulic pump with flow cancellation and power regulation :
 - flow : 150 l/mn
 - pressure : 220 bar
 - engine size : 100 cm³
- a back-up gears pump :
 - max flow : 16 l/mn
 - pressure : 18 bar
 - engine size : 11 cm³

b- with Diesel version :

- a load sensing hydraulic pump with flow cancellation :
 - flow : 160 l/mn
 - pressure : 280 bar
 - engine size : 71 cm³
- a back-up gears pump :
 - max flow : 18 l/mn
 - pressure : 18 bar
 - engine size : 8 cm³
- an hydraulic tank :
 - capacity : 200 l
 - back filter with clogging electric indicator
 - air vent with cartridges
 - visual level

BUTOR

- electric low level
- filling with quick connection on the back line
- an oil refrigerator
- a proportional hydraulic manifold with electro-hydraulic control
- used oil is an hydraulic safety fluid (HFDU type, biodegradable, non-toxic, fire-resistant).
- Pressure tap in adequate number to allow a follow up and an assistance to diagnosis.
- Hydraulic fluid sample taps for analytical follow-up allowing the preventative maintenance.

230- Power group :

a- Electric version 75E :

A 55 kw electric engine- 3 x 380 V - 50 HZ turning at 1500 Rp/min

A power supply socket 125 A (3P+N+T).

A power cabinet including :

- a general switch
- an on/off switch
- a time counter
- an electronic starter
- a power indicator.

b- Diesel version 100T

A 4 cylinders industrial Diesel engine.

Features :

- | | |
|----------------------|-----------------------|
| - engine size : | 4L |
| - maxi power : | 74KW 2300 Rp/min |
| - maxi torque : | 400Nm 1400 Rp/min |
| - cooling : | Air/water |
| - filtration : | double dry air filter |
| - alternator : | 12 V |
| - electric starter : | 12 V |
| - battery : | 12 V |
| - Certification : | 97/68 phase 2 |
| - Sound emissions : | 92 dB à régime maxi |
| - fuel type : | Fuel EN 590 |
| - fuel tank : | 90 Litres |

Exhaust fumes out of engine are processed with a cat silencer.

240 – Driving cabin

- a removable cabin made of sheet iron and mechanically-welded tubes (FOPS type);
- front, rear and side glasses ;
- cabin is equipped with a locking door ;
- a side box including the instrument panel and the transfer control ;
- a floor supporting the structure ;
- a seat with separated arm-rest, equipped with 2 cross joysticks ;
- windscreen wiper ;
- front and side protection gratings.

224 – Complementary equipment :

- flash lights
- powder extinguisher
- 3 work headlights

240 – Kinematics (version TEM arm – 6 axes) :

- a boom articulation compass mounted on axle and rings, and lead by a dual-acting hydraulic cylinder, equipped with balancing valve ;
- a boom made with mechanically welded box ;
- a compass articulation between the boom and the walking beam, lead by a dual-acting hydraulic cylinder, equipped with balancing valve ;
- the walking beam is constituted with 3 parts :
 - a rotary cylinder
 - maxi torque during rotation : 10KNm
 - possible rotation 140° (+/-70°)
 - rotation speed : 3 Rp/min
 - a fix walking beam with mechanically welded box
 - a mobile walking beam with mechanically welded box, integrating the dipper kinematics (cylinder + quick attachment)
- a dipper articulation compass lead by a dual-acting hydraulic cylinder equipped with a balancing valve.

BUTOR

- a standard mechanical quick attachment
- a set of treated axles and rings, each articulation is equipped with a protected lubricator

SUPPLY RANGE :

It includes :

- the material as described above, painted in white RAL 9010.
- Our spare parts catalogue and the operation and maintenance manual.

The machine shall be mounted, tested and taken in delivery in our premises.

Our service does not include:

- the tools supply. We can make a separate proposal for these ones.
- Another probate than CE

Our service includes :

- realization
- assembly and tests in our premises

We assure after-sales service and operators training.