



Series GC

COALESCER FILTERS
GAS-LIQUID
TAILOR MADE

MAIN APPLICATIONS:

- OIL & GAS
- PETROCHEMICAL
- FINE CHEMICAL
- POWER GENERATION
- STEEL MILL

CHARACTERISTICS:

- Construction materials:
Carbon steel
Stainless steel
(other materials available as option)
- Design according to:
ASME Sect. VIII Div. 1
EN 13445
VSR
(other calculation code available as option)
- Conform to 97/23/CE PED Directive
- Conform to 94/9/CE ATEX Directive
- Available with U-Stamp certification
- Top cover closure:
ANSI or EN flanges
Swing bolts - eye bolts type
Quick opening closure yoke or band-lock type
- Available for pressure up to 2500# rating
- Vertical or horizontal arrangement
- Suitable for natural or process gas filtration
- In/out connections up to 36" (DN 900)
- Available in four different arrangements:
Vertical gas-liquid coalescer cartridges
Double stage vertical gas-liquid separator
Double stage horizontal gas-liquid separator
Double stage vertical gas-liquid separator with multi cyclone and coalescer cartridges
Vertical gas-liquid absolute separator
- Special design with demister and/or inlet gas distributor device
- High liquid separation efficiency even in the presence of caustic or amine
- Minimal initial pressure drop

ASCO FILTRI

ASCO Filtri S.r.l.

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Series GC

COALESCER FILTERS
GAS-LIQUID
TAILOR MADE

TECHNICAL DATA

CONSTRUCTION MATERIAL

Body:

- Carbon steel
- 304 SS
- 316 SS
- Duplex SS
- *Other materials available*

Raiser and tube sheet:

- Carbon steel
- 304 SS
- 316 SS
- Duplex SS

GASKETS

- SPIRAL WOUND
- KLINGERSIL
- BUNA-N
- VITON
- RING JOINT

IN/OUT

- Up to 36"

DESIGN PRESSURE

- Up to 2500#

ACCESSORIES

- DIFFERENTIAL PRESSURE GAUGE
- DIFFERENTIAL PRESSURE SWITCH
- DIFFERENTIAL PRESSURE TRANSMITTER
- VENT VALVE
- DRAIN VALVE
- PRESSURE SAFETY VALVE
- AUTOMATIC LIQUID DRAIN
- LEVEL CONTROLS

In the current processes of extraction, transportation and treatment of gas is becoming increasingly important to remove the liquids present to reduce maintenance costs associated with problems generated by their presence.

An efficient removal of liquid present in the gas streams, allows to adequately protect costly equipment such as compressors, turbines, valves and burners; also allows to protect the catalysts beds or reduce the tendency to the foams formation in amines treatment plants.

Last, but not least, the presence of liquids facilitates the clogging of heat exchangers with subsequent reduction of the thermal exchange capacity.

To solve the problem of liquids separation from gas streams, ASCO Filtri is able to provide different solutions in relation to the problem:

- Coalescer filters with cartridges
- Vertical or horizontal double stage gas separators
- Double stage absolute gas separators

Coalescer filters separation capabilities:

Gas/liquid coalescing system, are designed to provide an adequate solution to the many problems of separation.

The choice of coalescing filter type is a function of the presence of solids, liquids, and the efficiency of separation required.

	VANE EXTRACTOR	CYCLONES	COALESCER	GAS SEPARATOR	ABSOLUTE SEPARATOR
LIQUIDS QUANTITY	HIGH	HIGH	MEDIUM	MEDIUM	HIGH
SOLIDS QUANTITY	LOW	HIGH	LOW	HIGH	LOW
SEPARATION EFFICIENCY	HIGH	HIGH	VERY HIGH	HIGH	VERY HIGH
INITIAL PRESSURE DROP	VERY LOW	HIGH	LOW	MEDIUM	MEDIUM
TURN-DOWN	30% - 50%	30%	VERY HIGH	50%	50%



Many types of quick opening closure, to facilitate the replacement of the filtering elements, can be applied to coalescing filters series GC:

- V opening type with single hand wheel and jaw,
- mechanical sector type,
- threaded, etc.

All quick opening closure installed on ASCO Filtri equipments comply with ASME standards.

All quick opening closure used on ASCO Filtri equipments are accompanied by safety device that prevents the opening of the closure with the filter under pressure, as required by ASME code.

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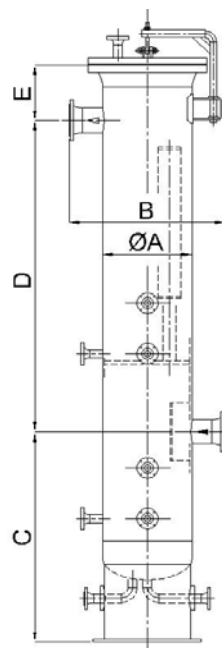
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FILTRI

Series 152GC dimension- Cartridges GLP series :

Model	Dimension [mm]					
	A	B	C	D	E	In/out
152GCTV014CZ02A	219.1	520	1170	1850	300	2"
152GCTV014CZ03A	273.0	560	1220	1850	320	3"
152GCTV034CZ04A	406.4	820	1250	1900	350	4"
152GCTV044CZ04A	457.2	870	1270	1900	350	4"
152GCTV054CZ04A	508.0	900	1270	1900	350	4"
152GCTV064CZ06A	558.8	960	1280	2000	400	6"
152GCTV074CZ06A	609.6	1050	1320	2110	420	6"
152GCTV084CZ06A	660.4	1100	1350	2110	420	6"
152GCTV094CZ06A	711.2	1150	1380	2120	430	6"
152GCTV124CZ08A	762.0	1190	1400	2160	450	8"
152GCTV134CZ08A	812.8	1240	1400	2160	460	8"
152GCTV154CZ08A	863.6	1300	1420	2160	460	8"
152GCTV164CZ08A	914.4	1350	1420	2160	470	8"
152GCTV194CZ10A	1016	1430	1630	2520	560	10"
152GCTV234CZ10A	1066.8	1500	1650	2520	570	10"
152GCTV294CZ10A	1168.4	1580	1650	2520	580	10"
152GCTV314CZ12A	1219.2	1630	1700	2570	590	12"
152GCTV354CZ12A	1270	1630	1700	2570	600	12"

The allowable flow-rate depends on the installed cartridges, the inlet liquids, the gas density and its minimum pressure.

The specified dimension and cartridges quantity are valid for rating up to 300#: for higher rating contact ASCO Filtri for dimension.



Series GC

GAS-LIQUID COALESCER
VERTICAL
TAILOR MADE

LAYOUT

INLET:

- FLOW DIVERTER
- FLOW DIFFUSER

SEPARATION STAGE:

- HIGH EFFICIENCY
COALESCER CARTRIDGES

Operation:

GC series filters are high efficiency gas-liquid coalescer filters.

The gas to be treated enter in the lower chamber of the filter where the larger size liquids (> 300 µm) are separated by gravity.

In cases of high liquid presences it is possible to provide at filter inlet a flow diffuser or a flow diverter to increase the separation efficiency , reduce the liquids load on the coalescer cartridges or simply increase the life of the coalescer cartridges. When a large diameter filter (> 50") is required, a flow diffuser at inlet is strongly recommended.

The gas then passes in the actual separation stage consist of one or more pleated fibre glass, polyester or polypropylene coalescer cartridges. The gas through the raisers reaches the coalescing cartridges and crosses from the outside to inside; the dragged liquids and the aerosols are intercepted by the cartridge's microfiber that capture them. The separated micro drops are agglomerated to form larger drops, that pushed by the gas, emerge from the outer surface of the cartridges. Now, thanks to the low gas annular speed the separated liquids can be collected by gravity on support plate from where are regularly downloaded.

The gas, once dehydrates, leaves the filter from the nozzle placed above the coalescing cartridges.

Cartridges coalescer filter, provide different separation efficiency related to the installed cartridges:

GLP series

- Liquids: 99.9% droplets ≥ 0.3 µm, residual liquids up to 0.01 ppm
- Solids: 99.9% particles ≥ 0.3 µm

RFVR series

- Liquids: 99.98% droplets ≥ 0.1 µm, residual liquid up to 0.01 ppm
- Solids: 99.98% particles ≥ 0.1 µm

The coalescing filters GC series are ideal for treating the gases with liquids content up to 1000 ppm (0.1%) with low solids content.

The coalescing filters GC series are suitable to accept high flow-rate variation without appreciable efficiency changes.



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Series SG/V

**GAS FILTER SEPARATOR
VERTICAL
TAILOR MADE**

LAYOUT

1ST STAGE:

- COALESCING CARTRIDGES

2ND STAGE:

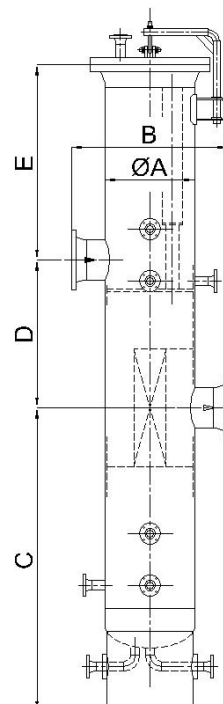
- VANE EXTRACTOR

140SG series dimension- Cartridges PFG536 series:

Model	Dimension [mm]					
	A	B	C	D	E	In/out
140SGTV014CZ02A	219.1	540	1000	1000	1170	2"
140SGTV014CZ03A	273.0	600	1020	1000	1170	3"
140SGTV024CZ04A	323.8	650	1060	1060	1200	4"
140SGTV034CZ06A	355.6	770	1120	1120	1230	6"
140SGTV044CZ06A	406.4	820	1120	1120	1230	6"
140SGTV054CZ08A	457.2	870	1220	1220	1290	8"
140SGTV074CZ08A	508.0	920	1220	1220	1220	8"
140SGTV094CZ10A	609.6	1020	1400	1400	1320	10"
140SGTV124CZ10A	660.4	1080	1430	1400	1320	10"
140SGTV144CZ10A	711.2	1120	1430	1400	1320	10"
140SGTV154CZ12A	762.0	1180	1600	1580	1320	12"
140SGTV194CZ12A	812.8	1220	1600	1580	1320	12"
140SGTV214CZ14A	863.6	1270	1630	1600	1330	14"
140SGTV224CZ14A	914.4	1320	1630	1600	1340	14"
140SGTV284CZ16A	1016	1440	1650	1630	1380	16"
140SGTV324CL16A	1066.8	1520	1830	1780	1380	16"
140SGTV374CL18A	1168.4	1650	1830	1800	1420	18"
140SGTV414CL18A	1219.2	1730	1930	1910	1450	18"
140SGTV494CL20A	1320.8	1780	1980	1910	1500	20"
140SGTV534CL20A	1371.6	1880	1980	1910	1520	20"
140SGTV614CL24A	1473.2	1950	2080	2030	1610	24"
140SGTV674CL24A	1524	2040	2090	2030	1620	24"
140SGTV804CL24A	1676.4	2180	2130	2030	1650	24"

The allowable flow-rate depends on the installed cartridges, the inlet liquids, the gas density and its minimum pressure.

The specified dimension and cartridges quantity are valid for rating up to 300#; for higher rating contact ASCO Filtri for dimension.



Operation:

The filters SG/V series are high efficiency gas-liquid filters separator.

The gas to be treated enters into the upper chamber of the filter in correspondence of the first stage cartridges riser. Here, the largest size liquids (> 300 µm) are separated by gravity and collected on the tubesheet from which are constantly downloaded.

The gas passes through the filter cartridges from the outside to inside; the entrained solids are retained by the cartridges which being made with a depth filtering medium, provides to agglomerate the finer drops of liquid and aerosols into larger droplets.

These droplets are entrained by the gas exiting from the cartridges and crossing the second separation stage, consisting of an horizontal flow vane extractor, are separated by centrifugal effect and to inertial impact.

The liquids separated from the vane extractor, by gravity are collected on the bottom of the filter from which are downloaded frequently.

The gas-liquid separators provide the following separation efficiencies:

- Liquids: 100% droplets ≥ 8 µm, 99.5% droplets from 0.5 to 8 µm,
- Solids: 100% particles ≥ 1 µm, 99.5% particles from 0.5 to 1 µm.

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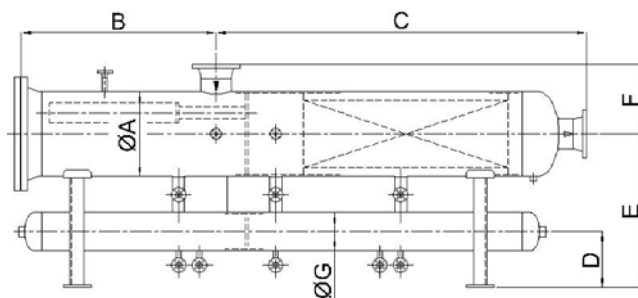
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140SG series dimension- Cartridges PFG536 series:

Model	Dimension [mm]								
	A	OD/ID	B	C	D	E	F	G	In/out
140SGTH014CL02A	219.1	OD	1230	1335	300	700	260	168.3	2"
140SGTH014CL03A	273		1230	1360	300	700	290	168.3	3"
140SGTH024CL04A	323.8		1250	1430	300	800	315	168.3	4"
140SGTH034CL04A	355.6		1277	1540	320	870	330	168.3	4"
140SGTH044CL04A	406.4		1277	1600	320	920	350	168.3	4"
140SGTH054CL06A	457.2		1370	1850	330	930	420	168.3	6"
140SGTH074CL06A	508.0		1365	2100	320	970	450	168.3	6"
140SGTH094CL08A	609.6		1402	2667	400	1100	500	219.1	8"
140SGTH124CL10A	660.4	ID	1300	2760	400	1125	550	273	10"
140SGTH144CL10A	711.2		1305	3110	400	1162	585	273	10"
140SGTH154CL12A	762.0		1310	3150	400	1162	585	273	12"
140SGTH194CL12A	812.8		1318	3150	400	1210	610	273	12"
140SGTH21CL14A	863.6		1330	3600	430	1330	690	323.8	14"
140SGTH224CL14A	914.4		1340	3640	430	1330	720	323.8	14"
140SGTH284CL16A	1016		1400	3990	450	1450	770	355.6	16"
140SGTH324CL16A	1066.8		1410	4100	450	1550	800	355.6	16"
140SGTH374CL18A	1168.4		1440	4160	450	1580	890	355.6	18"
140SGTH414CL18A	1219.2		1440	4170	450	1625	900	355.4	18"
140SGTH494CL20A	1320.8		1460	4500	480	1700	920	406.4	20"
140SGTH534CL20A	1371.6		1460	4500	480	1730	970	406.4	20"
140SGTH614CL24A	1473.2		1520	4850	500	1830	1020	457.2	24"
140SGTH674CL24A	1524		1530	5000	500	1850	1040	457.2	24"
140SGTH804CL24A	1676.4		1550	5300	500	1930	1120	457.2	24"

The specified dimension and cartridges quantity are valid for rating up to 300#: for higher rating contact ASCO Filtri for dimension.



Operation:

The filters SG/H series are high efficiency gas-liquid filters separator.

The gas to be treated enters into the prefiltration and primary separation chamber of the filter in correspondence of the first stage cartridges riser. Here, the largest size liquids (> 300 µm) are separated by gravity and collected on the filter lower side; through the drainage tube, liquids are discharged into the collecting barrel.

The gas passes through the filter cartridges from the outside to inside; the entrained solids are retained by the cartridges which being made with a depth filtering medium, provides to agglomerate the finer drops of liquid and aerosols into larger droplets.

These droplets are entrained by the gas exiting from the cartridges and crossing the second separation stage, consisting of an horizontal flow vane extractor, are separated by centrifugal effect and to inertial impact.

The liquids separated from the vane extractor, by gravity are collected on the bottom of the filter; through the drainage tube, liquids are discharged into the collecting barrel.

The gas, now filtered and dehydrated exit from gas-liquid filter separator from the outlet nozzle located on the rear dish head.

The gas-liquid separators provide the following separation efficiencies:

- Liquids: 100% droplets ≥ 8 µm, 99.5% droplets from 0.5 to 8 µm,
- Solids: 100% particles ≥ 1 µm, 99.5% particles from 0.5 to 1 µm.

Series SG/H

GAS FILTER SEPARATOR
HORIZONTAL
TAILOR MADE

LAYOUT

1ST STAGE:

- COALESCING CARTRIDGES

2ND STAGE:

- VANE EXTRACTOR



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Series AS

**ABSOLUTE GAS SEPARATOR
WITH VANE EXTRACTOR
TAILOR MADE**

LAYOUT

1ST STAGE:

- VANE EXTRACTOR

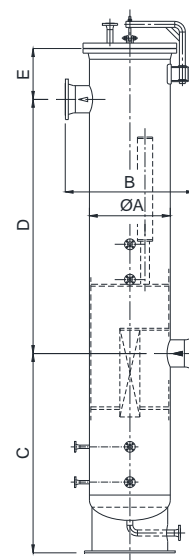
2ND STAGE:

- HIGH EFFICIENCY

COALESCER CARTRIDGES

152AS series dimension - cartridges GLP series:

Model	Dimension [mm]						
	A	OD/ID	B	C	D	E	In/out
152ASTV014CZ03A	273.0	OD	600	1250	1950	259	3"
152ASTV014CZ04A	323.8		650	1390	2110	352	4"
152ASTV034CZ06A	406.4		720	1420	2200	361	6"
152ASTV044CZ06A	457.2		770	1640	2250	374	6"
152ASTV054CZ06A	508.0		900	1700	2300	451	6"
152ASTV064CZ08A	558.8		950	1750	2300	456	8"
152ASTV074CZ08A	609.6		1050	1850	2400	472	8"
152ASTV084CZ08A	660.4	ID	1100	1850	2400	475	8"
152ASTV094CZ08A	711.2		1150	1850	2400	482	8"
152ASTV124CZ10A	762.0		1200	1870	2400	502	10"
152ASTV134CZ10A	812.8		1300	2000	2550	510	10"
152ASTV154CZ10A	863.6		1440	2050	2550	512	10"
152ASTV164CZ12A	914.4		1500	2050	2580	520	12"
152ASTV194CZ12A	1016		1600	2230	2625	531	12"
152ASTV234CZ12A	1066.8		1650	2300	2680	540	12"
152ASTV294CZ12A	1168.4		1700	2350	2680	541	12"
152ASTV314CZ14A	1219.2		1800	2390	2860	580	14"



The allowable flow-rate depends on the installed cartridges, the inlet liquids, the gas density and its minimum pressure.

The specified dimension and cartridges quantity are valid for rating up to 300#; for higher rating contact ASCO Filtri for dimension.

Operation:

The filters AS series are multiple stage high efficiency gas-liquid filters separators; their operation is mainly based on simple physical principles like the gravity, the inertial impact, the direct interception and Brownian movements.

The gas to be treated enters into the primary separation chamber of the filter where a vane extractor provide to separate the largest size liquids; the first stage is suitable to provide high separation efficiency: 100% liquids $\geq 8 - 10 \mu\text{m}$.

The gas, thus purified, rises to the top and crossing the high efficiency coalescer cartridges from inside to outside that provide at the final separation of aerosols and fogs, exactly as for the GC series coalescing filters, ensuring high separation performance:

- Liquids: 99.9% droplets $\geq 0.3 \mu\text{m}$, residual liquids up to 0.01 ppm
- Solids: 99.9% particles $\geq 0.3 \mu\text{m}$

The absolute separation filters are the ideal solution in applications that demand high-performance for gas highly contaminated by liquids.

Due to their configuration, the absolute separators, are very sensitive to the presence of solids which must be limited to prevent fouling of the vane extractor with consequent loss of separation capacity.

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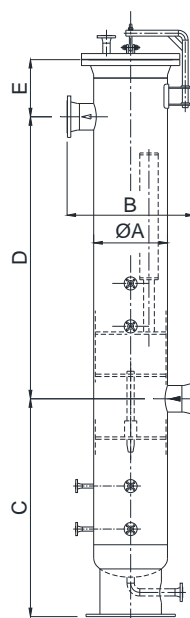
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152CYseries dimension - 2" cyclones + GLP series cartridges:

Model	Dimension [mm]						
	A	OD/ID	B	C	D	E	In/out
152CYTV014CZ03A	219.1	OD	520	1270	1840	246	3"
152CYTV014CZ04A	273		600	1550	1970	259	4"
152CYTV014CZ06A	323.8		650	1600	2100	352	6"
152CYTV034CZ06A	406.4		720	1680	2200	361	6"
152CYTV044CZ06A	457.2		770	1680	2210	374	6"
152CYTV054CZ08A	508.0		900	1750	2300	451	8"
152CYTV064CZ08A	558.8		950	1750	2300	456	8"
152CYTV074CZ08A	609.6		1050	1800	2330	472	8"
152CYTV084CZ10A	660.4		1100	1850	2330	475	10"
152CYTV094CZ10A	711.2		1150	1850	2330	482	10"
152CYTV124CZ10A	762.0	ID	1200	1870	2330	502	10"
152CYTV134CZ12A	812.8		1300	1920	2510	510	12"
152CYTV154CZ12A	863.6		1440	1940	2510	512	12"
152CYTV164CZ12A	914.4		1500	1952	2510	520	12"
152CYTV194CZ12A	1016		1600	2110	2600	530	12"
152CYTV234CZ14A	1066.8		1600	2110	2620	530	14"
152CYTV294CZ14A	1168.4		1700	2145	2620	541	14"
152CYTV314CZ16A	1219.2		1780	2200	2830	580	16"



Operation:

The filters CY series are multiple stage high efficiency gas-liquid filters separators; their operation is mainly based on simple physical principles like the gravity and the centrifugal force.

The gas to be treated enters into the prefiltration and separation chamber of the filter in the correspondence of the first stage cyclones risers. Here the gas velocity is significantly reduced and the bulk liquids and solids ($> 300 \mu\text{m}$) fall down to the cyclones tubesheet; other liquids are additionally separated due to the direct impact on the cyclones risers. The separated liquids are constantly drained through a specific drain nozzle.

The gas then enters in the cyclones; each cyclone has two tangential entrance points that force the gas in a counter-clockwise downwards direction, increasing the flow velocity and imposing a centrifugal force upon the solids and liquids contained.

Both solids and liquids separated are pushed down, over the vortex generated by the cyclone and then collected by gravity into the collection chamber below the filter to be subsequently drained.

The cyclones first separation is suitable itself to ensure high separation efficiency: liquids/solids $100\% \geq 8 \mu\text{m}$, 99% from 5 to $8 \mu\text{m}$.

Generally, not more than 1.5 litres of liquids per 100.000 Nm^3 of gas are dragged downstream cyclones if operated at the provided design flow-rate.

The gas, thus purified, rises to the top and crossing the high efficiency coalescer cartridges from inside to outside that provide at the final separation of aerosols and fogs, exactly as for the GC series coalescing filters, ensuring high separation performance:

- Liquids: 99.9% droplets $\geq 0.3 \mu\text{m}$, residual liquids up to 0.01 ppm
- Solids: 99.9% particles $\geq 0.3 \mu\text{m}$



Series CY

**ABSOLUTE GAS SEPARATOR
WITH MULTIPLE CYCLONES
TAILOR MADE**

LAYOUT

1ST STAGE:

- **2" CYCLONES**

2ND STAGE:

- **HIGH EFFICIENCY**

COALESCER CARTRIDGES

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Serie GC

FILTRI COALESCENTI
GAS-LIQUIDO
ESECUZIONE SU SPECIFICA

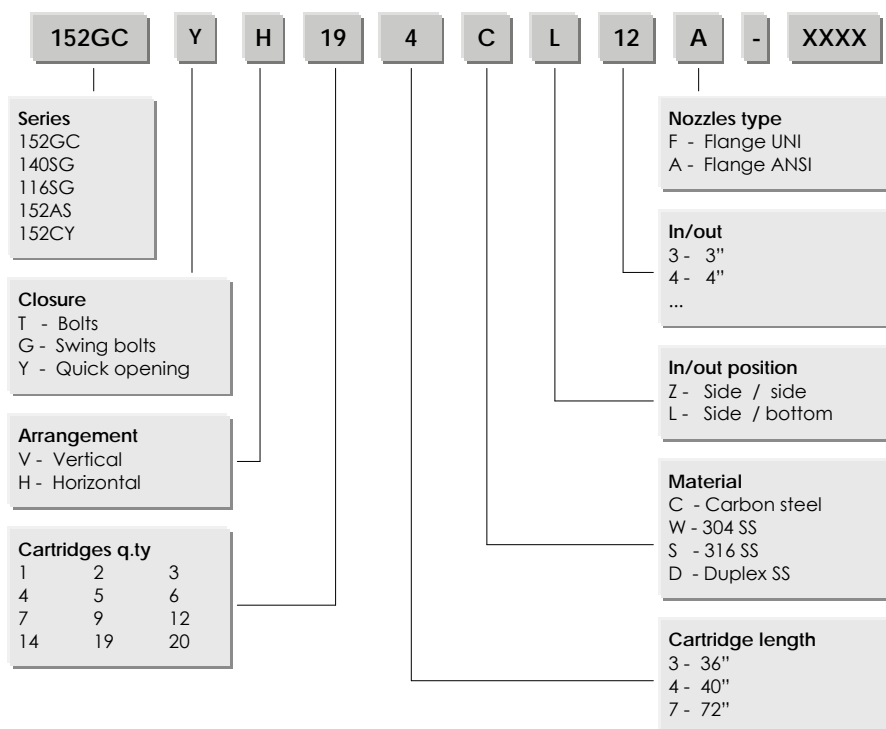
MAIN APPLICATION

- PROTECTION OF:
- FLOWMETERS
- VALVES
- PRESSURE REGULATORS
- COMPRESSORS
- TURBINES
- BURNERS
- CATALYSTS
- DISSECCANTS
- REFINERIES
- CHEMICAL PLANTS
- GAS PIPELINE
- COMPRESSION STATIONS
- TECHNICAL GAS PRODUCTION
- REMOVAL OF:
- WATER
- LIQUID HYDROCARBONS
- LUBRICANTS

FLUIDS:

- NATURAL GAS
- PROCESS GAS
- SYNGAS
- BIOGAS
- NITROGEN
- HYDROGEN

Ordering information:



We reserve the right to change the data of this specification without notice.

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