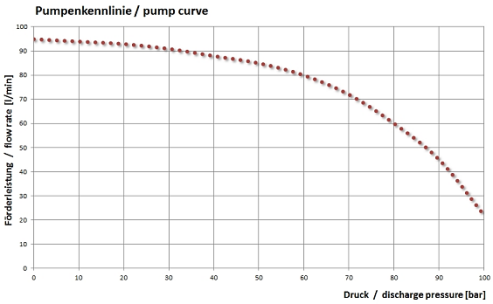
GERTEC
Maschinen- und Anlagenbau GmbH

Product Information
Grout Plant IS-80-3-EAC

Grout Plant IS

picture similar



Application areas

- Micro tunneling
- Pipe jacking
- Bentonit lubrication

Mixing of:

- Bentonit slurrys

Technical Data / Performance Data *)

Mixing capacity (20 batches/h)	12,75	m³/h (see example calculation)
Effective mixer volume	750	l
Mixing water minimum	250	l
Mixer filling level (bag loading)	1400	mm
Capacity each agitator tank (I + II)	2000	l (4000 l overall)
Flow rate each pump (I + II + III)	0 – 95	l/min, electrically continously adjustable
Discharge pressure each pump (I + II + III)	100	bar, continuosly limited
Solid grain size	max. 2	mm
Amount of mixing components	2	1 liquid, 1 solid (bentonite) additives dosage manually
Pressure connection pump	(3x) 1“	IG
Water connection	Storz C	2 ½“ standard coupling DIN14307, max.6 bar;
Cleaning conneciton	DN 25	Geka-claw coupling
Power connection	160	A (terminal box in control cabinet)
Power input	approx. 76	kW
Voltage	400	V; 50 Hz
Dimensions	6,05 x 2,43 x 2,59	m (L x W x H)
Weight	approx. 6000	kg

)* The specified performance data are non-binding values that differ significantly depending on dosing, mixing and discharge times.

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Description:

The grout plant IS-80-3-EAC is a specifically developed container based automatic mixing and grouting plant for construction sites. The grout plant is particularly suitable for mixing and grouting of bentonite slurries. In automatic operation mode the grout plant can automatically produce slurries according to stored formulas, pump them into the agitator tank and stores them for the injection pump. Processing of bagged goods is also possible.

Features:

- ✓ **Batch mixer** 750 l capacity (colloidal mixer)
  Fast running colloidal mixing mechanism; mixing scale for manually and automatic dosage of the mixing components, cover with connections for cement auger; Pumping and emptying lines with electro-pneumatically operated double valves; additional alternative bag loading
  removable recirculation for easy tank draining
- ✓ **2 Agitator tanks with 2000 l,** every one with:
  fast running agitator; with inclined tank bottom for better tank draining, tank wall with cleaning opening; tank lid with inspection port and safety-end switch; 2 times tank outlet with butterfly valves; Connecting pipe with butterfly valves for separate or shared use; tank wall with cleaning opening; Container lid with inspection opening; Level probe (ultrasonic sensor 0-100%); Connection possibility for external additional tank
- ✓ **3-way valve** electrically to selectively fill the agitator container I or II
- ✓ **3 double plunger pumps** arranged vertically;
  automatic ball valves (inlet and outlet valves)
- ✓ **Water dosage** fully automatically by electrically operated ball valve,
- ✓ **Booster pump** for water dosage
- ✓ **Separate connection** for cleaning hose including stopcock
- ✓ **3 Pump suction pipes** with quick couplings
- ✓ **Pump pressure pipe** with 6 lubricated high-pressure ball valves
  (3 times pressure relief for agitator tank, 3 times pressure port plunger pump)
- ✓ **Hydraulic aggregate** with:
  - 3 electric drives, each with 1 variable displacement pump and 1 fixed displacement pump
  - tank with optical level indicator incl. Electrical minimum guard
  - Oil cooler, switchable for summer and winter operation
  - return filter including visual contamination indicator
  - venting nozzles
  - 3 hydraulic control blocks each with one hand wheel (manually continuously adjustment of pump discharge pressure) and one potentiometer flow rate electrically continuously adjustable (potentiometer)
- ✓ **20` Container** (double door) in CSC version
  - Container-integrated transport options for Big-Bag-Station and screw conveyor
  - Breakthrough and connection piece for additional tank
  - Metal plug with connection possibility for screw conveyor and shaker
- ✓ **Lightening** container inside

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- ✓ **Electrical function and power control** with the following display and control elements:
  - Main switch ON/OFF
  - Mixer ON/OFF
  - Pump ON/OFF
  - Screw conveyor ON/OFF
  - Agitator ON/OFF
  - Selector switch filling agitator tank I or II
  - 3 x plunger pump ON / OFF (pump I + II + III)
  - 3 x stroke counter (pump I + II + III)
  - 2 x level indicator stirred tank 0 - 100%
  - Selector switch for oil cooling SUMMER / WINTER operation
  - Emergency stop button
  - Various switches and buttons for service operation
  - Light button: acknowledge fault
  - Process control for automatic operation and production data acquisition
  - Batch logging on USB stick
  - Rotating beacon (fault light)

- ✓ **W-LAN module** without sim-card (on site)
  - location independent input of all functions via tablet or laptop / PC (not included) such as: recipe input, parameter input and borehole numbers input (if GERLOGG is connected)
  - data readout batch logging
  - data readout grouting data's (if GERLOGG is connected)
  - monitoring of all current operating conditions
    possibility of remote maintenance or software updates by GERTEC without an on-site technician

Calculation of mixing capacity	Dosing quantity per batch [kg]	Cycle time per batch [sec]	**required dosing capacities are not part of the performance of the injection station**
Dosing time water	approx. 720	approx. 45	Q min = 1000 l/min at 1 bar
Dosing time bentonite	approx. 50	approx. 25	Q min = 8 m³/h (bulk density 1000 kg / m 3)
Mixing time		approx. 90	Time accepted; This may differ significantly depending on the rheological properties of the mixture components and the mixing result to be achieved
Emptying time mixer		approx. 50	
Total time required per batch		approx. 210	

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Beispielrechnung:

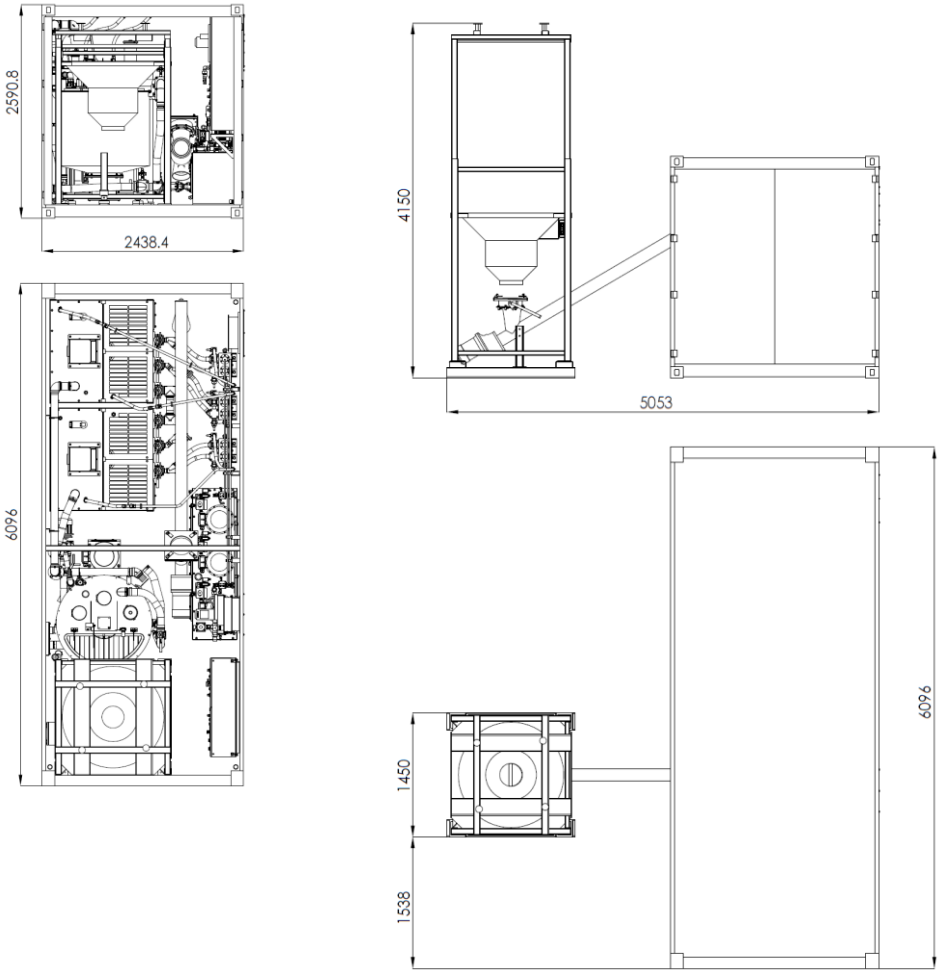
$$Amont\ of\ batches\ per\ hour\ multiplied\ by\ batch\ size\ [m3] = \frac{3600\ [sec.]}{needed\ total\ time\ per\ batch\ [sec.] + [h]} * batch\ size\ [m3]$$

Beispielrechnung:

$$mixing\ capacity = \frac{3600\ [sec.]}{210\ [sec.] * [h]} * 0{,}75\ [m3] = 12{,}85\ m^3/h$$

Transport / Installation dimensions:

(Big bag emptying station + screw conveyor not included)



Accessories (optinal, not included):

- Radio remote control for plunger pump
- Booster pump mixed water
- Digital delivery pressure gauge
- Electric delivery pressure limitation
- Pedestal for mixer loading
- Grouting hoses
- high-pressure cleaner

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