



Technical Gases Filling Stations Instrumentation Catalogue

Issue 2024/01

Dear customer,

The company APT is the supplier of whole set of the technological equipment for the filling plants. The company has the personal capacities and more than 25 years of experience in the field of development, planning and construction of technological assemblies and special purpose equipment, including measurement, control, data processing and data analysis as an integral part of software solutions and control systems.

Intention of this short catalogue is to give the reader a basic orientation in the possible scope and extent of deliveries, including the indicative prices.

CATALOGUE CONTENT

TANK AREA EQUIPMENT

Storage Tanks, Pumps, Cryogenic Pumps & Compressors, Evaporators & Heaters, Filters & Membrane separation

MEDIA DISTRIBUTION

Pressure & Flow Reduction Skids, Gas Buffers, Exhausts & Silencers

CYLINDER PREPARATION

Degassing, Rinsing & Evacuation, Testing, Mechanical Maintenance

CYLINDER FILLING

Gravimetric, Manometric, Volumetric

ANALYTICAL SYSTEMS

Analytical cabinets, Sample & Calibration Racks

CENTRAL INFORMATION MANAGEMENT

Data Acquisition, Archival & Retrieval, Gateway to InLabel & MES, Reporting

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Basic Data

The company APT is the supplier of whole set of the technological equipment for the filling plants. Intention of this short catalogue is to give the reader a basic orientation in the possible scope and extent of deliveries. It is necessary to note, that the company is ready for very wide customization of the deliveries, where the main company motto is “everything is possible”

The company has the personal capacities and more than 25 years of experience in the field of development, planning and construction of technological assemblies and special purpose equipment, including measurement, control, data processing and data analysis as an integral part of software solutions and control systems.

We are ready for the complex deliveries, starting from project planning, design and development of the structural design to production and installation, followed by installation (including the delivery of construction works), commissioning of the plant and a long-term support of the installation (maintenance, inspections, process optimization). We also provide the consulting services in the field of welding technology.

The technological equipment is organized by FS-system. This system enables to prepare the set of blocks according to particular needs of the client. The FS-code system is also certified for the import and operation in the territory of Customs Union Russia-Kazakhstan-Belarus. The system of FS-codes comprises the equipment with the following commercial designation:

- FS (Filling Station) - a compact set of equipment designed for filling of gas transporting cylinders, consisting of the following components,
 - FS-MS (Filling Station - Medium Source) - medium source for the filling equipment,
 - FS-MS-T (Storage Tank) - a reservoir in form of a tank, mobile tank or other operating medium accumulator,
 - FS-MS-P (Pump) - medium pressure source, piston pump, circulating pump, compressor, etc.,
 - FS-MS-S (change of State) - equipment for change of the operating medium state, evaporator, heater, cooler, etc.,
 - FS-MS-F (Filter) - equipment for product quality change, mechanical filters, absorption and adsorption filters, membrane separators, etc.,
 - FS-MD (Filling Station - Medium Distribution) - equipment designated for the medium distribution - connecting pipeline, valve distributors, etc.,
 - FS-MF (Filling Station - Medium Filling) - equipment used for safe connection of the cylinder being filled and for the filling process check, filling stands, automatic filling devices, etc.,
 - FS-MF-G (Gravimetric) - equipment for cylinder filling by the gravimetric method (based on the medium weight),
 - FS-MF-M (Manometric) - equipment for cylinder filling by the manometric method (based on the achieved filling overpressure) including equipment utilizing the state equation (gas overpressure - temperature characteristic),
 - FS-MF-V (Volumetric) - equipment for cylinder filling based on the required volume,
 - FS-CS (Filling Station - Control System) - equipment designated for control of the filling process or sub-processes including sensors and actuating devices. The equipment character may be electronic or mechanical.
 - FS-QC (Filling Station – Quality Control) – equipment for the quality control and analysis of the gases, including the accessories – sampling panels, control systems etc.
 - FS-CP (Filling Station - Cylinder Preparation) - equipment for cylinder preparation prior to filling
 - FS-CP-D (Degassing) - equipment designated for releasing residual gas from cylinders and eventual evacuation,
 - FS-CP-P (Purging) - equipment for purging cylinder preparation gas, eventually associated with cylinder evacuation. The process can be performed at ambient temperature or higher temperature, inert gases or outright the operating gases are usually used as purging gases,
 - FS-CP-T (Testing) - equipment designated for testing of pressure cylinders and their accessories, such as the hydraulic pressure tests including cylinder drying after the test, cylinder weighing, determination of cylinder inner volume, cylinder valve cleanliness test, etc.



- FS-SP-M (Mechanical) - equipment designated for mechanical repairs of cylinders and their accessories, such as replacement of cylinder valves, renewal of cylinder paint or marking, cylinder base replacement, etc.

The above-mentioned equipment marking is complemented with other alphanumeric characters, providing better identification of the equipment within the commercial and technical relationship between the contractor and the customer.

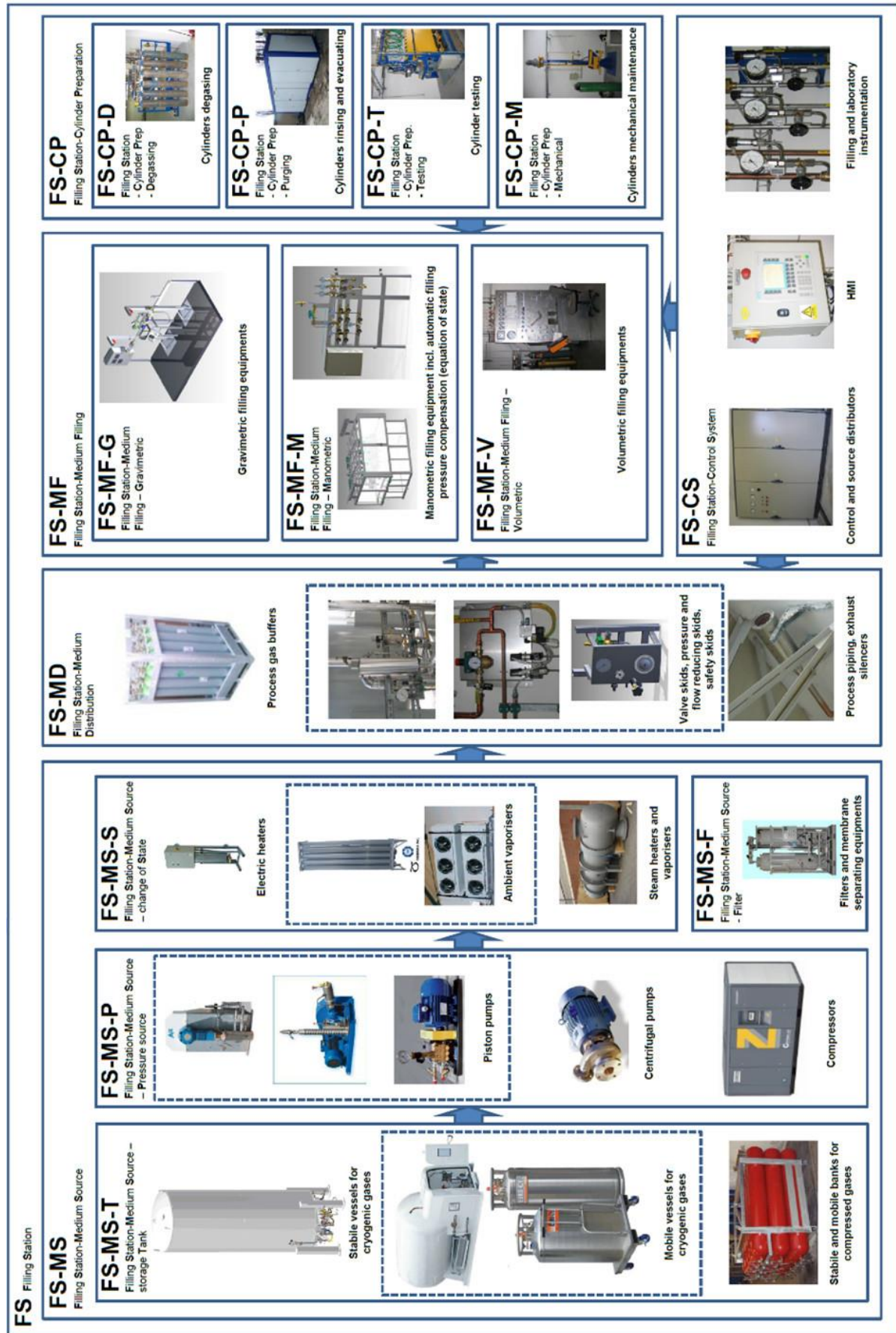
Regarding the fact that the FS-XX product series have a flexible design and enable a number of customizations, the above-listed breakdown is a general breakdown based on type and application method. Description of the specific modifications requested by the user is always provided in details in the equipment documentation.

The equipment assembly or partial equipment from the FS-XX product series is always delivered including the detailed technical documentation according to valid EU rules and standards. The minimum scope is as follows:

- operation manual, service manual, technical certificate,
- declaration of conformity and CE declaration of conformity,
- drawing documentation for components, including component sections and specification of materials used,
- definition of operating and threshold parameters of the equipment.



Whole filling equipment is in accordance with the relevant EU standards and we are ready to accept also the relevant internal standards of our clients.






Tank area equipment

The tank-farm technological equipment consists mainly of:

- the cryogenic storage tank
- the cryogenic high-pressure pump or liquid CO₂ high-pressure pump
- ambient or electric vaporizers and heaters


Cryogenic Storage Tanks are produced by the several companies in the world (Chart-Ferox, Linde, VRV etc.). APT is not the producer, our task is the specification of needed parameters, engineering and installation of the tank, including the commissioning. According to long-time experiences it is possible to recommend the storage tanks Chart-Ferox.

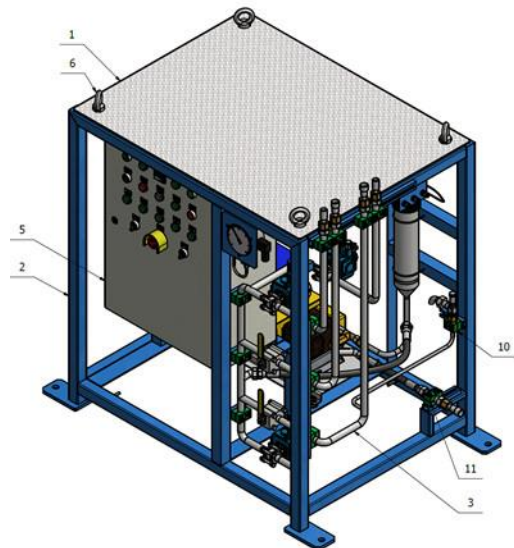
Ordering number:	FS-MS-P	Description: High-pressure cryogenic pump for air-gases A-MRP 40/30-T			
		Features: The delivery of pump includes: <ul style="list-style-type: none">• automatic valves for the inlet and return lines• automatic HP valve for the venting of outlet• three temperature transmitters• pressure transmitter on the outlet• pulsation damper• flexible hoses for inlet and return lines• none return valve• electric motor 18 kW for VFD• GAN purge system• other according to project			
	Max. Outlet: 380 bar	Average capacity: 6-12 l/min	Average time to deliver: 3 months	Indicative price: on demand	


The Cryogenic pumps for the liquid air-gases (oxygen, nitrogen, argon) are produced by the companies Cryostar, ACD-Cryo, Krytem or Vanzetti. APT is supplier of the accessories of the pumps, mainly the control units and valve-panels. The recommended supplier of the cryogenic pumps is Cryostar company.




Ambient Vaporizers are intended to evaporate the liquid gas. The Chart-Ferox company is producer of the wide range of the high-pressure ambient vaporizers.

Ordering number:	FS-CS		Description: Control Unit for the Cryogenic Pump			
			Features:			
			<ul style="list-style-type: none">• variable frequency driver (VFD) for the pump-speed regulation• PLC Siemens Simatic®• automatic cool-down procedure of pump• automatic start/stop of the pump• emergency stop push-button• automatic stop of pump if parameters are out of range (temperature, pressure, ...)• parameters indication on HMI• optic and acoustic signalization of the status• other functions according to project• prepared for the communication with the master system			
		Max. Power:	Power:	Average time to deliver:	Indicative price:	
		18 kW	3x400/230V 50Hz	2 months	on demand	

Ordering number:	FS-MS-P		Description: Compact Source of Liquid CO2 TH1310			
			Features:			
			<ul style="list-style-type: none">• including the three-piston high-speed pump PETO NP10 (Speck)• PLC Siemens Simatic® controlled• two speed operation• automatic start/stop of the pump• emergency stop push-button• automatic stop of pump if parameters are out of range (temperature, pressure, ...)• parameters indication on HMI• optic and acoustic signalization of the status• two outlets – liquid filling/gas filling• other functions according to project• prepared for the communication with the master system			
		Max. Outlet:	Average capacity:	Average time to deliver:	Indicative price:	
		100 bar	4.5/9 kg/min	3 months	on demand	

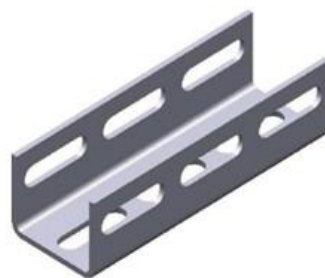
Ordering number:	FS-MS-S		Description: Electric Heaters / Vaporizers EHA200/EHA300					
			Features:					
			<ul style="list-style-type: none">• stainless steel piping system• brass manifold• autonomous regulation based on the outgoing gas temperature• prepared for the remote start/stop signal					
	DN/PN:	15/400	Power (EHA200/EHA300):	20/30 kW	Average time to deliver:	2 months	Indicative price:	on demand

Ordering number:	FS-MS-S		Description: Electric Heaters / Vaporizers EHA80							
			Features:							
			<ul style="list-style-type: none">• stainless steel piping system EHA80 SS• copper piping system EHA80 Cu• brass manifold• autonomous regulation based on the outgoing gas temperature• prepared for the remote start/stop signal							
	DN/PN EHA80Cu:	15/250	DN/PN EHA80SS:	15/400	Power:	8.2 kW	Average time to deliver:	2 months	Indicative price:	on demand



Gas supply pipe-lines

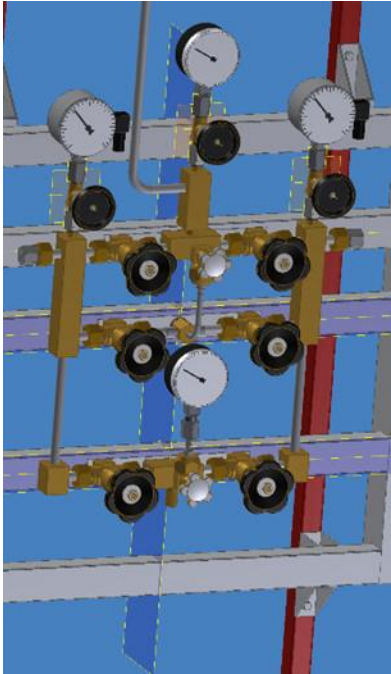
APT company is able to propose the complete technological solution for the pipelines and cabling for the technological equipment of the filling plants. The main pipe and cable trays are usually prepared from the unit-construction assembly TD184 (APT – see separate catalogue), which includes several basic parts made from the zinc coated steel by hot dipping according to DIN 50 976 (EN 1461).

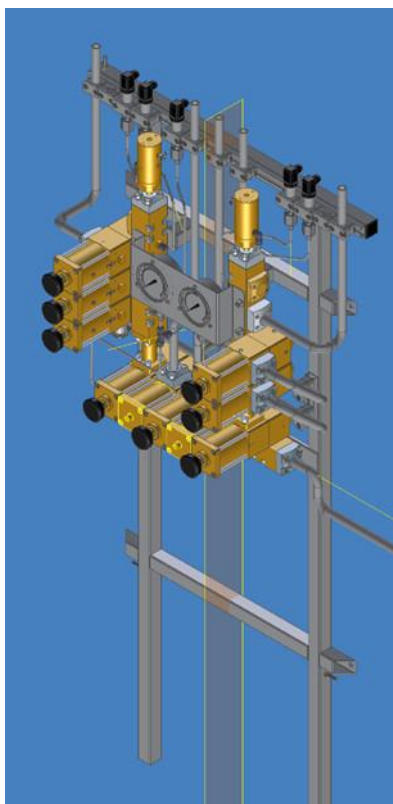


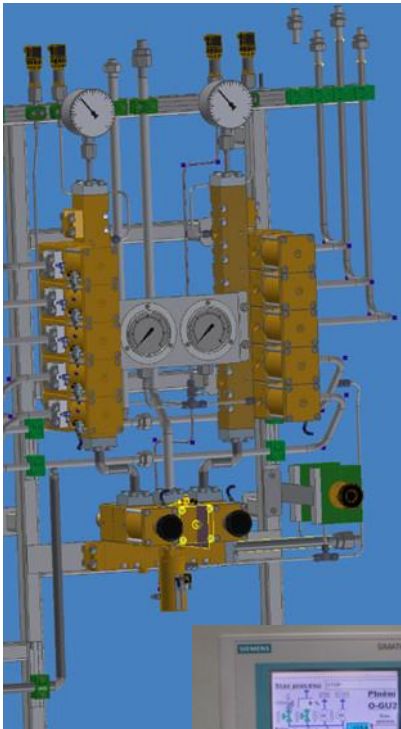

The main pipelines are usually made from the stainless steel AISI316L or from MONEL400 for the high-pressure oxygen. All piping must be prepared in the accordance with the relevant EU and EIGA Standards with the respect to the internal standards of client.

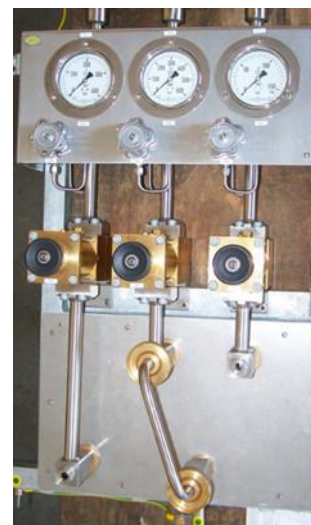

Filling manifolds

Valve Panels

FS-MF-M	Description: Semi-automatic Valve Panel - MONOGAS <ul style="list-style-type: none">inert gases, oxygen, medical oxygenmanometric fillingbasic filling application				
	Features: <ul style="list-style-type: none">valve panel with 1 inlet and 4 outlets200 bar fillingtwo-side fillingincluding the control unit with HMI<ul style="list-style-type: none">state-equation recalculationstop of filling on the final pressure (200 bar for 15°C)filling status and failure signalizationfilling interruption in the case of failureprepared for remote communicationEmergency Stop push-buttonbrass / coppersteel support frame (hot-zinc galvanized)fixation to the wallprepared for vacuum pump connectionisolation valves acc. to projectincluding documentation and FAT protocols				
Ordering number:	DN/PN:	Filling Pressure:	Inlets/Outlets:	Average time to deliver:	Indicative unit price (€):
	10/300	200 bar	1 / 4	3 months	on demand
	OP101	Rotary vane vacuum pump VC75 - INERT			on demand
	OP102	Rotary vane vacuum pump VC75 - Oxygen			on demand
	OP103	Dry-running vacuum pump XDs35 – Oxygen			on demand
	OP104	Vacuum pump connection set – safety valve, isolation valve, flexible hose, fittings etc.			on demand
	OP105	Magnetic Temperature Transmitter for cylinders			on demand

FS-MF-M	Description: Semi-automatic Valve Panel - MONOGAS <ul style="list-style-type: none">inert gases, oxygen, medical oxygenmanometric filling				
	Features: <ul style="list-style-type: none">valve panel with 1 inlet and 4 outlets (possible upgrade up to 6 outlets)two filling pressures – including safety valve for 200 bar fillingtwo-side fillingincluding the control unit with HMI<ul style="list-style-type: none">filling pressure switchingstate-equation recalculationstop of filling on the final pressure (200 bar or 300 bar for 15°C)filling status and failure signalizationfilling interruption in the case of failureprepared for remote communicationEmergency Stop push-buttonbrass / Monel / stainless steelsteel support frame (hot-zinc galvanized)fixation to the wall or to filling standprepared for vacuum pump connectionisolation valves acc. to projectincluding documentation and FAT protocols				
Ordering number:	DN/PN:	Filling Pressure:	Inlets/Outlets:	Average time to deliver:	Indicative unit price (€):
	12/420	200/300 bar	1 / 4	3 months	on demand
	OP111	Rotary vane vacuum pump VC75 - INERT			on demand
	OP112	Rotary vane vacuum pump VC75 - Oxygen			on demand
	OP113	Dry-running vacuum pump XDs35 – Oxygen			on demand
	OP114	Vacuum pump connection set – safety valve, isolation valve, flexible hose, fittings etc.			on demand
	OP115	Additional outlet with manual valve			on demand
	OP116	Magnetic Temperature Transmitter for cylinders			on demand

Ordering number:	FS-MF-M	Description: Automatic Valve Panel - MONOGAS <ul style="list-style-type: none">inert gases, oxygen, medical oxygenmanometric filling			 	
		Features: <ul style="list-style-type: none">valve panel with 1 inlet and 4 outlets (possible upgrade up to 6 outlets)fully automatic filling procedure – venting, evacuation, purging, fillingtwo filling pressures – including safety valve for 200 bar fillingtwo-side fillingincluding the control unit with HMI (Siemens Simatic)<ul style="list-style-type: none">automatic filling procedure (selection from menu)service mode included (secured by password)state-equation recalculationstop of filling on the final pressure (200 bar or 300 bar for 15°C)filling status and failure signalizationfilling interruption in the case of failureprepared for remote communicationEmergency Stop push-buttonbrass / Monel / stainless steelsteel support frame (hot-zinc galvanized)fixation to the wall or to filling standprepared for vacuum pump connectionisolation valves acc. to projectincluding documentation and FAT protocols				
	DN/PN:	Filling Pressure:	Inlets/Outlets:	Average time to deliver:	Indicative unit price (€):	
	12/420	200/300 bar	1 / 4	3 months	on demand	
	OP121	Rotary vane vacuum pump VC75 - INERT			on demand	
	OP122	Rotary vane vacuum pump VC75 - Oxygen			on demand	
	OP123	Dry-running vacuum pump XD35 – Oxygen			on demand	
	OP124	Vacuum pump connection set – safety valve, isolation valve, flexible hose, fittings etc.			on demand	
	OP125	Additional outlet with automatic valve			on demand	
	OP126	Magnetic Temperature Transmitter for cylinders			on demand	

Ordering number:	FS-MF-M	Description: Semi-automatic Valve Panel - MIX				
		<ul style="list-style-type: none">inert gases, oxygen, medical oxygenmanometric filling				
	Features:					
	<ul style="list-style-type: none">valve panel with 3 inlets and 4 outlets (possible up to 5 inlets and 6 outlets)two filling pressures – including safety valve for 200 bar fillinginlet selection by pigtail to avoid the cross-contaminationtwo-side fillingincluding the control unit with HMI<ul style="list-style-type: none">filling pressure switchingstate-equation recalculationstop of filling on the final pressure (200 bar or 300 bar for 15°C)filling status and failure signalizationfilling interruption in the case of failureprepared for remote communicationEmergency Stop push-buttonbrass / Monel / stainless steelsteel support frame (hot-zinc galvanized)fixation to the wall or to filling standprepared for vacuum pump connectionisolation valves acc. to projectincluding documentation and FAT protocols					
	DN/PN:	Filling Pressure:	Inlets/Outlets:			
	12/420	200/300 bar	3 / 4			
	Average time to deliver:					
	3 months					
	Indicative unit price (€):					
	on demand					
	OP131	Rotary vane vacuum pump VC75 - INERT			on demand	
	OP132	Rotary vane vacuum pump VC75 - Oxygen			on demand	
	OP133	Dry-running vacuum pump XDs35 – Oxygen			on demand	
	OP134	Vacuum pump connection set – safety valve, isolation valve, flexible hose, fittings etc.			on demand	
	OP135	Additional inlet with inlet valve, vent valve, check valve and pressure indicator			on demand	
	OP136	Additional outlet with manual valve			on demand	
	OP137	Magnetic Temperature Transmitter for cylinders			on demand	

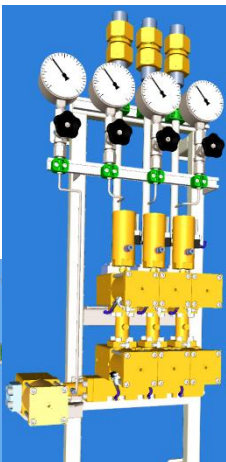
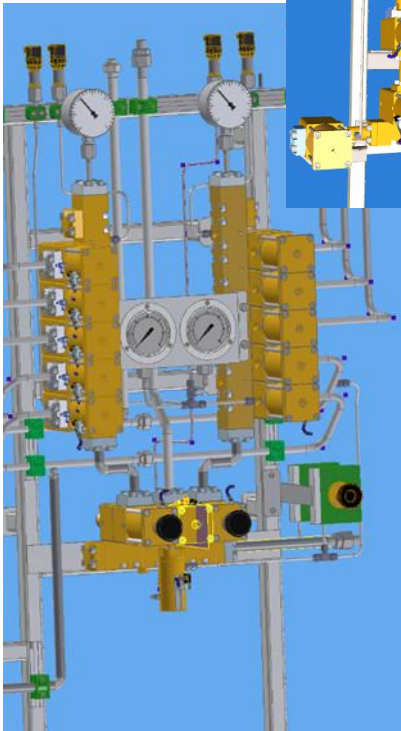
FS-MF-M

Description:
Automatic Valve Panel - MIX

- inert gases, oxygen, medical oxygen
- manometric filling (gravimetric filling at request)

Features:


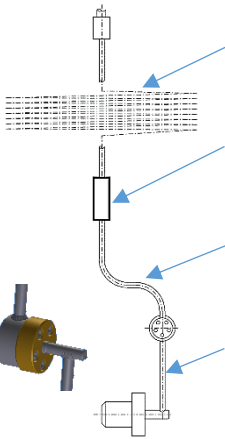
- valve panel with 3 inlets and 4 outlets (possible upgrade up to 6 outlets)
- fully automatic filling procedure – venting, evacuation, purging, filling
- two filling pressures – including safety valve for 200 bar filling
- inlets with block&bleed valve combination
- two-side filling
- including the control unit with HMI (Siemens Simatic)
 - automatic filling procedure (mixture and procedure selection from menu)
 - service mode included (secured by password)
 - state-equation recalculation
 - stop of filling on the final pressure (200 bar or 300 bar for 15°C)
 - filling status and failure signalization
 - filling interruption in the case of failure
 - prepared for remote communication
 - Emergency Stop push-button
- brass / Monel / stainless steel
- steel support frame (hot-zinc galvanized)
- fixation to the wall or to filling stand
- prepared for vacuum pump connection
- isolation valves acc. to project
- including documentation and FAT protocols




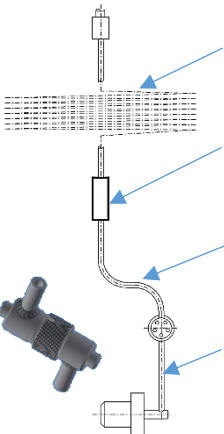
DN/PN:	Filling Pressure:	Inlets/Outlets:	Average time to deliver:	Indicative unit price (€):
12/420	200/300 bar	3 / 4	3 months	on demand
OP141	Rotary vane vacuum pump VC75 - INERT			on demand
OP142	Rotary vane vacuum pump VC75 - Oxygen			on demand
OP143	Dry-running vacuum pump XD35 – Oxygen			on demand
OP144	Vacuum pump connection set – safety valve, isolation valve, flexible hose, fittings etc.			on demand
OP145	Additional inlet with inlet block&bleed, check valve and pressure indicator			on demand
OP145	Additional outlet with automatic valve			on demand
OP146	Magnetic Temperature Transmitter for cylinders			on demand


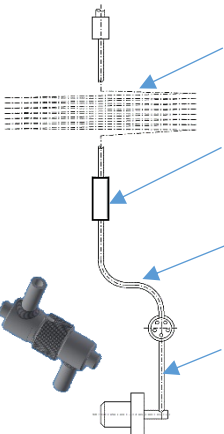
Ordering number:


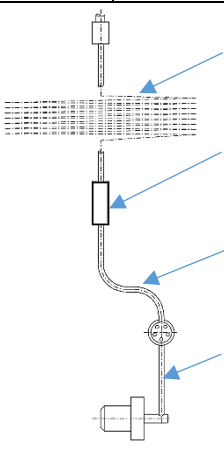
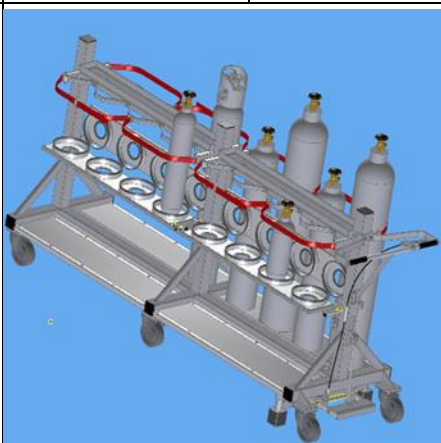
Filling stands

FS-MF-M	Description: Pallet Filling Stand PN300 <ul style="list-style-type: none">oxygen, medical oxygen			
	Features: <ul style="list-style-type: none">12 connections with stainless steel spiral coils12 isolation valves DN4, PN300manifold made from Monel400each spiral coil with swivel jointpressure indicator ø160 mmincluding movable cover with limit switchincluding one side and one rear walking platform (ca. 3,2 m²)without cylinder adapters			
	DN/PN:	Filling connections::	Average time to deliver:	Indicative unit price (€):
	12/300	12	3 months	on demand
	SP201		Spare part – Spiral Coil – stainless steel	on demand
SP202	Spare part – Swivel Joint – brass/Monel		on demand	
SP203	Spare part – S-pipe – stainless steel/Monel		on demand	
OP204 OP205	Cylinder adapter – without RPV – Monel/SS Cylinder adapter – with RPV – Monel/SS		on demand	
OP206	Additional walking platform		on demand	


Ordering number:



FS-MF-M	Description: Pallet Filling Stand PN420 <ul style="list-style-type: none">inert gases, oxygen, medical oxygen				
	Features: <ul style="list-style-type: none">12 connections with stainless steel spiral coils3 isolation valves DN12, PN420manifold made from Monel400each spiral coil with swivel jointcylinder adapters exchangeable by quick connectorpressure indicator ø160 mmincluding movable cover with limit switchincluding one side and one rear walking platform (ca. 3,2 m²)without cylinder adapters				
DN/PN: 12/420		Filling connections:: 12	Average time to deliver: 3 months	Indicative unit price (€): on demand	
Ordering number:	SP211		Spare part – Spiral Coil – stainless steel		on demand
	SP212		Spare part – Swivel Joint – brass/Monel		on demand
	SP213		Spare part – S-pipe – stainless steel/Monel		on demand
	OP214		Cylinder adapter – without RPV – Monel/SS Cylinder adapter – with RPV – Monel/SS		on demand
	OP215				
	OP216	Additional walking platform			on demand

FS-MF-M	Description: Pallet Filling Stand PN420 <ul style="list-style-type: none">inert gases				
	Features: <ul style="list-style-type: none">12 connections with stainless steel spiral coils6 isolation ball-valves DN10, PN420manifold made from Stainless Steeleach spiral coil with swivel jointcylinder adapters exchangeable by quick connectorpressure indicator ø160 mmincluding movable cover with limit switchincluding one side and one rear walking platform (ca. 3,2 m²)without cylinder adapters				
DN/PN: 12/420		Filling connections:: 12	Average time to deliver: 3 months	Indicative unit price (€): on demand	
Ordering number:	SP221		Spare part – Spiral Coil – stainless steel		on demand
	SP222		Spare part – Swivel Joint – brass		on demand
	SP223		Spare part – S-pipe – stainless steel		on demand
	OP224 OP225		Cylinder adapter – without RPV – SS Cylinder adapter – with RPV – SS		on demand
	OP226		Additional walking platform		on demand


FS-MF-M	Description: Medical oxygen Filling Stand PN300 <ul style="list-style-type: none">• medical oxygen• single cylinders in the cart			
	Features: <ul style="list-style-type: none">• 16 connections with stainless steel spiral coils• 4 isolation valves DN10, PN300• manifold made from Monel• each spiral coil with swivel joint• cylinder adapters acc. to client• pressure indicator ø160 mm• including movable cover with limit switch• without cylinder adapters			
	DN/PN: 12/300	Filling connections:: 16	Average time to deliver: 3 months	Indicative unit price (€): on demand
	SP231		Spare part – Spiral Coil – stainless steel	on demand
	SP232		Spare part – Swivel Joint – brass	on demand
	SP233		Spare part – S-pipe – stainless steel	on demand
OP234	Cylinder adapter – to be defined		on demand	
OP235		Cylinder Cart for small cylinders – without piping (piping on the filling stand) <ul style="list-style-type: none">- 16 cylinders- cylinders 2-20 liters- incl. brakes		on demand


Ordering number:


Ordering number:	FS-MF-G	Description: Liquid CO ₂ Filling System <ul style="list-style-type: none">• gravimetric automatic filling system• 2 cylinders + 1 bundle			
		Features: <ul style="list-style-type: none">• valve panel with 1 inlets and 3 outlets• fully automatic filling procedure• two-side filling, on one side selection cylinder/bundle• possible versions without bundle filling• including the control unit with HMI (Siemens Simatic)<ul style="list-style-type: none">○ automatic filling procedure (cylinder type selection from menu)○ service mode included (secured by password)○ stop of filling on the final CO₂ mass○ filling status and failure signalization○ filling interruption in the case of failure○ prepared for remote communication○ Emergency Stop push-button○ possible connection to master control or d-base system• brass / stainless steel• steel frame with walking platform +120 mm (hot-zinc galvanized)			
	DN/PN:	Filling Speed:	Inlets/Outlets:	Average time to deliver:	Indicative unit price (€):
	12/100	up to 16 kg/min	1/3	3 months	on demand

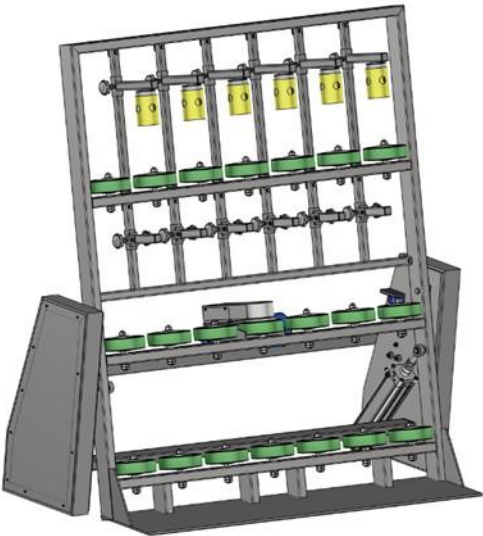
Ordering number:	FS-MF-G(M)	Description: Specialty Gases Filling Systems					 
		<ul style="list-style-type: none">• gravimetric and/or manometric filling• manual or semiautomatic filling system					
		Features:					
		<ul style="list-style-type: none">• valve panel with up to 12 inlets and 1 outlet• manual or semiautomatic filling procedure• step-by-step filling of the components of mixtures• inlet selection by pigtail to avoid the cross-contamination• materials according to working gases• versions for flammable, toxic, oxidizing, corrosive or inert gases• design always according to client's needs• including the control unit with HMI (Siemens Simatic)<ul style="list-style-type: none">○ stop of filling on the final max. pressure○ filling status and failure signalization○ filling interruption in the case of failure○ prepared for remote communication○ Emergency Stop push-button○ possible connection to master control or d-base system• including the cabinet, possibility of ventilation and gas-detection system• all parameters are variable• filling cylinder connections according to specific project					
DN/PN:		Filling Pressure:		Inlets/Outlets:		Average time to deliver:	Indicative unit price (€):
4/250		200/300 bar		up to 12/1		3-5 months	on demand

Accessories, Others


Ordering number:	FS-MF-M	Description: Bundle filling connection						
		<ul style="list-style-type: none">• inert gases, oxygen, medical oxygen						
		Features: <ul style="list-style-type: none">• filling pig-tail with swivel joints• prepared for fixation to pallet filling stand or to the wall (the steel frame as the option)• no isolation valves• without bundle adapter (option)						
	DN/PN: 12/420		Filling Pressure: 200/300 bar		Average time to deliver: 3 months		Indicative unit price (€): on demand	
	OP241 OP242		Cylinder adapter – without RPV – SS Cylinder adapter – with RPV – SS				on demand	
OP243 OP244		Cylinder adapter – without RPV – Monel/SS Cylinder adapter – with RPV – Monel/SS				on demand		

Ordering number:	FS-MF-M	Description: Pallet Lift			
		<ul style="list-style-type: none">• Accessory of the pallet filling stand• Filling of the small cylinders in pallets			
		Features:			
	<ul style="list-style-type: none">• intended for the pallet filling stands• including the safety barrier with interlock• hydraulic aggregate• the standard hydraulic oil (not FOMBLIN)				
		Load Capacity:	Max Stroke:	Average time to deliver:	Indicative unit price (€):
		1500 kg	900 mm	3 months	on demand

Ordering number:	FS-MF-M	Description: Cylinder Cart for small cylinders			
		<ul style="list-style-type: none">• Accessory of the pallet filling stand• Versions for Oxygen and Inert Gases			
	Features:				
	<ul style="list-style-type: none">• intended for small cylinders filling• including piping• oxygen version with Monel manifold• 10 or 12 cylinders versions• main inlet isolation valve• pressure indicator• intended for cylinders 2-10 liters• including stainless steel flexible hoses• without cylinder adapters				
	DN/PN:	Filling Pressure:	Average time to deliver:	Indicative unit price (€):	
	10/300	200 bar	3 months	on demand	


Ordering number:	FS-MF-M	Description: Single cylinder homogenization unit		
		<ul style="list-style-type: none">Homogenization of the mixtures in the single cylinders		
	Features:			
	<ul style="list-style-type: none">cylinder rolling in horizontal positionup to 6 cylinderscylinders 10-50 litersincluding control unitsafety fencing according to project (optionally)			
	Power Supply:	Instrument Air:	Average time to deliver:	Indicative unit price (€):
	3x400/230V 50Hz 0,5 kW	min.6 bar	3 months	on demand





Ordering number:	FS-MF-M	Description: Bundle homogenization unit <ul style="list-style-type: none"> Homogenization of the mixtures in the bundles 		
		Features: <ul style="list-style-type: none"> bundle swinging one bundle or pallet bundles above 12 cylinders optionally including control unit safety fencing according to project (optionally) 		
		Power Supply: 3x400/230V 50Hz 0,5 kW	Average time to deliver: 3 months	Indicative unit price (€): on demand





Cylinder Maintenance


Ordering number:	FS-CP-M				
Description:					
Cylinder Valve Fitter					
<ul style="list-style-type: none"> replacing valves on HP cylinders 					
Features:					
<ul style="list-style-type: none"> pneumatic fixation of the cylinders cylinders diameter 100-300 mm cylinder height 820-1.850 mm old valve removal new valve installation with pre-set torque optionally supplied with a torque validating device safety fencing according to project (optionally) 					
Power Supply:		Instrument Air:	Average time to deliver:	Indicative unit price (€):	
3x400/230V 50Hz 2,3kW		min.8 bar	3 months	on demand	

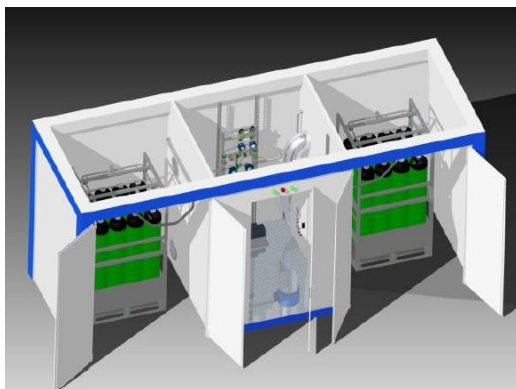
Ordering number:	FS-CP-T				
Description:					
Hydraulic Pressure Testing Machine					
<ul style="list-style-type: none"> hydraulic pressure testing of the cylinders 					
Features:					
<ul style="list-style-type: none"> up to 6 cylinders per run mechanical fixation of the cylinders cylinders diameter 140-300 mm cylinder height 835-1.585 mm pressure test by 225, 250, 300 or 450 bar selected from menu automatic test procedure with acoustic signaling of the end of test cylinders draining after test completion tilting frame adjustable to any angle safety fencing according to project (optionally) 					
Power Supply:		Instrument Air:	Average time to deliver:	Indicative unit price (€):	
3x400/230V 50Hz 2kW		min.8 bar	3 months	on demand	

Ordering number:	FS-CP-T	<p>Description:</p> <p>Cylinder dryer after Hydraulic Pressure Testing</p> <ul style="list-style-type: none"> drying of the cylinders after hydraulic test 		
		<p>Features:</p> <ul style="list-style-type: none"> up to 96 cylinders per run hot air temperature adjustable up to 90°C (heater integrated) air piped down to the cylinder bottom by flexible hoses easy hoses coupling with quick connects automatic operation (overnight) including air source (Roots blower) safety fencing according to project (optionally) 		
		<p>Power Supply:</p> <p>3x400/230V 50Hz 15kW</p>	<p>Average time to deliver:</p> <p>3 months</p>	<p>Indicative unit price (€):</p> <p>on demand</p>

Ordering number:	FS-CP-M	<p>Description:</p> <p>Cylinder Brushing Machine</p> <ul style="list-style-type: none"> mechanical cleaning of outer surface of cylinder 		
		<p>Features:</p> <ul style="list-style-type: none"> cylinders diameter 60-230 mm cylinders height 835-1.585 mm rotating cylinder bottom support vertically translatable and rotating wire brushes automatic stop function protective box debris safe collection (optionally) up to 6 pre-set programs optionally ATEX for cleaning acetylene cylinders 		
		<p>Power Supply:</p> <p>3x400/230V 50Hz 3,8kW</p>	<p>Average time to deliver:</p> <p>3 months</p>	<p>Indicative unit price (€):</p> <p>on demand</p>

Ordering number:	FS-CP-M	<p>Description:</p> <p>Cylinder Painting Machine</p> <ul style="list-style-type: none"> stand for the painting of outer surface of the cylinder 		
		<p>Features:</p> <ul style="list-style-type: none"> cylinders diameter up to 240 mm cylinders height up to 1.750 mm for water based paints only paint applied with rollers adapters for differently sized cylinders cylinder support flush with the floor for easy manipulation paint vapor evacuation (optionally) 		
		<p>Power Supply:</p> <p>3x400/230V 50Hz 0,6kW</p>	<p>Average time to deliver:</p> <p>2 months</p>	<p>Indicative unit price (€):</p> <p>on demand</p>


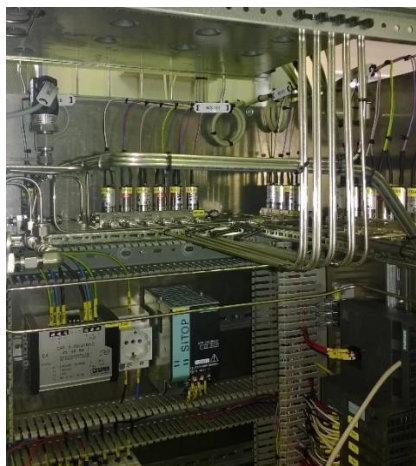
Ordering number:	FS-CP-D	<p>Description:</p> <p>Degassing / Purging stands for the cylinders</p> <ul style="list-style-type: none"> degassing of the rest gases from the cylinders, purging and/or evacuation inert, flammable, toxic or corrosive gases 		
		<p>Features:</p> <ul style="list-style-type: none"> design according to specific project possible high-pressure (PN300) or low-pressure (PN40) design including control unit (Siemens Simatic) automatic procedure (selection from menu) typically 6-12 cylinders materials according to working gases – stainless steel, Monel, ... possible outlets with purging to scrubbers 		
			<p>Average time to deliver:</p> <p>3-4 months</p>	<p>Indicative unit price (€):</p> <p>acc. to project</p>

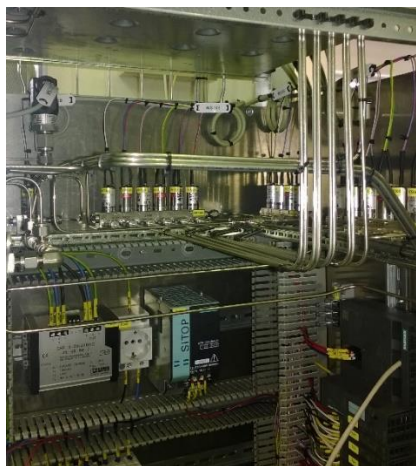
Ordering number:	FS-CP-P				
	<p>Description:</p> <p>Heating Shell</p> <ul style="list-style-type: none">degassing of the rest gases from the cylinders, purging and/or evacuation on the high temperatureversions for inert, flammable, toxic or corrosive gases available				
	<p>Features:</p> <ul style="list-style-type: none">installed in the containertwo working chambers (one pallet or bundle in one chamber) + one technological chambertwo-side working to save the working timeincluding control unit (Siemens Simatic)automatic working process (selection from menu)purging by nitrogen, argon or other gas (acc. to design)including the vacuum pumpmaterials according to working gases – stainless steel, Monel, ...possible outlets with purging to scrubbers				
DN/PN:		Power Supply:		Average time to deliver:	Indicative unit price (€):
12/40		3x400/230V 50Hz 25kW		3-4 months	on demand




Analytical equipment

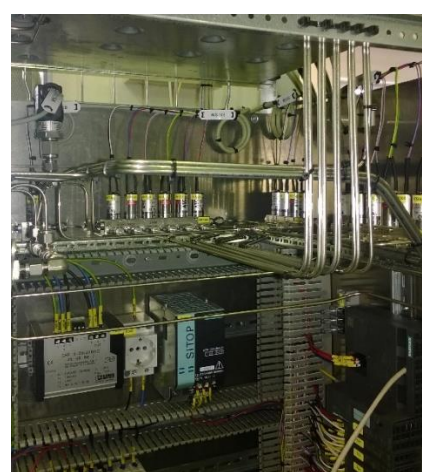
Analytical cabinets


Ordering number:	FS-QC-ACBM00	Description:			
		Analytical cabinet basic manual			
		<ul style="list-style-type: none">purity control of inert mono-gasesproduction control of CO2 % mixtures			
		Features:			
		<ul style="list-style-type: none">1 sample inlet4 calibration inlets1 service quick connector inletManual valves to switch sample/calibration/service inletsManual flow and pressure adjustmentLocal indication of pressure & flowTrace oxygen analyzerTrace CO2 analyzer, % CO2 analyzerTrace moisture (H2O) analyzerTransfer of analytical results to Central Information Server on-demand			
Typical application:		Quality control of inert mono-gases up to 5.0 purity grade, e.g.:			
		<ul style="list-style-type: none">Nitrogen 5.0Argon 4.8			
Quality control of Welding and Food-grade gases, e.g.:					
<ul style="list-style-type: none">Corgon 10 & 18Biogon 20					
Low frequency of analyses					
		Average capacity:	Average time to deliver:	Indicative price:	
		2-3 analyses / hour	3 months	on demand	


Ordering number:	FS-QC-ACBS00	Description:			
		Extension: Analytical cabinet basic manual – scale up to semi-automatic version			
		Features:			
		<ul style="list-style-type: none">All the features of manual cabinetAutomatic valves to switch sample/calibration/service inletsManual flow and pressure adjustmentHigh-pressure and low flow warningControl system + 7" HMI Comfort PanelTransfer of analytical results to Central Information Server			
		Typical application:			
		Average capacity:	Average time to deliver:	Indicative price:	
		5-6 analyses / hour	+0 months	on demand	

Ordering number:	FS-QC-ACOM00	Description: Analytical cabinet for oxygen analyses manual			
		<ul style="list-style-type: none">• purity control of Oxygen			
		Features: <ul style="list-style-type: none">• 1 sample inlet• 5 calibration inlets• 1 service quick connector inlet• Manual valves to switch sample/calibration/service inlets• Manual flow and pressure adjustment• Local indication of pressure & flow• Paramagnetic oxygen analyzer• Trace CO and CO2 analyzer• Trace moisture (H2O) analyzer*• Cleaned for Oxygen service• Transfer of analytical results to Central Information Server on-demand• Qualification for Medicinal use on-demand			
		Typical application: Quality control of Oxygen 2.5 purity grade and Medicinal Oxygen Low frequency of analyses			
		Average capacity:	Average time to deliver:	Indicative price:	
		2 analyses / hour	4 months	on demand	

* - Note: Calculation based on Trace moisture quartz crystal analyzers. Trace moisture analyzer used for Medicinal applications might vary (as well as the price) according to Pharmacopoeia requirements, local legislation, RoHS directive 2002/95/EC and local State medicine control agency requirements etc.


Ordering number:	FS-QC-ACOS00	Description: Extension: Analytical cabinet for oxygen analyses manual – scale up to semi-automatic version			
		Features: <ul style="list-style-type: none">• All the features of manual cabinet• Automatic valves to switch sample/calibration/service inlets• Manual flow and pressure adjustment• High-pressure and low flow warning• Control system + 7" HMI Comfort Panel• Transfer of analytical results to Central Information Server			
		Typical application: <ul style="list-style-type: none">• High frequency of analyses			
		Average capacity: 5-6 analyses / hour	Average time to deliver: +0 months	Indicative price: on demand	


Ordering number:	FS-QC-ACPS00	Description: Analytical cabinet purity control semi-automatic		
		<ul style="list-style-type: none">purity control of Raw gases		
		Features:		
		<ul style="list-style-type: none">2 sample inlet8 calibration inlets1 service quick connector inlet2 auxiliary gases inlet1 Helium (carrier gas) purifierAutomatic valves to switch sample/calibration/service inletsManual flow and pressure adjustmentHigh-pressure and low flow warningLocal indication of pressure and flowFID Process analyzer to measure CmHnTrace moisture (H2O) analyzerHF Plasma Gas ChromatographControl system + 7" HMI Comfort PanelTransfer of analytical results to Central Information Server		
Typical application:				
Quality control of mono-gases 5.0 purity grade and higher (consultancy needed), e.g.:				
<ul style="list-style-type: none">Nitrogen 5.0Oxygen 3.5, 4.5 & 5.0Helium 5.0Argon 5.0				
		Average capacity:	Average time to deliver:	Indicative price:
		1-2 analyses / hour	6 months	on demand

Ordering number:	FS-QC-ACPA00	Description:			
		Extension: Analytical cabinet purity control of Raw gases – scale up to full-automation <ul style="list-style-type: none">Virtually no personnel needed to operate			
		Features:			
		Typical application:			
			Average capacity:	Average time to deliver:	Indicative price:
			2 - 3 analyses / hour	+0 months	on demand




Sample racks


Ordering number:	FS-QC-SRM00	Description: Sample Rack Manual – 1 sampling position			
		Features:			
		Typical application:			
		Average capacity:	Average time to deliver:	Indicative price:	
		n.a.	1-2 months	on demand	


Ordering number:	FS-QC-SRS00	Description: Sample Rack semi-automatic – 1 sampling position			
		Features:			
		Typical application:			
		Average capacity:	Average time to deliver:	Indicative price:	
		n.a.	2-3 months	on demand	




Ordering number:	FS-QC-SROP00	Description: Extension: Sample Rack semi-automatic – Operator HMI control unit			
		Features:			
		<ul style="list-style-type: none">• 1 touch panel (7") for detailed data presentation, diagnostics and control• Standard control SW included, modifications subject to add-on price• Outdoor version on-demand			
		Typical application:			
		<ul style="list-style-type: none">• Extension of semi-automatic Sample Rack• Can be used for several Sample racks / Sampling positions• Mounting position independent of Analytical cabinet		Average capacity:	Average time to deliver:
		n.a.			Indicative price:
				+1 months	on demand

Calibration racks


Ordering number:	FS-QC-CRM00	Description: Calibration Rack Manual – 1 connection point			
		Features:			
		<ul style="list-style-type: none">• 1 sample connection point with spiral HP capillary and purging of HP side into ATM• Pressure-reduction valve 1-stage• 1 cylinder holders with nylon belt or chain			
		Typical application:			
		<ul style="list-style-type: none">• As an accessory for the manual analytical cabinets		Average capacity:	Average time to deliver:
		n.a.			Indicative price:
				1-2 months	on demand


Ordering number:	FS-QC-CRS00	Description: Calibration Rack Semi-Automatic – 1 connection point			
		Features:			
		<ul style="list-style-type: none">• 1 sample connection point with spiral HP capillary and purging of HP side into ATM• Pressure-reduction valve 1-stage• Contact gauge to indicate low pressure in cylinder (connected to control system through junction box)• 1 cylinder holders with nylon belt or chain			
		Typical application:			
	<ul style="list-style-type: none">• As an accessory for the semi-automatic and automatic analytical cabinets				
		Average capacity:	Average time to deliver:	Indicative price:	
		n.a.	2 months	on demand	

Ordering number:	FS-QC-CRS01	Description: Calibration Rack Semi-Automatic Redundant - 2 connection point, 1 outlet			
		Features:			
		<ul style="list-style-type: none">• 2 sample connection point with spiral HP capillary and purging of HP side into ATM• Pressure-reduction valve 1-stage• Contact gauge to indicate low pressure in cylinder (connected to control system through junction box)• 2 cylinder holders with nylon belt or chain			
		Typical application:			
		<ul style="list-style-type: none">• As an accessory for the semi-automatic and automatic analytical cabinets• To connect Carrier Gases, Regeneration Gases, Purge Gases etc. to Analytical cabinets			
		Average capacity:	Average time to deliver:	Indicative price:	
		n.a.	2 months	on demand	



Central Information Management

Ordering number:	FS-IM-CIS00	Description: Central Information Server			
		• IT Rack with Server, UPS and Networking			
		Features:			
		• Automatic data acquisition from all IoT enabled components			
		• Data storage in SQL database			
		• Gateway to third-party systems (InLabel, MES)			
		• Automatic report generation			
		• Trend View – timelines and XY Graphs			
		• View Server to present data & analytics to Mobile devices, Web-browsers and Information tablos			
		• In-built QR code system to mark individual components and seamlessly access all relevant component information in your mobile device			
		Typical application:			
		• To extend larger installations and leverage Industry 4.0 concepts			
			Average capacity:	Average time to deliver:	Indicative price:
			n.a.	3 months	on demand

Ordering number:	FS-IM-CIS00	Description:			
		Extension: CIS Information Tablo <ul style="list-style-type: none">Wall mounted 42" flat TV + micro-PC			
		Features: <ul style="list-style-type: none">Presentation of data, statistics and analytics on a large-scale, wall mounted TVTraining videos & Safety instructions Videos			
		Typical application: <ul style="list-style-type: none">To extend larger installations and support better productivity and safety of operations			
		Average capacity:	n.a.	Average time to deliver:	2 months
				Indicative price:	on demand



Services

The APT company is not only supplier of goods. The company provides a long-term support of the installation (maintenance, inspections, process optimization) throughout the whole life-cycle of the equipment. Our target is the fully satisfied client, thus we offer to our clients also all necessary services for the turn-key technological delivery:

- development and prototype construction on the field of machinery construction and gas-technology
- design works in all project steps (feasibility study, basic design, project for building permission, project documentation for the realization (detail design) etc.)
- engineering works and consultant service
- production of the mechanical and electric parts, software development
- mechanical and electrical installation of the equipment, software implementation
- technical supervision on the installation works
- commissioning of the technological equipment
- testing of the systems
- training of the operators
- warranty and after-warranty service, maintenance of the systems including the remote monitoring
- System SW as well as Application SW updates and upgrades

The prices of the services are calculated always according to specific project (works).



Attachments

None