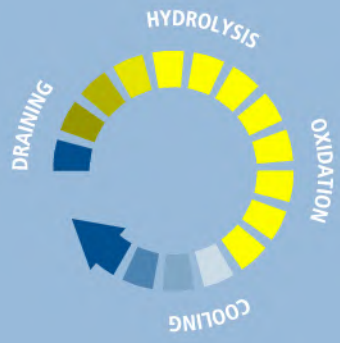
HYPOX®

Polymer removing system

HYPOX®



HYPOX® 4 ACTIONS 1 PROCESS

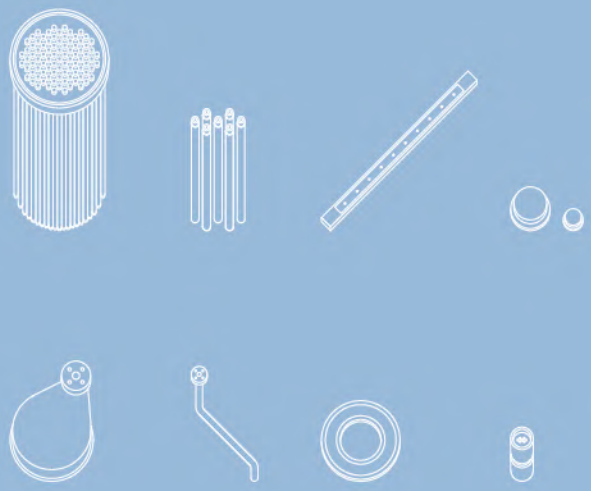
HYPOX®, patented by **Movengineering**, is the first process based on hydrolysis and oxidation reactions that deeply removes organic substances, polymers, gels and carbonic residues from all components, both rough and very delicate. **HYPOX®** guarantees excellent cleaning results.

THE CLEANING PROCESS WITH THE LARGEST REMOVAL SPECTRUM

Hundreds **HYPOX®** systems are used worldwide to remove:
* thermoplastic and thermosetting resins and polymers;
* slurry oil, hydrocarbons, lubricants;
* organic gas or combustion gas residues.

ONE EFFECTIVE PROCESS FOR ALL COMPONENTS

HYPOX® is the ideal cleaning process for all metallic components, aluminium included, such as:
* assembled filter housing;
* filter elements made with different filter media such as classical weave, sintered metal fibres and sintered metal powder;
* spinnerettes and spin-packs for synthetic fibres;
* gear pumps;
* polymer extrusion components, pipes and manifolds;
* hot runner plates and molds
* heat exchangers;
* static mixers.



BENEFITS

HYPOX®, AN EFFECTIVE, SURE AND DELICATE CLEANING PROCESS

HYPOX® works through three phases:
* **Draining**: in the atmosphere void of oxigen, polymers and organic substances that can drain from components,a re-collected in a cold box.
* **Hydrolysis**: Overheated steam deeply breaks the macromolecules and homogenizes the temperature of the components. Its delicate action does not modify superficial, dimensional and structural features of the components.
* **Oxidation**: air at high temperature removes molecular aggregates particularly resistent to hydrolysis that may still be present on the components.

HYPOX® is suitable also to clean not drainable assembled and with complex geometry components.

HYPOX®, AN ENVIRONMENTAL FRIENDLY PROCESS

HYPOX® does not use solvents or chemical substances, does not produce toxic residues and it requires low amount of energy. Off gases and vapours are treated directly in **HYPOX®** systems with:
* **Scrubber and condenser** that minimize atmospheric discharges.
After burner suitable up to 900° C.
HYPOX® systems are compatible with the most stringent environmental regulations.

HYPOX® IS COST EFFECTIVE

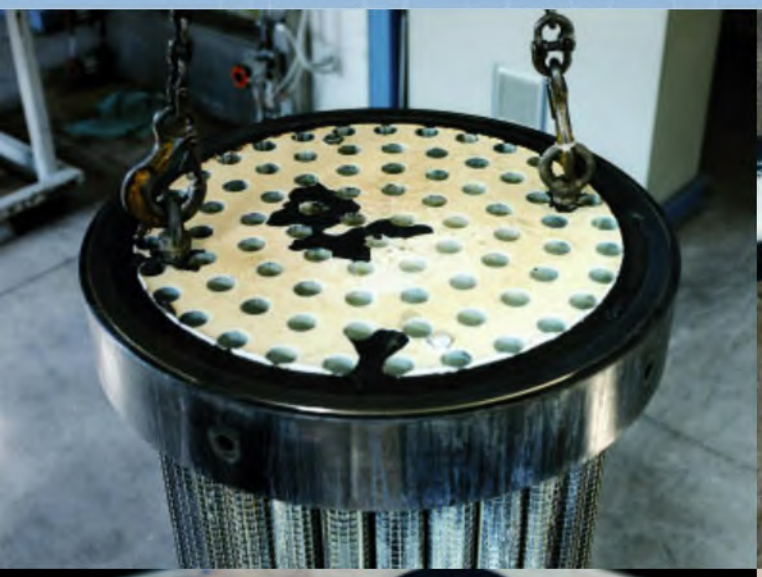
HYPOX® systems minimize maintenance costs and do not require supervision while working thanks to the complete automatic cleaning procedures that can be encodered on recipes. **HYPOX®** systems have low energy costs and consumptions.

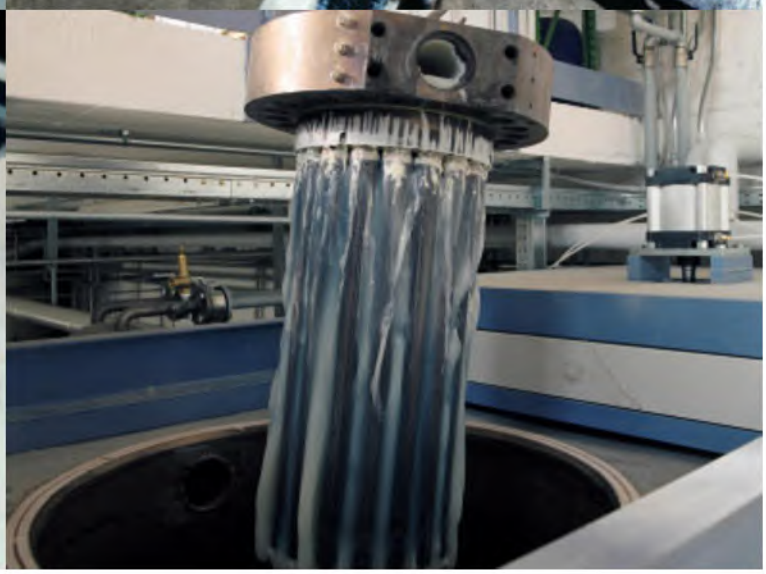
HYPOX® IS A USER-FRIENDLY SYSTEM

HYPOX® systems are delivered assembled and are easy to install. The operators' training is quick and easy, loading and unloading operations are safe and effortless and the cleaning process is automatically driven.

HYPOX® IS THE BEST SOLUTION

Thanks to the thorough planning and realization, **HYPOX®** systems are modern, reliable and safe, and assure excellent cleaning results over the time with any kind of components. **HYPOX®** systems are suitable for installation in any kind of working environment.





HYPOX® MI

HIGH ACCESSIBILITY LOADING FLOOR SYSTEM

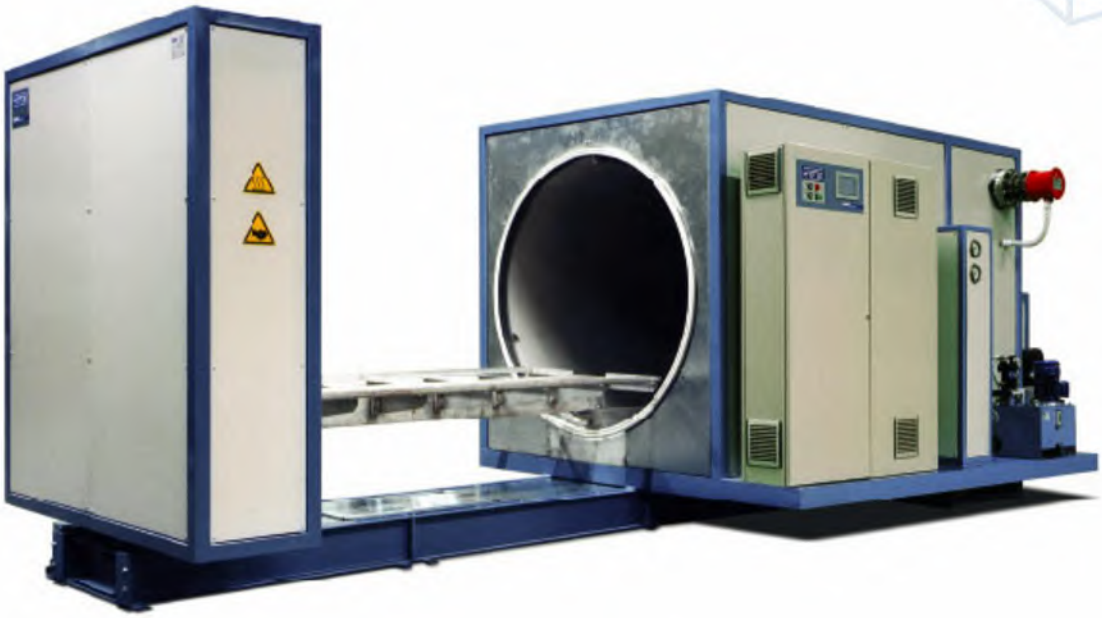
APPLICATION SECTORS

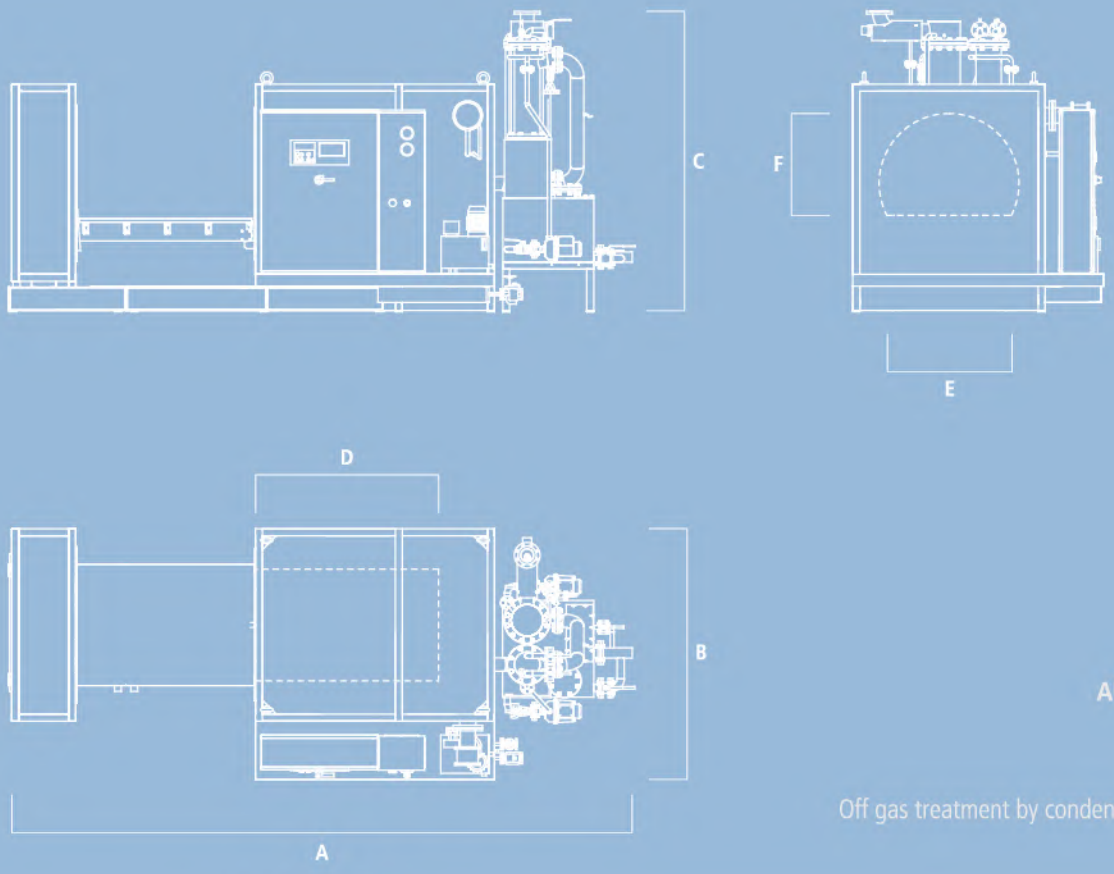
HYPOX® MI is the ideal solution for the cleaning of components that requires a wide bearing surface and that can be moved in baskets, such as:
* spin pack and spinnerettes;
* small filter housing;
* filter elements;
* components to be cleaned in horizontal position.

FEATURES

* Horizontal axis cleaning chamber.
* Hydraulically driven loading floor with height up to 800 mm and accessible on both sides on the whole length.
* Components loading:
  manual;
  with forklift;
  with hoist.
* Door with hydraulic closing system.

The access to the unit s direct and does not imply for the operator the overcome of architectural barriers such as steps and stairs.





AUXILIARY EQUIPMENTS

Drain Box **DBM** series
After burner **PB** series
Off gas treatment by condenser and scrubber **CS** series

Size	Dimensions			Internal dimensions			Maximum load	Utilities		
	A (mm)	B (mm)	C (mm)	D (mm)	E (mm)	F (mm)	Kg	Electrical power absorbed* (Kw)	Steam (Kg/h)	Compr. air (Nm^3/h)
6/12	4750	2600	1600	1250	550	460	500	13	30	70
6/15	5250	2600	1600	1500	550	460	600	17	50	70
6/20	6250	2600	1600	2000	550	460	800	20	50	70
6/25	7250	2600	1600	2500	550	460	1000	23	60	90
6/30	8250	2600	1600	3000	550	460	1200	26	80	90
8/12	4750	2630	1650	1250	730	660	700	16	60	90
8/15	5250	2630	1650	1500	730	660	800	20	80	90
8/20	6250	2630	1650	2000	730	660	1000	26	80	90
8/25	7250	2630	1650	2500	730	660	1200	29	80	90
8/30	8250	2630	1650	3000	730	660	1400	33	100	90
10/12	4750	2630	1800	1250	910	780	1000	21	60	90
10/15	5250	2630	1800	1500	910	780	1200	25	80	90
10/20	6250	2660	1800	2000	910	780	1500	30	100	90
10/25	7250	2660	1800	2500	910	780	1800	34	100	90
10/30	8250	2960	1800	3000	910	780	2100	39	100	90
12/12	4750	2680	2000	1250	1010	920	1400	24	100	90
12/15	5250	2680	2000	1500	1010	920	1600	30	100	90
12/20	6250	2680	2000	2000	1010	920	1900	36	100	90
12/25	7310	2980	2000	2500	1010	920	2100	42	100	90
12/30	8310	2980	2000	3000	1010	920	2400	48	100	90
15/12	4750	2700	2250	1250	1180	1210	1700	28	100	90
15/15	5250	2700	2250	1500	1180	1210	1900	35	100	90
15/20	6310	3000	2250	2000	1180	1210	2300	42	100	90
15/25	7310	3000	2250	2500	1180	1210	2600	49	120	120
15/30	8310	3000	2250	3000	1180	1210	2900	56	120	120

* Medium value

HYPOX® VPM

TOP LOADING SYSTEMS FOR HEAVY COMPONENTS

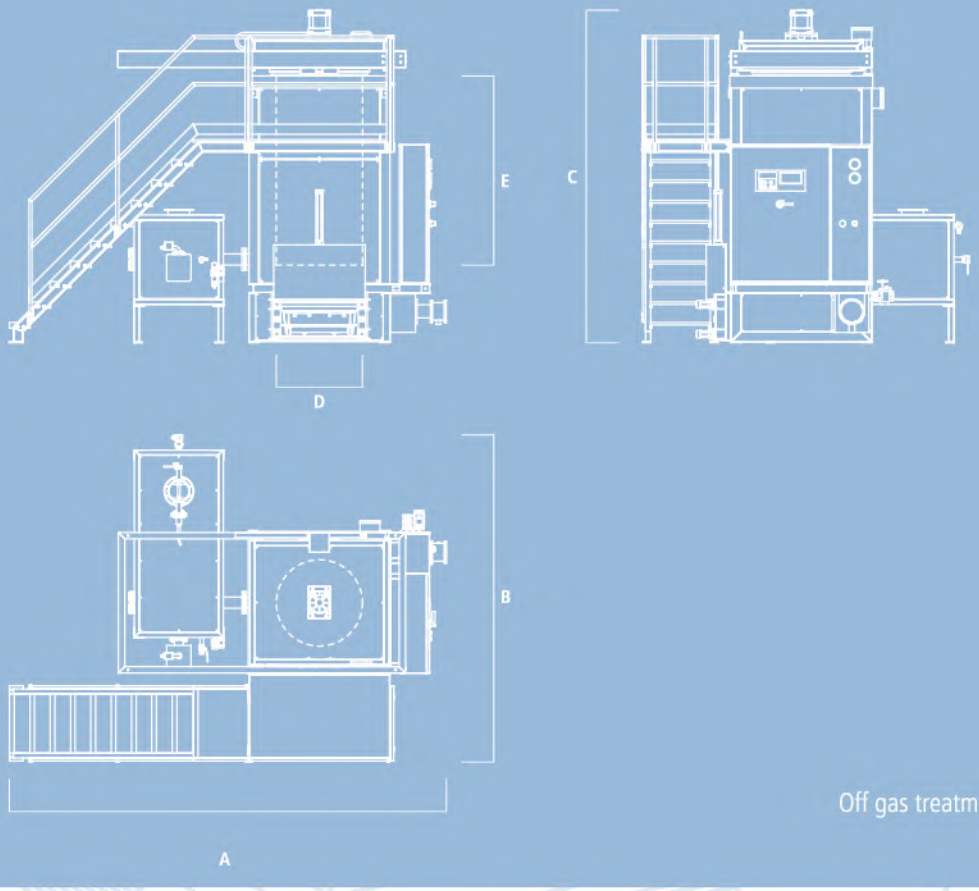
APPLICATION SECTORS

HYPOX® VPM is the ideal solution for the cleaning of large size components to be treated preferably in vertical position, such as:

* assembled filter housing;
* filter candle plates;
* filter disk spindles;
* exchangers and moulds.

FEATURES

* Vertical axis cleaning chamber.
* Top loading by hoist.
* Stairs and service platform.
* Cover with pneumatic closing system.



AUXILIARY EQUIPMENTS

Drain Box **DBM** series
After burner **PB** series
Off gas treatment by condenser and scrubber **CS** series

Size	Dimensions			Internal dimensions		Maximum load	Utilities		
	A (mm)	B (mm)	C (mm)	D (mm)	E (mm)	Kg	Electrical power absorbed* (Kw)	Steam (Kg/h)	Compr. air (Nm^3/h)
6/12	3900	3150	2900	630	1150	1500	14	30	70
6/15	3900	3150	2900	630	1400	1600	17	50	70
6/20	4100	3150	3400	630	1900	1800	20	50	70
6/25	4300	3150	3900	630	2400	2000	23	60	90
6/30	4500	3150	4400	630	2900	2200	26	80	90
8/12	4200	3300	2900	870	1150	1800	16	60	90
8/15	4200	3300	2900	870	1400	1900	20	80	90
8/20	4400	3300	3400	870	1900	2100	25	80	90
8/25	4600	3300	3900	870	2400	2300	29	80	90
8/30	4800	3300	4400	870	2900	2500	33	100	90
10/12	4550	3400	2900	1050	1150	2100	20	60	90
10/15	4550	3400	2900	1050	1400	2200	25	80	90
10/20	4750	3400	3400	1050	1900	2400	29	100	90
10/25	4950	3400	3900	1050	2400	2600	34	100	90
10/30	5150	3400	4400	1050	2900	3000	39	100	90
12/12	4900	3750	2900	1200	1150	2300	24	100	90
12/15	4900	3750	2900	1200	1400	2400	30	100	90
12/20	5100	3750	3400	1200	1900	2600	36	100	90
12/25	5300	3750	3900	1200	2400	2800	42	100	90
12/30	5500	3750	4400	1200	2900	3200	48	100	90
14/12	5350	3850	2900	1430	1150	2700	27	100	90
14/15	5350	3850	2900	1430	1400	2800	34	100	90
14/20	5550	3850	3400	1430	1900	3200	41	100	90
14/25	5750	3850	3900	1430	2400	3600	47	120	120
14/30	5950	3850	4400	1430	2900	4000	54	120	120

* Medium value

HYPOX® OTP

TOP LOADING SYSTEM FOR VERY LONG COMPONENTS

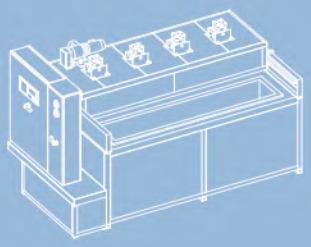
APPLICATION SECTORS

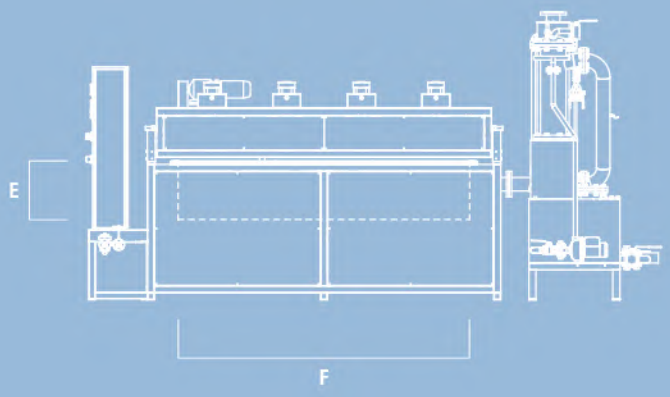
HYPOX® OTP is the ideal solution for the cleaning of very long components that require a rigid support without inflexions on the whole length, such as:

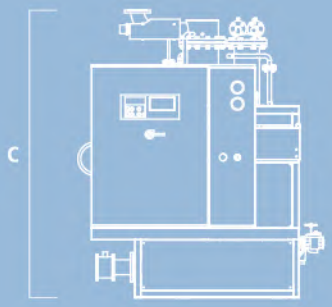
* very long spinnerettes;
* spin pack and spinnerettes for spun bounded melt blown;
* extrusion snacks and barrels;
* spinnerettes for casting film.

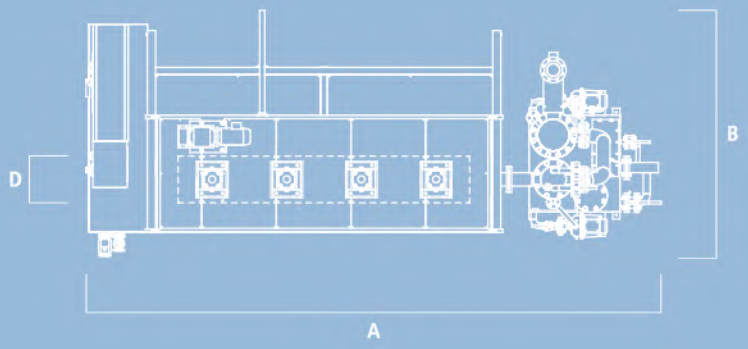
FEATURES

* Horizontal axis chamber.
* Top loading by hoist.
* Loading level at 1.300mm.
* Cover with pneumatic closing system.









AUXILIARY EQUIPMENTS

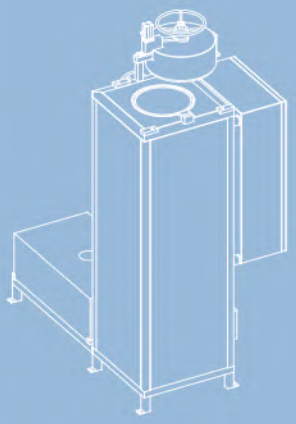
After burner **PB** series
Off gas treatment by condenser and scrubber **CS** series

Size	Dimensions			Internal dimensions			Maximum load	Utilities		
	A (mm)	B (mm)	C (mm)	D (mm)	E (mm)	F (mm)	Kg	Electrical power absorbed* (Kw)	Steam (Kg/h)	Compr. air (Nm^3/h)
OTP 30	5400	2350	2470	400	500	3000	1500	27	50	90
OTP 45	6900	2350	2470	400	500	4500	2000	35	60	90
OTP 60	8400	2350	2470	400	500	6000	2500	44	80	90

* Medium value

HYPOX® MC

TOP LOADING SYSTEM FOR SMALL COMPONENTS



APPLICATION SECTORS

HYPOX® MC is the ideal solution for the cleaning of small components and with limited polymer quantities such as:
* plastic material molding injectors;
*small filter;
*spin pack.

FEATURES

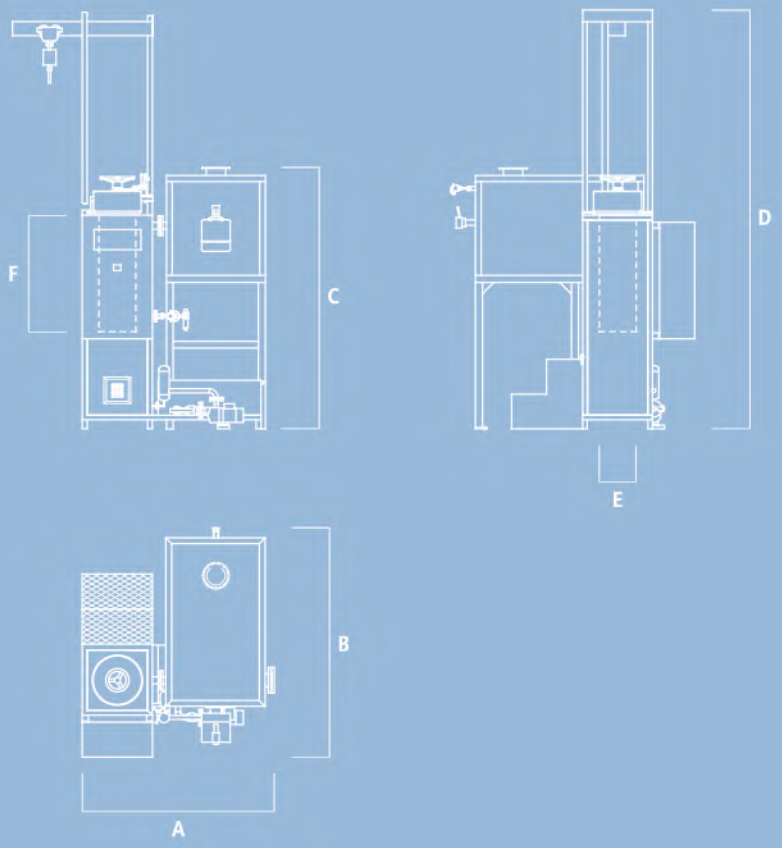
* Vertical axis chamber with small dimensions.
* Top loading.
* Door with manual closing system.
* Superheater integrated to the cleaning chamber.

Size	Dimensions			Internal dimensions			Maximum load	Utilities		
	A (mm)	B (mm)	C (mm)	D (mm)	E (mm)	F (mm)		Electrical power absorbed* (Kw)	Steam (Kg/h)	Compr. air (Nm^3/h)
3/5	1700	2000	2300	2600	316	500	150	6	8	60
3/7	1700	2000	2550	3100	316	750	200	7	8	60
3/10	1700	2000	2800	3600	316	1000	220	7	8	60
4/7	1960	2000	2550	3100	450	750	230	9	8	60
4/10	1960	2000	2800	3600	450	1000	250	11	8	60

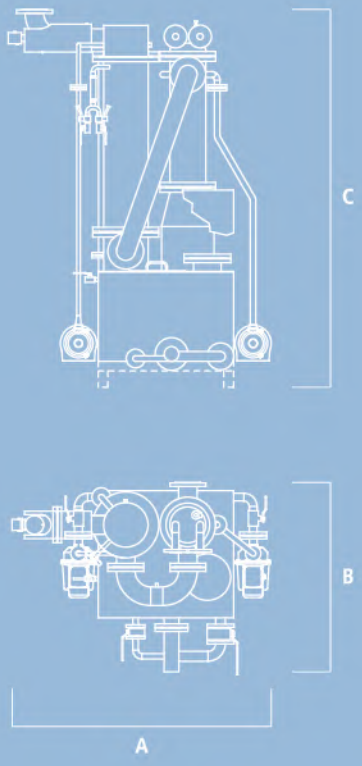
* Medium value

AUXILIARY EQUIPMENTS

After burner **PB** series
Off gas treatment by condenser and scrubber **CS** series


F
C
D
E
B
A

CS
CONDENSER AND SCRUBBER



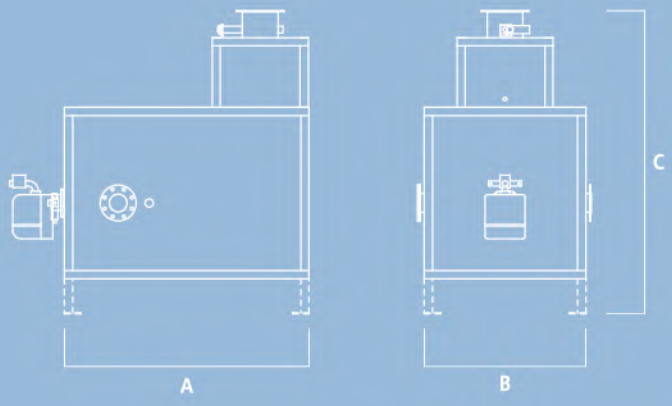
For the off gases and vapours treatment, **Movengineering** has developed condensers and scrubbers that limit the emission only to the uncondensable gas at room temperature.
HYPOX® systems equipped with condenser and scrubber **CS** series are particularly suitable for factory with effluent treatment plants.

Size	Dimensions			Utilities		
	A (mm)	B (mm)	C (mm)	Cooling water (m^3/h)	Industr. water (lt/h)	Compr. air (Nm^3/h)
1	1100	1050	2000	1	50	8
2	1500	1150	2000	2	200	8
3	1600	1150	2200	3	250	8

PB
AFTER BURNER

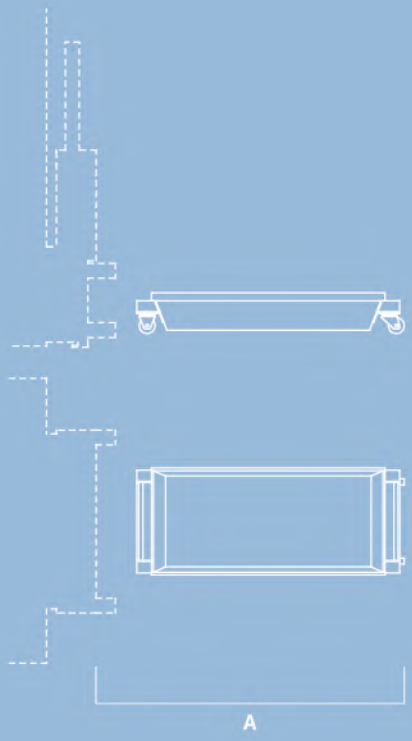
For off gas and vapours treatment, **Movengineering** has developped after burner equipped with:
* burner feeded by natural gas or diesel fuel;
* control of free oxigen in the exhaust;
* automatic regulation of combusion air.

HYPOX® systems equipped with after burner PB series, guarantee emissions with CO, COV and dust compatible with the most stringent environmental regulations.



Size	Dimensions			Utilities	
	A (mm)	B (mm)	C (mm)	Methane (m^3/h)	Compr. air (Nm^3/h)
1	1600	1100	1550	1,6-4,2	40
2	1850	1100	1700	3,1-5,7	40
3	1850	1250	1750	3,1-5,7	50

DBM
DRAIN BOX



HYPOX® systems could be equipped with drain box with pneumatic closing device **DBM** series to clean components with high content of drainable substances that require a preliminary draining phase. Substances that drip down from components are collected in a trolley inserted in the drain box.

Size	Max width for trolley exctraction	Capacity
	A (mm)	lt
DBM75	1100	75
DBM75	1450	100
DBM75	1800	125
DBV110	950	110
DBV160	1150	160
DBV190	1300	190

ANCILLARIES

REVERSE OSMOSIS UNIT

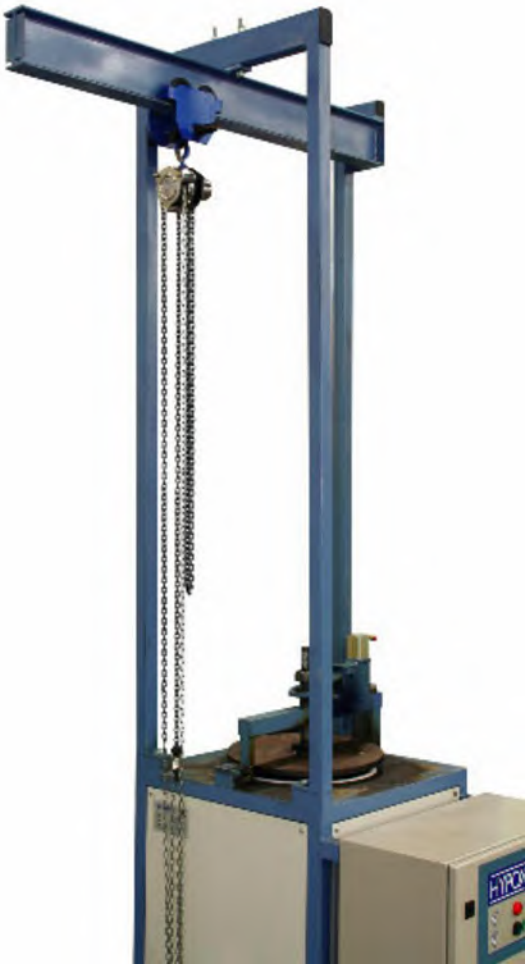
In order to provide deionized water and steam for those companies that do not have them at disposal, **Movengineering** has developed small reverse osmosis units for boiler water feeding.

BOILER

For those companies that do not have steam at disposal, **Movengineering** has developed small electrical boiler that can be integrated in **HYPOX®** systems.

HOIST

HYPOX® VPM and **HYPOX® MC** systems can be integrated with structure for monorail and hoist for loading and unloading operations.



POST TREATMENTS

SPECIFIC TREATMENTS FOR INORGANIC SUBSTANCES REMOVAL

Filter candles and segments

HYPOX®
Polymer removal process

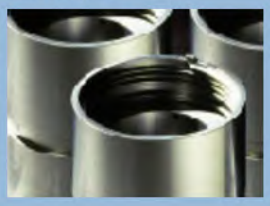
WATER JET
CHEMICAL BATH
BACKFLUSHING
ULTRASONIC BATH
DRYING
TESTING

Spinnerettes

HYPOX®
Polymer removal process

WATER JET
ULTRASONIC BATH
DRYING
INSPECTION

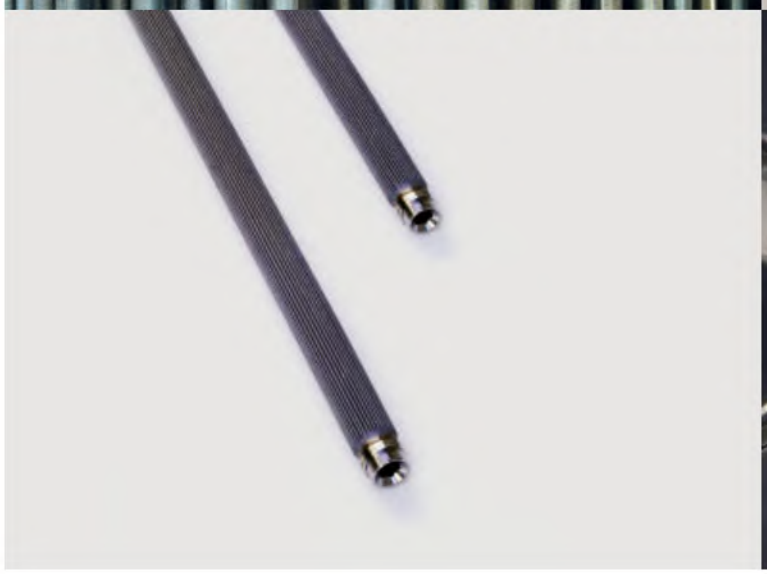
Robust parts



HYPOX®
Polymer removal process

WATER JET
DRYING

Thanks to his updated experience, **Movengineering** supplies the best know-how and any equipments for the realization of cleaning centre for all kind of components.

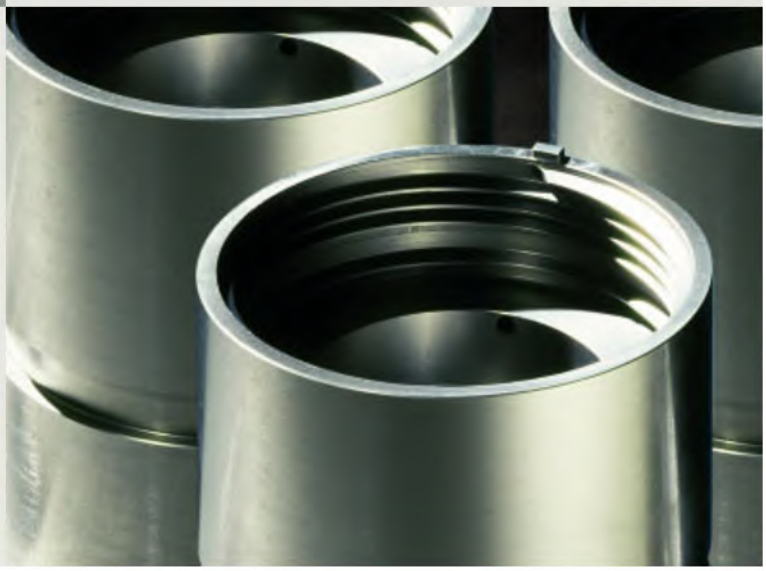


Chemical bath

Dryer

Bubble test

For the post treatment of filters and spinnerettes, **Movengineering** has developed:
* chemical and ulstrasonic baths for totally safe washing;
* automatic washing lines with hydrojet;
* testing equipments.



Agents

design & photography **newlandscapes.org**

MOVEngineering
20 years of experience and more than 500 hundreds HYPOX® systems working worldwide

MOVEngineering

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