

DISSOLVED AIR FLOTATION



Product Specifications




anaconda®


fatflot®


sludgeway®

Anaconda®: Dissolved Air Flotation System for physical-chemical treatment.

Advanced FADAR® Flotation technology. Solid removal performance levels of up to 99%.

Anaconda is made of FRP with high resistance chemical and mechanical resins.

Accessibility and safety.

ANACONDA®, HIGH PERFORMANCE DISSOLVED AIR FLOTATION

Anaconda® FRC-2, FRC-5



Flows and Dimensions



MODEL	Flow	Maximum width A (mm)	Maximum height B (mm)	Length L (mm)	Installed power (kW)	Water inlet	Water outlet	Sludge outlet	Drainage	Compressed air consumption (NI/min) *
FRC-2	2 m³/h	1.555	2.338+100	2.416	3,3	DN50	DN65	DN100	DN50	18
FRC-5	5 m³/h	2.202	2.350+100	2.947	3,9	DN80	DN100	DN125	DN65	28

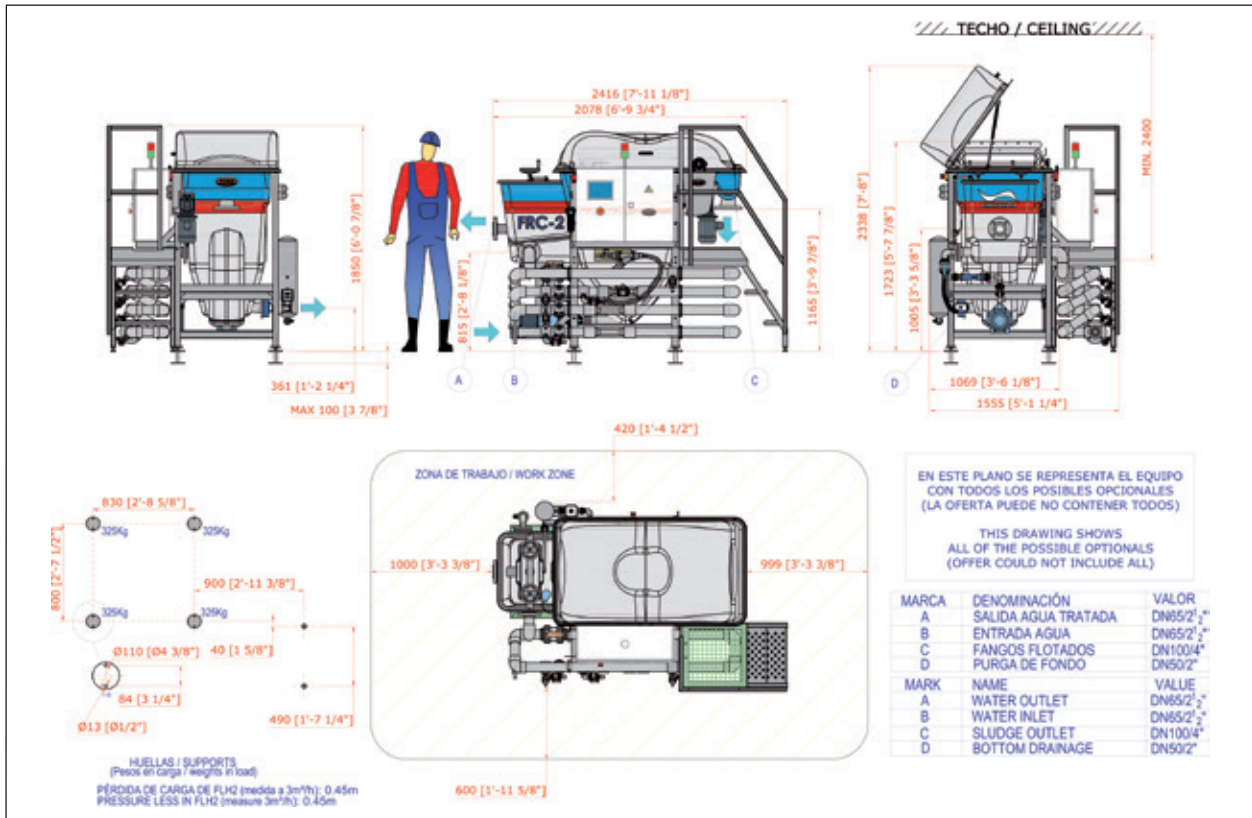


MODEL	Flow	Maximum width A (mm)	Maximum height B (mm)	Length L (mm)	Installed power (kW)	Water inlet	Water outlet	Sludge outlet	Drainage	Compressed air consumption (NI/min) *
FRC-2	1 m³/h	1.555	2.338+100	2.416	3,3	DN65	DN65	DN100	DN50	18
FRC-5	3 m³/h	2.202	2.350+100	2.947	3.9	DN80	DN100	DN125	DN65	28

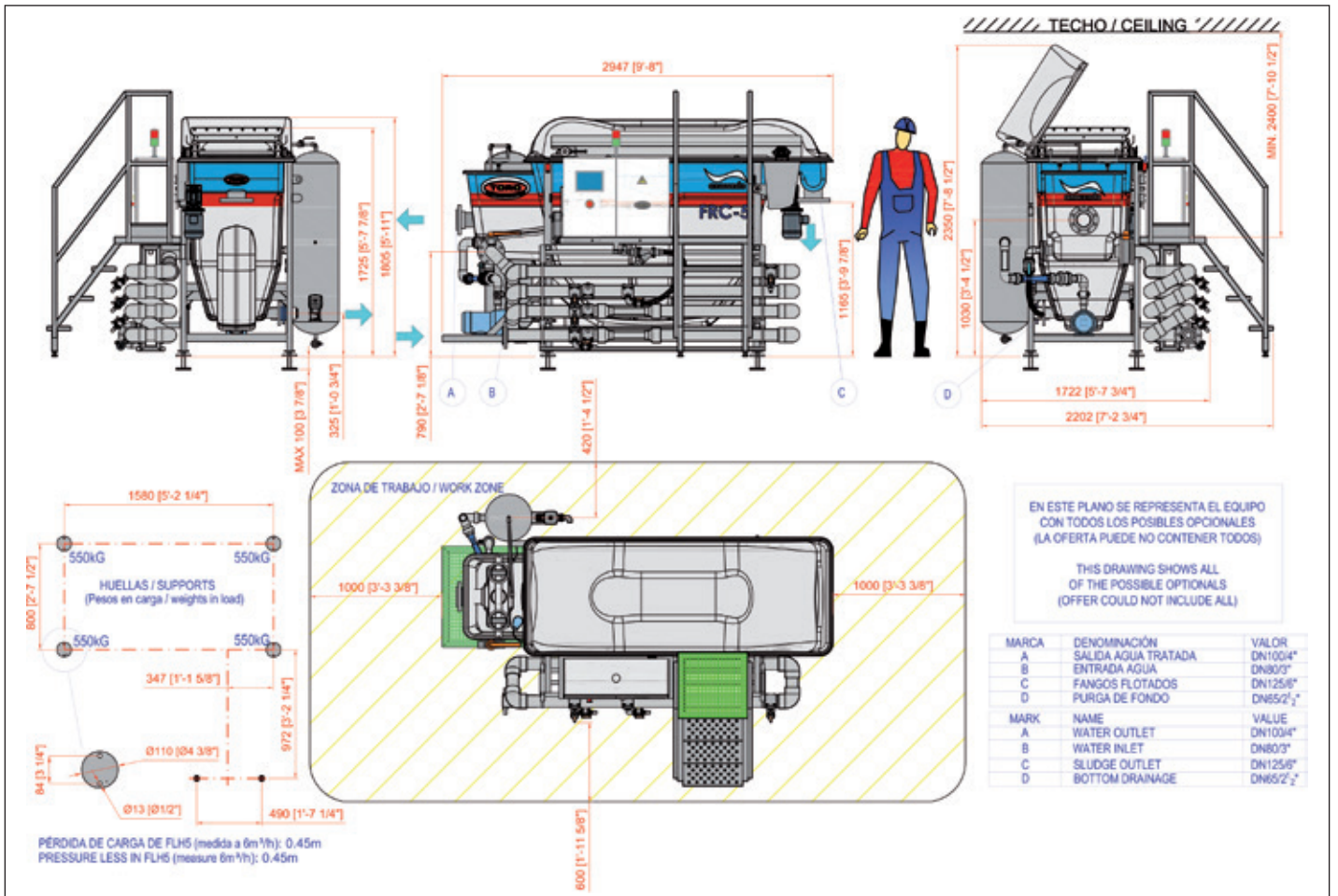
* The air pressure will be between 6-8 bar on all models.

The dimensions and product specifications might vary slightly, due to the normal development of products by the engineering department of Toro Equipment SL. More specific data can be found on our website at www.toroequipment.com.

Anaconda® FRC-2



Anaconda® FRC-5



Anaconda® FRC-10, FRC-20



Flows and Dimensions



MODEL	Flow	Maximum width A (mm)	Maximum height B (mm)	Length L (mm)	Installed power (kW)	Water inlet	Water outlet	Sludge outlet	Drainage	Compressed air consumption (NI/min) *
FRC-10	10 m ³ /h	2.509	2.902+100	4.201	4.5	DN100	DN125	DN125	DN65	52
FRC-20	20 m ³ /h	3.224	2.880+100	5.735	5.43	DN100 DN150	DN150	DN150	DN80	64



MODEL	Flow	Maximum width A (mm)	Maximum height B (mm)	Length L (mm)	Installed power (kW)	Water inlet	Water outlet	Sludge outlet	Drainage	Compressed air consumption (NI/min) *
FSG-10	10 m ³ /h	2.415	2.902+100	3.414	4,5	DN100	DN125	DN125	DN65	52
FSG-20	20 m ³ /h	2.859	2.880+100	4.814	5,43	DN150	DN150	DN150	DN80	64

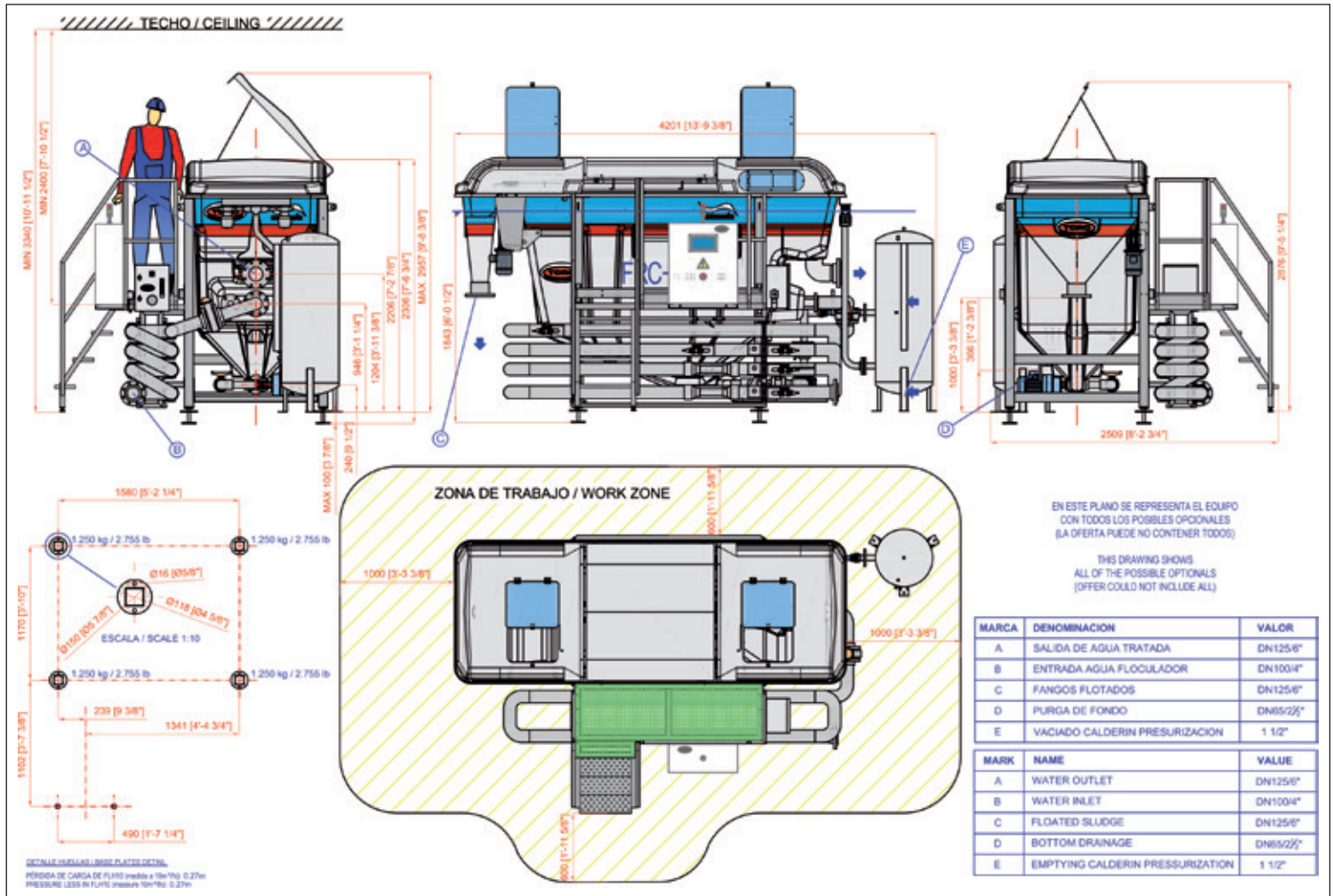


MODEL	Flow	Maximum width A (mm)	Maximum height B (mm)	Length L (mm)	Installed power (kW)	Water inlet	Water outlet	Sludge outlet	Drainage	Compressed air consumption (NI/min) *
FRC-10	10 m ³ /h	2.509	2.902+100	4.201	4,5	DN100	DN125	DN125	DN65	52
FRC-20	20 m ³ /h	3.224	2.880+100	5.735	5,43	DN100 DN150	DN150	DN150	DN80	64

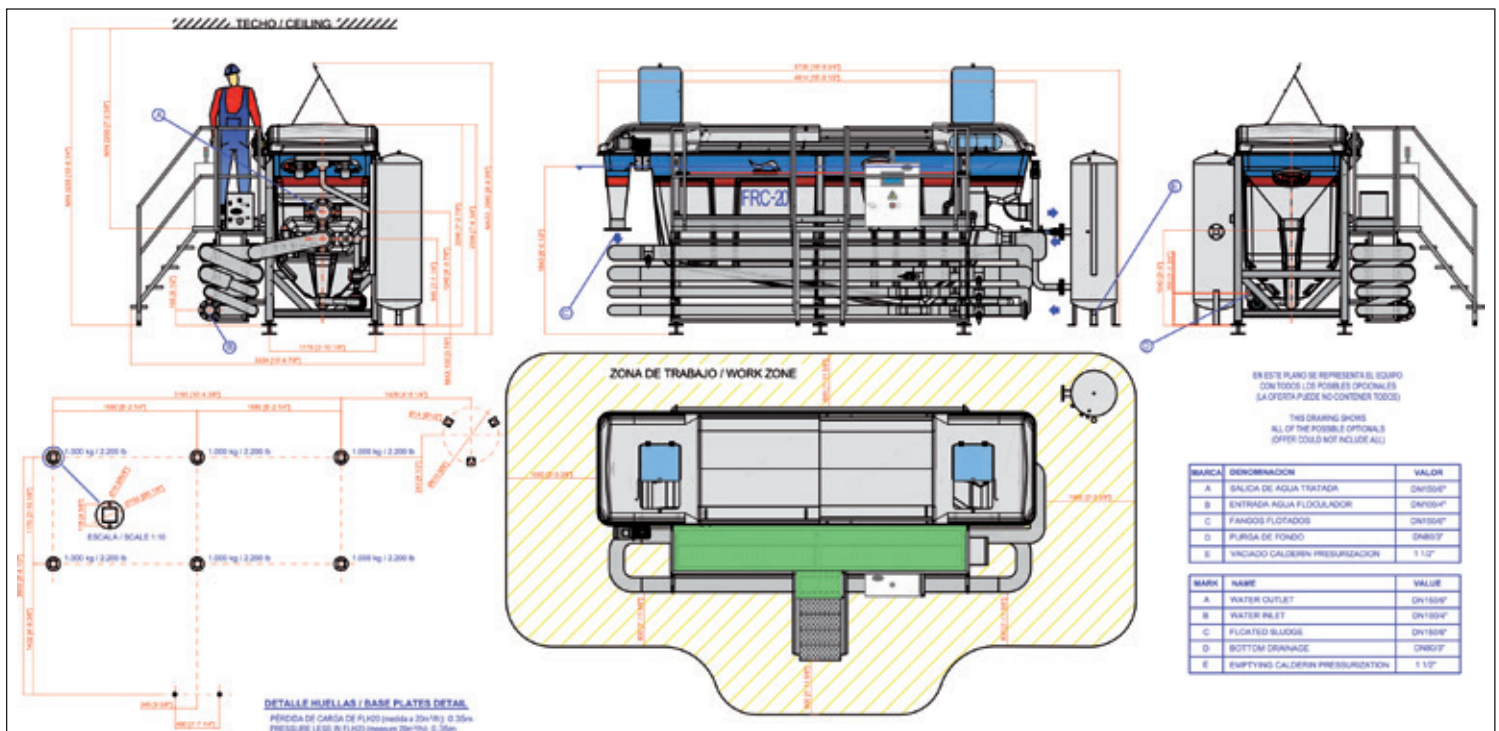
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Anaconda® FRC-10



Anaconda® FRC-20



Anaconda® FRC-30, FRC-60, FRC-90



Flows and Dimensions



MODEL	Flow	Maximum width A (mm)	Maximum height B (mm)	Length L (mm)	Installed power (kW)	Water inlet	Water outlet	Sludge outlet	Drainage	Compressed air consumption (NI/min) *
FRC-30	30 m³/h	3.765	3.176+100	5.969	6,57	DN150	DN200	DN150	DN80	95
FRC-60	60 m³/h	4.445/3.535	3.181+100	9.445	14,05	DN200	DN200	DN150	2x DN80	217
FRC-90	90 m³/h	4.448/3.535	3.181+100	12.805	15,37	DN200	DN250	DN250	3x DN80	309



MODEL	Flow	Maximum width A (mm)	Maximum height B (mm)	Length L (mm)	Installed power (kW)	Water inlet	Water outlet	Sludge outlet	Drainage	Compressed air consumption (NI/min) *
FSG-30	30 m³/h	3.765	3.176+100	4.907	6,57	DN150	DN200	DN150	DN80	95
FSG-60	60 m³/h	3.535	3.181+100	8.610	14.04	DN200	DN200	DN150	2x DN80	217
FSG-90	90 m³/h	3.535	3.181+100	11.931	15,37	DN200	DN250	DN250	3x DN80	309

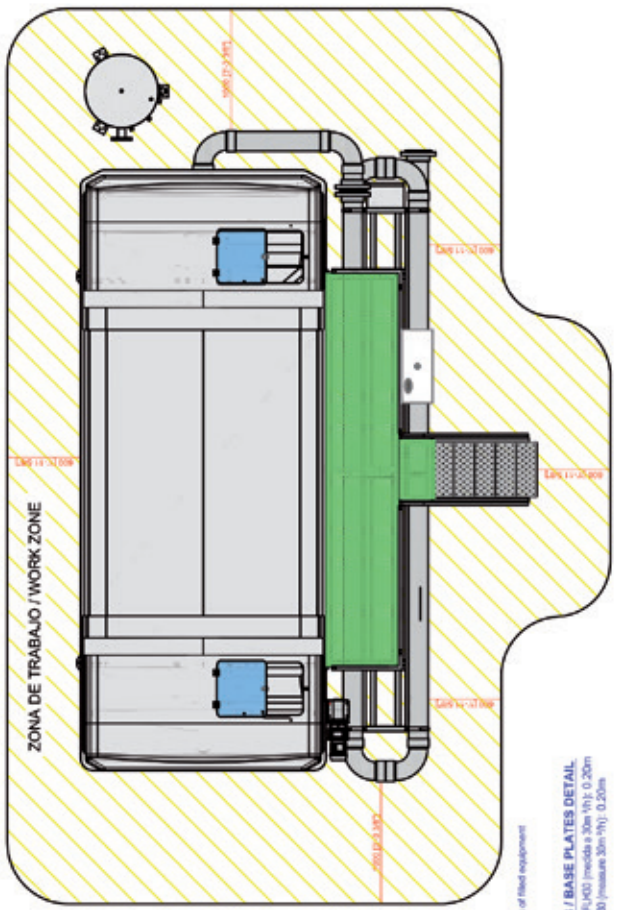
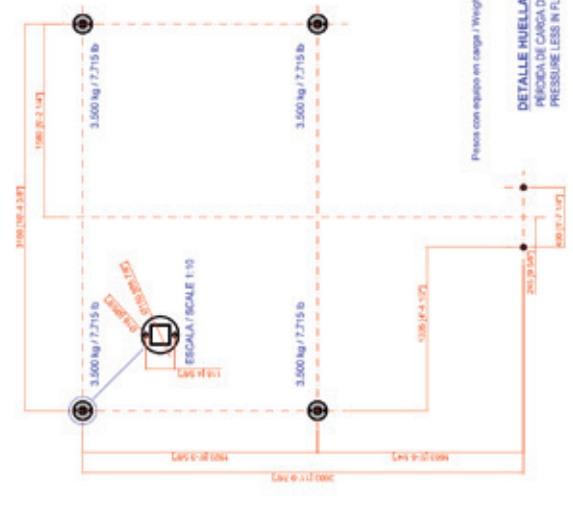
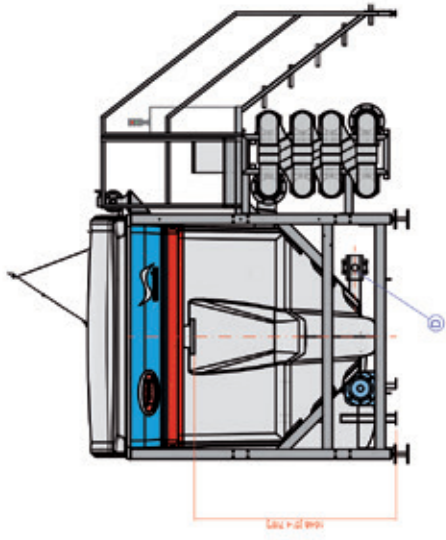
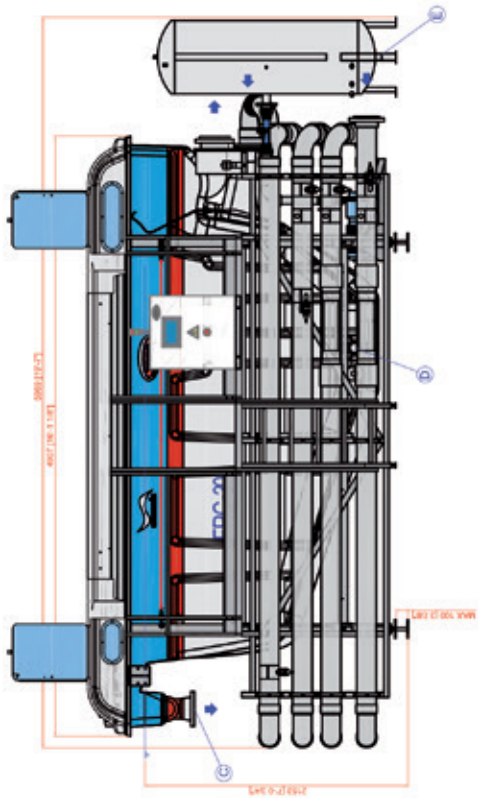
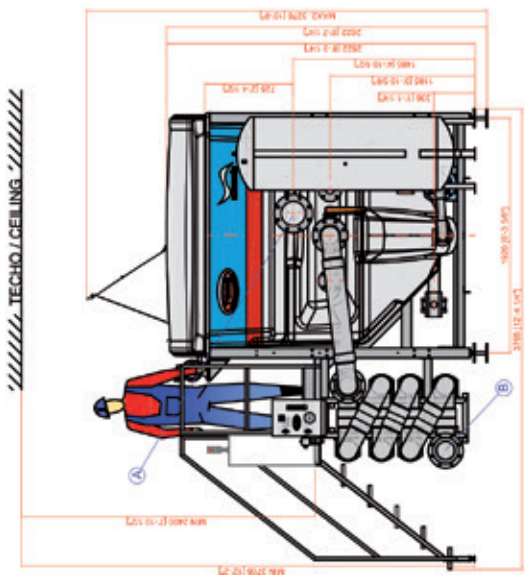


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FRC-60	60 m³/h	4.445/3.535	3.181+100	9.445	14,05	DN200	DN200	DN150	2x DN80	217
FRC-90	90 m³/h	4.448/3.535	3.181+100	12.805	15,37	DN200	DN250	DN250	3x DN80	309

* The air pressure will be between 6-8 bar on all models.

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TECHO / CEILING



EN ESTE PLANO SE REPRESENTA EL EQUIPO CON TODOS LOS POSIBLES OPCIONALES (LA OFERTA PUEDE NO CONTENER TODOS)

THIS DRAWING SHOWS ALL OF THE POSSIBLE OPTIONALS (OFFER COULD NOT INCLUDE ALL)

MARCA	DENOMINACION	VALOR
A	SALIDA DE AGUA TRATADA	DN200/8"
B	ENTRADA AGUA FLOCULADOR	DN150/6"
C	FANGOS FLOTADOS	DN150/6"
D	PURGA DE FONDO	DN80/3"
E	VACIADO CALDERIN PRESURIZACION	1 1/2"

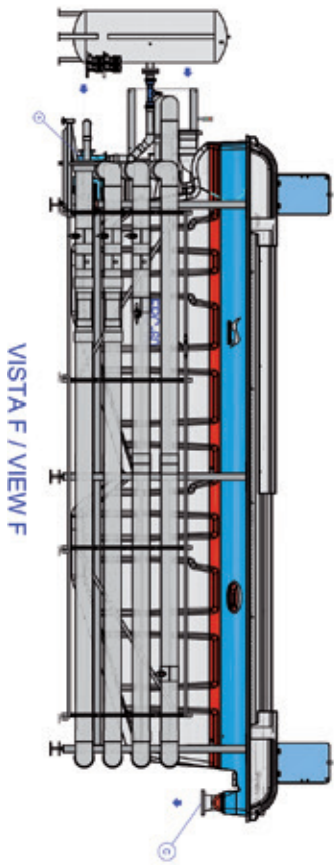
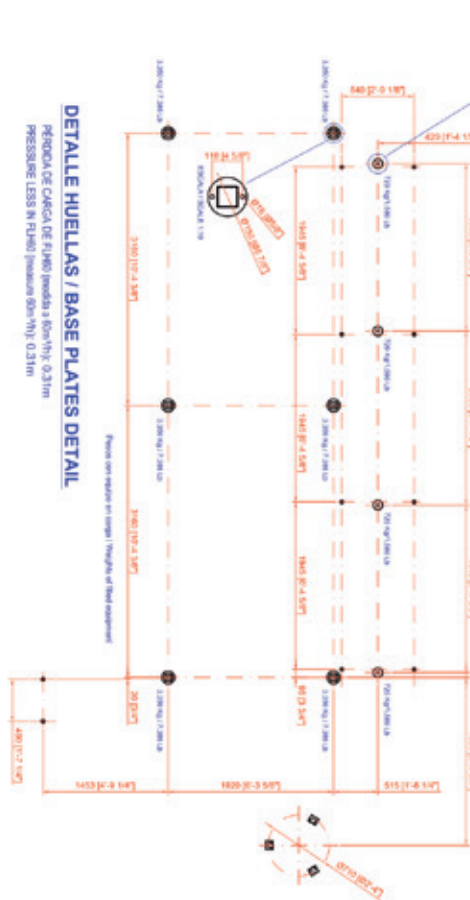
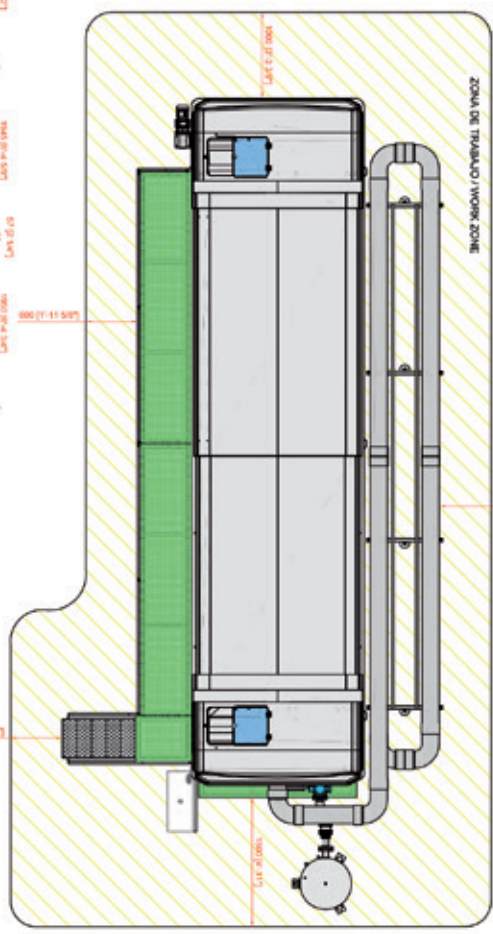
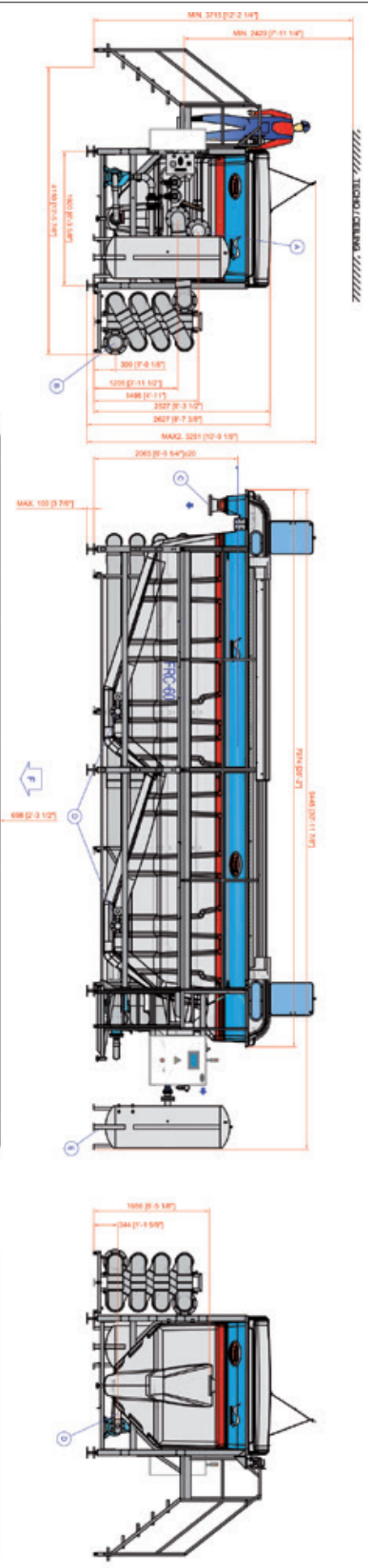
MARK	NAME	VALUE
A	WATER OUTLET	DN200/8"
B	WATER INLET	DN150/6"
C	FLOATED SLUDGE	DN150/6"
D	BOTTOM DRAINAGE	DN80/3"
E	EMPTYING CALDERIN PRESSURIZATION	1 1/2"

DETALLE HUELLAS / BASE PLATES DETAIL

PIEDRA DE CARGA DE FUNDICION (medida 30x19x0.20m)

PRESSURE LESS IN FUNDICION (measure 30x19x0.20m)

pesos con equipo en carga / Weights of filled equipment

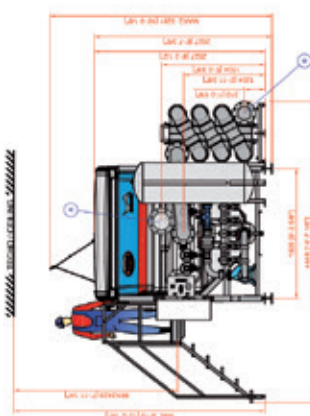
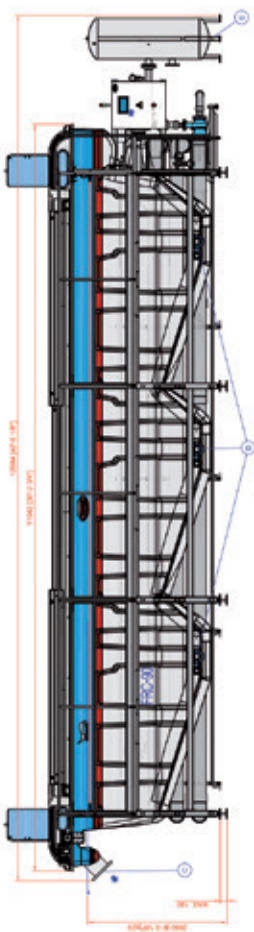
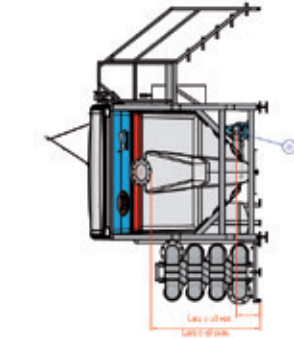


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MARCA	DENOMINACION	VALOR
A	SALIDA DE AGUA TRATADA	DN200/8"
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MARK	NAME	VALUE
A	WATER OUTLET	DN200/8"
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E	EMPTYING CALDERIN PRESSURIZATION	1 1/2"

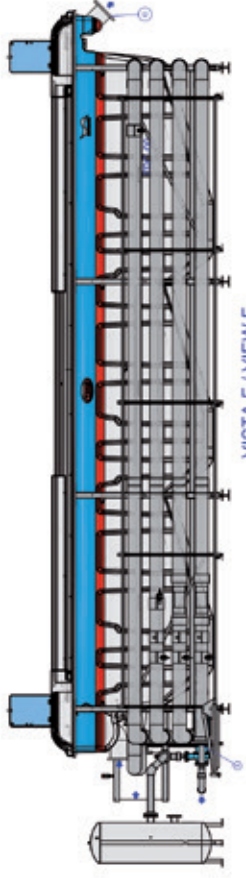
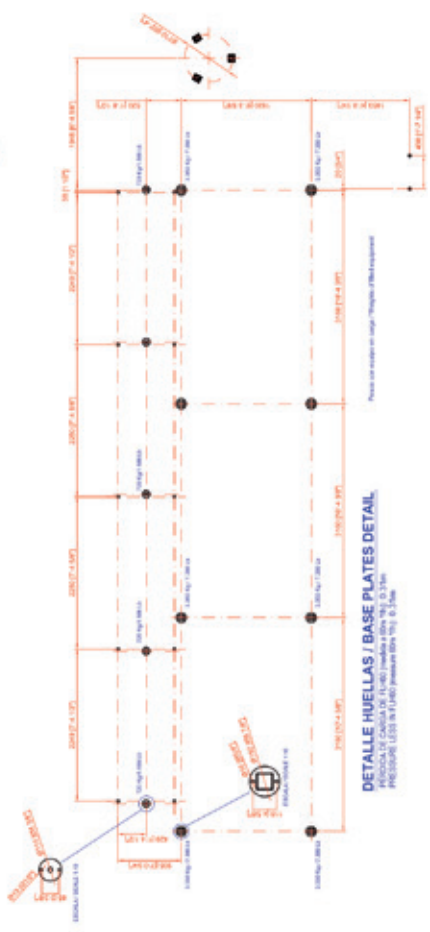
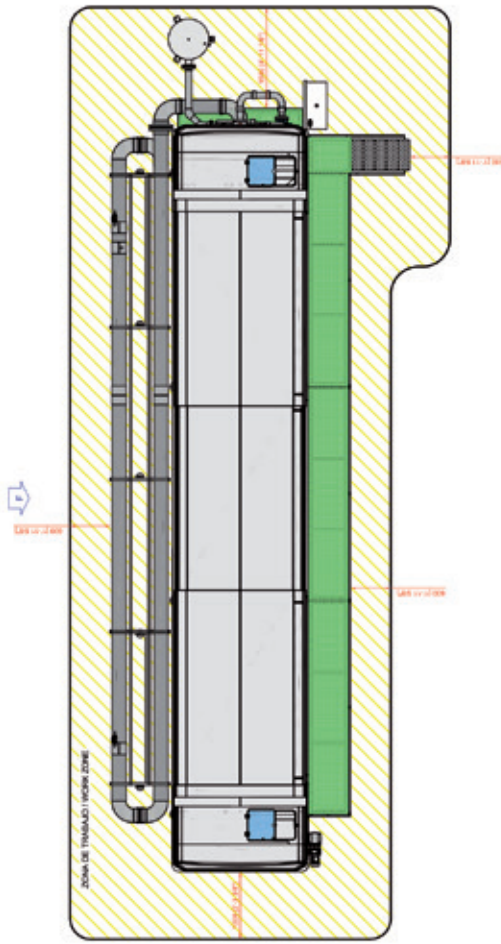


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THIS DRAWING SHOWS ALL OF THE POSSIBLE OPTIONALS (OFFER COULD NOT INCLUDE ALL)

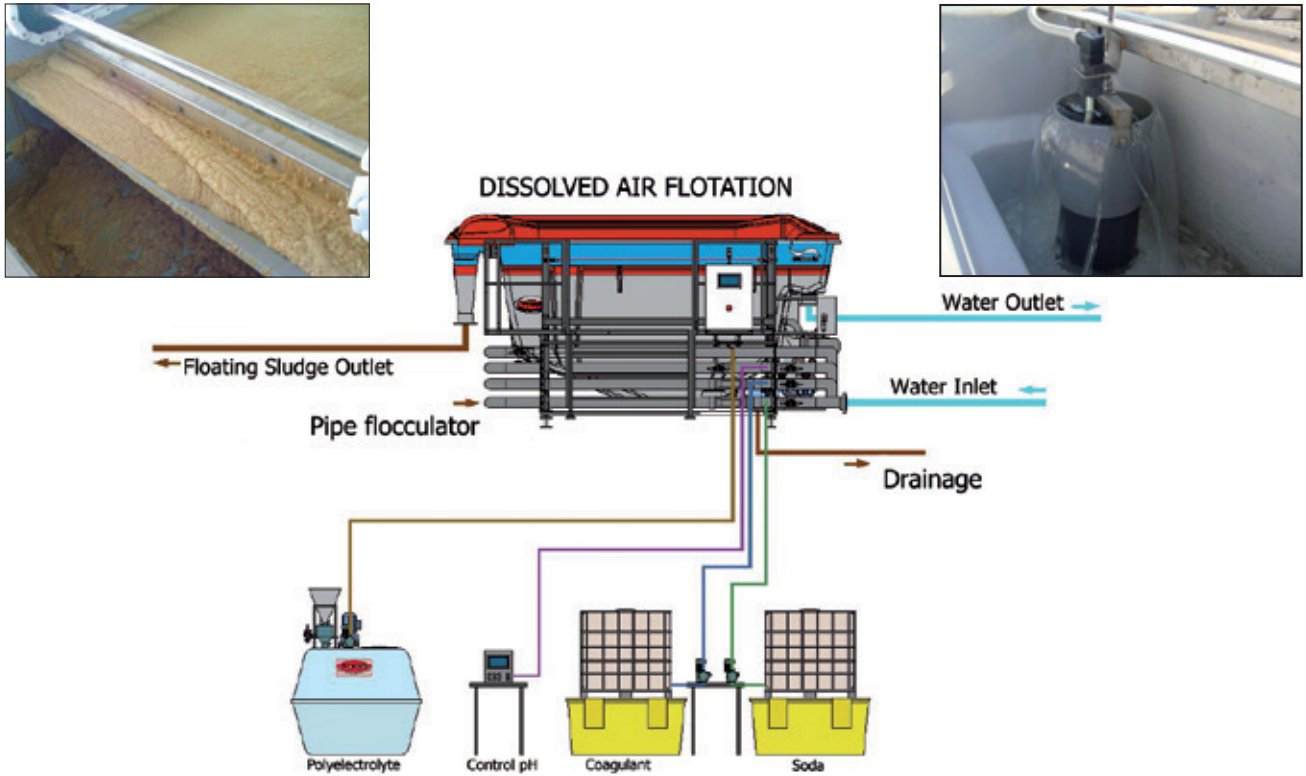
MARCA	DENOMINACION	VALOR
A	SALIDA DE AGUA TRATADA	DN250/10"
B	ENTRADA AGUA	DN200/8"
C	FANGOS FLOTADOS	DN250/10"
D	PURGA DE FONDO	DN80/3"
E	VACIADO CALDERIN PRESURIZACION	1 1/2"

MARK	NAME	VALUE
A	WATER OUTLET	DN250/10"
B	WATER INLET	DN200/8"
C	FLOATED SLUDGE	DN250/10"
D	BOTTOM DRAINAGE	DN80/3"
E	EMPTYING CALDERIN PRESSURIZATION	1 1/2"



VISTA F / VIEW F

Process Description



Applications

- Pretreatment: Anaconda®.
 - Sewage and industrial wastewater. In urban wastewater fat and oil reduction of up to 60% of pollution load.
 - Drinking and industrial water process.

- Physical-Chemical: Anaconda®.
 - In sewage, the performance depends on application, volume and type of prior equalization.
 - In industrial water such as solid-liquid separators:

Slaughterhouse	Metal finishing
Dairy	Timber industry
Pulp & paper	Mining
Precooked product	Textile industry
Biofuel	Vegetable oil
Canned fish	Pharmaceutical

- Sludge thickening: Sludgeway®.
- Fat and oil separation: Fatflot®.




Outfit

STANDARD



OPTIONAL



STRUCTURE:		OTHERS:	
Structure AISI-304	<input checked="" type="checkbox"/>	Air sludge pre-chamber contact	<input checked="" type="checkbox"/>
Gangway	In 2 & 5 <input type="checkbox"/> others <input checked="" type="checkbox"/>	Reflocculation system in flotation chamber	<input checked="" type="checkbox"/>
Stairs	In 2 & 5 <input type="checkbox"/> others <input checked="" type="checkbox"/>	Sludge thickening lamellas	<input checked="" type="checkbox"/>
Flanges in FRP, DIN 2501	<input checked="" type="checkbox"/>	Acetal scraper chain	<input checked="" type="checkbox"/>
Tramex gangway in FRP	<input checked="" type="checkbox"/>	Rigid scraping system in FRP	<input checked="" type="checkbox"/>
Protection cover and safety	<input type="checkbox"/>	Automatic drainage	<input checked="" type="checkbox"/>
Modification regarding standard gateway	<input type="checkbox"/>	Sludge level regulating system	<input checked="" type="checkbox"/>
Height adjuster 0-100 mm	<input checked="" type="checkbox"/>	Pneumatic control box. Automatic purgator	<input checked="" type="checkbox"/>
Structure elevation (1 m)	<input type="checkbox"/>	Emergency stop	<input checked="" type="checkbox"/>
Structure AISI-316	<input type="checkbox"/>		
Epoxy painted structure	<input type="checkbox"/>		
Metallic parts in contact with water AISI-316	<input type="checkbox"/>		
Metallic parts in contact with water DUPLEX	<input type="checkbox"/>		
Tank in other colours	<input type="checkbox"/>		
PRESSURIZATION SYSTEMS:		FLOCCULATOR PIPE, INCLUDES:	
Vessel	<input checked="" type="checkbox"/>	- Reagent injection 2 units	<input checked="" type="checkbox"/>
Double centrifugal pump (1 in reserve)	<input type="checkbox"/>	- Polyelectrolyte injection 1 unit	<input checked="" type="checkbox"/>
Pump marine bronze	<input type="checkbox"/>	- Flock sponge system	<input checked="" type="checkbox"/>
Pump AISI-316	<input type="checkbox"/>	- Inlet taps samples 3 units	<input checked="" type="checkbox"/>
Auto-cleaning injectors system	<input checked="" type="checkbox"/>	- Legs adjuster	<input checked="" type="checkbox"/>
Pressurization tank FRP	<input type="checkbox"/>	- Manufacture inox AISI-304/PVC	<input checked="" type="checkbox"/>
Pressurization tank PP	<input type="checkbox"/>	- Replacement in inox AISI-304-316	<input type="checkbox"/>
Pressurization Piping PP	<input type="checkbox"/>	- Replacement in PVC-P.E.H.D.	<input type="checkbox"/>
Compressor	<input type="checkbox"/>	- Replacement in PVC-PP	<input type="checkbox"/>
SIGNALING:		INTEGRATION OF ELECTRICAL CABINET INCLUDE:	
Bright alarm beacon	<input checked="" type="checkbox"/>	- Electric cabinet integration	<input checked="" type="checkbox"/>
Ethernet communication	<input checked="" type="checkbox"/>	- Touch-sensitive panel in colour	<input checked="" type="checkbox"/>
Starting process by remote signal	<input checked="" type="checkbox"/>	- Dynamic PLC software	<input checked="" type="checkbox"/>
Electric box for power and control wiring (without electrical cabinet)	<input checked="" type="checkbox"/>		

* Nominal flow in normal conditions of temperature and salinity. Temperature of 15° - 25°, Anaconda supports up to 3,000 mg/l of solids (TSS) in FRC2 and FRC5, rest of models support up to 5,000 mg/l of solids.

* Flow rates higher or lower depending on the application and rate air/solid. Contact us.

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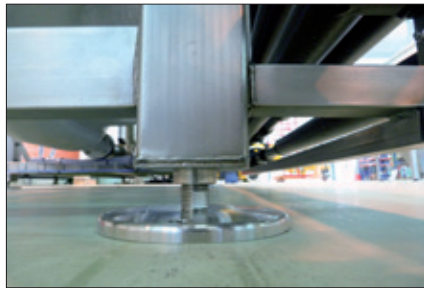
Structure and Materials

- Other materials can be used in the construction of Anaconda®.

- Equipments are made of polyester resin reinforced in isophthalic fibreglass with high chemical resistance. Higher chemical resistance than stainless steel.
- Standard steel items are AISI 304 grade, other options being available.
- Working temperature up to 50° C in continuous. Other material can be use to work under higher temperature conditions. Request more information on our website, www.toroequipment.com or consult our technical staff.



Tramex gangway in FRP

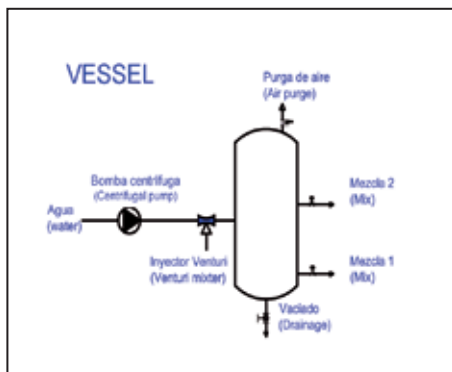


Height adjuster



Ladder

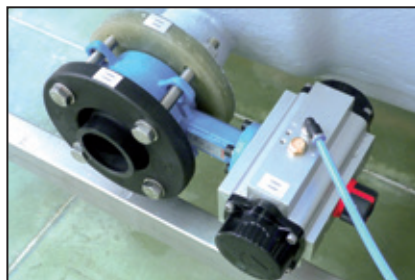
Pressurization System



Others



Rigid scraper system in FRP



Automatic drainage



Emergency stop systems

Flocculator Pipe

- The flocculator pipe manufactured by Toro Equipment is made of PVC, polypropylene, polyethylene or stainless depending of the application.
- The flocculator is a system that allows online dosing of chemicals in the water.
- Each section has a samples taking tap to control the amount of chemical injected.



FLH in PP



FLH in PVC

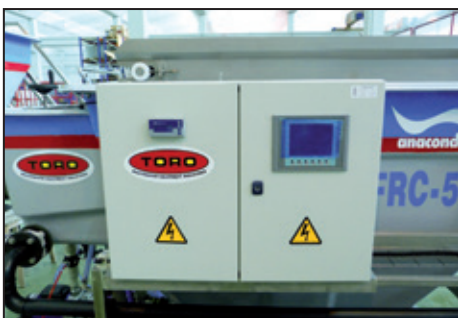


FLH in polyethylene



FLH in Inox

Electrical & Pneumatic Cabinet



Dynamic graphic cabinet: PLC touch screen, alarm history, status, hour meter...



Electrical and pneumatic control in the same cabinet.

Packaging and Transport

- FRC-2 & FRC-5 fully enclosed protective wooden crate.
- Protective plastic wrapping of equipment for shipping.
- FRC 2/5/10/20 transportable in 20ft container.
- FRC 30/60/90 transportable in 40ft container, High Cube.



FRC-2 with protective wooden crate



Wooden crate



40ft container H.C.



Equipment plasticized

Compact Plant

- At the request of the customer, we supply compact plant in containers. Please request information to our commercial department.



- 40ft, with ground in FRP.



- Containers insulated with sandwich panel. Coated steel sheet 0.4 mm. 30mm PUR foam. Conditioning by heat pump, ventilation and illumination.

- Implementing the Anaconda® in a raised plant allows the sludge to fall by gravity into the TAF (Sludge Conditioning Tank), thereby saving pumping. (See TAF file).
- Ask for polypropylene cover and pipe options in outside installations.
- Consider the problems of reagent freezing and process water, especially in stopping.
- For hot or salt water consult the application, since the solubility of air in water decreases. The pressurization system shall be over-sized.
- The blowdown returns to the preliminary pumping or homogenization. It is advisable to do this through a small chamber sandbox, which collects very large dense solids.
- Raw water prior to flotation will have to be screened to at least a 1 mm aperture.
- It is advisable to install constant and adjustable flow pumping systems. This is achieved through a flow meter and a frequency inverter that operates the pump. We can as an option include it in the supply. (Diagram of pump / Frequency inverter / Magnetic flowmeter).
- The pre-flotation tanks shall be stirred. In many applications, stirring with air will be a great advantage for the process (see DBF file).
- The amount accumulated in these tanks will vary from one process to another. A minimum of 6-10 hours is recommended. It is also recommended to have a fixed or slave amount of 2-4 hours.
- If the preliminary tank is higher than the DAF Anaconda®, an automatic shutoff valve should be available.
- Ask our sales department or in our website www.toroequipment.com drawing dwg.



Worldwide References



- Algeria
- Argentina
- Australia
- Austria
- Belgium
- Brazil
- Bulgaria
- Canada
- Chile
- China
- Colombia
- Costa Rica
- Croatia
- Dominican Republic
- Ecuador
- Egypt
- Estonia
- Finland
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- Greece
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- Holland
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- Indonesia
- Iran
- Ireland
- Israel
- Italy
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- Thailand
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- Tunisia
- Turkey
- UK
- Ukraine
- United Arab Emirates
- United States of America
- Uruguay
- Vietnam

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Factory La Cistèrniga - Valladolid



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 ANACONDA® DISSOLVED AIR FLOTATION
 FATFLOT® FAT AND OIL SEPARATOR
 SLUDGEWAY® SLUDGE THICKENING