

DAI PRÀ

FORCE ABOVE ALL

General Catalog

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DAI PRÀ

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Dai Prà S.r.l. is an Italian company with roots in the early 20th century, initially focused on tunnel and bridge construction. Over four generations, the company has specialized in developing machinery for geotechnical works.

With a team dedicated to design, engineering, and manufacturing, Dai Prà leverages extensive experience and customer feedback to introduce innovative solutions aligned with the latest techniques in the industry. Dai Prà's areas of expertise include:



Consolidation injection

Micropiles

Piles

Anchoring and ties

Rod and pipe handling

Soil nails

Geothermal applications

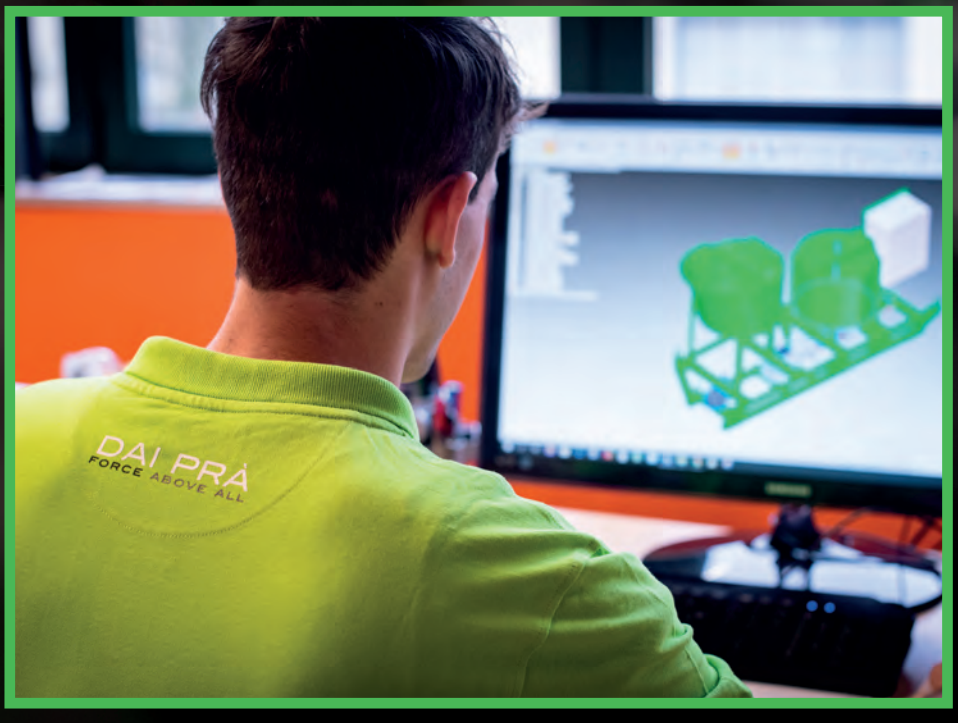
Land remediation

Concrete spraying

Wall injection

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DAM



From the initial project, our technicians develop an integrated project together with the company, deciding together the system which in its characteristics and perfomance is suitable for the execution of the work. Lastly, the location on the construction site is definited in order to **avoid downtime** and fully use the systems themselves.

Given the great relevance of these construction and restoration projects, they are increasingly requested the **detection and subsequent verification of the injection data**. In this regard we have develop our software which among other data allows you to **follow the GIN curve** (method develop by **Studio Lombardi**)

Site view for restoration of water discharge tunnel (Cornatel Dam—Spain)





View of the base of the **Scandarello Dam (Italy)** dam restoration site. Here there is an automatic turbo mixer/agitator (tank capacity 500 lt—agitator capacit 1000 lt) **with a PLC** and a **big bag** (capacity 1500 kg) **emtying system** that supplies the turbomixer—injector DE/OL100

It operates on electric power. **To avoid the use of cement bags**, given the difficultiy of installing the silo, a screw-operated big-bag emptying system was chosen, which is managed in the automatic mixing cycle.





To be self-sufficient, our production includes mixing and injection systems **powered by diesel engine**.

In this case as well. It is an **automatic system** with data input and monitoring for mixing and injection. The entire system, of course, is powered by the diesel engine.

The required data for mixing, including the quantity of water, cement and the third additive, mixing time, injection quantities per valve, total hole, and the corresponding pressures, **are managed either on-site or remotely from the office**.



Automatic mixing plant, supplied by silos. They are located at the base of the dam.



Two separate injectors (**DE/OL80**), each with its own electrical panel complete with a PLC for data input and recording.

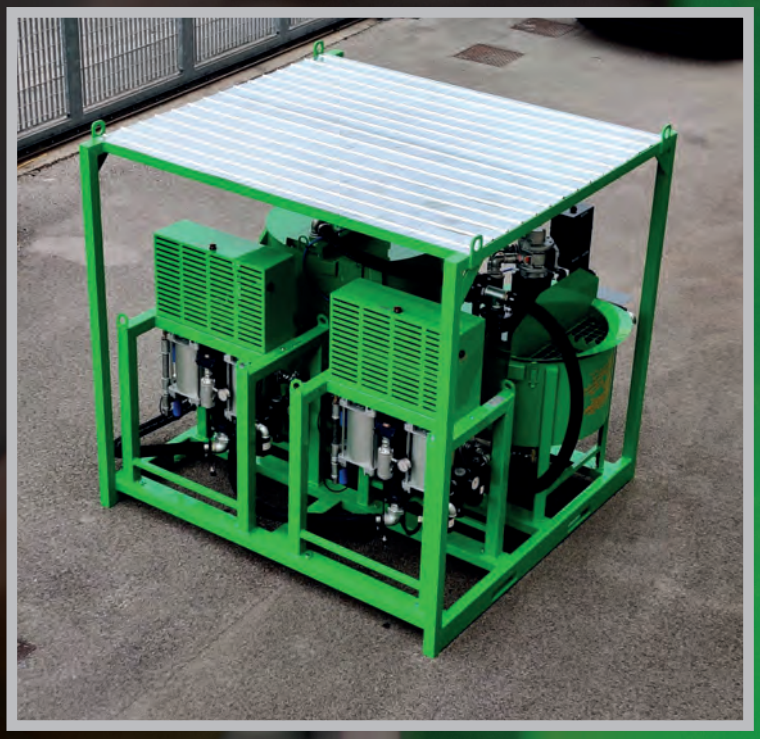
They are supplied with slurry from the turbomixer in the background.





An alternative to electric power, pneumatic mixing and injection units can be used, providing a flexible solution in locations where electrical connection are difficult to set up or unavailable.

High-turbolence mixing unit with DE/AR 80 injector **powered by a compressor**



For construction sites requiring higher production, a mixing plant powered by compressed air is provided, combined with two injectors



TUNNEL



Site view of tunnel hight speed railway Messina—Catania (Sicily-Italy)



Based on the materials that make up the mixture to be injected, the appropriate system for the realization of the project in specifications is studied together with the customer.

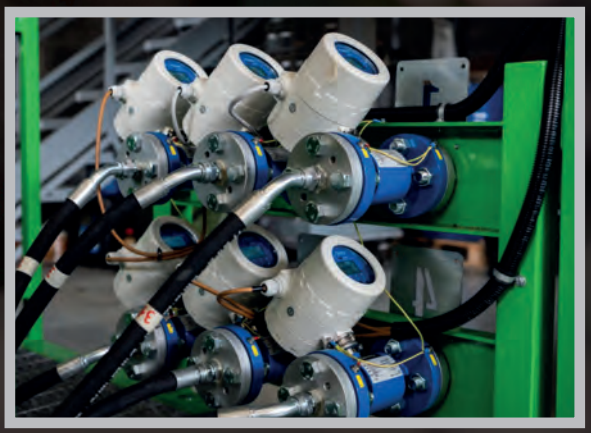
Elements to take into consideration are obviously the quantities of daily mixtures to be obtained, the different types of ingredients to be mixed, the quantity per single injection and total daily, the degree of automation required in both mixing and injection. **The injection is continuously monitored through our data acquisition system** which is integrated into the electrical control panel.

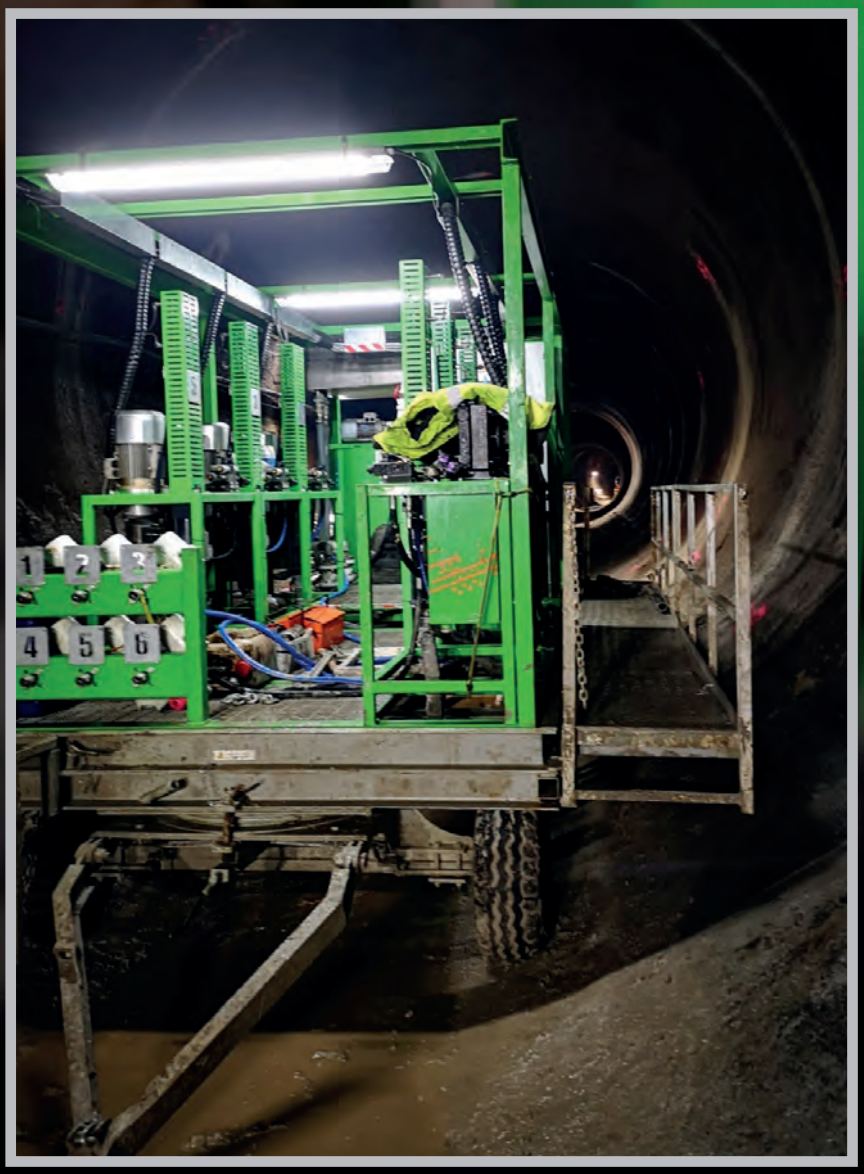


A system composed of 6 injectors (DE/OL 80) for injections to be performed at different points of the tunnel. They are fed by the agitation tank (1000 lt), which is filled by 2 external injectors (DE/OL c400). Given the need to **constantly monitor both the injected quantity and the pressure**, each is equiped with a flow meter and a pressure switch.

Everythink is set and dowloaded remotely or on-site.

The PLC is a single unit.









Another system, also electrical, with PLC.

Equipped with a **high-pressure pump for washing** and at the bottom a **stainless steel tank** for collecting dirty water.

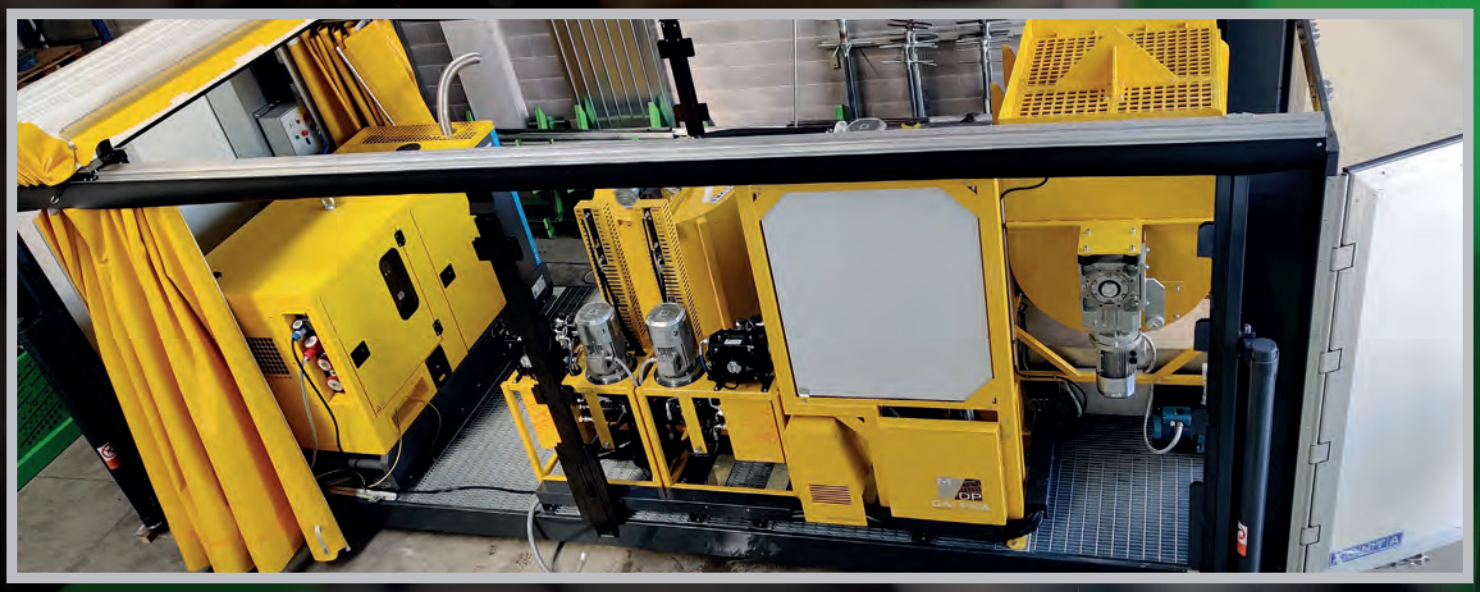
TUNNEL MAINTENANCE



Due to problems of cracks and water leakage in existing tunnels, we have developed a self-lift system mounted on a truck it allowa the quick carrying out of activities in the tunnels.

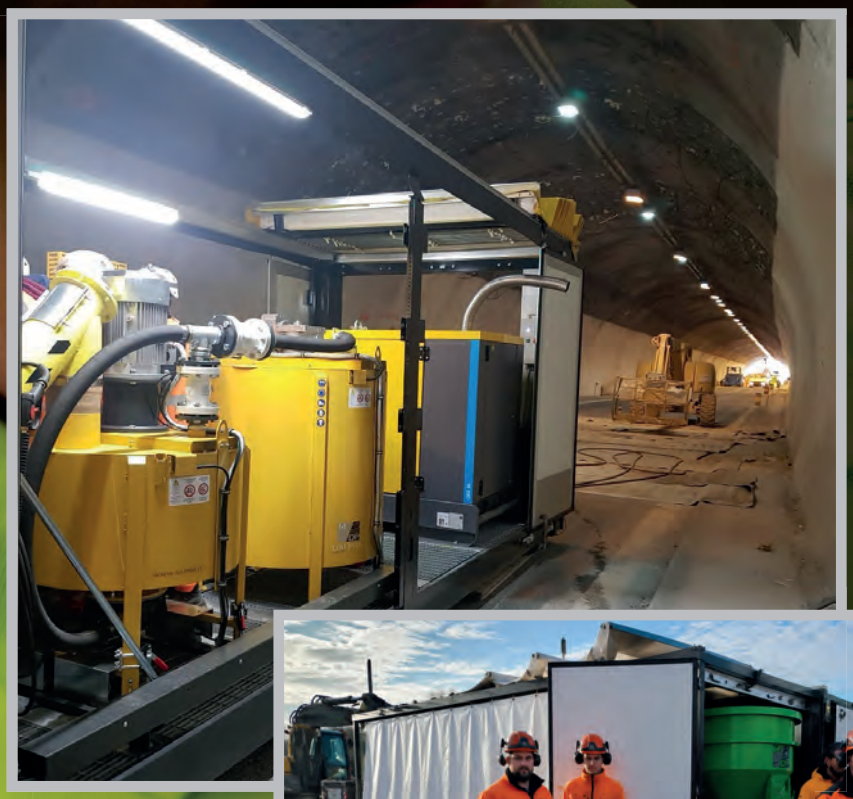
The system is as shown in the following photos equipped with the following equipment:

Generator 50 kw – 2 Injectors – Special mixer for big bag 1500 kg – Auger –Turbomixer with load cells -Agitator – Water loading pump – High pressure washer – Water tank - below it has a tank for dirty liquids – 4 Hydraulic piston for lifting and positioning on 7 mt trucks - Electrical panel with plc to set quantity of cement, water, mixing time, injection data (pressure-flow rate)















Other configurations of the self-lifting system:

an electrical panel from wich to set automatic operation and program the desired values.

Below the self-lifting with 2 injectors and a screw pump if the grain size are bigger or to have a continuous production







We now have a range of pneumatic products and systems that comply with **the ATEX directive**, which is essential for ensuring **safety in potentially explosive environments** such tunnels, mines, chemical and petrochemical plants

Systems with a **colloidal turbomixer** 300 ltagitator 750 liters and 2 injectors whose flow rate is 60 lt/min each and pressure up to 110 bar





REMEDIATION OF POLLUTED SITES



In collaboration with industry leaders in the cleanup of **polluted sites**, we have developed state-of-the-art mixing and injection systems **tailored** to meet the diverse needs of **environmental remediation projects**. Our expertise ensures that every system we produce is both efficient and versatile, capable of handling a wide range of injected materials with precision.*

Innovative Mixing and Injection Systems—**Customizable and Durable**:

Our mixing and injection plants are designed for the **injection of critical substances like antioxidants and inert materials**. Depending on the nature of the material being injected, our systems can be equipped with **stainless steel tanks, ensuring durability and resistance to corrosion**. We offer a comprehensive range of mixing and injection units suitable for both large-scale industrial sites and smaller structures, such as factories or localized polluted areas. Whether the project involves a vast contaminated area or a smaller site, our systems are designed to deliver optimal performance.**

Precision Control with PLC Integration:** Each of our systems is equipped with advanced PLC (Programmable Logic Controller) technology, allowing for precise control over the mixing and injection process. Operators can set exact quantities to be mixed and injected, ensuring consistency and reliability in every application. Furthermore, the ability to download and review data ensures full verification of the work carried out, providing transparency and accountability in environmental remediation efforts.







Mobile plant is designed to be versatile and reach various locationss on a remediation site. It operates by receiving input from a fixed agitator system, **ensuring consistent supply**.

This plant is mounted on trucks, allowing for movement and flexibility on site. Furthermore the system is equipped with two injectors, enabling simmultaneous operations at **different locations**.

Automatic mixing system with PLC for setting quantities of water, cement and additives. **Fully automatic** and made of **stainless steel** to resst corrosion caused by the potentially corrosive materials used. The mixing data is recorded and can be **downloaded via USB or remotely**.





For **small-scale projects** or work in **hard-to-reach areas**, we offer the Minimx, which is a compact **hydraulic** mixing and injection plant. It is connected for operation to an external power pack or a drilling machine.

-**Little one**: turbo tank 80 lt—storage 90 lt Injector: flow rate 60 lt/min—pressure from 60 to 100 bar

-**Big one**: turbo tank 150 lt –storage 210 lt Injector: flow rate 60 lt/min—pressure from 60 to 100 bar



LANDSLIDES



For landslides, when a **large volume of grout or high pressure is not required**, we offer a variety of mixing and injection systems specifically designed for anchors, nails or rods. Whether the project **involves securing slopes reinforcing retaining structures**, or **preventing erosion**, our systems can be adapted together with the client, to meet the **specific demands of the terrain**



At the top right, there is a pneumatic system consisting of mixer with 2 **overlapping tanks 200 liter** tanks and an injector with a flow rate of 60 liter– pressure max 110 bar.

At the bottom left, there is the same version with double tanks but the electrical panel is equipped with a PLC



On the bottom right, an electric system with turbomixer 150 lt a storage tank with recirculation and a **screw pump**







If higher production is required, we have the turbomixer 150 liters, which provides **fast mixing** at 1450-1500rpm and allows for the mixing of bentonite as well.

Below there is the **hydraulic system** that can be connected to an external power unit or a drilling machine







If injection and mixing parameters are also required, the model on the left, fully electric, is equipped with a turbo 300 liter, a 750 liter agitator and an injector.

There is also of course, a pneumatic system for weight measurement, and the PLC can be programmed either on-site or remotely.

Below a **pneumatic** version **SPEEDY** :ideal for work in areas where larger equipment cannot operate, the cement bags are inserted and mixed directly with water inside the machine.

It can be used for **localized repairs on bridges, tunnel, or other infrastructures with limited access**.





MICROPILES



Micropiles can vary significantly in **both depth and diameter**, depending on the project requirements. We can provide a wide range of mixing an injection equipment with various features, such as **flow rates, pressures and granulometries**. Our equipment is available in **electric, pneumatic, or hydraulic versions**, allowing us to cater to the specific demands of each construction site. Whether the project calls for precise control of material consistency or high-pressure injection, we have the right solution to ensure optimal performance and realibility



Complete automatic system with remote control, data detection for both mixing and injection, stainless steel water tank above the roof of the structure.

In the below photo, our automatic mixing and injector system, is used in the **restoration** of the **Garisenda tower (13° century)** in Bologna







The distinctive feature of this system is its capability to **inject granulometries up to 5-6 mm**.

The injector operates with a flow rate of 200 per minute and can handle a maximum pressure of 85 bar. In this example, the system is fully

For construction sites that **demand a higher and more** costant **flow rate** to meet the increased workload or specific operational equirements, our systems can be customized with the addition of a **screw pump**. This feature enhances the efficiency and realibility of the system, ensuring that it can handle larger volumes of material while maintaining smooth and







Fully automatic electrig mixing plant, with data setting and recording of set and processed values.

For jet grouting work, we have designed and produced this plant, which features a colloidal turbo tank with capacity of 1500 liters, an agitator 3000 lt.

It is fully automatic and the turbo mixer can be supplied by two separate screw conveyors.





Smaller-sized manual mixing unit, also supplied by the silo screw conveyor





WELLS FOR REMEDIATION OF POLLUTED SITES



The concept outlined in the image, refers to a specialized system developed for the remediation of polluted sites, specifically focused on cleaning drainage wells. This system appears to be an all-inone, automated solution that is mounted on a small truck, allowing for portability and efficient restoration activities at various sites **even with the injection of reagents and oxidizer**.



Key features of the system include:

-Full integration: the system is design to be fully integrated on a mobile platform. Like a small truck.

-Clean and restoration tools: the system uses multiple techniques and tools include

*video inspection -*Pistoning -*Brushing -*Jetting tools -*Air lifting-***Air pulse generator** (innovative device that generates air pulses to help break up and remove blockages. This technology **has been patented** by our company).

*Automation and data management: the system is fully automated for data recording, registration and download.

This implies that data from inspections and cleaning processes can be stored and accessed digitally for recrd- keeping and analysis, improving the efficiency and traceability of remediation activities.



Brushing



Air lifting





DIFFERENT PLANTS

The use f big bag on construction sites allows the **elimination of paper bags** (special waste) and also prevents emplyees from breathing dust. We have designed this system which in addition to advantages indicated, allow you to **avoid sratification of the premixed material**.

Two version are available: the first fully atomatic with recording data and the second manual







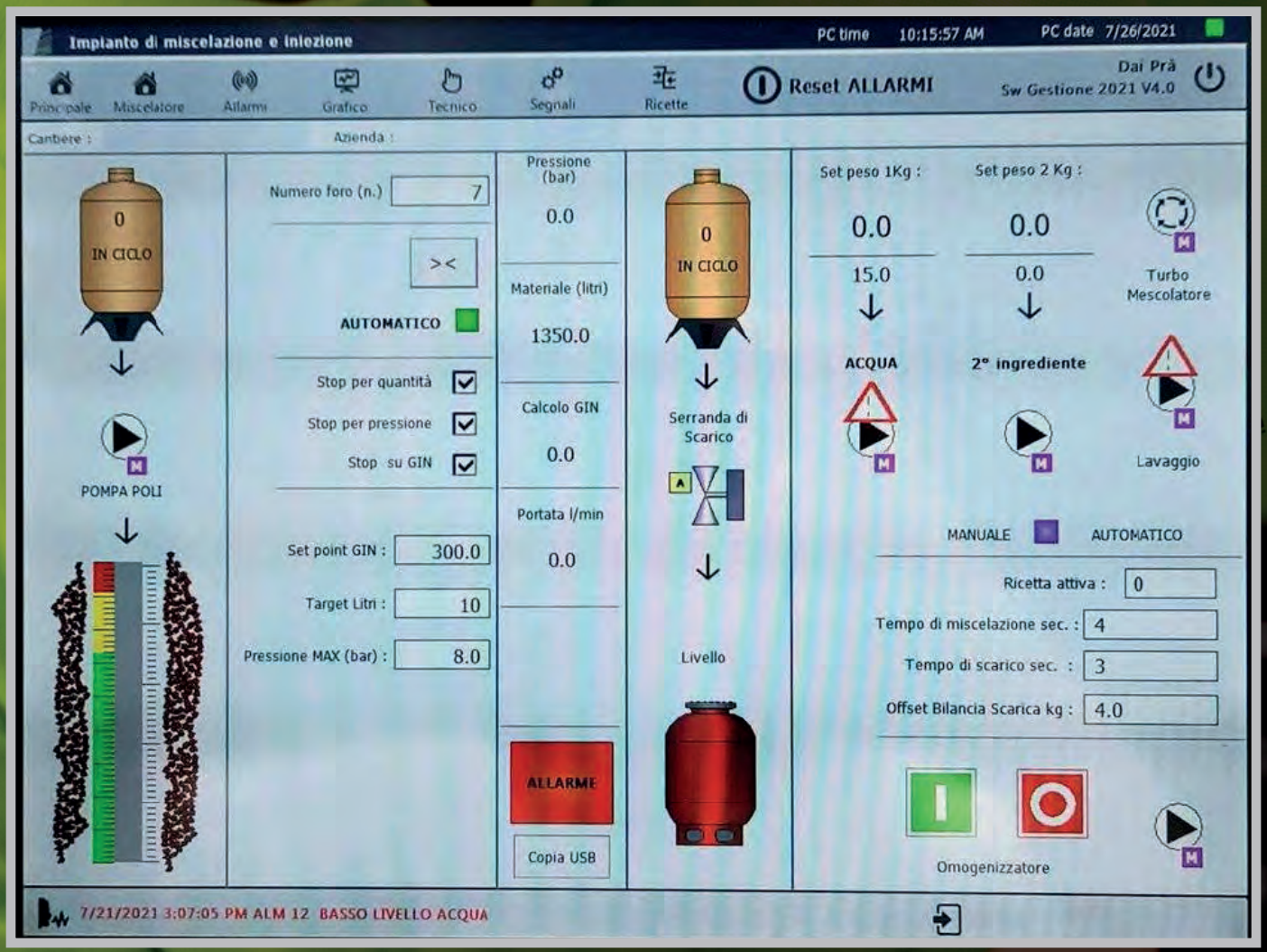




DATA SET/RECORD/DOWNLOAD

This (as example) is the display of our PLC for **set, record and downloaded work data of injection and mixing**.

(with the indication of the flow rate-pressure that must reach the injector - registration of the valve pressure parameters - quantity injected per valve / pole / self-drilling - **GIN number data download in usb or remotely in the office. Same parameters can be set remotely**)



The system allows **automatic mixing recipes** to be set either directly from the display or remotely.

For each recipe, it is possible to define:

- the different products to be used;
- the quantity of each product;
- the mixing times;
- the transfer times from the **high-turbulence** mixer to the **agitator tank**.

All process data and recorded values can then be downloaded via **USB** or accessed **remotely.**

ACCESSORIES

For injection into valved pipes made of iron, PVC or resin, packers are used. **We have hydraulic, pneumatic, manual and flexible packers available**, depending on the specific task to be performed.

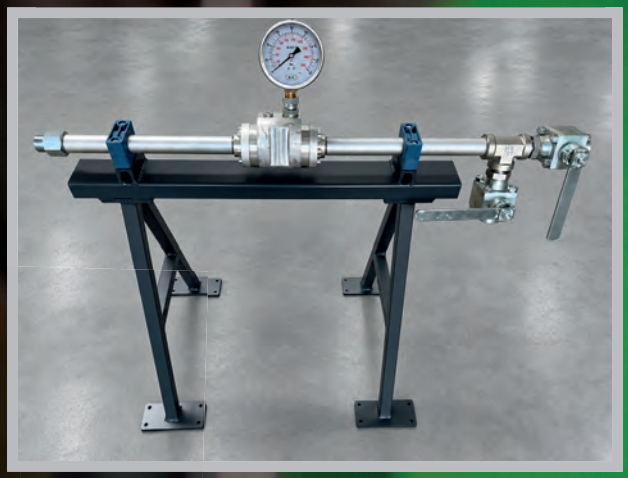
HYDRAULIC PACKERS





PNEUMATIC PACKERS





Cavalletto iniezione

FLEXIBLE PACKERS



MANUAL PACKER



To **avoid having hoses** scattered **around the construction site** , we use an electric hose reel (as shown in the photo) or a manual hose reel



MORDE

THE QUICK, SIMPLE, AND HIGHLY EFFICIENT SOLUTION TO DEAL WITH CASING AND PIPES ON A CONSTRUCTION SITE

-Connecting the MORDE bucket to the digger allows for the handling and positioning of casing and perforation pipes directly on the perforation shaft.

Can be used for soil and dirt removal.

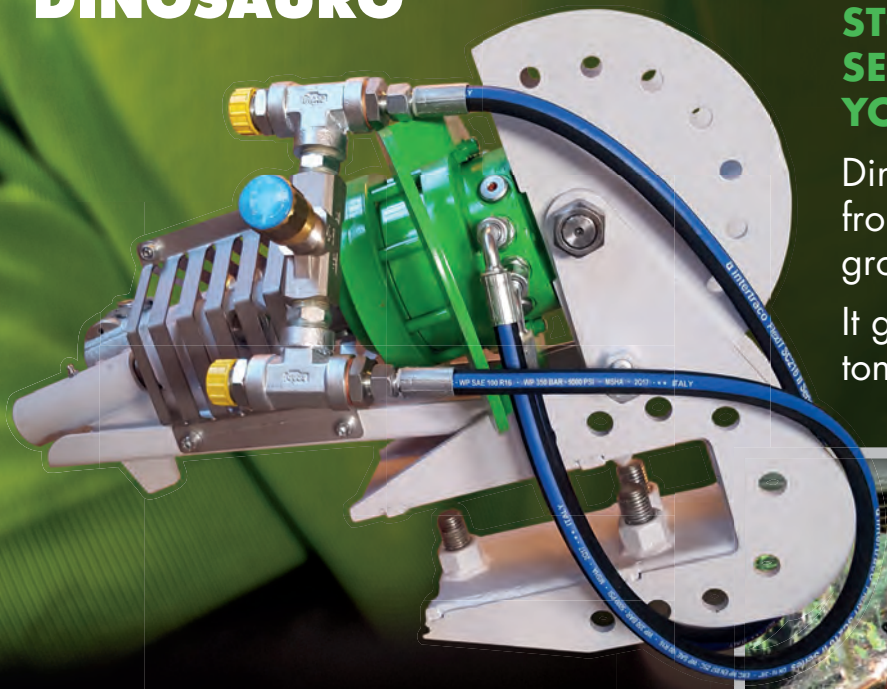
-The MORDE bucket substitutes the traditional bucket and is operated by the excavator hydraulic circuit.

From the cabin one can command all MORDE bucket movements and functions.

-The standard version can staple up to a diameter of 80 to 300 mm.



DINOSAURO



STOP WITH THE WEIGHT OF HOSES AND SHOTCRETE NOZZLE IN YOUR HANDS

Dinosauro can be installed on excavators from 3300 to 33000 lbs. It carrys back grout, air and silicate hoses.

It grants a smooth and uniform spritz beton thank to ellettic adjustable rotation.

Dinosauro can be applied in 5 minutes and works by the excavator's hydraulic circuit.



ELECTRIC INJECTOR	DE/OL 80S	DE/OL 80	DE/OL 3	DE/OL 100	130c200	DE/OL c300	DE/OL 130 c400
Adjust flow rate (GPM)*	60 (15,8)	60 (15.8)	5-27 (1,31-7,1)	95	130 (34,34)	215 (56.90)	270 (71)
Adjust pressure (PSI)*	110 (1600)	85 (1230)	70 (1020)	100 (1450)	85 (1230)	85 (1230)	85 (1230)
Particle size mm	2	2	2	3	5	5	5
Motor kw	5,5	4	2,2	10	9,2	15	18
Diam. piston (IN)	80 (3)	80 (3)	80 (3)	100	130 (5.1/8)	130 (5.1/8)	130 (50.1/8)
Piston stroke (IN)	200 (8)	200 (8)	200 (8)	200	200 (8)	300 (11)	400 (16)
Diam. grout cylinder (IN)	80 (3)	80 (3)	80 (3)	100	130 (5.1/8)	130 (5.1/8)	130 (5.1/8)
Suction (IN)	2	2	2	2	3	3	3
Output diam. (IN)	1	1	1	1	1.1/2	1.1/2	1,1/2"
Adjust stroke	60	60	45	60	58	58	54
Piston grease system	Acqua - Water	Acqua - Water	Acqua - Water				
Air/oil heat exchanger	Aria/Olio	Aria/Olio	Aria/Olio	Aria/Olio	Aria/Olio	Aria/Olio	Aria/Olio
Electric panel	c/contacolpi	c/contacolpi	c/contacolpi	c/contacolpi	c/contacolpi	c/contacolpi	
Size (IN)	L.83-P.54 H.181	L.83-P.54 H.181	L.83-P.54 H.181	L.110-P.54-H.187	L.131-P.75 H.170	L.131-P.75 H.170	L.132-P.80 H.195
Weight lbs	255 (560)	250 (550)	240 (528)	520	820 (1808)	850 (1874)	950 (2094)

* or more on demand

PNEUMATIC INJECTOR	DE/AR 80	DE/AR 130
Adjust flow rate (GPM)*	60 (16)	115 (30,3)
Adjust pressure (PSI)*	100 (1449)	100 (1449)
Particle size mm	2	5
Air piston	2	2 in tandem
Piston diam. (IN)	80 (3,15)	130 (5,12)
Plunger stroke (IN)	200 (7,9)	200 (7,9)
Grout sleeve dim. (IN)	80 (3,15)	130 (5,12)
Suction diameter	2"	3"
Output diameter	1"	1.1/2"
Adjust stroke	60	58
Air consumption max lt. (GAL)	6000 (1585)	9000 (2380)
Lubeoil filter regulator dimension	si / yes	si / yes
Dimension cm (IN)	h. 135 - l. 85 - p. 65	h. 135 - l. 85 - p. 65
Weight (lbs)	190 (420)	350 (770)

AGITATORS	
ELECTRIC ENGINE MODEL	
Tank (gal)	300-3000 (80-800)
Electric motor Kw	1,1 - 4
RPM reducer	rpm
Safety guard device on moving parts	si / yes
Start and stop device CE standard	si / yes
Weight Kg (lbs)	180-1500 (80-680)
(GPM)	*
Store diameter cm (IN)	80-1500 (32- 590)
Discharge pipe connection	1,1/2" - 3"
COMPRESSED AIR ENGINE MODEL	**MDP 250 - A**
Air Motor	4 HP -16 HP

*Theoretical calculation

TURBO MIXER	MDP T
Tank (gal)	150-1750 (40-460)
Motor three-phase	4kw - 15 kw
RPM	1450
Main characteristics	
On-Off push button	si / yes / si / oui
Butterfly or pinch valve for transfer	2
Impeller	1
Grout charge device height (in)	da 105 (41,30)
Wieght (lbs)	200-1750 (450-3850)
Grout mixing capacity* mc/h**	4-30
Sitable for bentonie mixture	si / yes / si / oui

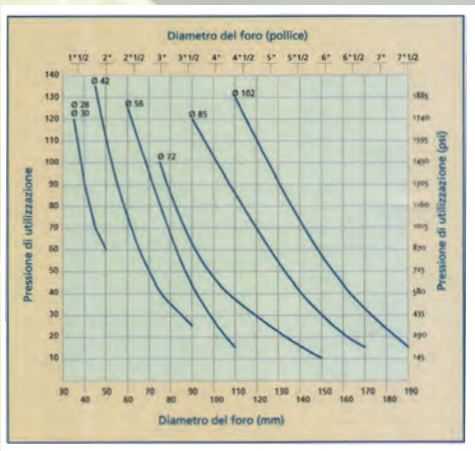
* Theoretical calculation
It depend on the model

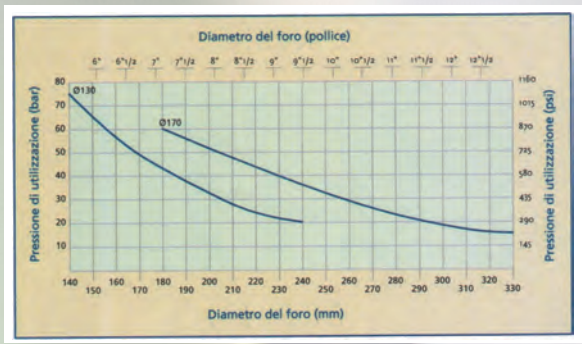
FLEXIBLE PACKER	Ø 27	Ø 30	Ø 37
Rubber spacing (mm)	350	330	330
Total length (mm)	530	534	534
Inlet thread	1/2" F	1/2" F	1/2" F
Cups	4	4	4
For internal pipes (mm)	27	31	38

MANUAL PACKER	1/4"	1/2"	3/4"	1"	2"
Thread	1/4" F	1/2" F	3/4" F	1" F	2" F
Total length B (mm)*	500	500	600	700	900
Grout passage C (mm)	8,5	16	18	23	50
Rubber external diameter D (mm)	30	45	56 / 65	71 / 86 / 96 105 / 110 / 125	96 / 105 / 110 / 125 130 / 145 / 165
Rubber height E (mm)	100	100	90	100	100
Weight (kg)	0,6	0,9	1,5	3,4	8,8

HYDRAULIC PACKER	Rubber ring	Max expansionmm	Oil pipe	Cement pipe	Max hydraulic pressure
MDP 23	23 - 27	29-35	1/8"	1/4"	100
MDP 32	32 - 35	54 - 58	1/8"	1/4"	100
MDP 38	38 - 45	61 - 68	1/8"	1/4"	180
MDP 55	55 - 67	84 - 92	1/8"	3/4"	180
MDP 80	85 - 98 - 110 130 - 150*	120 - 130 - 138 154 - 175	1/8"	3/4"	180
MDP 115	146 - 170 - 190 210 - 240	170 - 194 - 215 235 - 265	1/4"	1 1/2"	200

INFLATABLE PACKER									
Nominal diameter (mm)	**28**	**30**	**42**	**56**	**72**	**85**	**102**	**130**	**170**
Top connection TC	3/8" BSP I	3/8" BSP	3/8" BSP	3/4" BSP	1" BSP	1" BSP	2" BSP	3" BSP	3" BSP
Tube Central CP internal diameter (mm)	8	8	17	20	35	35	53	83	83
Maximum expansion Ø (mm)	55	55	98	125	160	185	200	270	350
Maximum working diameter (mm)	50	50	90	110	150	170	190	240	330
Inputs for inflation fluid	1x1/8" BSP	1x1/8" BSP	2x1/8" BSP	2x1/8" BSP	2x1/8" BSP	2x1/8" BSP	2x1/8" BSP	2x1/8" BSP	2x1/8" BSP





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