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TC LOADING BELLOWS


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Before We Start...

This catalogue contains description and recommendations for set-up, operation and maintenance procedures.

This catalogue or its related parts should be kept close to the product with easy access for users. It is the buyer's responsibility to ensure the delivery of this catalogue to related users of the product.

Never start any operation before reading this catalogue completely.

The product is produced solely for its intended use. Please ask for producer's approval for different applications.

The product shall be operated in and under normal operating conditions. Producer is absolutely not responsible for any complications or their consequences in cases where alterations have been made without written consent of the producer.

In order to perform assembly, maintenance, repair and cleaning on the product, according to 2006/42 EC the user must take all necessary precautions to ensure public safety, safety of the environment and it's entities and also take all actions to prevent any harm that may involve third parties.

Producer can modify the product without notice and immediate effect All dimensions specified in the catalog are for nominal standard parts. Dimensions and features may change depending on the type of project, applications, material.

TC SERIES LOADING BELLOWS

TC series loading bellows, allow the user to unload material from tanks, bunkers, screw conveyors and many other sources by free-fall principle, while keeping a dust free environment. TC series loading bellows can be produced from different materials, has the option of filter with fan and inner cones.

- **Inlet diameter**: 300mm (suitable for 300mm butterfly valve), can be customised based on the request
- **Nominal maximum capacity**: 250m^3/h
- **Bellow**: High tenacity polyester with CR and/or CSM coating.
- **Drive Group**: 0,75kW
- **Control panel and remote control unit**: Included
- **Level Indicator**: Rotating paddle type, included
- **Optional Filter & Fan**: Nominal 10m^2 filter and 1.5kW fan, 8 cartridges.
- **Operating temperature**: Nominal -40°C/+90°C

Execution Materials

Depending on the application/customer request, parts which are in contact with the flowing material can be produced from different raw materials.

- Carbon steel
- AISI304
- AISI316
- HARDOX (inner cones only)

Filter with Fan/Ventilation Options

Up on request, TC series loading bellows will be supplied with 10m^2 filter and 1.5kW fan.

Product Code System

1	2	3	4	5	6
TC	S	0	1	1	1500

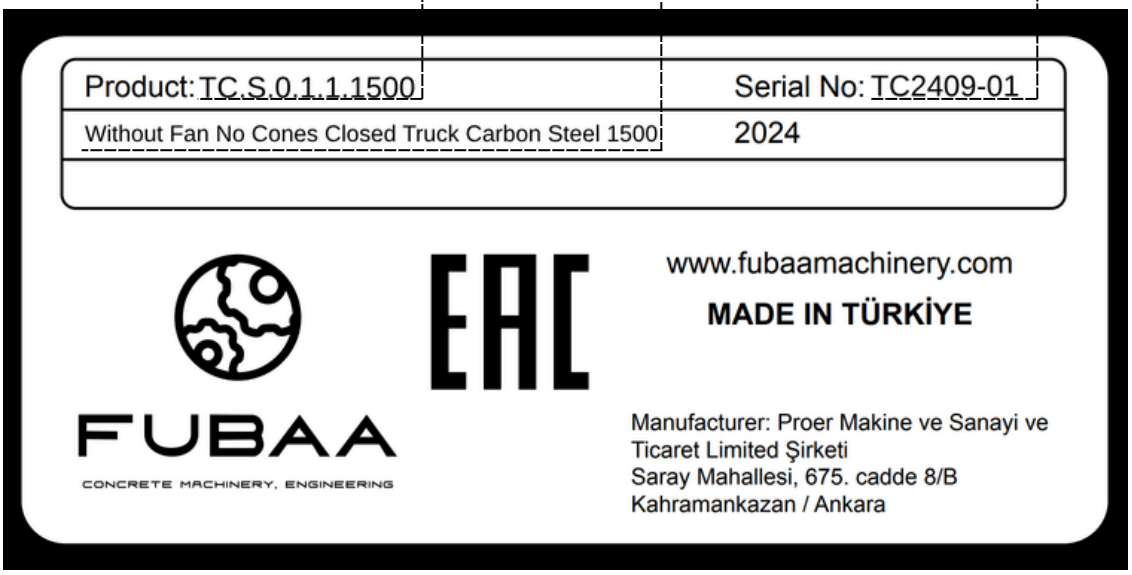
1	Product Type	Telescopic Chute						
2	Type	S	Standart	F	With Fan			
3	Inner Cones	0	No	1	Yes			
4	Loading Type	0	Open Truck	1	Closed Truck			
5	Execution Material	1	Carbon steel	2	304	3	316	
6	Stroke	1500, 2000						

Label

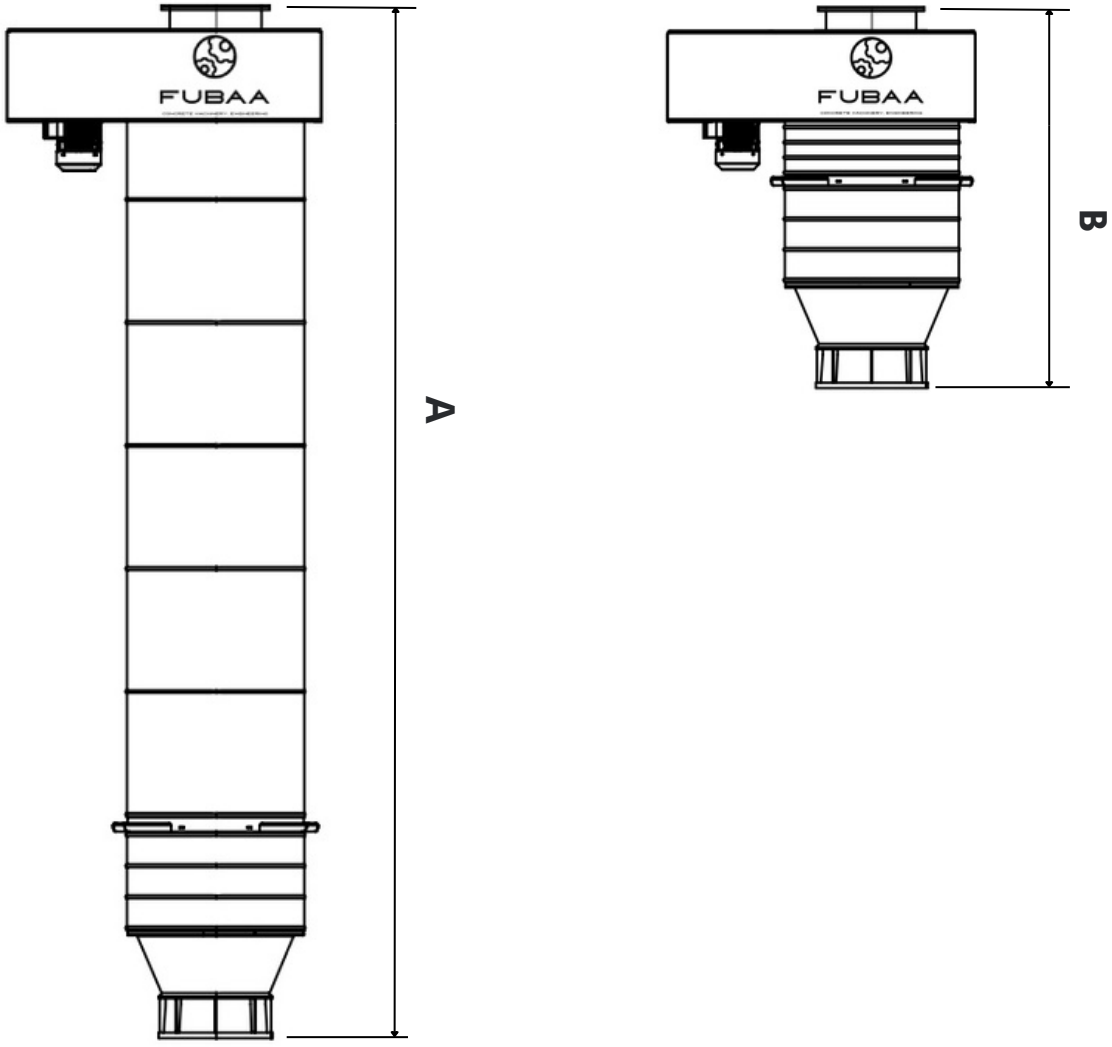
Serial Number (Product Type/Production Year/Production Month/Unit Number in Production Line

Product General Specs (Fan Option / Cone Option/ Loading Type / Execution Material / Stroke)

Product Code (See “Product Code System”)



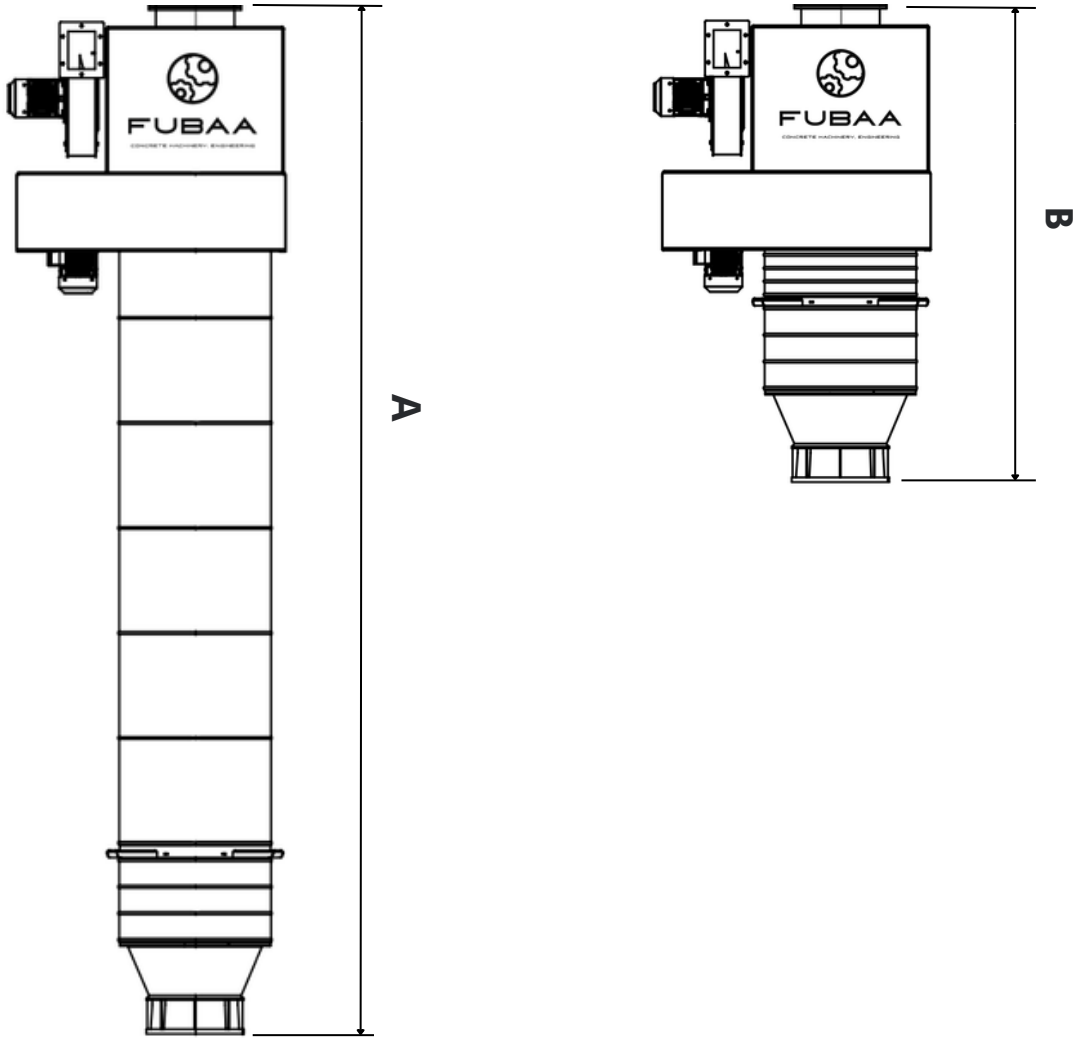
TC.S Dimensions



Stroke mm	A mm	B mm
1500	2800	1300
2000	3500	1500

Note: TC Series Loading Bellows have some standart length options but it is highly customisable and dimensions can be customised up to some degree, based on the client request.

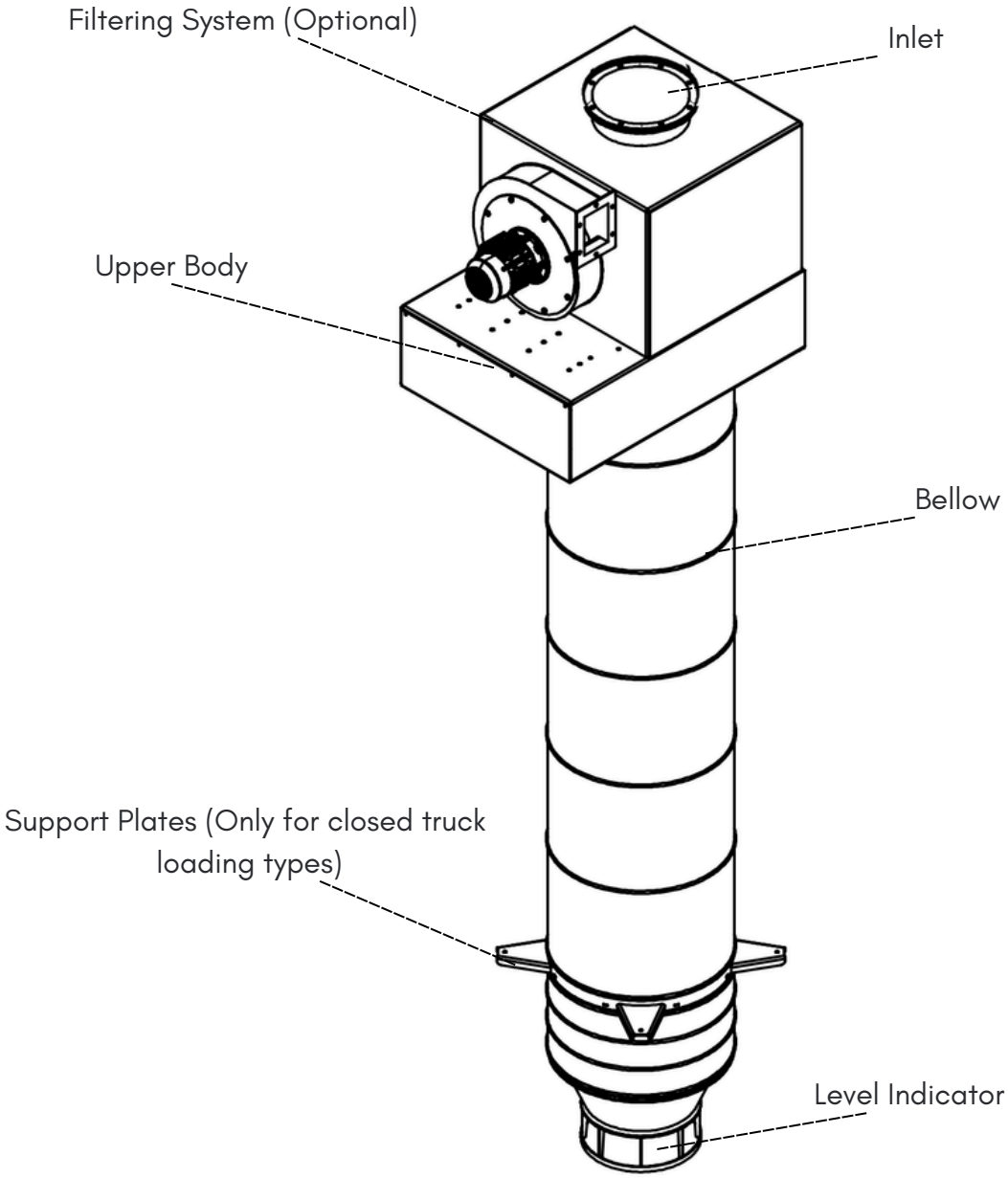
TC.F Dimensions



Stroke mm	A mm	B mm
1500	3700	2200
2000	4700	2500

Note: TC Series Loading Bellows have some standart length options but it is highly customisable and dimensions can be customised up to some degree, based on the client request.

TC Components



Sub-Components & Brands

Unit	Manufacturer	Spec
Winch	In-House	
Winch Motor	OMEGA or ELK	0.75kW, IP55
Limit Switches	SCHNEIDER, TELEMECANIQUE or ISISO	
Level Indicator	WAM or In-House	Paddle type
Bellows	“Hypalon”	High tenacity polyester with CR and/or CSM coating
Filtering System	In-House	1.5kW, 10m^2
Ventilator Motor	OMEGA or ELK	1.5kW
Filtering Element	AFS Filtration	1.2m^2/pc

Filtering Element and Filtering Media

Cartridge type filtering elements, ensure high life-span not just because of the good product design, but also thanks to its top-notch specs. Cartridges used in TC Series Loading Bellows;

Diameter	mm	115
Height	mm	500
Filtration Area	M2	1.2
Material		100% Polyester
Construction		Spundbond
Treatment		OLEO/HYDROPHOBIC
Permeability	M3/M2/H AT 200PA	408
Weight	G/M2	260
Elongation MD	%	18.6
Elongation CD	%	24.8
Thickness	MM	0.54
Fiber Size	DENIER	1.2-2.7
Tenstile Strength MD	N	512.4
Tenstile Strength CD	N	518.3
Tear Strength MD	N	386.7
Tear Strength CD	N	358.2

Thermal Shrinkage MD	%	0.67
Thermal Shrinkage CD	%	0.32
Mullen Burs	KG/CM2	25
Temperature Resistance	C	120
OLEO/HYDROPHOBIC Res.		Excellent
Acid Resistance		Good
Alkaline Resistance		Good
Dust Release		Excellent
Filter Test	BIA	M
Efficiency of 0.3 Micron	%	48

Bellow Specs

Different types of bellows will be used, based on the material to be transfered, enviromental factors and special requests

261

Base fabric :	Polyester High tenacity 1100 dtex - 990 deniers
Coating :	Polychloropene (CR) double side
Item code :	V261

Specifications	Standard-Test	Direction	Result (Imperial)	Result (Metric)
Surfacic Mass	*ISO 2286-2* *FSTM 191/5041*		>= 18.29 oz/yd²	>= 620 g/m²
Tensile Strength	*ISO 1421* *ASTM D 751 / B*	*CH (W)* *TR (F)*	>= 337.08 lbs/in >= 337.08 lbs/in	>= 300 daN/5cm >= 300 daN/5cm
Elongation at break	*ISO 1421* *ASTM D 751 / B*	*CH (W)* *TR (F)*	>= 15 % >= 15 %	
Permeability (Helium) Zeppelin Test	*NFG 37 114*		< 3 l/m²/24H	
Peeling Test Adhesion	*ISO 2411*		>= 16.85 lbs/in	>= 15 daN/5cm

228

Base fabric :	Polyester High tenacity **1100 dtex – 990 deniers**
Coating :	Ext : Chlorosulfonated Polyethylene (CSM) / Polychloroprene (CR) Int : Polychloroprene (CR)

Specifications	Standard-Test	Direction	Result (Imperial)	Result (Metric)
Surfacic Mass	*ISO 2286-2*		39,5 oz/yd² ± 4,13	1 340 g/m² ± 140
Tensile Strength	*ISO 1421* *ASTM D 751 / B*	*CH (W)* *TR (F)*	≥ 393 lbs/in ≥ 393 lbs/in	≥ 350 daN/5cm ≥ 350 daN/5cm
Tear Resistance	*ISO 4674-1* *ASTM D 751 / B*	*CH (W)* *TR (F)*	≥ 45,0 lbs ≥ 36,0 lbs	≥ 20 daN ≥ 16 daN
Permeability (Helium) Zeppelin Test	*NFG 37 114*			< 3 l/m²/24H
Peeling Test Adhesion	*ISO 2411* *ASTM D 751*		≥ 16,85 lbs/in	≥ 15 daN/5cm
Low Temperature Resistance	*NF EN 1876-2* *ASTM D 751*		≤ - 22 °F	≤ - 30 °C
Heat Aging 7 day at 158 °F (70°C)	*NF EN 12280 - 1*		Tensile strength unchanged	
Hydrocarbon Resistance	*ISO 1817*		Tensile strength unchanged	
Fill Distortion	*NFG 37 119/1*		80% ≤ 1,18 in Maxi 1,97 in	80% ≤ 3 cm Maxi 5 cm

220

Base fabric : Polyester High tenacity **1100 dtex – 990 deniers**
Coating : Ext : Chlorosulfonated Polyethylene (CSM) / Polychloroprene (CR)
Int : Polychloroprene (CR)

Specifications	Standard-Test	Direction	Result (Imperial)	Result (Metric)
Surfacic Mass	*ISO 2286-2*		33,6 oz/yd² ± 3,54	1 140 g/m² ± 120
Tensile Strength	*ISO 1421* *ASTM D 751 / B*	*CH (W)* *TR (F)*	≥ 337 lbs/in ≥ 337 lbs/in	≥ 300 daN/5cm ≥ 300 daN/5cm
Tear Resistance	*ISO 4674-1* *ASTM D 751 / B*	*CH (W)* *TR (F)*	≥ 45,0 lbs ≥ 33,7 lbs	≥ 20 daN ≥ 15 daN
Permeability (Helium) Zeppelin Test	*NFG 37 114*			< 3 l/m²/24H
Peeling Test Adhesion	*ISO 2411* *ASTM D 751*		≥ 16,85 lbs/in	≥ 15 daN/5cm
Low Temperature Resistance	*NF EN 1876-2* *ASTM D 751*		≤ - 22 °F	≤ - 30 °C
Heat Aging 7 day at 158 °F (70°C)	*NF EN 12280 - 1*		Tensile strength unchanged	
Hydrocarbon Resistance	*ISO 1817*		Tensile strength unchanged	
Fill Distortion	*NFG 37 119/1*		80% ≤ 1,18 in Maxi 1,97 in	80% ≤ 3 cm Maxi 5 cm

Standard width: ≥ 57 in – ≥ 145 cm

219

Base fabric :	Polyester High tenacity 1100 dtex - 990 deniers
Coating :	Ext:Chlorosulfonated Polyethylene (CSM)
Coating :	Int: Polychloroprene (CR)

Specifications	Standard-Test	Direction	Result (Imperial)	Result (Metric)
Surfacic Mass	*ISO 2286-2*		27,58 oz/yd² ± 2,95	935 g/m² ± 100
Tensile Strength	*ISO 1421* *ASTM D 751 / B*	*CH (W)* *TR (F)*	≥ 309 lbs/in ≥ 309 lbs/in	≥ 275 daN/5cm ≥ 275 daN/5cm
Tear Resistance	*ISO 4674-1* *ASTM D 751 / B*	*CH (W)* *TR (F)*	≥ 27 lbs ≥ 22 lbs	≥ 12 daN ≥ 10 daN
Permeability (Helium) Zeppelin Test	*NFG 37 114*		< 3 l/m²/24H	
Peeling Test Adhesion	*ISO 2411* *ASTM D 751*		≥ 14,0 lbs/in	≥ 12,5 daN/5cm
Low Temperature Resistance	*NF EN 1876-2* *ASTM D 751*		≤ - 22 °F	≤ - 30 °C
Heat Aging 7 day at 158 °F (70°C)	*NF EN 12280 - 1*		Tensile strength unchanged	
Hydrocarbon Resistance	*ISO 1817*		Tensile strength unchanged	

WORKING PRINCIPLE and START UP

NOTE:

Products are NOT designed to operate at explosive, flammable, toxic, hazardous viral or bacterial dangerous environment and/or materials. If the machine has o operate in these conditions, the manufacturer must be informed. The appropriate use of the unit according the food norms should be reported to the manufacturer at order although the unit has to be produced accordingly.

Install the unit properly to the system. Make sure the electrical connections are made properly and tightly. Setting on the assembled unit is not recommended. Clear all external parts, pieces remaining in packages; make sure that there is no foreign matter in the unit and will not come before start up. **Do not open the valve/feeder unit at the inlet of the bellows before the loading bellows is fully open and in the loading position.**

While the loading bellows is in the closed position, press the down button. As long as the button is pressed, the bellows will go down.

For closed truck loading; make sure that the loading bellows is fitted on the filling opening. Check with both hands that the unit is fully fitted in the filling opening from the frames/pulley around the lower cone.

When the loading bellows reaches the filling position, the level indicator will be activated automatically.

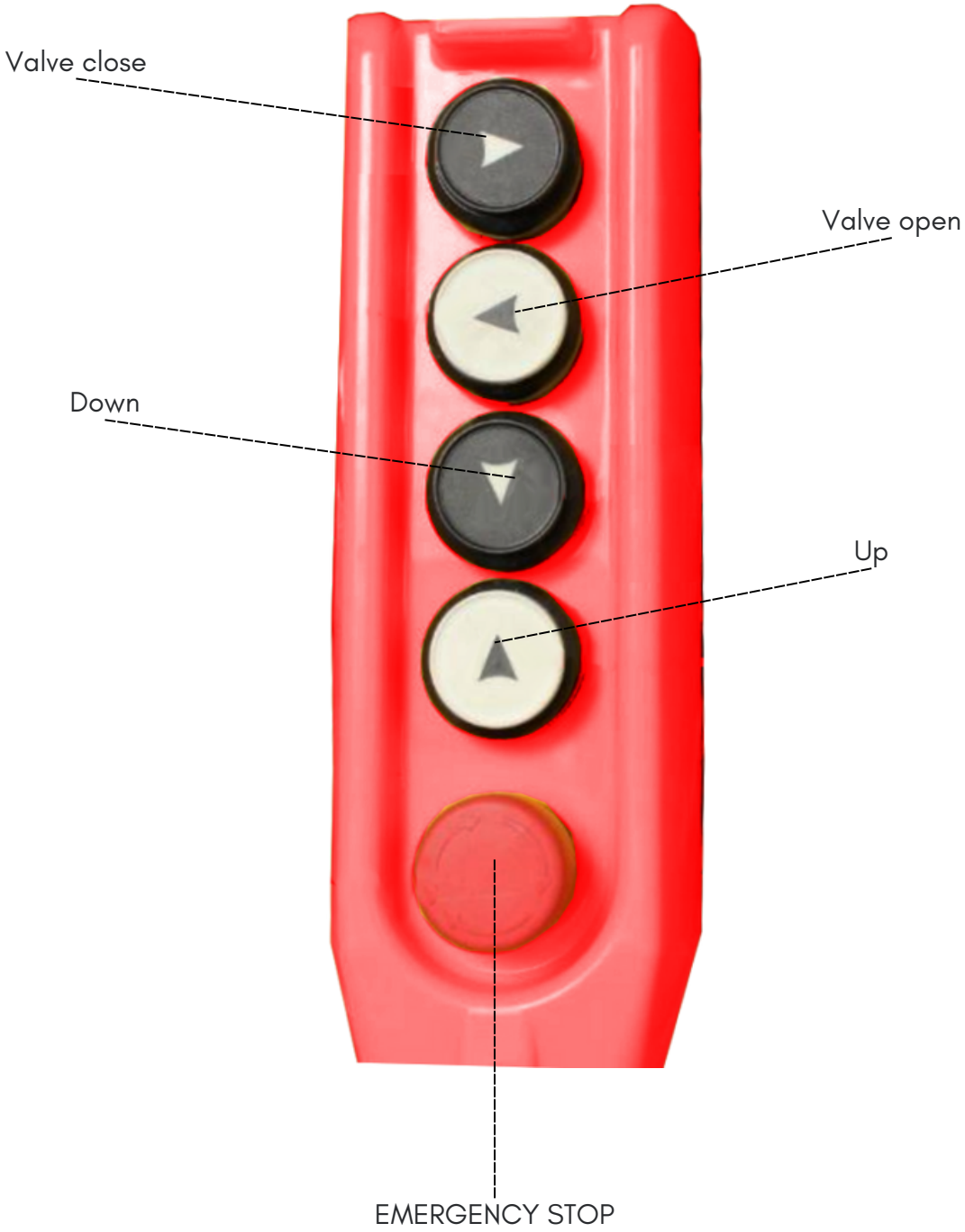
This means; the material in the tank rises upwards when material is fully filled, the cone flag type occurs depending on the material slope angle contacts the flag of the level indicator and blocks its return. Level indicator creates a signal. This signal is used to stop the valve/feeder unit at the loading bellows inlet in the system to be created by the user.

The bellow waits for 3 seconds (adjustable). Then bellow ascends automatically to original position. The filter jet pulse cleaning system also stops, the fan continues to operate. (The lift of the loading bellows should be started after the closure of the valve/feeder unit at the bellows inlet, thus minimizing the suspended material.)

The upward collecting time continues for 7 seconds (adjustable time), the rope motor stops before the bellows is fully closed position. The level indicator continues to operate during upward collecting process and when bellows stop.

With the control panel, the loading bellows lift up as long as the up button is pressed, and the take-off can be stopped by the operator at the desired point with the push button. When the loading bellows reaches the upper level (closed position), the rope motor stops. When the loading bellows goes down, level indicator starts to run and continues to run until the bellows comes to the closed position.

Remote Control



Maintenance

Every day before proceed to work:

- Ensure and check the emergency STOP buttons are operative.
- Check the unit visually.
- Check that the warning labels on the machine are present and in good condition. Check the electric motor cable and connections.
- Check all the bolts and nuts present and they are tighted.

At the end of each day:

- Check the unit visually.
- Check the emergency STOP button function.
- Shake the below hand to check if it is blocked or not.
- Clean the conical seatle.
- Check the outer & inner below.

At the end of each week:

- Check whether the bellows are intact.
- Open the drain cock and remove the condensate water in the air circuit.
- Measure the pressure difference between the clogged part and the clean part of the filter. If the differential pressure has risen rapidly from the value measured in the previous week, refer to the Torubleshooting Table.
- Check the fan motor for possible abnormal vibrations or noise.

At the end of each month:

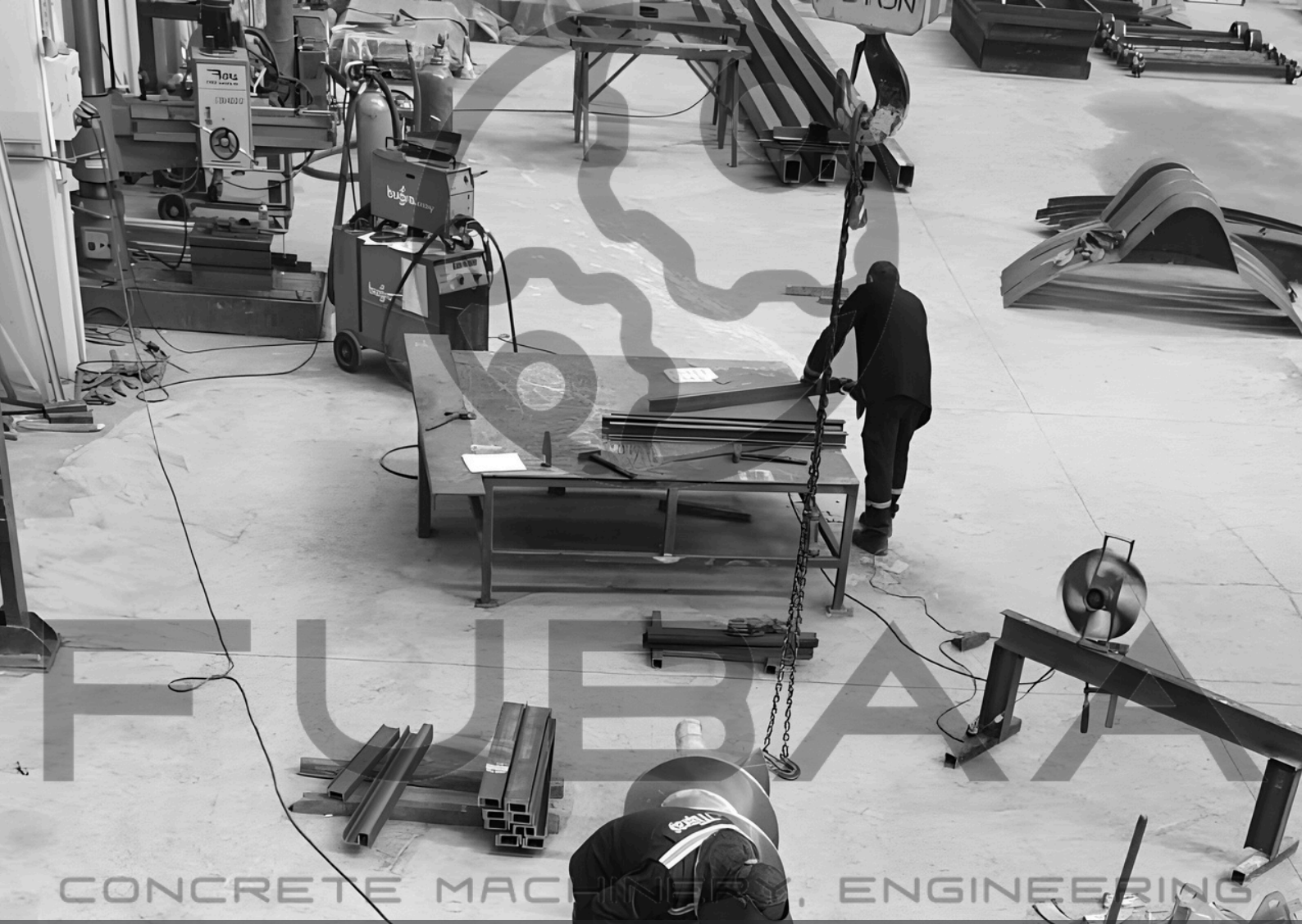
- Check V belt.
- Check the upper & lower switches.
- Check stroke limitors.
- Check level indicator operation.
- Check filter elements.

Every 6 months:

Check the cables.
Slightly oil the chain drive.
Check all seals and coupling flanges.
Remove all filter elements, check for wear and clean them.
Check the fan and motor.

At the end of every year:

- Check the cable diameters and replece if needed.
- Change the filter cartridges and replace it if necessary.
- Check whether the bellows are intact.



Established by one engineer and one sales person, FUBAA brand aims to expand it's existance to where the others fear.

Being extremely flexible and quick, gives our brand a huge adavantage over the others.

Having over 10+ years of exprience in bulk handling materials, FUBAA brand can, not only produce the "product" customer needs, but can also to supply, re-design and export what already exists.

info@fubaamachinery.com
+7 778 724 9104