COBOD Training L1

Module 1.5

Materials Delivery System (MDS)

Instructor name: Adel Chahrour, M. Eng

Structural & Materials Engineer

For questions, please contact: ach@cobod.com

DISCLAIMER

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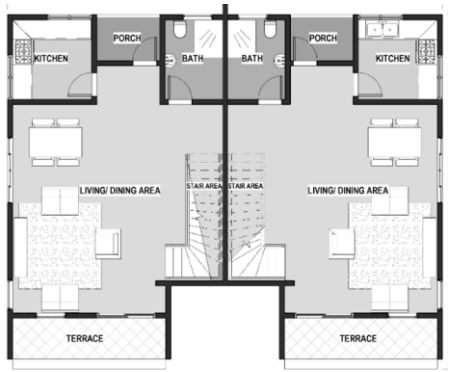
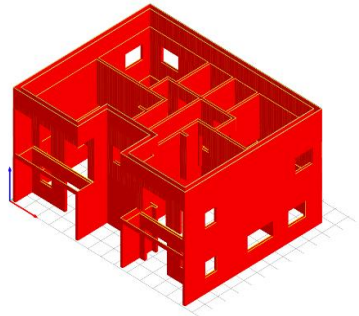
PROJECT OVERVIEW RECAP



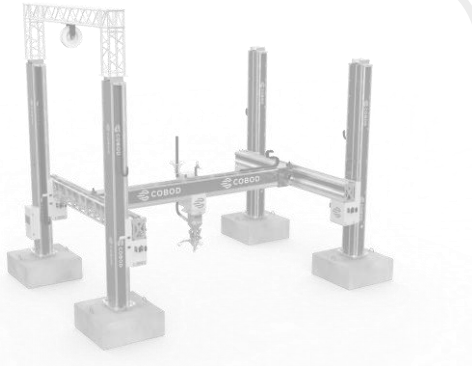
Project Design

Project Adjustment

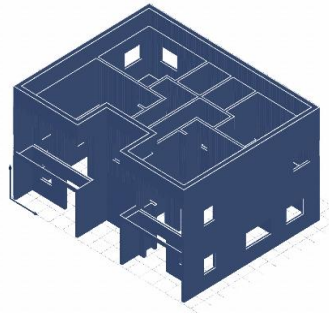


Project Data – **Digital Run**

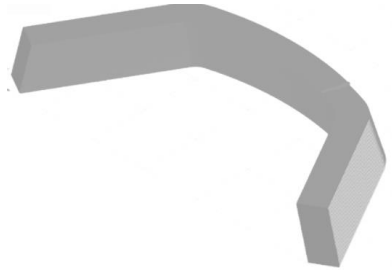
Physical Installation



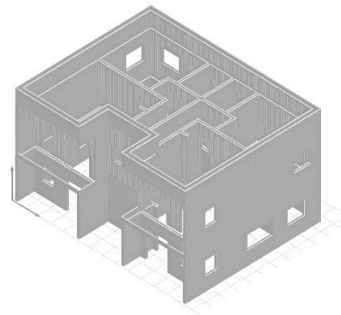
Digital Installation



Project Verification -**Dry Run**

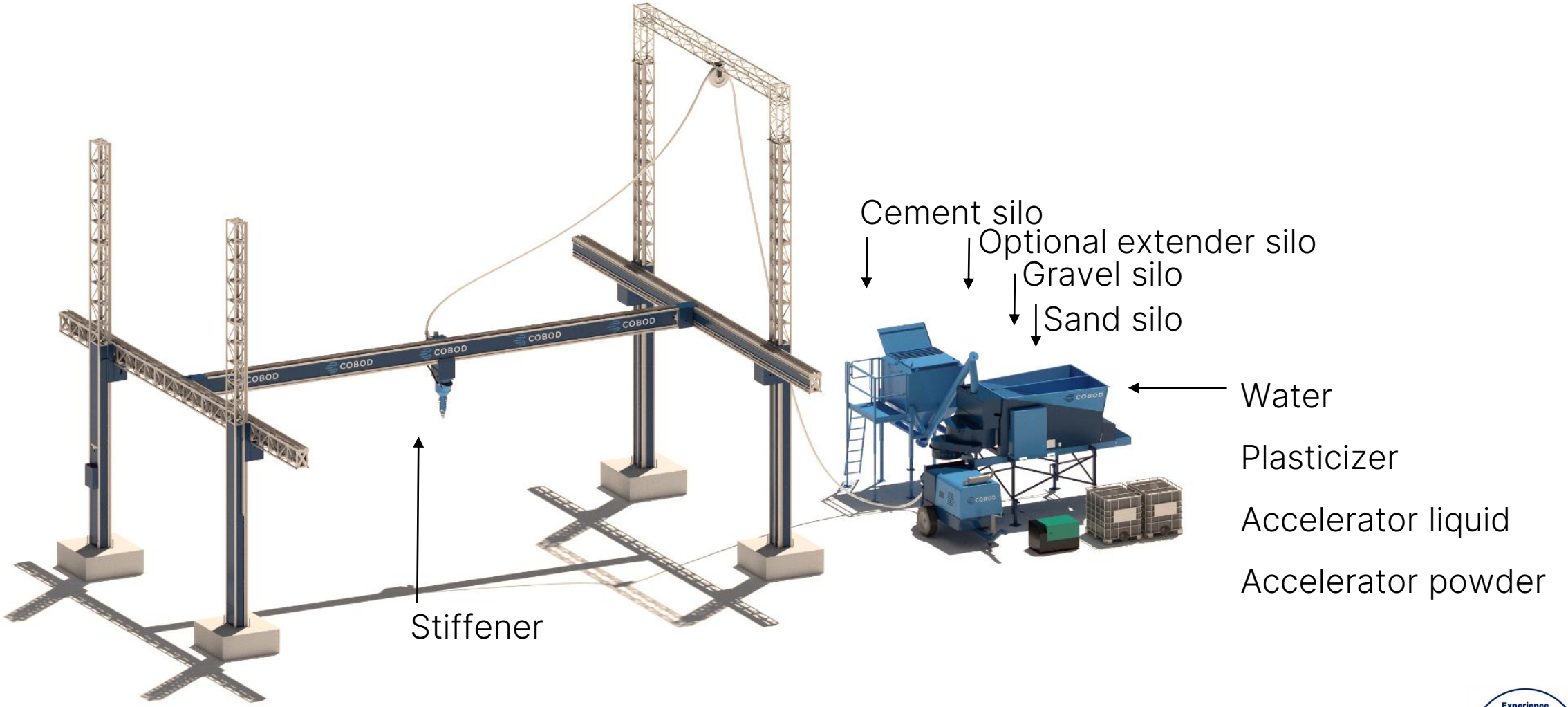


Material Verification -**Wet Run**



Production

SYSTEM OVERVIEW



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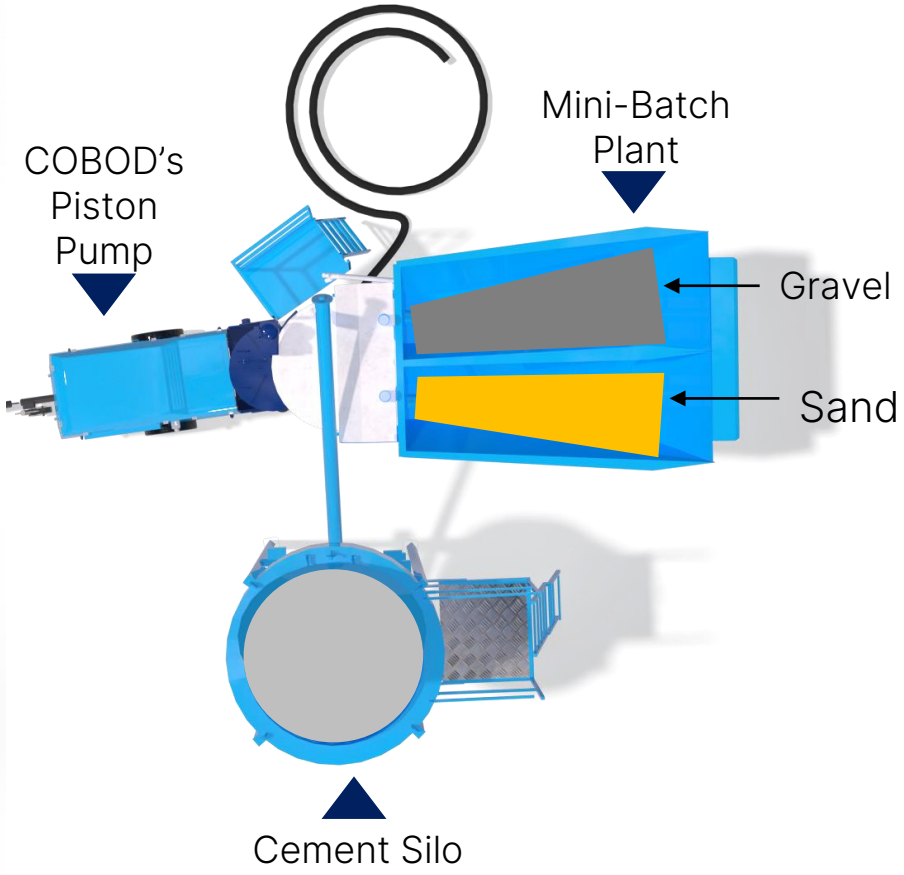
Experience these components in the Configurator

MATERIAL DELIVERY SYSTEM (MDS) OVERVIEW – 3 ELEMENTS

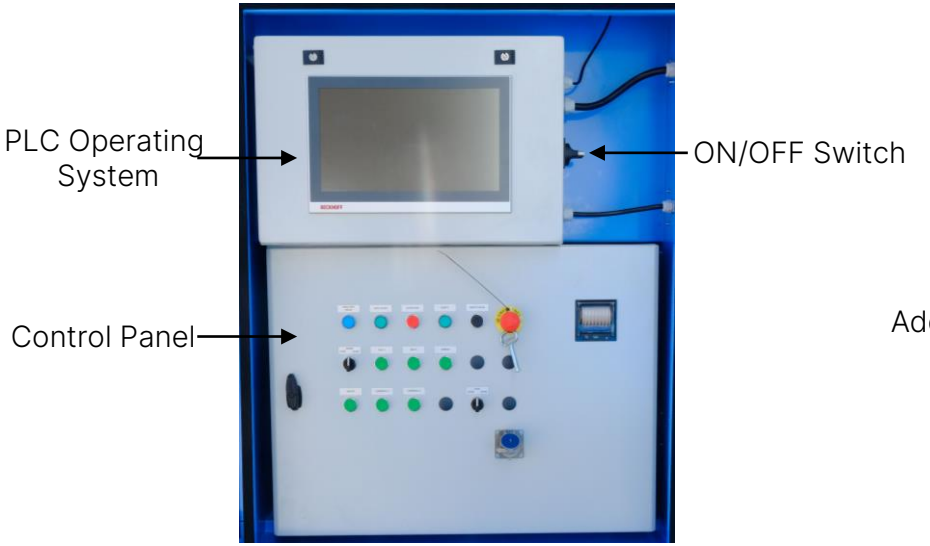
GENERAL



COBOD MINI-BATCH PLANT

COBOD BATCH PLANT – COMPONENTS

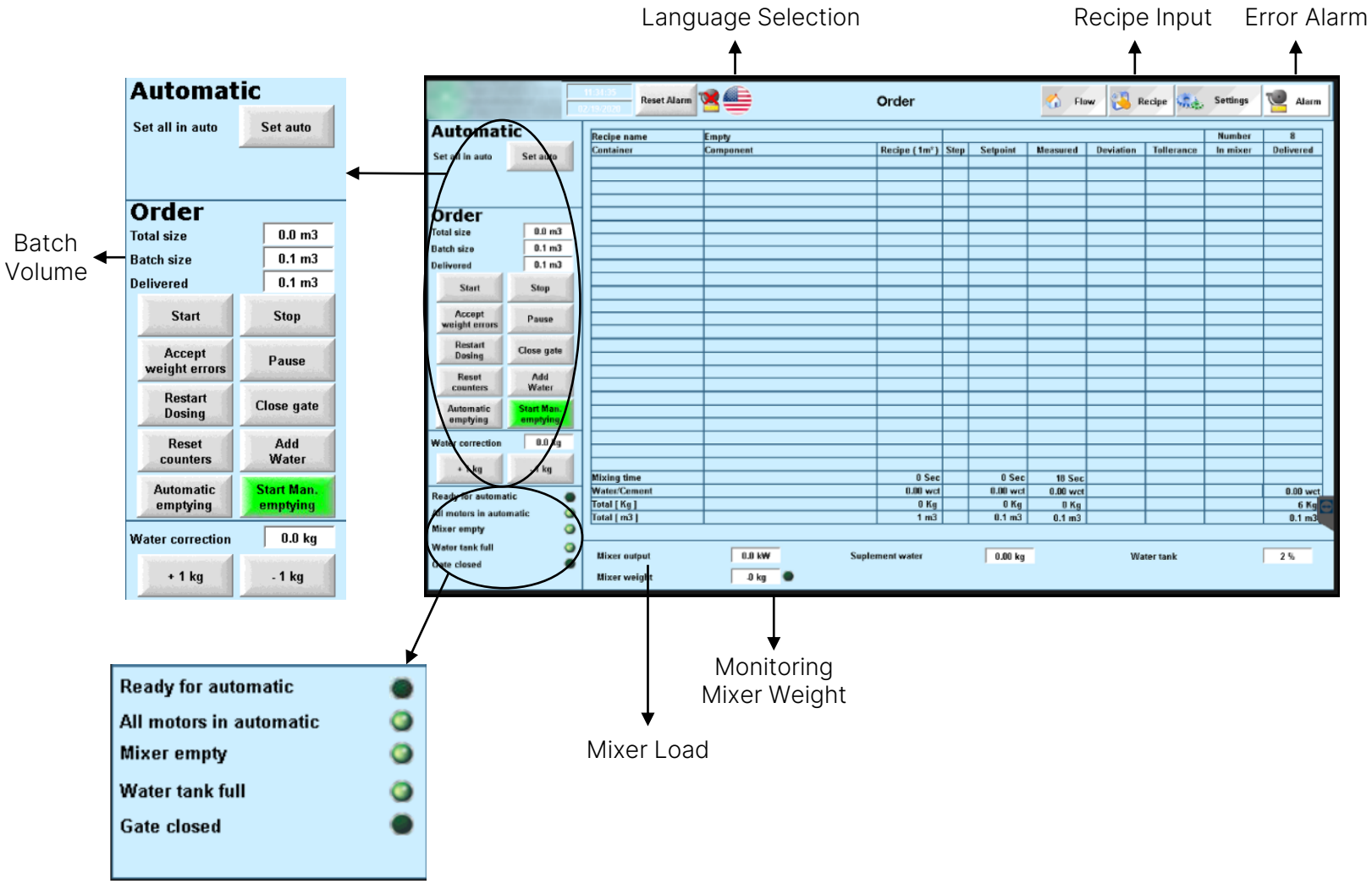
- Mixing Chamber – Capacity 300 L, recommended capacity 200 L
- Batch plant hoppers – Capacity 1.2 m³/hopper
- Water tank – Capacity 250 L
- 2 additive pumps
- Water inlet
- Power connections (Main power, Cement)



COBOD BATCH PLANT

COBOD BATCH PLANT – OPERATION

Main Screen



Buttons

1. Stop / Off / Deactivate

2. Started / On / Activated

3. Pause

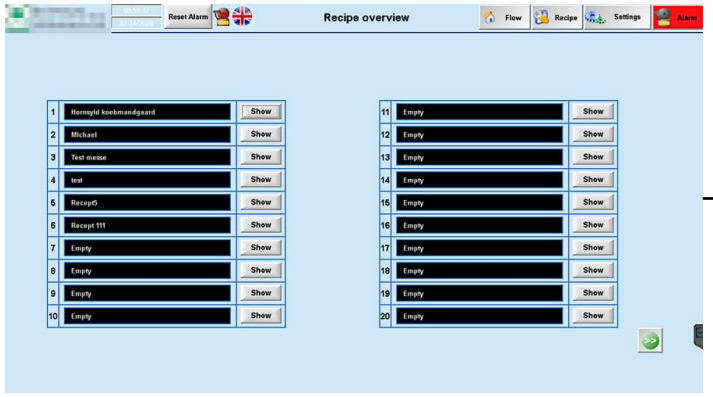
This button indicates that the machine is paused.

COBOD BATCH PLANT

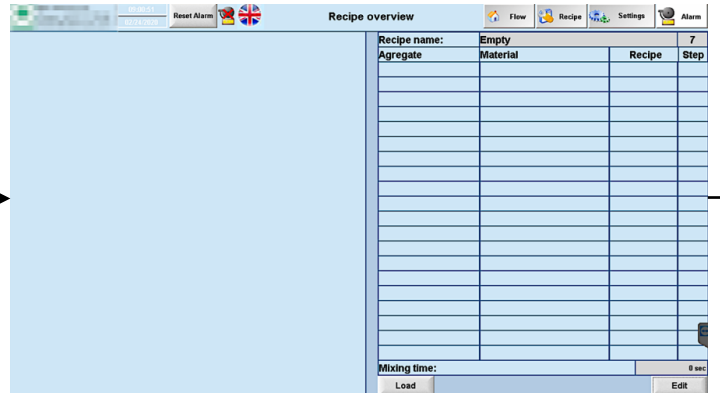
COBOD BATCH PLANT – OPERATION

Recipe Input

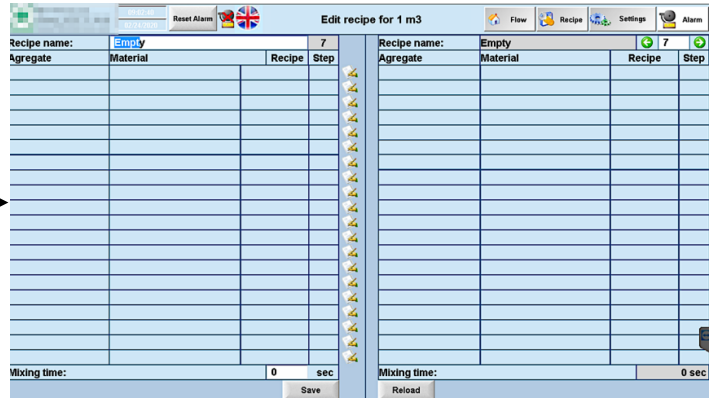
1. Select an empty cell, press **Show**



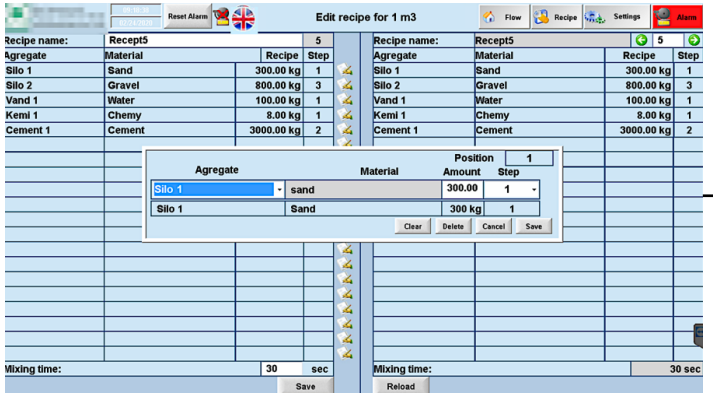
2. Press on **Edit** button



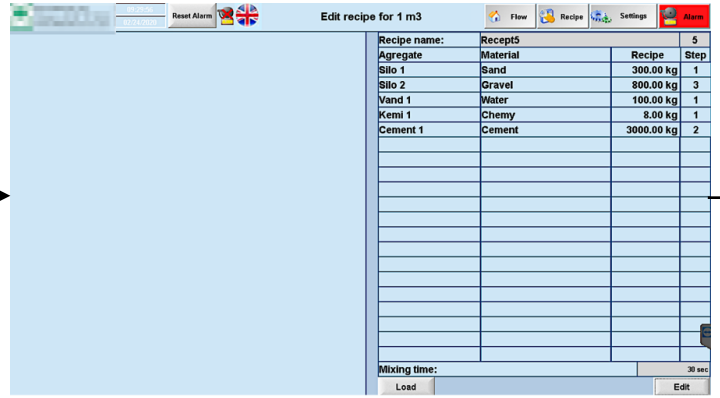
3. Input/edit **Recipe name**



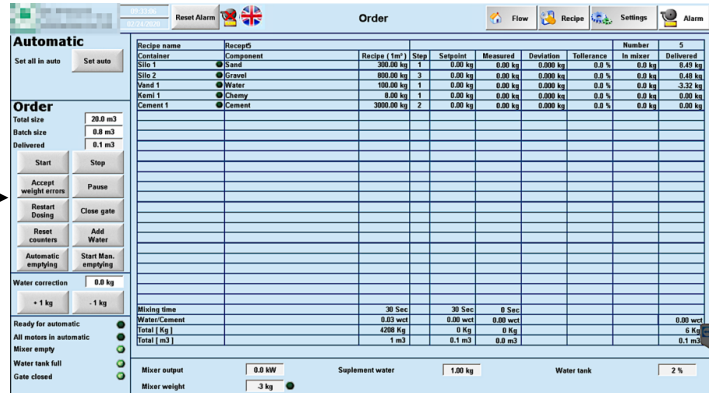
4. Input recipe **components**, **steps** and **mixing time**. Press **Save**



5. **Load** the Recipe



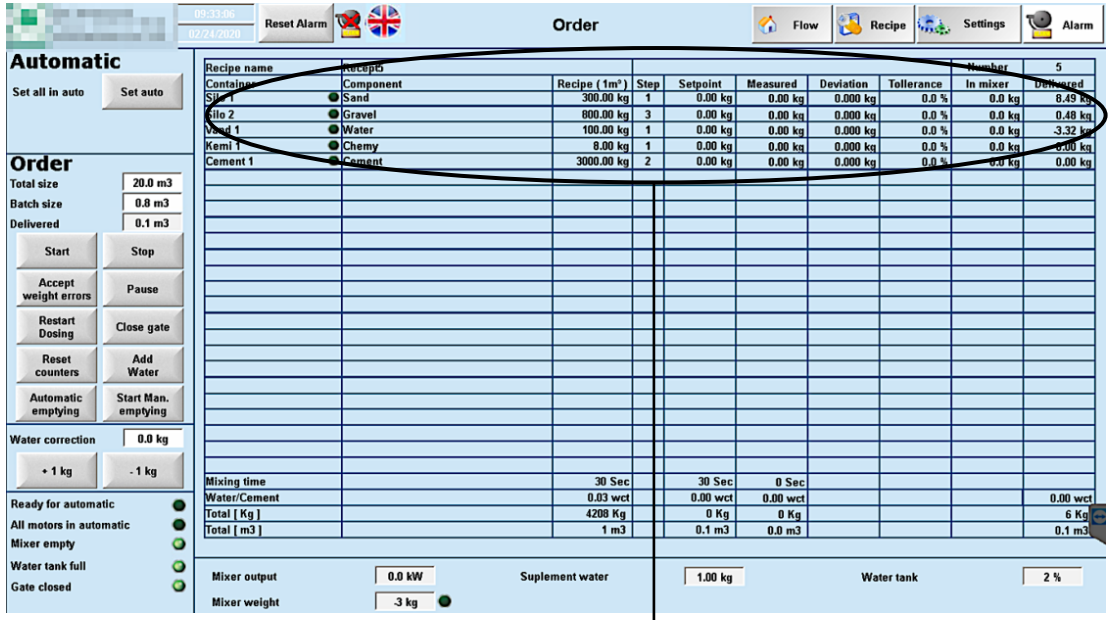
6. Check recipe been loaded to the main screen



COBOD BATCH PLANT

COBOD BATCH PLANT – OPERATION

- Performance Indicator - Main Screen Monitoring



Recipe name	Recept5							Number	5
Container	Component	Recipe (1m³)	Step	Setpoint	Measured	Deviation	Tollerance	In mixer	Delivered
Silo 1	Sand	300.00 kg	1	0.00 kg	0.00 kg	0.000 kg	0.0 %	0.0 kg	8.49 kg
Silo 2	Gravel	800.00 kg	3	0.00 kg	0.00 kg	0.000 kg	0.0 %	0.0 kg	0.48 kg
Vand 1	Water	100.00 kg	1	0.00 kg	0.00 kg	0.000 kg	0.0 %	0.0 kg	-3.32 kg
Kemi 1	Chemy	8.00 kg	1	0.00 kg	0.00 kg	0.000 kg	0.0 %	0.0 kg	0.00 kg
Cement 1	Cement	3000.00 kg	2	0.00 kg	0.00 kg	0.000 kg	0.0 %	0.0 kg	0.00 kg

Main monitoring values

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Experience these components in the Configurator

COBOD

COBOD PISTON PUMP

COBOD PISTON PUMP – COMPONENTS

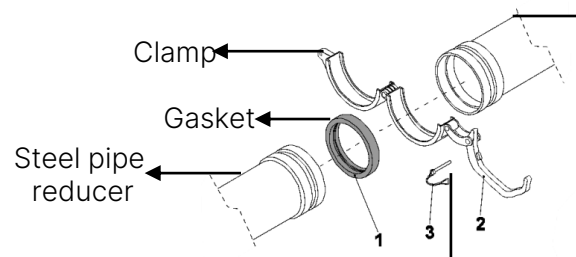
- Pump Hopper – Capacity 200 L
- Hopper Grid and vibrator
- Agitators
- Hose Connection, safety pins
- Control panel

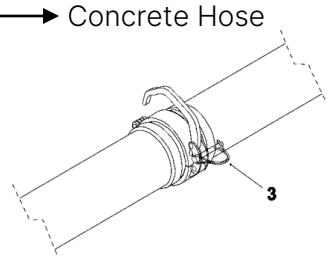
Hopper Grid

Grid Vibrator

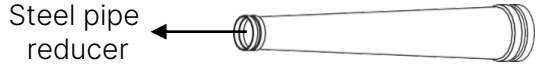
Pump Hopper

Remote Cable Connection





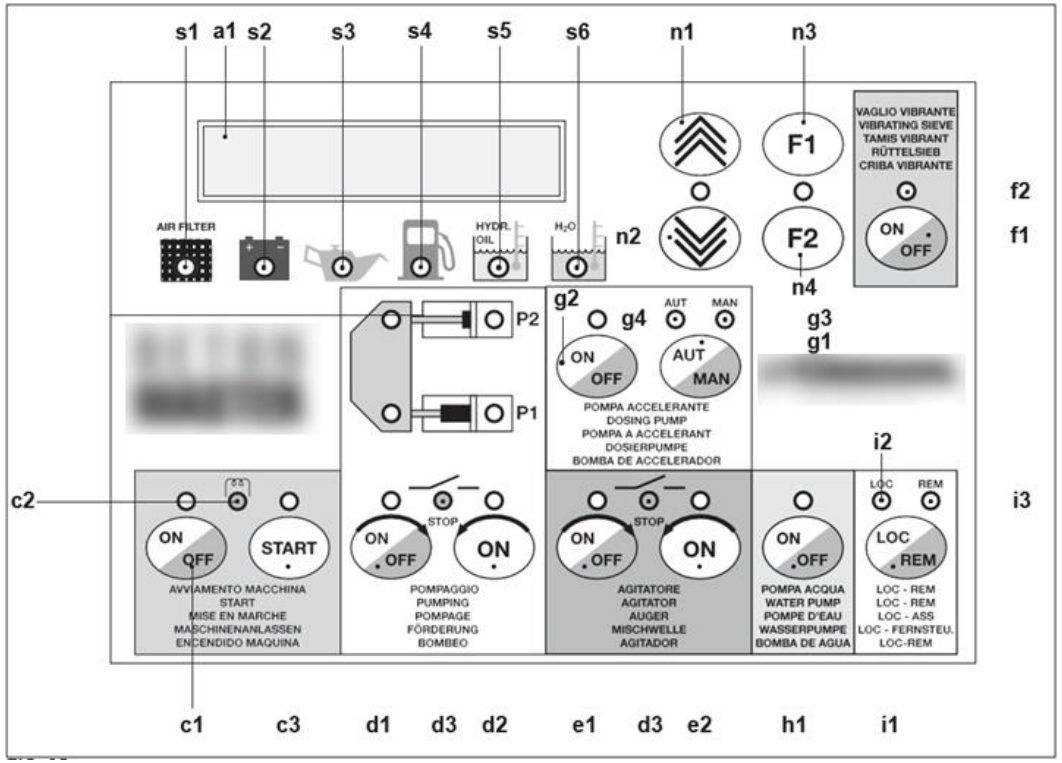
Hose interconnector safety cabl



COBOD PISTON PUMP

COBOD PISTON PUMP – OPERATION

Control Panel

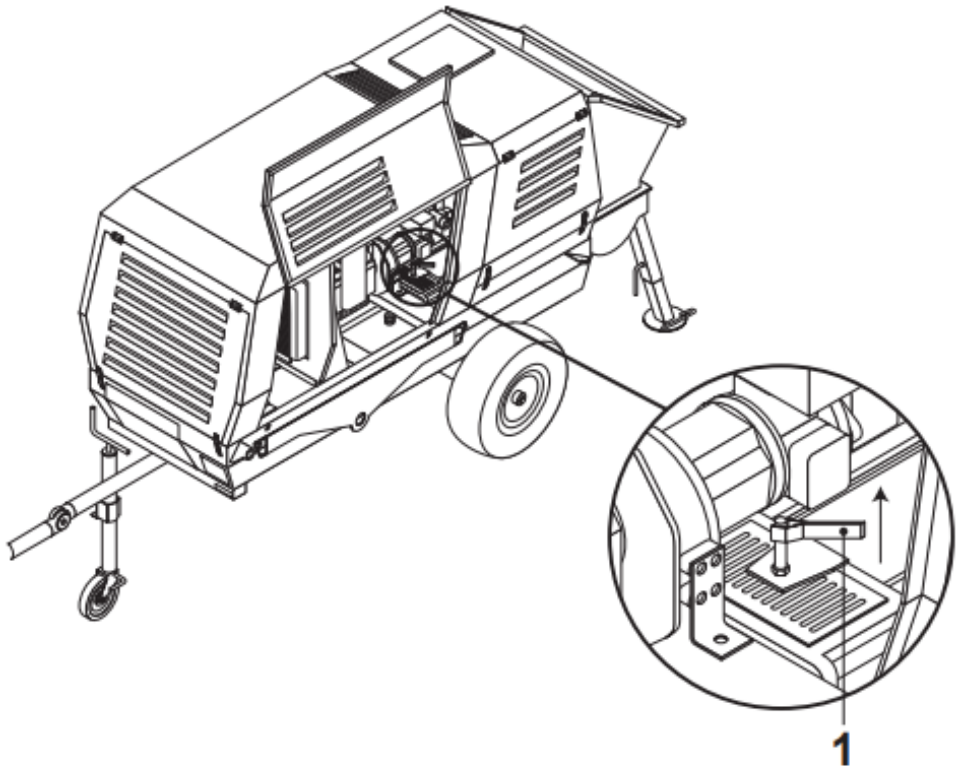


1. **c1** Machine switch-on/motor switch-off
2. **c3** Motor start-up
3. **d1** Pump start/stop
4. **d2** Reverse pumping start/stop
5. **e1** Agitator start/stop
6. **e2** Agitator reverse
7. **i1** Machine control mode
8. **f1** vibrating sieve start/stop

COBOD PISTON PUMP

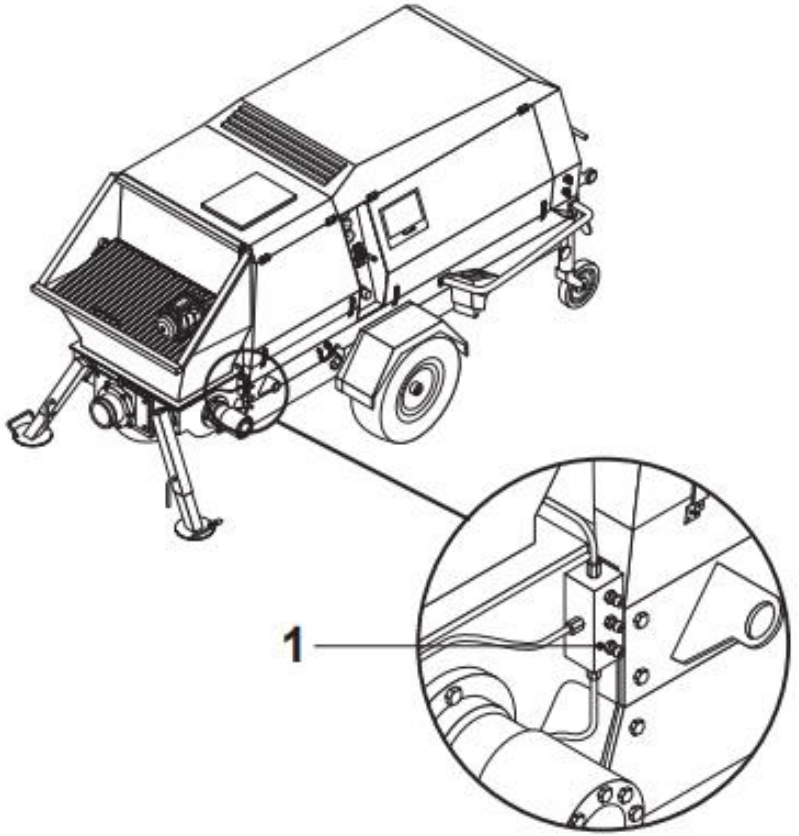
COBOD PISTON PUMP – MAINTENANCE

Lubrication Water Level – Pistons Cooling



1. The lubrication water should be changed completely at least once a week, or preferably after every work session.
2. When working in a cold climate, empty the tank at the end of every work session or add antifreeze.

Grease Pump

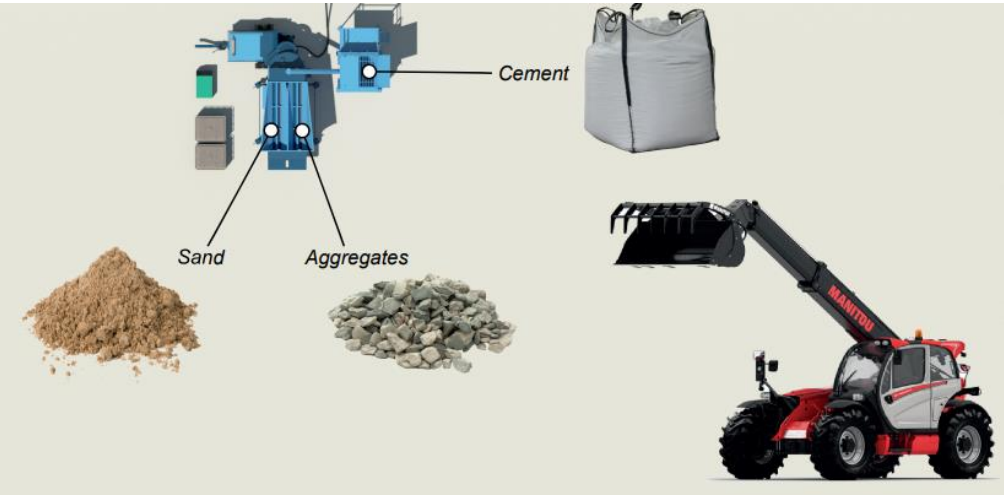


1. Using the grease pump supplied, lubricate the three greasing points on the mixer support and the S-valve mount.

CONCRETE BATCHING

CONCRETE BATCHING LOGISTICS

Concrete Production



1. Material storage (Bulk, big bags).
2. Materials loading/filling process.
3. Site planning (MDS location, material stocks storage..)

Cleaning Process-Batch Plant

1. After emptying the mixing chamber of concrete, start mixing and add 50 kg gravel and 10 kg water manually.
2. After pump is removed, dump gravel and water mix.
3. Pressure wash the inside of the mixing chamber.
4. Manually turn mixing arms to clean.
5. Pressure wash the gate from discharge side.

Cleaning Process-Piston Pump

1. Pump until concrete level reach top of agitator shaft.
2. Pump reverse for two switches of s-valve, to remove the pressure.
3. Open hopper gate and remove excess concrete from pump hopper, then close the gate.
4. Fill pump hopper with clean water from containers filled during start-up. Also add water continuously.
5. Disconnect hose from steel reducer.
6. Pump until only water is discharged from reducer.
7. Insert two cleaning balls.
8. Reconnect hose to reducer. The balls separate the water from mixing with the concrete, this separation is important to prevent clogging.
9. Start pumping until balls exit hose.

SILO CLOGGING

SILO CLEANING

- Humidity creates cement rocks inside the bag which clog our systems while moving material from the cement silo to the mixer.
- This situation directly impacts batching quality.

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Experience these components in the Configurator

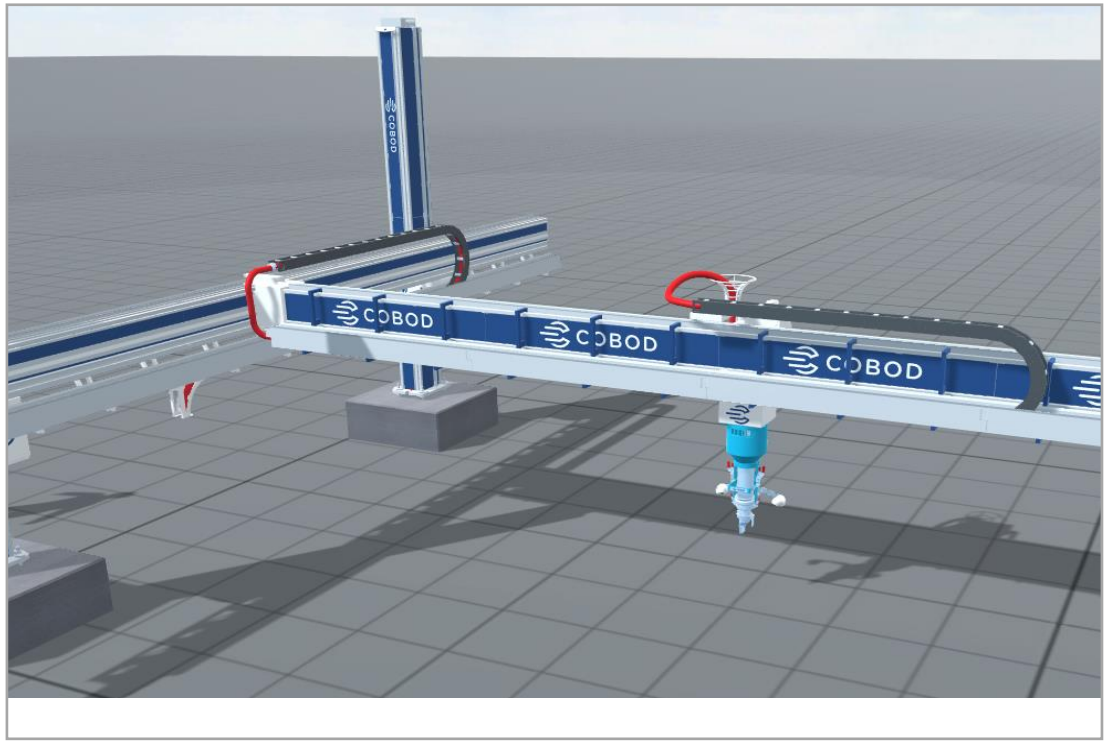
HOSE MANAGEMENT SYSTEM

TWO OPTIONS

1. Recommended for large machines (above 4-4-4)

Advanced Hose Management System (AHMS)

Main parts: Hose type (color and dimensions), modular e-chain, modular trays, connectors and safety pins.



2. Recommended for small machines (up to 4-4-4)

Hose Management System (HMS)

Main parts: Hose type (color and dimensions), pulley, Allu trusses, crane, connectors and safety pins.
Hose Weight: 1.9 kg/m

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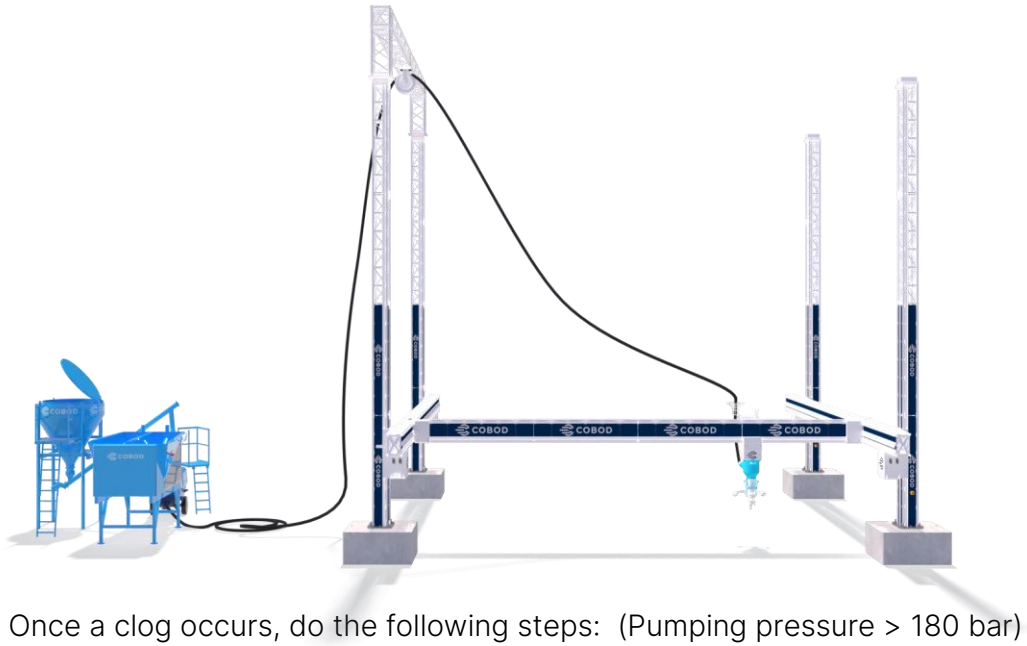
Experience these components in the Configurator

COBOD

HOSE SYSTEM

DEALING WITH HOSE CLOGGING

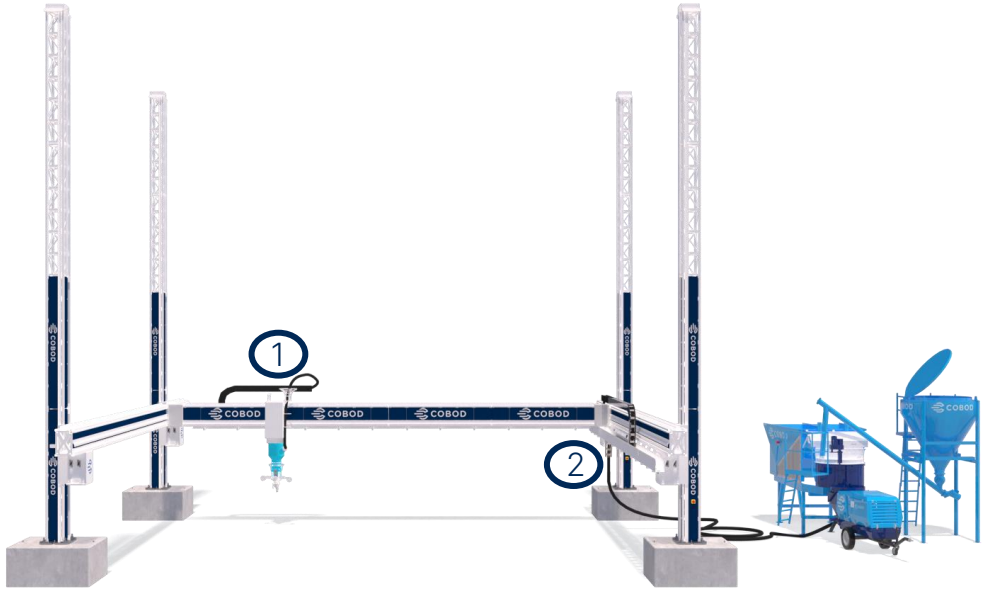
Pulley Hose System



Once a clog occurs, do the following steps: (Pumping pressure > 180 bar)

1. Pump twice backward, then pump forward.
2. If step 1 didn't work, move the hose down and start stepping in the hose to detect where the clog location is.
3. Once the clog location is detected, use the hummer to crush the clog then try and pump again.
4. Repeat 3 till fresh material goes out of the hose.

New Hose Management



Once a clog occurs, do the following steps: (Pumping pressure > 180 bar)

1. Pump twice backward, then pump forward.
2. If step 1 didn't work, disconnect the connection (1), unclog and try to pump.
3. If step 2 didn't work, empty and clean the pump.
4. Disconnect connection (2) and try to pump.
5. After step 4 is completed, connect the hose again and try to pump to ensure the hose is cleaned.

SAFETY AND PREVENTION

 Body protection	 Protective helmet	 Protective gloves	 Safety footwear	 Protect the respiratory tracts: mask (Category II)
 Eye protection	 Hearing protection	 Read the use and maintenance manual before working	 Maintenance performed only by qualified personnel	 Lifting points

TEST TIME ☺

https://www.flexiquiz.com/SC/N/MDStestCOBOD