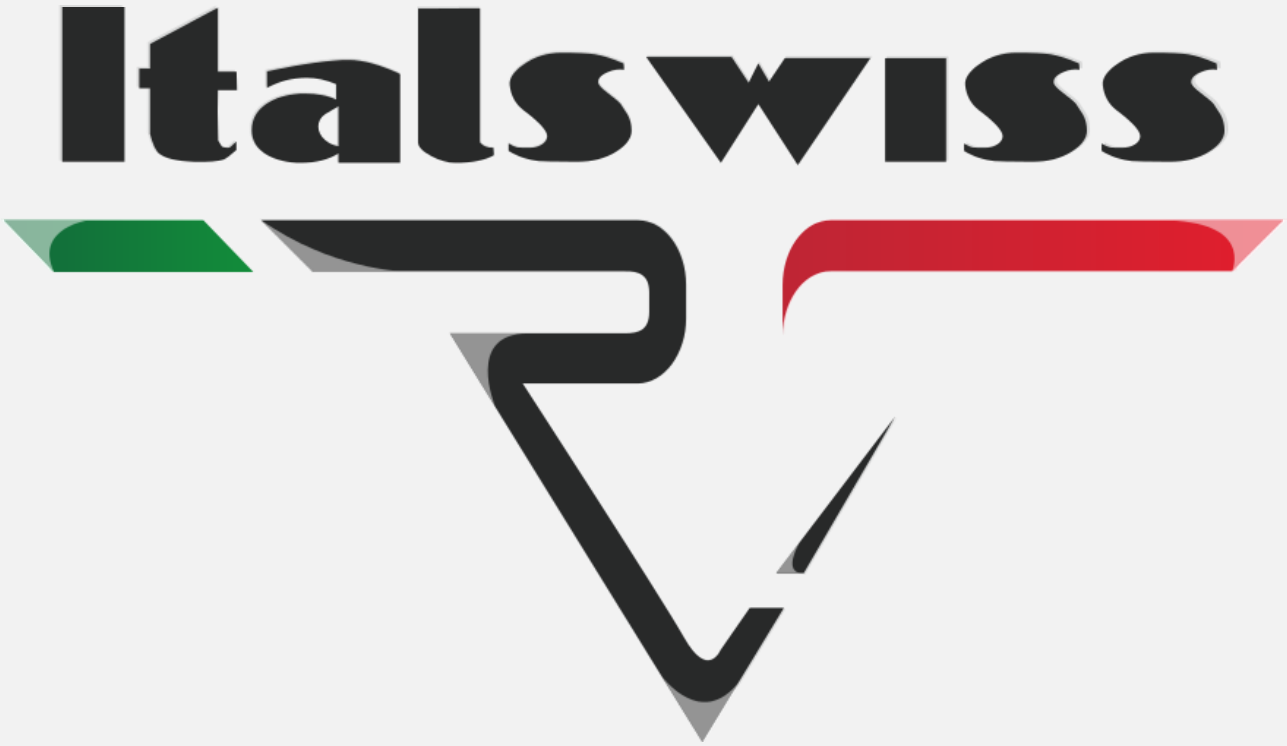


PRODUCTS CATALOGUE

Italswiss

Italswiss Engineeering srl has been present on the soil stabilization market from 1989. We supply mixing and grouting machines and equipment like grouting packers (hydraulic, inflatable and mechanical), accessories such as PVC TAM tubes and centralisers.

We launched on the market the Marmotta mixig pump , widely used both at small and big construction sites (tunnels, dams, highways).

Our long-lasting experience helps us to find and advise the best solutions with an excellent price-quality ratio. Our flexibility allows us to offer to our customers non-standard equipment designed specifically on request.

We can design and manufacture bespoke equipment for all your requirements.

MARMOTTA MIXING PUMP

Marmotta grout pump is an effect of long-standing experience in grouting and drilling.

It allows to mix and pump cement mortars with a maximum grain size of 3 mm, continuously and without problems. It is driven by an electric or a hydraulic motor.
Dry material is introduced into the pump, then it passes through a worm conveyor to a mixing chamber, where it is mixed with water. Ready mixture flows to stator and rotor and it is pumped with 80 bar maximum pressure and 100 m maximum distance. The flow rate depends on the installed pump body (from MP2 – 240 l/h to MP13 – 3600 l/h.

Marmotta may be used for: passive and active anchors; self-drilling anchors, tunneling, micropiles, backfilling. It may also be used for cement spraying if equipped with an additional air compressor.

TRONIC	HYDRAULIC
4 Kw or 5.5 Kw Electric motor . Two speeds: 240 and 400 rpm. Gradual start for less energy absorption during activation.	Hydraulic motor 125 cc. Variable speed in relation with the supplied oil. No electricity needed

MARMOTTA MIXING PUMP

TECHNICAL SPECIFICATIONS

Lunghezza - *Length*
165 cm

Larghezza - *Width*
68 cm

Altezza - *Height*
88 cm

180 Kg

MODELLO VERSION			*TRONIC*		*HYDRAULIC*	
VELOCITA' MOTORE *MOTOR SPEED*			240 rpm	400 rpm	240 rpm	400 rpm
ALIMENTAZIONE SUPPLY			4 kw	4 kw	30 l/min 150 bar	50 l/min 150 bar
GRUPPO POMPANTE PUMPING UNIT			PORTATE *FLOW RATES*			
MP2		P.Max 40 bar	240 l/h	400 l/h	240 l/h	400 l/h
MP3		P.Max 80 bar	830 l/h	1350 l/h	830 l/h	1350 l/h
MP8		P.Max 60 bar	1260 l/h	2160 l/h	1260 l/h	2160 l/h
MP13 K		P.Max 40 bar	2160 l/h	3600 l/h	2160 l/h	3600 l/h
GRANULOMETRIA MASSIMA *MAX. GRAIN SIZE*			3mm			
DISTANZA MASSIMA *MAX DELIVERY DISTANCE*			100m			

* Per la versione idraulica, la velocità del motore è variabile in proporzione alla quantità di olio fornita
* *On the hydraulic version the speed of the motor is variable in relation with the quantity of the oil supplied*

MARMOTTA VARIOTRONIC MIXING PUMP

The Marmotta Variotronic was born out of the continuous and increasing demands from construction sites, where more and more attention is being paid to the quality and control of injected cement mixtures.

The Marmotta Variotronic is the first newly developed mixing pump that allows the water/cement ratio to be set and kept constant even by varying the pumping speed. In fact, this new version allows the motor speed to be varied from a minimum of 240 rpm to a maximum of 400 rpm.

All necessary adjustments are easily set through the LCD DISPLAY located on the control panel, and the main injection parameters can be kept under constant control.
Cement is introduced into the hopper and transported via an auger to the mixing chamber where the correct amount of water is AUTOMATICALLY introduced. The cement mixture is subsequently pumped with pressures up to 80 bar and distances up to 100 meters.

The possibility of changing the pumping speed makes this pump a perfect machine for self-drilling anchor installation, tunnel nailing and micropiles.

MAIN FEATURES:

On board computer
LCD display
Water/Cement ratio keeping
Parameters security block through a PIN code
Grouting pressure limiter
Radio remote control with a flow rate regulator

MARMOTTA VARIOTRONIC MIXING PUMP

TECHNICAL SPECIFICATIONS

Lunghezza - Length
165 cm

Larghezza – Width
68 cm

Altezza – Height
88 cm

180 Kg

VELOCITA' MOTORE *MOTOR SPEED*			Min. 240 rpm	Max. 400 rpm
MOTORE ELETTRICO *ELECTRIC MOTOR*			4 kw	
GRUPPO POMPANTE *PUMPING UNIT*			**PORTATE** *FLOW RATES*	
MP2		P.Max 40 bar	Min. 240 l/h	Max. 400 l/h
MP3		P.Max 70 bar	Min. 830 l/h	Max. 1350 l/h
MP8		P.Max 60 bar	Min. 1260 l/h	Max. 2160 l/h
MP13 K		P.Max 40 bar	Min. 2160 l/h	Max. 3600 l/h
GRANULOMETRIA MASSIMA *MAX. GRAIN SIZE*			3 mm	
DISTANZA MASSIMA *MAX DELIVERY DISTANCE*			100 m	

PNEUMATIC GROUTING UNITS

FURETTO

A pneumatic grouting unit Furetto is easy to use and handle.
It has several advantages:
- A robust but light design;
- Easily removable grout pump, independent from the agitator;
- Easy and fast maintenance;
- Quick cleaning.

Only a part of the grout pump is in contact with cement mix, which increases the pump durability and reduces wear parts costs.
Furetto is recommended for soil nailing and cavity filling.

Furetto Duo is composed of two agitators and a pump/two pumps. It means that an operator can grout and mix at the same time.

FURETTO	FURETTO DUO
Single mixing tank. Removable pneumatic pump. Easy handling. Easy to clean.	Double mixing tank. Removable pneumatic pump. Possibility to pump and mix at the same time. Double flow rate with an additional grout pump.

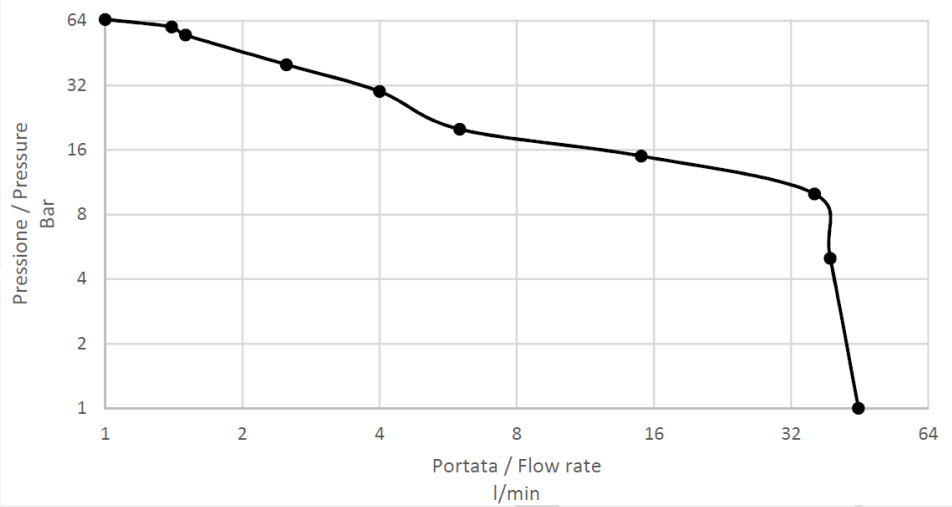
PNEUMATIC GROUTING UNITS

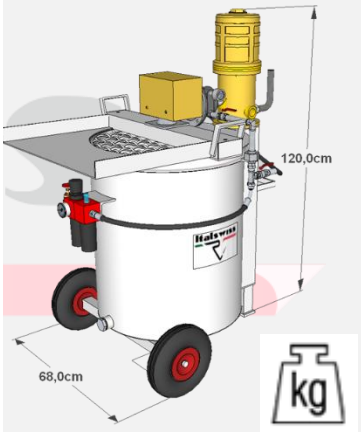
TECHNICAL SPECIFICATIONS

Lunghezza - Length
70 cm

Larghezza – Width
68 cm

Altezza – Height
120 cm





100 kg

Pneumatic mixer
Pneumatic motor : 1,25 Kw
Sound level : 87 dBa max
Tank capacity : 90 l
Rotation speed . 60-300 giri/min
Mixing time : approx. 2 min
Total weight : 80 kg
Pneumatic injector
Air-driven piston
Weight : 17 Kg
Length: 800 mm
Flow rate : 38 l/min max at 8 bar air pressure
Injection pressure : max 40 bar with air pressure 8 bar
Air consumption : 2000 l/min a 7 bar

PNEUMATIC GROUT UNIT

MINI AIR GROUT I – MINI AIR GROUT I PLUS

The pneumatic mixing and grouting unit Mini Air Grout has been designed to semplify the operations and the transports on a difficult jobsites. A powerful pneumatic cylinder can provide a flow rate of 60 l/min and a pressure up to 85 bar to cover works like:

- Micropiles injection
- Anchors and self drilling anchors
- Rockfall barrier
- Rock bolting

The control system of the machine is completely pneumatic, wich means it does not depend on any electrical supply. The machine is driven by compressed air from a compressor and is equipped with an air treatment system with a pressure regulation and a lubricator. It mounts an emergency shut off valve.

PNEUMATIC GROUT UNIT

TECHNICAL SPECIFICATIONS

Mixer

Single bin Pneumatic mixer (on wheels)

Pneumatic motor : 1,25 Kw

Sound level : 87 dBa max

Tank capacity : 80 l

Rotation speed . 60-300 rpm

Mixing time : approx. 2 min

Weight : 80 kg

Air consumption : 300 l/min at 8 bar

Pump

Mini Air Grout I

Air-driven piston diam 160

Double effect pump

Stroke: 150 mm

Flow rate : 60 l/min max at 8 bar air pressure

Injection pressure : max 60 bar with air pressure 8 bar

Air consumption : 5000 l/min at 8 bar

Weight: 80 Kg

Mini Air Grout I Plus

Air-driven piston diam 200

Double effect pump

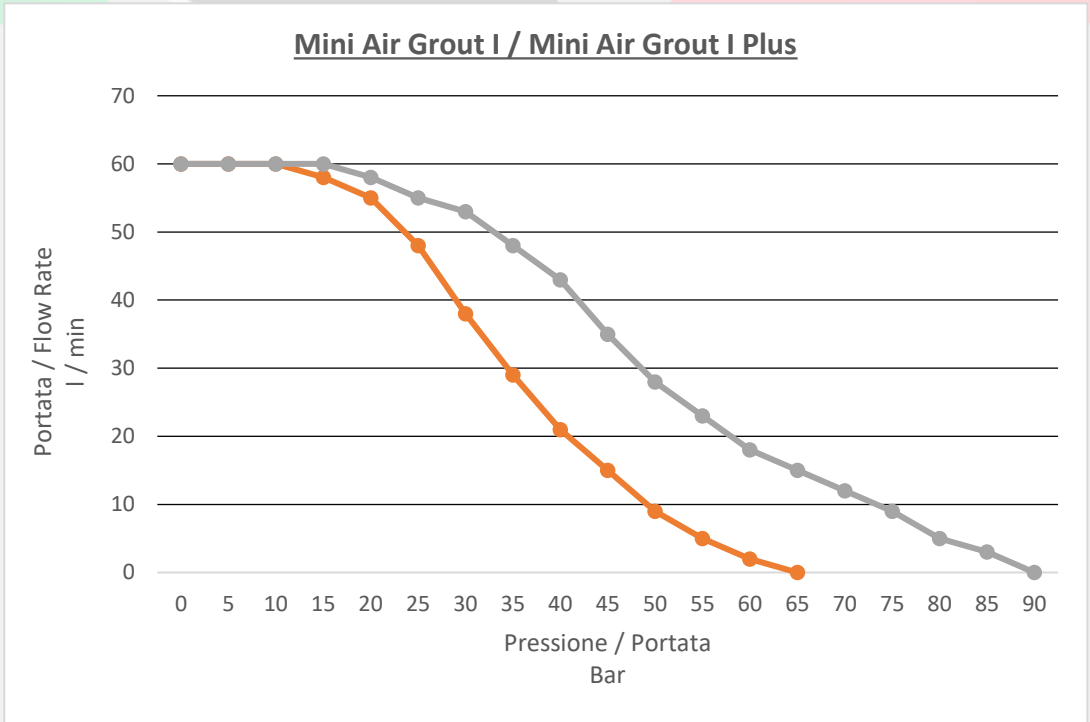
Stroke: 150 mm

Flow rate : 60 l/min max at 8 bar air pressure

Injection pressure : max 85 bar with air pressure 8 bar

Air consumption : 7000 l/min at 8 bar

Weight: 80 Kg



GROUT HOSE

SHOTCRETE NOZZLE

OUTLET MANOMETER

PNEUMATIC GROUT UNIT

MINI AIR GROUT II

The pneumatic mixing and grouting unit Mini Air Grout II has been designed to obtain big flow performance in a compact grout unit. A powerful pneumatic cylinder provide a flow rate of 75 l/min and a pressure up to 50 bar to cover lots of works like:

- Micropiles injection
- Anchors and self drilling anchors
- Rockfall barrier
- Rock bolting

The control system of the machine is completely pneumatic, wich means it does not depend on any electrical supply. The machine is driven by compressed air from a compressor and is equipped with an air treatment system with a pressure regulation and a lubricator. It mounts a control panel with an Emergency Button.

PNEUMATIC GROUT UNIT

TECHNICAL SPECIFICATION

Mixer

Single bin Pneumatic mixer

Pneumatic motor : 1,25 Kw

Sound level : 87 dBa max

Tank capacity : 250 l

Rotation speed . 60-300 rpm

Mixing time : approx. 2 min

Air consumption : 300 l/min at 8 bar

Pump

Mini Air Grout Ii

Air-driven piston diam 200

Double effect pump

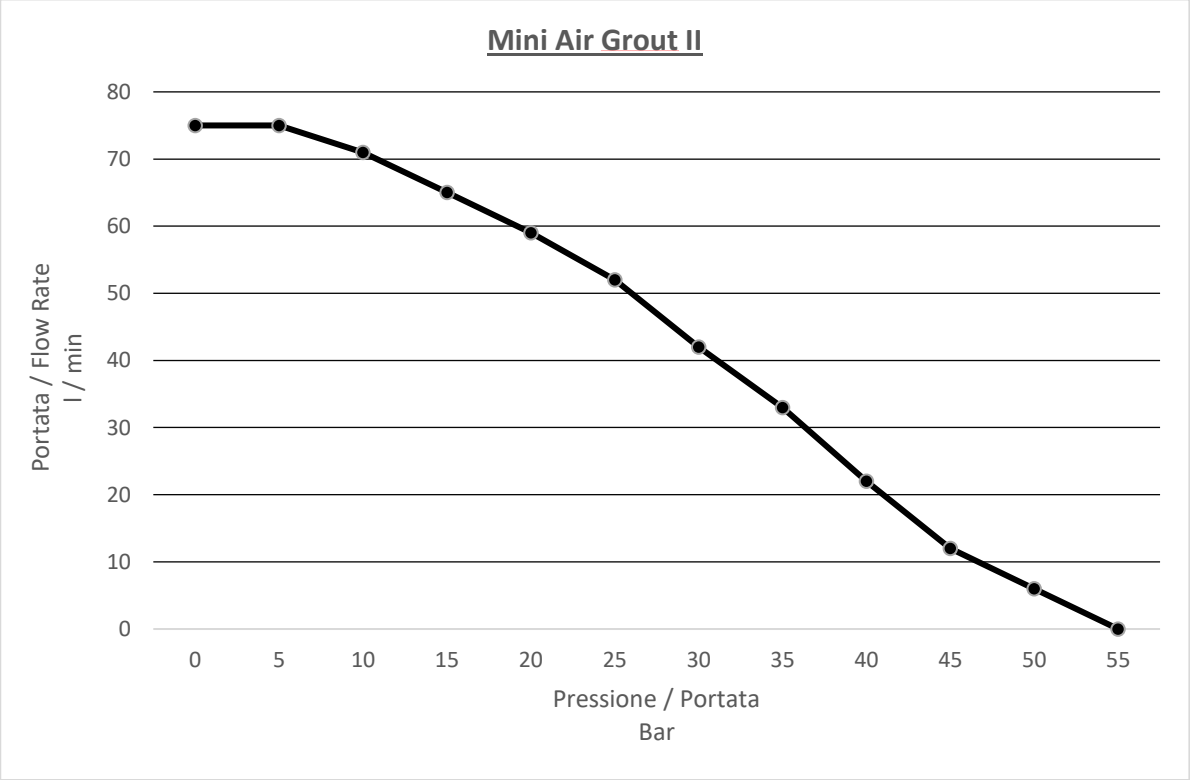
Stroke: 150 mm

Flow rate : 75 l/min max at 8 bar air pressure

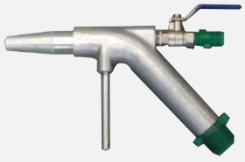
Injection pressure : max 50 bar with air pressure 8 bar

Air consumption : 7000 l/min at 8 bar

OVERALL DIMENSIONS: 120 x 80 x H 160 cm – TOTAL WEIGHT: 300Kg



GROUT HOSE



SHOTCRETE NOZZLE

OUTLET MANOMETER

GROUTING UNITS

MINIGROUT

The "Minigrout" series is composed of various mixing and grouting units for several types of mixtures. Tanks dimensions may vary depending on a customer's request. A grout pump is a double action piston pump and reaches both high and low pressure injections. It may be modified on request. Minigrout units may be driven by electric or diesel motors.

A standard MINIGROUT grouting system consists of:

- A high shear mixer. It is used to obtain cement mortar through the intense mixing of water and cement and/or bentonite. The obtained mix is transported into an agitator or directly into a grout pump.
- An agitator, which maintains in suspension mixes such as cement mortar or bentonite clay. The mix is transported directly to the grout pump.
- A grout pump, with a double acting piston used for cement mortar or bentonite injections with the use of PVC TAM tubes, micropiles, geothermal injections and other geotechnical applications.

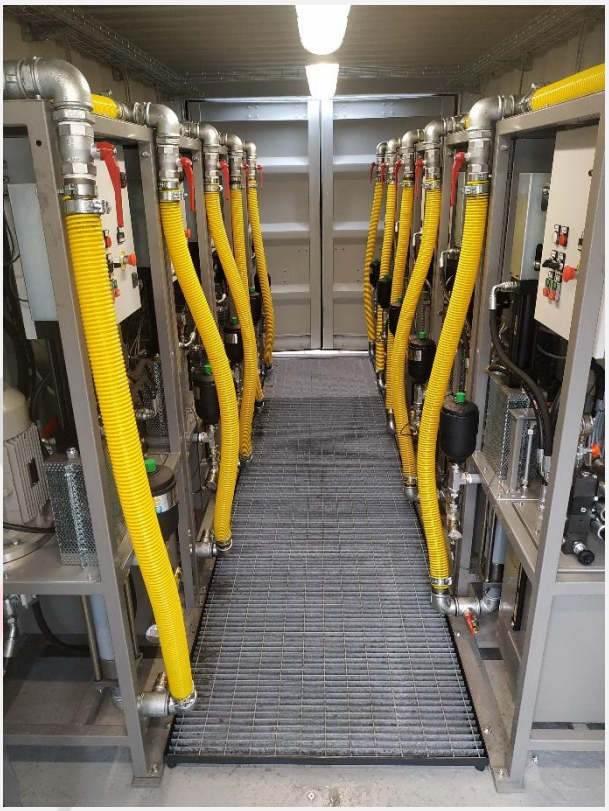
GROUTING UNITS

TECHNICAL DATA

MODELLO MODEL	MINIGROUT I	MINIGROUT II
INIETTORE / *GROUT PUMP*		
Diametro pistone/ *Piston diameter*	80 mm	100 mm
Corsa Pistone / *Piston stroke*	200 mm	200 mm
Alta Pressione/ *High pressure*	100 bar	100 bar
Portata max / *Max flow rate*	24 l/min	40 l/min
Bassa Pressione / *Low pressure*	40 bar	40 bar
Portata max / *Max flow rate*	55 l/min	100 l/min
Granulometria Max / *Max grain size*	3 mm	3 mm
Motore / *Engine*	5,5 kW	11 kW
TURBOMISCELATORE / *HIGH SHEAR MIXER*		
Motore / *Engine*	5,5 kW or 7,5 kW	7,5 kW
Velocità circolazione / *Mixing speed*	600 l/min	1200 l/min
Capacità miscelazione *Mixing capacity*	100 l	300 l
Produzione Max *Max mixture production*	3 m3/h	5 m3/h
AGITATORE / *AGITATOR*		
Motore / *Engine*	0,75 kW	1,5 kW
Velocità miscelaizone *Mixing speed*	60 rpm	60 rpm
Capacità miscelazione *Mixing capacity*	300 l	650 l
DIMENSIONI E PESO / WEIGHT AND DIMENSION		
L x W x H	235 x 80 x 195 cm	295 x 110 x 195 cm
PESO /WEIGHT	750 Kg	1300 Kg

GROUTING PUMP

MULTIPLE GROUTING UNIT MAMMUTH 10



A multiple grouting unit Mammuth 10 is a containerized plant composed of n.10 vertical grout pumps Minigrout I, disposed in 5-unit raws.

A data logger equipped with an lcd touch display allows to manage the units automatically. It permits to set configuration and start-stop operations. It also makes it possible to register every single unit performance.

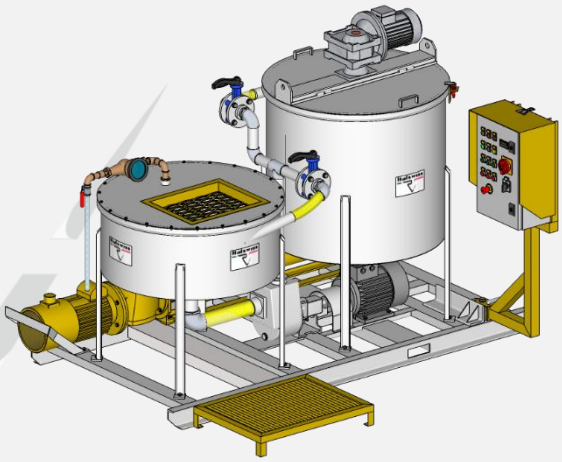
The container is delivered with suction and pressure hoses, a water hoses line for cleaning and a walkable raised floor. The control panel and the data logger are mounted in a separate key-locked area.

The containerized multiple grout unit Mammuth 10 can be equipped with MInigrout I and Minigrout II vertical pumps or it could be customized on request.

MINIGROUT "S"

This special version of Minigrout, equipped with a progressive cavity pump allows adjustable flow rates. The pump may transfer a huge volume of material which makes various geotechnical works easier and quicker.The agitator and high shear mixer capacity may be made on customer demand.

Turbomiscelatore / High Shear Mixer	
Motore elettrico / Electric motor	7,5 kW
Velocità di miscelazione / Mixing speed	1100 l/min
Capacità di miscelazione / Mixing capacity	300 l
Granulometria massima / Max grain size	4 mm
Uscita prodotto / Cement outlet	2"



Agitatore / Agitator	
Motore elettrico / Electric motor	1,5 kW
Velocità di miscelazione / Mixing speed	90 rpm
Capacità di miscelazione / Mixing capacity	650 l

Pompa iniezione / *Grout pump*	
Tipo / *Type*	Pompa a vite / Screw pump
Motore Elettrico / *Electric Motor*	7,5 kW + 0,75 kW (ventola / fan)
Portata massima / *Max flow rate*	167 l / min (10 m^3 / h)
Pressione massima / *Max pressure*	20 bar

GROUTING UNITS

VARANO

Varano combines the advantages of a progressive cavity pump with those of a high shear mixer that permits to have a homogenous mixture even with problematic products like bentonite and additives mixes. A big mixing hopper maintains in suspension the mixed products. The exchangeable pumping bodies allow to have a wide range of pressure and flow rate. It is also possible to adjust the flow rate of the pump by changing the speed of a motor, from 140 to 400 rpm for an electric version and from 5 to 400 rpm for a hydraulic version that requires a total of 80 l/min – 150 bar of pressure of oil (30 l/min for mixer and 50 l/min for pump)

Varano is equipped with an electronic inverter that permits to have:

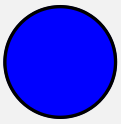
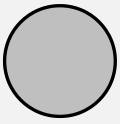
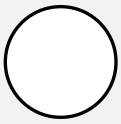
- Lower energy absorption during activation (-30%)
- Gradual start
- Adjustable flow rate
- Reduced consumptions which means electricity saving and a respect for the environment.

A new concept of a high shear mixer permits

To mix also with 0,35 A/C mixing ratio (100 kg of cement and 35 l of water)

TECHNICAL SPECIFICATIONS

VARANO GROUT PUMP

PORTATA / FLOW RATE	*MP3*	*MP8*	*MP13K*	*MP13*
STATORE / STATOR ROTORE /ROTOR				
ELECTRIC VERSION 5.5 KW MIN 120 RPM MAX 400 RPM	From 375 l/h to 1250 l/h P.max: 70 bar	From 650 l/h to 2160 l/h P.max: 50 bar	From 1100 l/h to 3600 l/h P.max: 40 bar	From 1350 l/h to 4500 l/h P.max: 30 bar
HYDRAULIC VERSION 125cc MIN 10 RPM MAX 400 RPM	From 5 l/h to 1250 l/h P.max: 70 bar	From 5 l/h to 2160 l/h P.max: 50 bar	From 5 l/h to 3600 l/h P.max: 40 bar	From 5 l/h to 4500 l/h P.max: 30 bar

MIXING UNIT

TECHNICAL DATA SHEET		
Versione / Version	*Electric*	*Hydraulic*
Capacità / Capacity	100 L	100 L
Velocità di miscelazione / Mixing speed	700 l/min	700 l/min
Motore pompa a girante / Impeller pump motor	5.5 or 7.5 Kw	22 cc (30 l/min-150bar)
Tramoggia / Hopper	200 L	200 L
Agitatore / Agitator (optional)	60 rpm	60 rpm

PNEUMATIC GROUT UNIT

MINI AIR GROUT TWIN

The pneumatic mixing and grouting unit Mini Air Grout Twin is designed to have let the contractor to do the grouting without stop. The twin overlayed agitators permit to produce a new batch of grouting while pumping.

The powerful pneumatic cylinder can grant a flow rate of 60 l/min and a pressure up to 60 bar to cover the most type of works like:

- Micropiles injection
- Anchors and self drilling anchors
- Rockfall barrier
- Rock bolting

The control system of the machine is completely pneumatic, then is independent from any electrical supply. The machine is supplied by air from a compressor and mount a air treatment group for the pressure regulation and lubrication.

PNEUMATIC GROUT UNIT

TECHNICAL SPECIFICATIONS

Double overlayed bin

Pneumatic motor : 1,25 Kw

Sound level : 87 dBa max

Tank capacity : 200 lt + 200 lt

Rotation speed . 60-300 rpm

Mixing time : approx. 2 min

Air consumption : 1000 l/min at 7 bar

Mini Air Grout I

Air-driven piston diam 160

Double effect pump

Stroke: 200 mm

Flow rate : 60 l/min max at 8 bar air pressure

Injection pressure : max 60 bar with air pressure 8 bar

Air consumption : 3000 l/min at 8 bar

Mini Air Grout I Plus

Air-driven piston diam 200

Double effect pump

Stroke: 200 mm

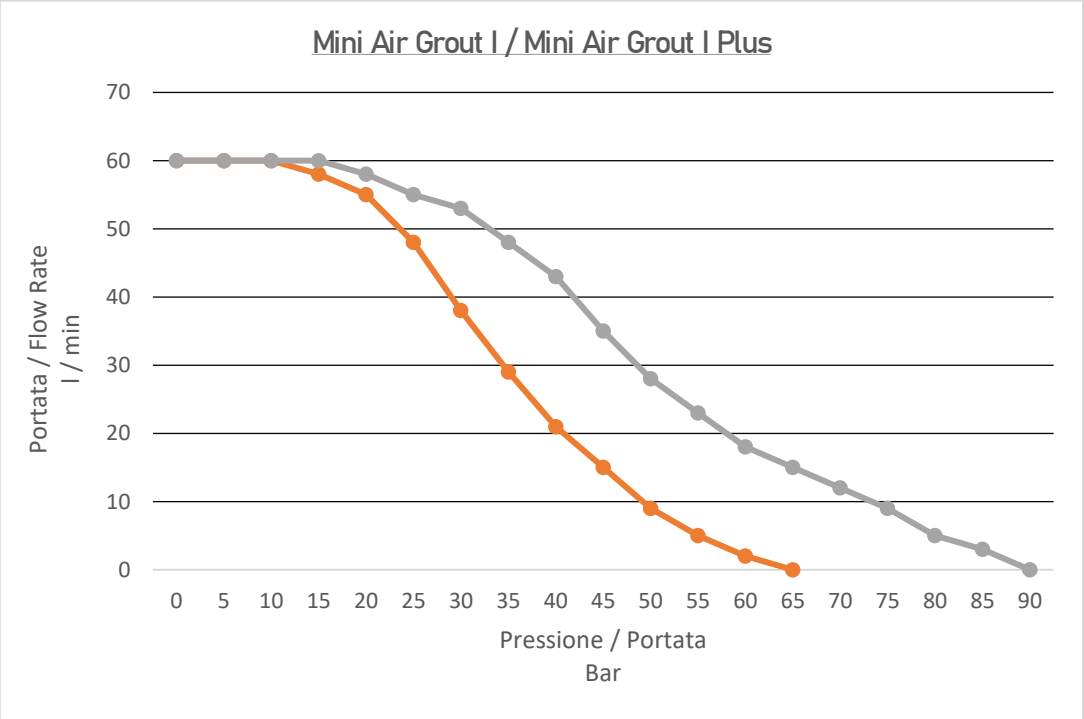
Flow rate : 60 l/min max at 8 bar air pressure

Injection pressure : max 85 bar with air pressure 8 bar

Air consumption : 5000 l/min at 8 bar

OVERALL DIMENSIONS:

160 x 105 x H 165 cm – TOTAL WEIGHT: 370Kg



DATA LOGGER

IS DATA LOGGER

GROUTING MEASURING AND DATA REGISTRATION INSTRUMENT

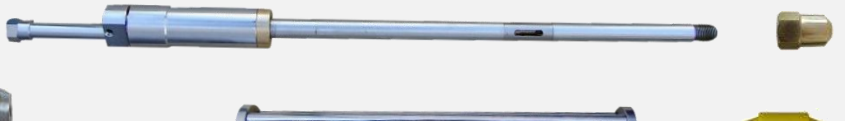
Data logger system may manage and register the main grouting parameters:

- Instant flow rate
- Instant grout pressure
- GIN Method injections
- Sleeve breakage
- Total injected volume
- Formula registration

Otherways the system can run or stop the injector when some parameters (registered by the user) are reached; e.g. max pressure exceeded, total volume reached).
The system is composed of a Central Unit mounted in a IP66 case , a display and 4 connectors for the input data of the instruments.

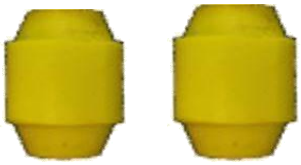
IS HYDRAULIC PACKERS

They were constructed deliberately to solve the problems during the cement injections. A hand-pump (or 230V electric pump) starts a hydraulic piston which compresses two special elastomer elements attached to steel rings with the same diameter. While stretched, rubber optimizes the leak tightness inside the micropiles and TAM tubes. After simple shifting of some elements, they can be used as a single packer or a double one, depending on needs. The rubber rings of our hydraulic packers are interchangeable, so it is possible to use them with tubes and micropiles of different diameters which is cost effective.



Single packer

Double packer

Italswiss	Packer	Elemento espansione/ Rubber ring min. mm	Elemento espansione/ Rubber ring max. mm	Raccordo tubo idraulico / Hydraulic hose connection	Raccordo tubo iniezione/ Injection hose connection	Pressione idraulica Hydraulic pressure min/max bar
	IS 24	24	35	BSP 3/16"	BSP 1/8"	250/500
	IS 32	32 35 45	45 50 60	BSP 3/16"	BSP 1/4"	250/500
	IS 45	45 50	60 65	BSP 3/16"		250/500
Pacco Espansione / Expansion Kit 	IS 58	58 68 78 88	75 85 95 105	BSP 3/16"	BSP 1/2"	250/500
	IS78	78 88 98 110 124 135 148	92 105 116 130 144 155 168	BSP 1/4"	BSP 3/4"	250/500
Gomma di Ricambio / Spare Rubber 	IS 110	110 124 135 148 158 168 188 238	130 144 155 168 178 188 208 268	BSP 1/4"	BSP 1 1/4"	250/500

GEOPACK INFLATABLE PACKERS

Geopack inflatable packers are used for cement injections in geotechnical applications to consolidate and/or to make impermeable foundations and tunnels and during other consolidation works. They are also used to perform Lugeon tests.
There are two types:

- A single packer which allows to pressurize the cement mortar injected below.
- A double packer which is normally used inside TAM tubes. It allows to inject mortar from each valve independently.

Holes characteristics
- with any orientation (vertical, horizontal, inclined)
- used in semi-solid and solid materials: natural such as loose and incoherent terrains, rocks; also for construction sector: bricks, concrete, dams etc.

Cement characteristics:
The materials usually used are cement, mortar, different additives, aggregate and water. Aggregate dimensions must not exceed packers' internal passages.

Packer dimensions choice:
Consult the table.

Packer inflation

With water:

- Suggested when using the packer at the maximum depth of 15 m. At larger depths the counterpressure may make it difficult to pull out the packer.

With air or nitrogen:

- It has to be done with a cylinder fitted with a pressure control and manometer. You must always obey the working pressures indicated below.

IMPORTANT:
Any other pumping mode is inadvisable and causes the loss of guarantee.

Geopack standard / Standard Geopack

Dati tecnici / Technical data

Geopack Ø 35										
Ø Foro/ Ø Hole mm	40	45	50	55	60	65	70	75	80	85
Press. Max. (Bar)	85	70	60							

Geopack Ø 44										
Ø Foro/ Ø Hole mm	50	55	60	65	70	75	80	85	90	95
Press. Max. (Bar)	85	85	75	60	50					

Geopack Ø 54										
Ø Foro/ Ø Hole mm	60	65	70	75	80	85	90	95	100	105
Press. Max. (Bar)	85	85	85	80	65	50	40	35	30	

Geopack Ø 74										
Ø Foro/ Ø Hole mm	80	85	90	95	100	105	110	120	130	140
Press. Max. (Bar)	85	70	55	50	45	40	35	30		

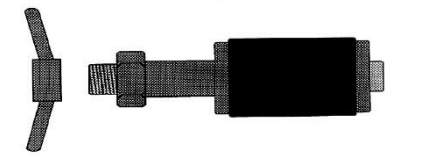
Geopack Ø 84										
Ø Foro/ Ø Hole mm	90	95	100	105	110	120	130	140	150	160
Press. Max. (Bar)	85	85	85	85	85	70	50	40		

Geopack Ø 102										
Ø Foro/ Ø Hole mm	110	120	130	140	150	160	170	180	190	
Press. Max. (Bar)	85	85	85	70	50	40	35	30		

Values are purely theoretical // i valori sono puramente indicativi

We reccomend to not use limit values // Si consiglia di non usare i valori limite

MECPACK MECHANICAL PACKERS



	Lungh. gomma Rubber length mm	Lungh. totale Total length mm	Ø Gomma Ø Rubber mm	Ø Filetto (m/f) Ø Thread (pin/box) mm
IS MP 30	150	250/500	30	R 3/8" (m)
IS MP 33	150	250/500	33	R 3/8" (m)
IS MP 38	150	250/500	38	R 3/8" (m)
IS MP 42	150	250/500	42	R 3/8" (m)
IS MP 46	150	250/500	46	R 3/8" (m)
IS MP 50	150	250/500	50	R 3/8" (m)
IS M54-3/8 "	150	250/500	54	R 3/8" (m)
IS MP 54-1"	150	500/1000	54	R 1" (m)
IS MP 64	150	500/1000	64	R 1" (m)
IS MP 74	150	500/1000	74	R 1" (m)
IS MP 84	150	500/1000	84	R 1" (m)
IS MP 98	150	500/1000	98	R 1" (m)
IS MP 114	150	500/1000	114	R 1" (m)
IS MP 125	150	500/1000	125	R 1" (m)
IS MP 135	150	500/1000	135	R 1" (m)
IS MP 144	150	500/1000	144	R 1" (m)
IS MP 155	150	500/1000	155	R 1" (m)
IS MP 165	150	500/1000	165	R 1" (m)
IS MP 195	150	500/1000	195	R 1" (m)
IS MP 250	150	500/1000	245	R 2" 1/2 (m)
IS MP 300	150	500/1000	295	R 2" 1/2 (m)
IS MP 350	150	500/1000	345	R 2" 1/2 (m)
IS MP 400	150	500/1000	395	R 2" 1/2 (m)
IS MP 500	150	500/1000	495	R 2" 1/2 (m)

ANCHORS

PVC TAM PIPES

PVC TAM tubes are used for cement and resin injections in various works such as:

- soil consolidation
- anchorage
- galleries reinforcement
- foundations reinforcement
- waterproofing

A tube has two threads and rubber valves with a spacing of 0,33, 0,5 m or 1m. All standard diameters are indicated in the datasheet

Nominal Diam.	Outer Diam.	Internal Diam.	Spacing	Weight per m.	Coupler diam.	Valve diam.	Working pressure	Burst pressure
mm	mm	mm	mm	Kg	mm	mm	MPa	MPa
1/2"	21	15	330 500 1000	0,220	26	26	8,20	9,80
1"	34	27	330 500 1000	0,650	42	40	7,27	8,18
1" R	38	27,5	330 500 1000	0,960	45	44	8,1	10,20
1" ¼	40	34	330 500 1000	0,680	48	46	2,72	4,00
1" ¼	40	31	330 500 1000	0,980	48	46	3.5	5.1
1" ½	48	42	330 500 1000	0,760	60	54	2,72	3,20
1" ½	48	40	330 500 1000	0.830	60	54	3,00	5,10
1" ½ R	51	40	330 500 1000	1,300	6,6	57	7,28	11,8
2"	60	52	330 500 1000	1,350	72	66	2,72	4.10
2"	60	50	330 500 1000	1.120	72	66	3.1	5.5

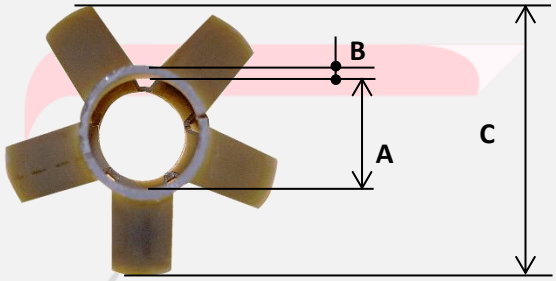
PVC CENTRALIZERS

Made in PVC, used with micropiles anchors and bolts for putting them perfectly in the middle of the hole, causing more homogeneity of grouting.

Made on request in various diameters. See attached technical data sheet for more information.

A Ø interno mm Ø inside mm	B spessore mm thickness mm	C Ø esterno * mm Ø outside * mm
17	1,5	40-50-60-70
21,2	1,9	40-50-60-70
28,4	1,8	50-60-70-80-90
34	3,0	80-90-100-110-120-130-140
42,2	3,9	90-100-110-120-130-140-150
49	3,0	90-100-110-120-130-140-150
57	3,0	100-110-120-130-140-150-160
67,8	3,6	100-110-120-130-140-150-160
84,6	2,7	120-130-140-150-160-170-180
103,6	3,2	140-150-160-170-180-190-200
117,8	3,6	160-170-180-190-200-210-220
134,4	2,8	180-190-200-210-220-230-240-250
153,6	3,2	200-210-220-230-240-250-260-270

* misura da definire in fase d'ordine
* measure to be given before an order



PNEUMATIC RESIN PUMPS

The S35 PU, GSF 35-2 PU, DP 40-PU and GX 45-PU pressure injection pumps are pneumatically driven, double acting piston pumps operating according to the pressure intensification principle.

The pneumatic pressure is multiplied on the base of the ratio between the pump drive zone (low-pressure) and the high-pressure zone. For S 35 PU is 1:34, GSF 35-2PU is 1:40, DP 40 PU is 1:41 and GX 45 PU is 1:45.

The pneumatic piston is connected with two high-pressure pumping pistons via a central shaft. The low-pressure and high-pressure zones are separated in such a way that if the sealings positioned in the high-pressure zone are not leakproof, the possible looses cannot enter into the low-pressure zone. The piston rods are made of high-tensile stainless steel and boast long service lives. The valve seats are made of wearproof quenched steel and sealings of UHMWPE special material.

Description	S35 PU - N	GSF 35 PU - N	GX 45 PU - N	DP 40 PU - N
Pressure ratio	01:34	01:40	01:45	01:41
High-pressure flow rate of every pump cycle	34 cm^3	49 cm^3	148 cm^3	49 cm^3
Max working pressure (high pressure)	150 bar	150 bar	150 bar	150 bar
Max actuating pressure	6 bar	6 bar	6 bar	6 bar
Air connection diameter	RD 32 x 1/8	RD 32 x 1/8	BSP 3/4" F	BSP 3/4" F
Suction connection diameter	RD 32 x 1/8	RD 32 x 1/8	BSP 3/4" F	BSP 3/4" F
High pressure outlet connection	DN 10	DN 10	BSP 3/8"	BSP 3/8"
Max flow rate	5,5 l/min.	8 l/min.	24 l/min.	25 l/min.
Dimensions				
Length	630 mm	720 mm	1000 mm	1000 mm
Depth	320 mm	330 mm	450 mm	470 mm
Height	200 mm	370 mm	420 mm	490 mm
Weight	28 Kg	74 Kg	82 Kg	120 Kg

NOTES

NOTES

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