FiWaRec®
Valves & Regulators

FiWaRec® Products for High Pressure Fire Suppression Systems

IT'S **YOUR** SYSTEM
OPTIMIZED WITH **OUR** COMPONENTS

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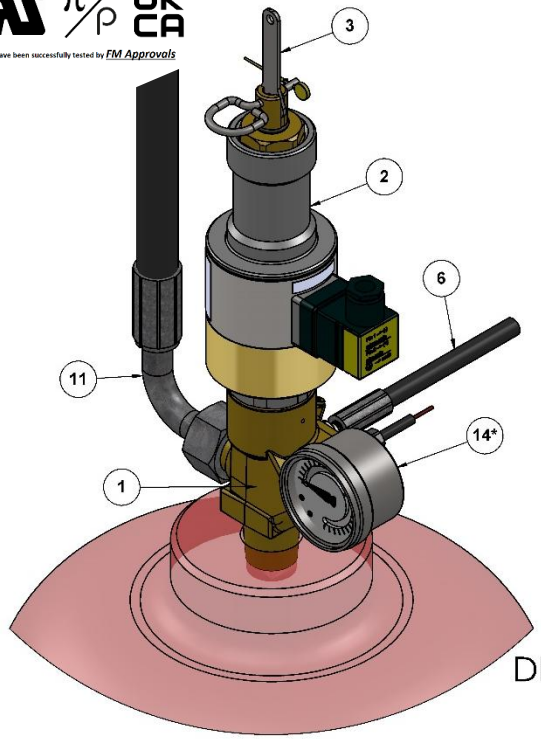
Master Valve

*these products meet the requirements of FM standards and have been successfully tested by FM Approvals



DETAIL C

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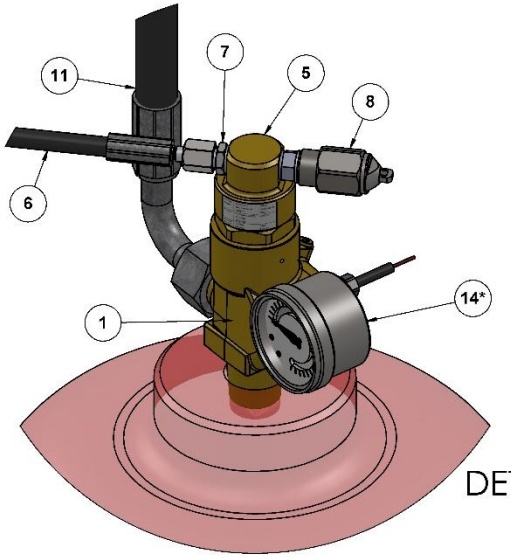
Slave Valve



DETAIL B

Master Valve

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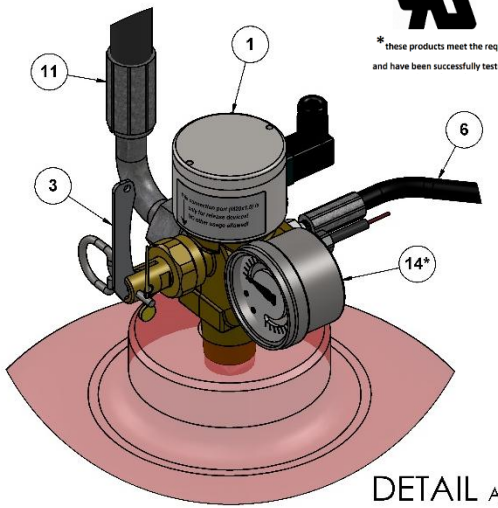
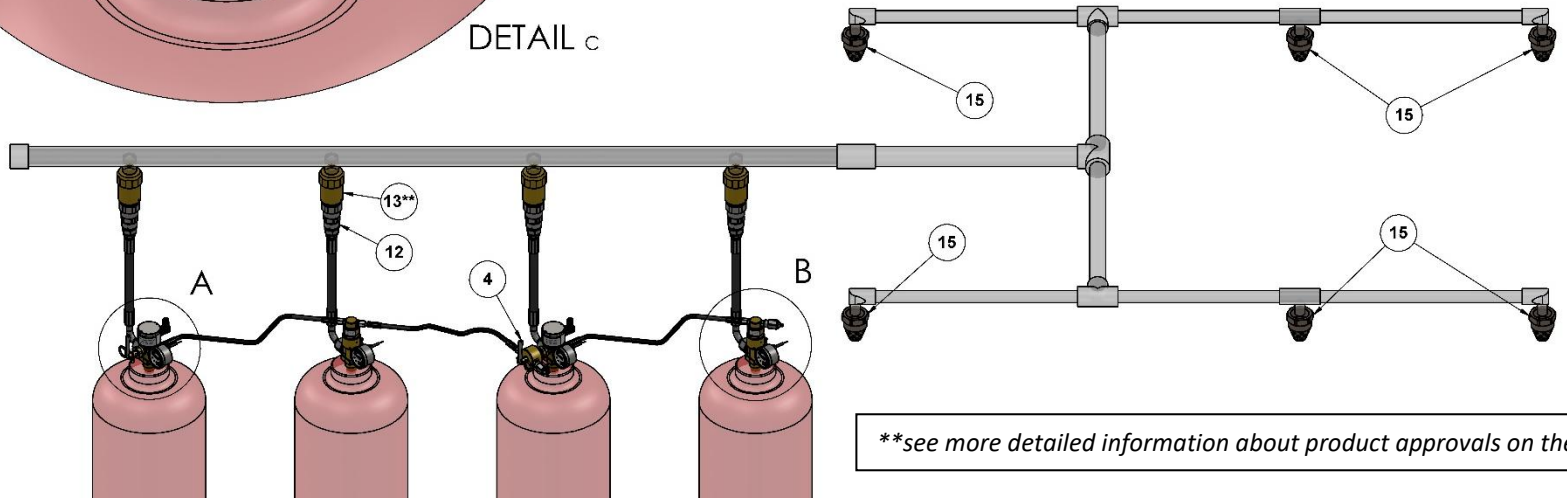


DETAIL A

* Gauges are not suitable for CO^2 Systems

** Constant Flow Regulator only for Inter Gas Systems



***see more detailed information about product approvals on the following pages*

Overview: FiWaRec® Products for High Pressure Fire Suppression Systems

	Description		Article codes								for more detailed information see page(s)
		Agent Type	Clean Agent			CO²		Inert Gas			
		System Pressure/Filling Ratio	25bar	42bar	50bar	0,746kg/L	0,666kg/L	200bar	300bar		
1	Cylinder Valve DN12		F2020001/ F2420001			F2021000	F2021001/ F2421001	F2022000/ F2422001	F2023001/ F2423001	F2023000/ F2423000	6
	Solenoid Cylinder Valve DN12		F2030001/ F2430001			F2031000	F2031001/ F2431001	F2032000/ F2432001	F2033000/ F2433001	F2033001/ F2433000	9/10
2	Solenoid Actuator	for F202/F242 Valves	F1160000 / F1160001 / F1120004								7/8
3	Manual Actuator	for F202/F242 Valves	F1120005								7/8
		for F203/F243 Valves	F1120013								11
4	Manual -Pneumatic Actuator	for F202/F242 Valves	F1120006								7/8
		for F203/F243 Valves	F1120025								11
5	Pneumatic Actuator	for F202/F242 Valves	F1120011								7/8
			F1120007								alternative Pos.
			F1120008								alternative Pos.
		for F203/F243 Valves	F1120014								11
6	pilot hose		F1040xxx								12/13
			F1041xxx								alternative Pos.
7	pilot hose adaptors		F0010000 / E6130003 / E6130004 / E6130005								13/14
8	bleed valve		F0150010								13/14
9	vent valve		F0150018								optional features
10	non-return valve for pilot line		F0160001								optional features
11	discharge hose, straight		F1050xxx							/	17 - 20
			/							F1060xxx	17 - 20
	discharge hose with 90° elbow		F1052xxx							/	alternative Pos.
			/							F1061xxx	alternative Pos.
12	check valve DN12		F0170000								20
13	constant pressure regulator		/					F2120010	F2120010		22
14	gauge with electric contact (NC)		F053/F058/F062xxxx					F053/F058/F062xxxx			21
	gauge with electric contact (NO)		F053/F058/F062xxxx					F053/F058/F062xxxx			alternative Pos.
	pressure gauge without electric contact		F052/F061xxxx					F052/F061xxxx			alternative Pos.
15	discharge nozzles		F0071/F0072xxx								23 - 25

Cylinder Valves (Type F202)

- Seat Diameter – 12mm
- Also available as ATEX-Version
  - Ex II 3GD
  - Ex h IIB T6-T4 Gc
  - Ex h IIIB T135°C Dc

Article no.	for System Type	Inlet Thread	Outlet Thread	Burst Disc	Gauge Port?	Dip Tube Connection?
F2020001	Chemical Gases	ISO 11363-1 25E	W21,8x1/14"	90bar	M12x1mm	M16x1mm
F2021000/ F2021001	CO^2			250bar/ 190bar	/	
F2022000	Inert Gases (200bar)			270bar	M12x1mm	/
F2023000/ F2023001	Inert Gases (300bar)		M24x1,5mm/ W21,8x1/14"	405bar		

Cylinder Valves (Type F242)

- Seat Diameter – 12mm

*these products meet the requirements of FM standards and have been successfully tested by ***FM Approvals***

Article no.	for System Type	Inlet Thread	Outlet Thread	Burst Disc	Gauge Port?	Dip Tube Connection?
F2420001	Chemical Gases	ISO 11363-1 25E	W21,8x1/14"	90bar	M12x1mm	M16x1mm
F2421001	CO^2			190bar	/	
F2422000/ F2422001	Inert Gases (200bar)		M24x1,5mm/ W21,8x1/14"	270bar	M12x1mm	/
F2423000/ F2423001	Inert Gases (300bar)			405bar		

Actuators for Cylinder Valves DN12* (Type F112)

*see more detailed information about product approvals on the following page

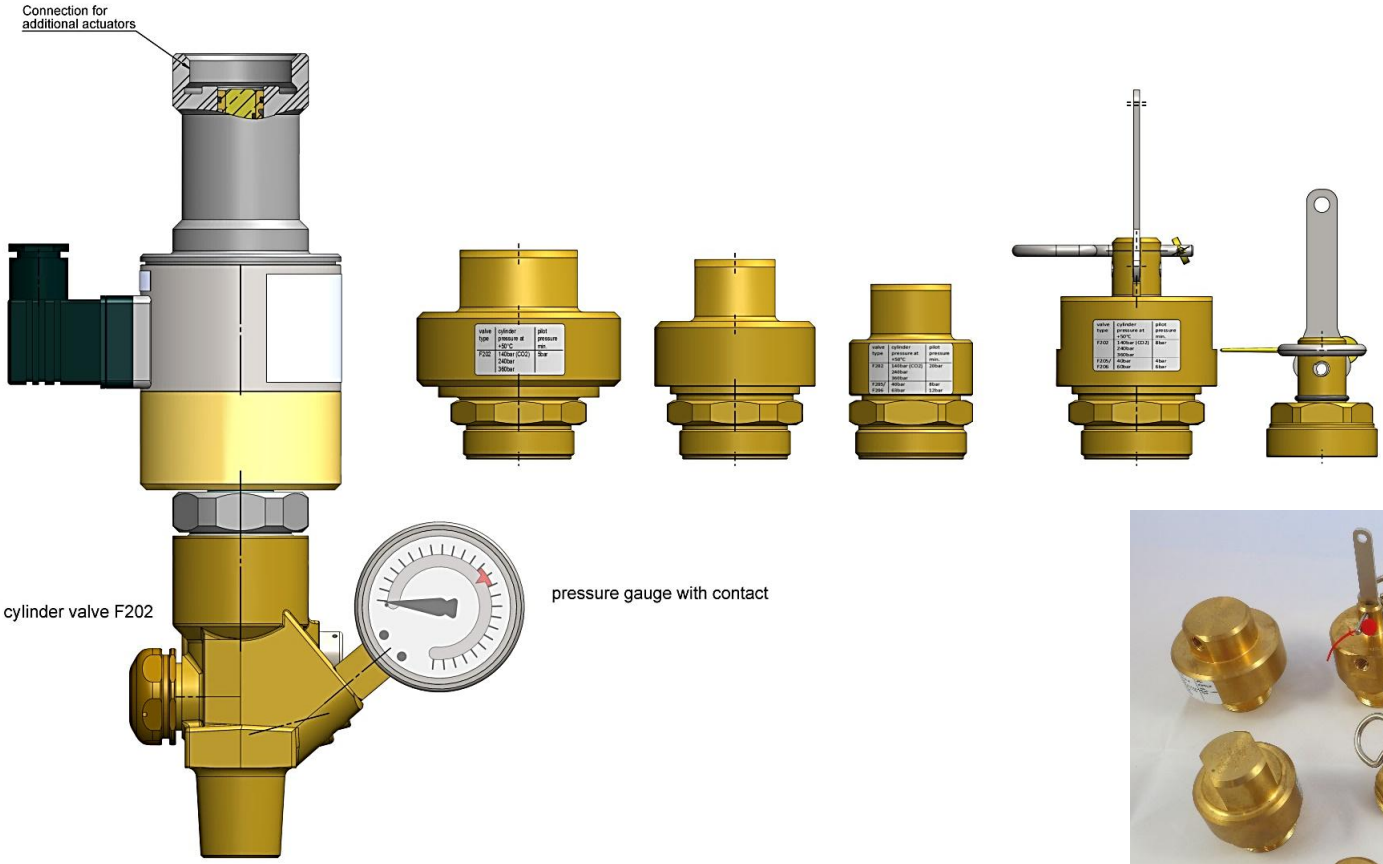
*these products meet the requirements of FM standards and have been successfully tested by ***FM Approvals***

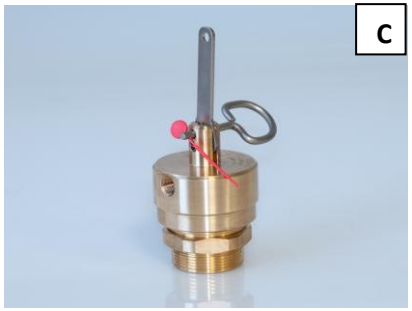
A solenoid actuator

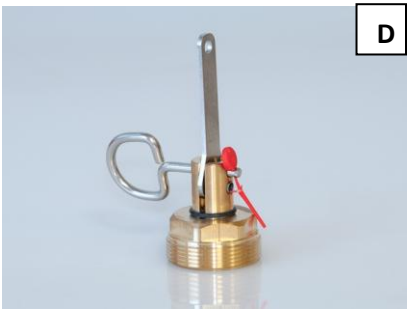
B pneumatic release device

C pneumatic-manual release device

D manual release device







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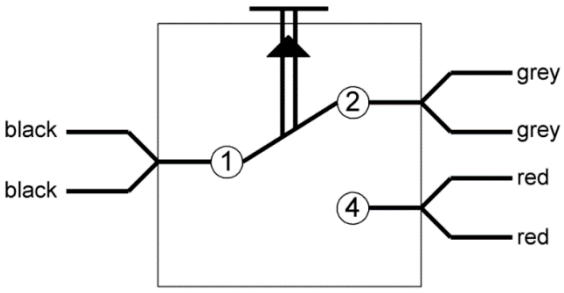
Article no.	Type	Actuation	Technical Details	
F116 0000 / F116 0001	**A**	**Electrical**	Refer to the Instruction Manual of the Electrical Actuator for all Technical Details (24V +/-4 / 0,5A / 100% ED / IP65)	
F112 0005	**D**	**Manual**	/	
F112 0006	**C**	**Pneumatic/ Manual**	minimal (nominal) Pilot Pressure 8bar*	max. Working Pressure 300bar
F112 0007	**B**	**Pneumatic**	minimal (nominal) Pilot Pressure 8bar*	max. Working Pressure 300bar
F112 0008			minimal (nominal) Pilot Pressure 5bar*	max. Working Pressure 200bar
F112 0011			minimal (nominal) Pilot Pressure 20bar*	max. Working Pressure 360bar

(*) for system pressure of p1=300bar (360bar at +50°C)

Monitoring switch for solenoid actuator (Type F0150048)

Can be easily retrofitted to all FiWaRec® F202 and F242 valves

- in combination with electrical actuator type F116
- Switching type – NO & NC (changeover contact)
- Rating – max. 250VAC, 5A
- Ingress protection class – IP67
- Wiring diagram:



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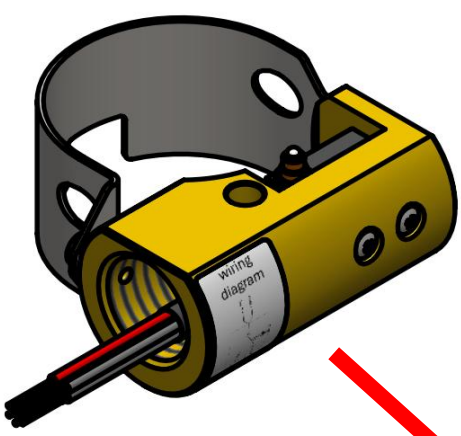

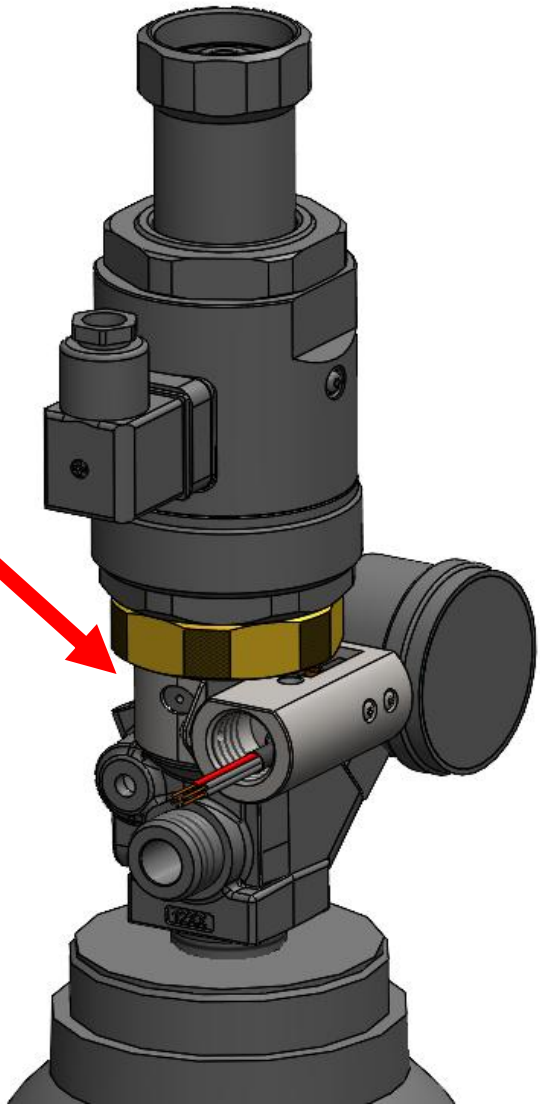

Solenoid Cylinder Valves (Type F203)

- Seat Diameter – 12mm
- Also available as ATEX-Version with classification:

  Ex II 3GD
  Ex h ec IIB T4 Gc
  Ex h tc IIIB T135°C Dc

Total Discharge Valves (TD):

Article no.	for System Type	Inlet Thread	Outlet Thread	Burst Disc	Gauge Port?	Dip Tube Connection?
F2030001	Chemical Gases	ISO 11363-1 25E	W21,8x1/14"	90bar	M12x1mm	M16x1mm
F2031000/ F2031001	CO^2			250bar/ 190bar	/	
F2032000	Inert Gases (200bar)			270bar	M12x1mm	/
F2033000/ F2033001	Inert Gases (300bar)		W21,8x1/14"/ M24x1,5mm	405bar		

Intermittent Valves (INT):

Article no.	for System Type	Inlet Thread	Outlet Thread	Burst Disc	Gauge Port?	Dip Tube Connection?
F2030501	Chemical Gases	ISO 11363-1 25E	W21,8x1/14"	90bar	M12x1mm	M16x1mm
F20315xx	CO^2			250bar/ 190bar	/	
F20325xx	Inert Gases (200bar)			270bar	M12x1mm	/
F20335xx	Inert Gases (300bar)		W21,8x1/14"/ M24x1,5mm	405bar		

Solenoid Cylinder Valves (Type F243)

- Seat Diameter – 12mm

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Total Discharge Valves (TD):

Article no.	for System Type	Inlet Thread	Outlet Thread	Burst Disc	Gauge Port?	Dip Tube Connection?
F2430001	Chemical Gases	ISO 11363-1 25E	W21,8x1/14"	90bar	M12x1mm	M16x1mm
F2431001	CO^2			190bar	/	
F2432000/ F2432001	Inert Gases (200bar)		M24x1,5mm/ W21,8x1/14"	270bar	M12x1mm	/
F2433000/ F2433001	Inert Gases (300bar)			405bar		

Solenoid Cylinder Valves ATEX-type (Type F244)

- Seat Diameter – 12mm
- ATEX-Classification:

  Ex II 3GD

  Ex h ec IIB T4 Gc

  Ex h tc IIIB T135°C Dc

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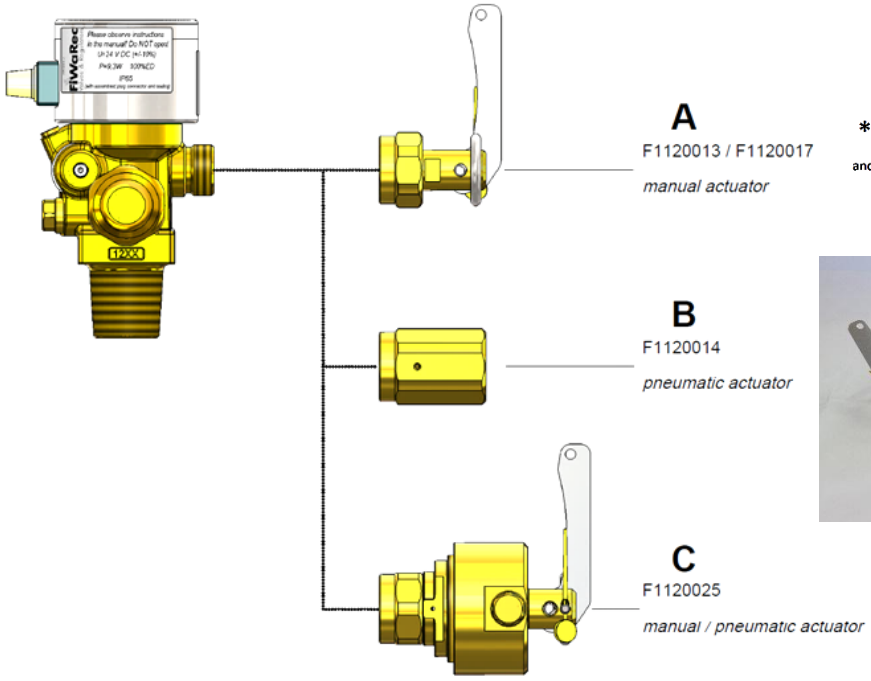
Total Discharge Valves (TD):

Article no.	for System Type	Inlet Thread	Outlet Thread	Burst Disc	Gauge Port?	Dip Tube Connection?
F2440001	Chemical Gases	ISO 11363-1 25E	W21,8x1/14"	90bar	M12x1mm	M16x1mm
F2441001	CO^2			190bar	/	
F2442000/ F2442001	Inert Gases (200bar)		M24x1,5mm/ W21,8x1/14"	270bar	M12x1mm	/
F2443000/ F2443001	Inert Gases (300bar)			405bar		

Actuators for Cylinder Valves F203/F243/F244 (Type F112)



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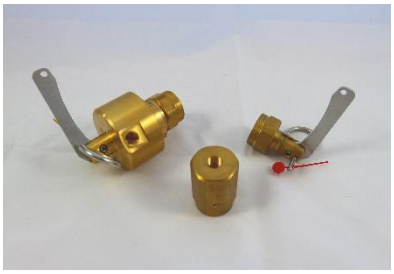
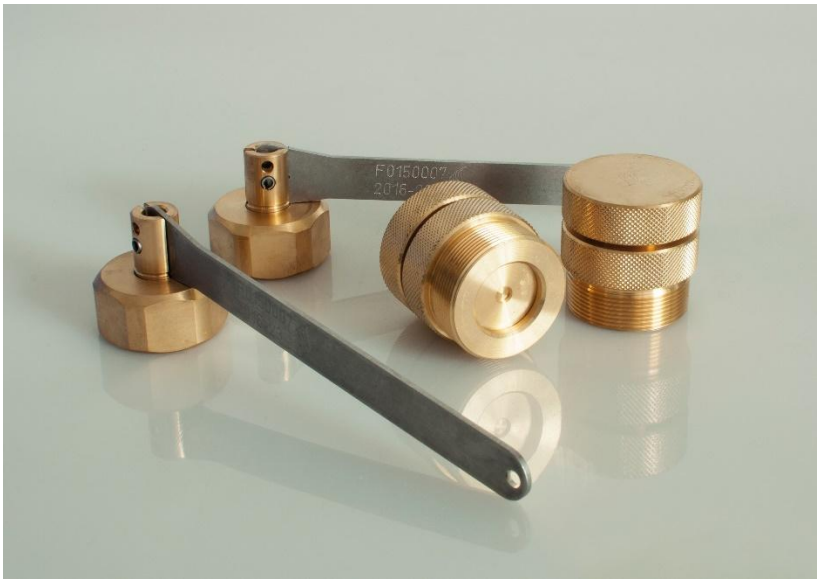


Article no.	Type	Actuation	Technical Details	
F112 0013	**A**	**Manual**	/	
F112 0014	**B**	**Pneumatic**	minimal Pilot Pressure 0,3x Cylinder Pressure	max. Working Pressure 360bar
F112 0025	**C**	**Pneumatic/ Manual**	minimal (nominal) Pilot Pressure 8bar*	max. Working Pressure 300bar

(*) for system pressure of p1=300bar (360bar at +50°C)

Reset Tool for Electrical Actuators



Article no.	Type
F0150007	For actuator F1120004
F0150045	For actuator F1160000

Pilot Hoses (Type F104)

- Pw_{max} – 360bar
- Nominal Wide – 4mm

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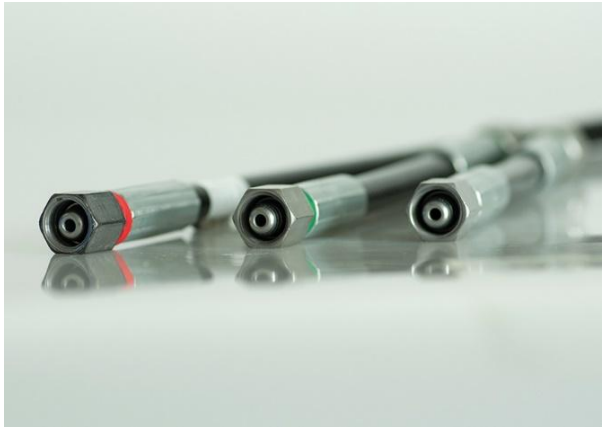
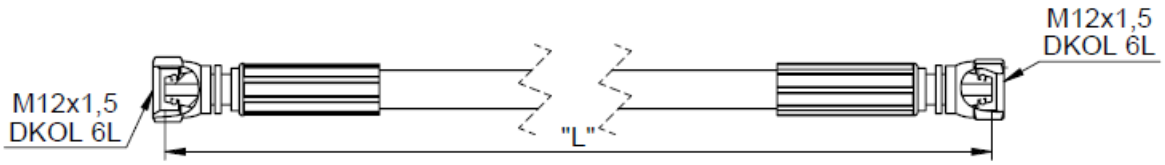


Pilot Hose F1040xxx



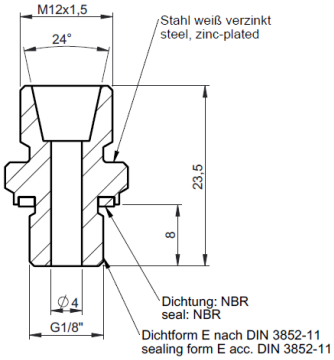
Article no.	Length "L"	Article no.	Length "L"	Article no.	Length "L"
F1040001	150mm	**F1040009**	550mm	**F1040017**	950mm
F1040002	200mm	**F1040010**	600mm	**F1040018**	1000mm
F1040003	250mm	**F1040011**	650mm	**F1040019**	1100mm
F1040004	300mm	**F1040012**	700mm	**F1040020**	1200mm
F1040005	350mm	**F1040013**	750mm	**F1040021**	1300mm
F1040006	400mm	**F1040014**	800mm	**F1040022**	1400mm
F1040007	450mm	**F1040015**	850mm	**F1040023**	1500mm
F1040008	500mm	**F1040016**	900mm		

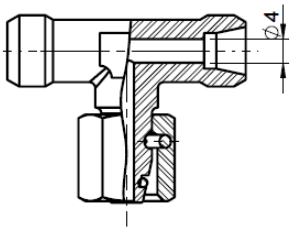
*also available in excess length up to 15.000mm on request

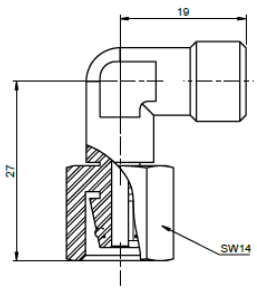
Pilot Line and other Accessories

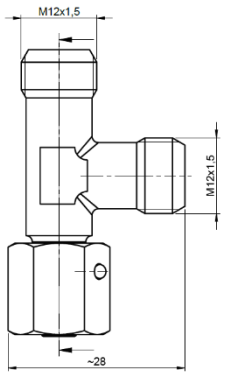
Adaptors for Pilot Hoses

Article no.	Type
F0010000	Straight
E6130003	T-Connector
E6130004	L-Connector
E6130005	T-Connector







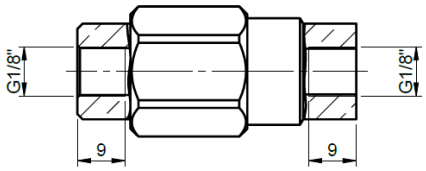


Non-Return Valve for Pilot Line F0160001

- Pw_{max} – 360bar
- Nominal Wide – 4mm

*these products meet the requirements of FM standards and have been successfully tested by ***FM Approvals***

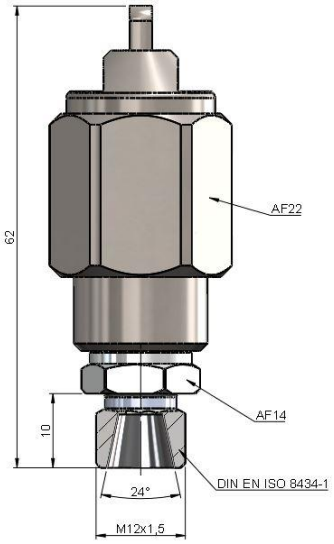
flow direction / Durchflussrichtung:
<-- open / geöffnet
closed / geschlossen-->



Bleed Valve (Type F0150009)

***officially tested by** VdS , FM , UL

- Pw_{max} – 360bar
- Reseating Volume Flow - ~ 30l/min
- Reseating Pressure - 0,5bar (Static) / ~ 0,7bar (Dynamic)
- Integrated Optical Control to show if the Bleed Valve is Closed (Pressurized)



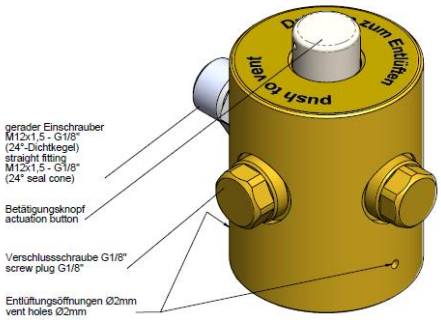
Article no.	Connection Type
F0150009	M12x1,5mm – DKOL 6L (DIN EN ISO 8434-1) – Male
F0150010	G1/8" – Male
F0150011	M12x1,5mm – DKOL 6L (DIN EN ISO 8434-1) – Female
F0150012	G1/8" – Female

* Test Report from Notified Body upon request

Vent Valve for Pilot Line (Type F0150018 /43)

*officially tested by VdS, FM, UL

- Pw_{max} – 360bar
- To Evacuate the Pressure from the Pilot Line after Function Test or System Discharge

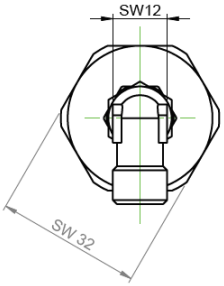


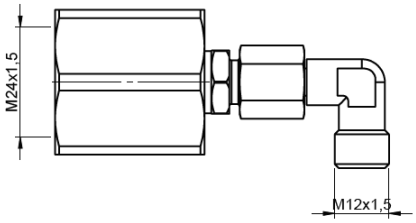
* Test Report from Notified Body upon request

Pilot Valve Adaptor (Type F0150013 /20 /24 /42)

*officially tested by UL, FM

- Pw_{max} – 360bar
  - Leak-free pilot cylinder adaptation to Pilot Line
    - For Valve Types F203/F243 and F202/F242
    - Available thread connections M24x1,5mm or W21,8x1/14”
    - Outlet Connection M12x1,5mm (DKOL 24°) for Pilot Hose Type F104





* Test Report from Notified Body upon request

Cylinder Venting Adaptor (Type F0150046)

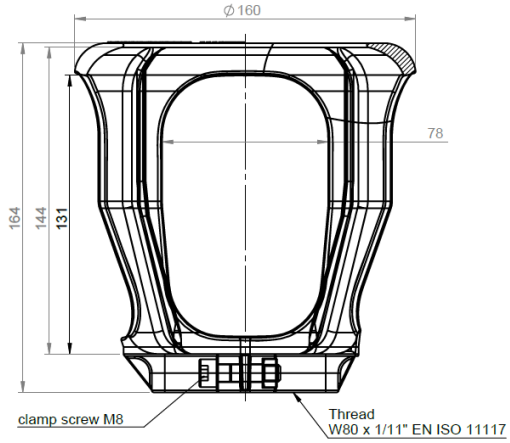
- Pw_{max} – 360bar
- For Safe release of cylinder pressure
  - Connection M12x1mm for gauge connection port

Valve Protection Caps (Type F009)

- Meeting the Requirements of EN ISO 11117 (tested by BAM/TÜV)
  - For Cylinder Connection Thread W80x1/11”
- Suitable for different Valve Types
  - Covering F202/F242, F203/F243, F230 and FiWaGuard Valves

Protective cage (Type F0090001)

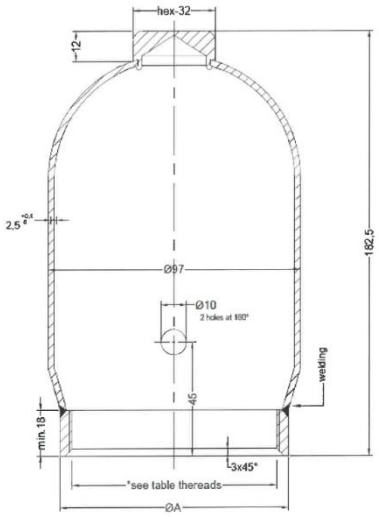
- For Cylinder Assemblies with Package Weights up to max. 180kg
- The Cap can be left on the Cylinder even when the Valve is in Use
  - Large Openings ensure a good access to all Valve Connections and Functions
- Made of Steel, painted in Black



* Test Report from Notified Body upon request

Protection cap (Type F0090002/3)

- For Cylinder Assemblies with Package Weights up to max. 320kg
- Closed cap design
- Made of deep-drawn Steel, painted in Black or zinc plated

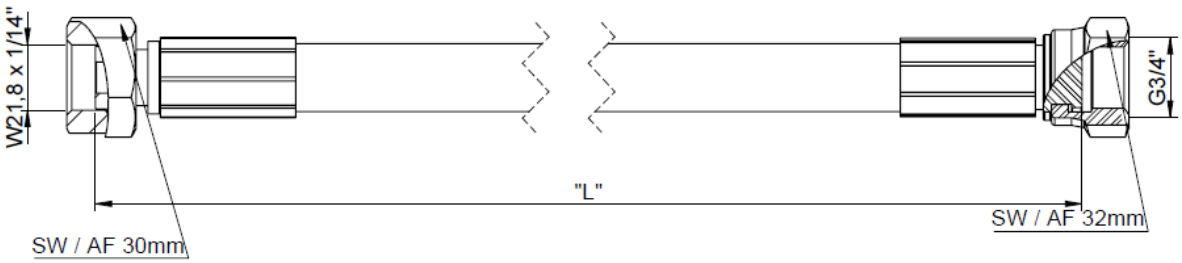


Discharge Hoses DN12 (Type F105)

- Pw_{max} – 360bar
- Nominal Wide – 12mm

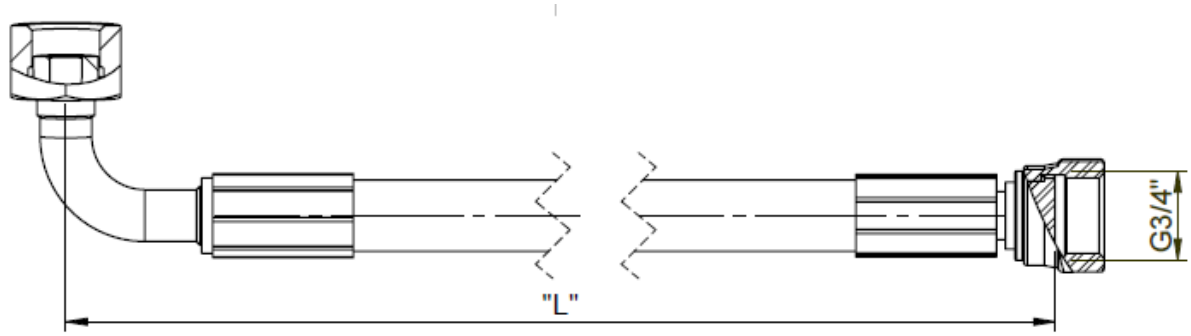
*these products meet the requirements of FM standards and have been successfully tested by FM Approvals

Discharge Hose F1050xxx – W21,8x1/14" (Female, turnable) to G3/4" (Female, turnable)



Article no.	Length "L"		Article no.	Length "L"
F1050001	250mm		**F1050010**	700mm
F1050002	300mm		**F1050011**	750mm
F1050003	350mm		**F1050012**	800mm
F1050004	400mm		**F1050013**	850mm
F1050005	450mm		**F1050014**	900mm
F1050006	500mm		**F1050015**	950mm
F1050007	550mm		**F1050016**	1000mm
F1050008	600mm		**F1050017**	1100mm
F1050009	650mm		**F1050018**	1200mm
			F1050019	1300mm

Discharge Hose F1052xxx – W21,8x1/14” (Female, turnable) to G3/4” (Female, turnable)



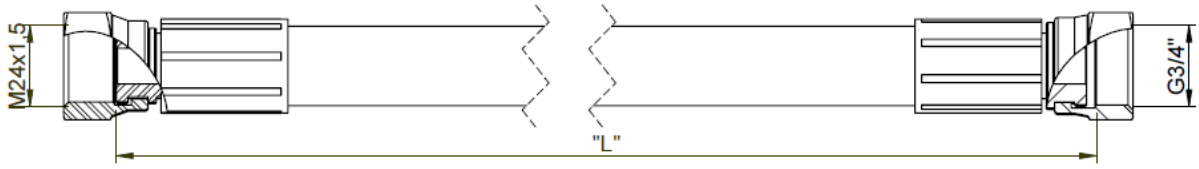
Article no.	Length “L”		Article no.	Length “L”
F1052001	250mm		**F1052010**	700mm
F1052002	300mm		**F1052011**	750mm
F1052003	350mm		**F1052012**	800mm
F1052004	400mm		**F1052013**	850mm
F1052005	450mm		**F1052014**	900mm
F1052006	500mm		**F1052015**	950mm
F1052007	550mm		**F1052016**	1000mm
F1052008	600mm		**F1052017**	1100mm
F1052009	650mm		**F1052018**	1200mm
			F1052019	1300mm

Discharge Hoses DN16 (Type F106)

- Pw_{max} – 360bar
- Nominal Wide – 16mm

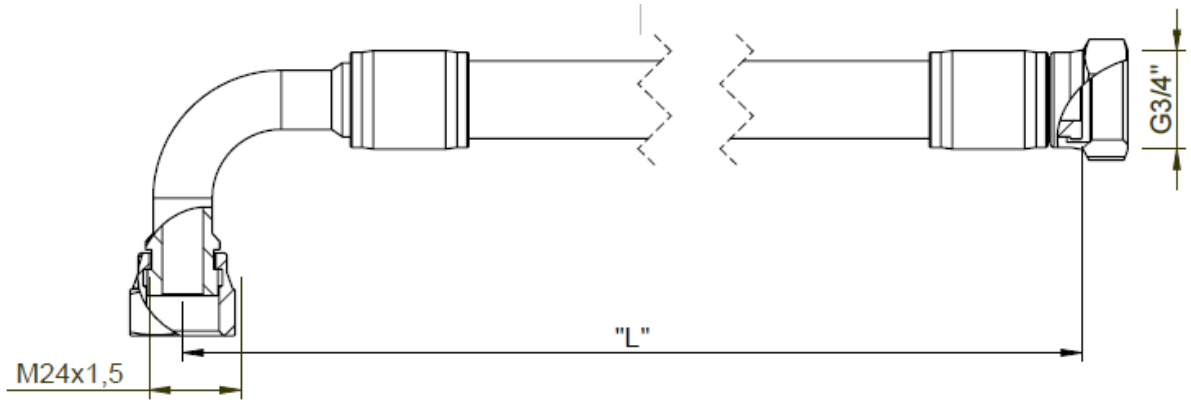
*these products meet the requirements of FM standards and have been successfully tested by FM Approvals

Discharge Hose F1060xxx – M24x1,5mm (Female, turnable) to G3/4” (Female, turnable)



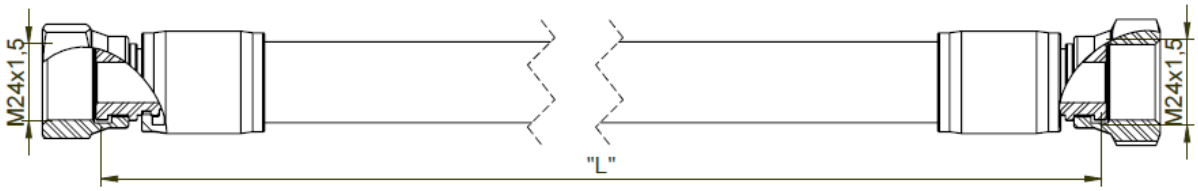
Article no.	Length “L”		Article no.	Length “L”
F1060001	250mm		**F1060010**	700mm
F1060002	300mm		**F1060011**	750mm
F1060003	350mm		**F1060012**	800mm
F1060004	400mm		**F1060013**	850mm
F1060005	450mm		**F1060014**	900mm
F1060006	500mm		**F1060015**	950mm
F1060007	550mm		**F1060016**	1000mm
F1060008	600mm		**F1060017**	1100mm
F1060009	650mm		**F1060018**	1200mm

Discharge Hose F1061xxx – M24x1,5mm (Female, turnable) to G3/4" (Female, turnable)



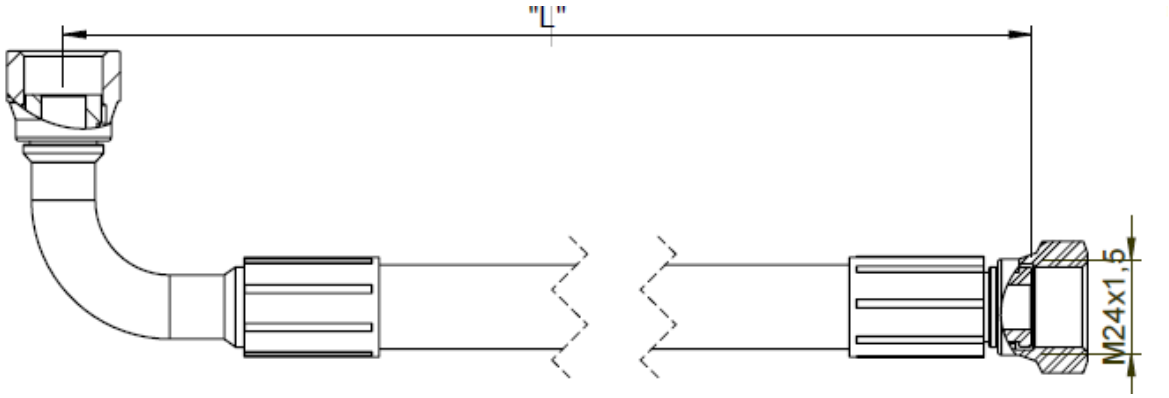
Article no.	Length "L"		Article no.	Length "L"
F1061001	250mm		**F1061010**	700mm
F1061002	300mm		**F1061011**	750mm
F1061003	350mm		**F1061012**	800mm
F1061004	400mm		**F1061013**	850mm
F1061005	450mm		**F1061014**	900mm
F1061006	500mm		**F1061015**	950mm
F1061007	550mm		**F1061016**	1000mm
F1061008	600mm		**F1061017**	1100mm
F1061009	650mm		**F1061018**	1200mm

Discharge Hose F1062xxx – M24x1,5mm (Female, turnable) to M24x1,5mm (Female, turnable)



Article no.	Length "L"		Article no.	Length "L"
F1062001	250mm		**F1062010**	700mm
F1062002	300mm		**F1062011**	750mm
F1062003	350mm		**F1062012**	800mm
F1062004	400mm		**F1062013**	850mm
F1062005	450mm		**F1062014**	900mm
F1062006	500mm		**F1062015**	950mm
F1062007	550mm		**F1062016**	1000mm
F1062008	600mm		**F1062017**	1100mm
F1062009	650mm		**F1062018**	1200mm

Discharge Hose F1063xxx – M24x1,5mm (Female, turnable) to M24x1,5mm (Female, turnable)

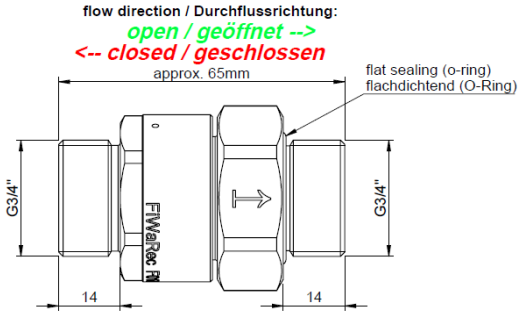


Article no.	Length "L"		Article no.	Length "L"
F1063001	250mm		**F1063010**	700mm
F1063002	300mm		**F1063011**	750mm
F1063003	350mm		**F1063012**	800mm
F1063004	400mm		**F1063013**	850mm
F1063005	450mm		**F1063014**	900mm
F1063006	500mm		**F1063015**	950mm
F1063007	550mm		**F1063016**	1000mm
F1063008	600mm		**F1063017**	1100mm
F1063009	650mm		**F1063018**	1200mm

Check Valves for Discharge Line (Type F017)

- Pw_{max} – 360bar
- Nominal Wide – 12mm

* these products meet the requirements of FM standards and have been successfully tested by ***FM Approvals***



Article no.	Inlet Thread	Outlet Thread
F0170000	G3/4"	G3/4"
F0170001	M24x1,5mm	

Monitoring Devices

Special patented Thread Connection which enables to assemble and disassemble the Gauges even under Pressure without causing any Leakages.

Pressure Gauge (Type F05200xx)

Article no.	Pressure Range
F0520006	0-100bar
F0520002	0-315bar
F0520005	0-400bar

Pressure Gauge (Type F05201xx)

Article no.	Pressure Range
F0520100	0-60bar
F0520101	0-100bar
F0520102	0-250bar
F0520103	0-315bar
F0520104	0-400bar

Pressure Gauge **with Switching Contact** (Type F053)

Article no.	Pressure Range	Set Point	Switching Type*
F0530015	0-60bar	22,5bar	Normally open (NO)
F0530016			Normally closed (NC)
F0530019	0-100bar	38bar	Normally open (NO)
F0530020			Normally closed (NC)
F0530045	0-100bar	45bar	Normally open (NO)
F0530046			Normally closed (NC)
F0530069	0-160bar	90bar	Normally open (NO)
F0530070			Normally closed (NC)
F0530021	0-315bar	180bar	Normally open (NO)
F0530022			Normally closed (NC)
F0530000	0-400bar	270bar	Normally open (NO)
F0530024			Normally closed (NC)

*switching type for condition without pressure

Pressure Gauge **with Switching Contact** (Type F058)

*these products meet the requirements of FM standards and have been successfully tested by ***FM Approvals***

Article no.	Pressure Range	Set Point	Switching Type*	Remarks
F0580000	0-450bar	270bar	Normally Open (NO)	only for IG-01, IG-100, IG-55 and IG-541
F0580001			Normally Closed (NC)	
F0580002	0-300bar	180bar	Normally Open (NO)	
F0580003			Normally Closed (NC)	
F0580004	0-60bar	22,5bar	Normally Open (NO)	only for HFC227ea
F0580005			Normally Closed (NC)	
F0580006			Normally Open (NO)	only for FK5-1-12
F0580007			Normally Closed (NC)	
F0580008	0-80bar	38bar	Normally Open (NO)	only for HFC227ea and FK5-1-12
F0580009			Normally Closed (NC)	
F0580012	0-90bar	45bar	Normally Open (NO)	
F0580013			Normally Closed (NC)	

*switching type for condition without pressure

Pressure Gauge (Type F061)

*these products meet the requirements of FM standards and have been successfully tested by FM Approvals

Article no.	Pressure Range	Remarks	Filling reference temperature
F0610000	0-450bar	only for inert gases	15°C
F0610001	0-300bar		
F0610002	0-60bar	only for HFC227ea	
F0610003	0-50bar	only for FK5-1-12	
F0610004	0-80bar	only for HFC227ea and FK5-1-12	
F0610005	0-90bar		
F0610006	0-450bar	only for inert gases	21°C

Pressure Gauge **with Switching Contact** (Type F062)

*these products meet the requirements of FM standards and have been successfully tested by FM Approvals

Article no.	Pressure Range	Set Point	Switching Type*	Remarks	Filling reference temperature
F0620000	0-450bar	270bar	Normally Open (NO)	only for inert gases	15°C
F0620001			Normally Closed (NC)		
F0620002	0-300bar	180bar	Normally Open (NO)		
F0620003			Normally Closed (NC)		
F0620004	0-60bar	22,5bar	Normally Open (NO)	only for HFC227ea	
F0620005			Normally Closed (NC)		
F0620006			Normally Open (NO)	only for FK5-1-12	
F0620007			Normally Closed (NC)		
F0620008	0-80bar	38bar	Normally Open (NO)	only for HFC227ea and FK5-1-12	
F0620009			Normally Closed (NC)		
F0620010	0-90bar	45bar	Normally Open (NO)		
F0620011			Normally Closed (NC)		
F0620012	0-450bar	270bar	Normally Open (NO)	only for inert gases	21°C
F0620013			Normally Closed (NC)		

Constant Pressure Regulator (Type F212)

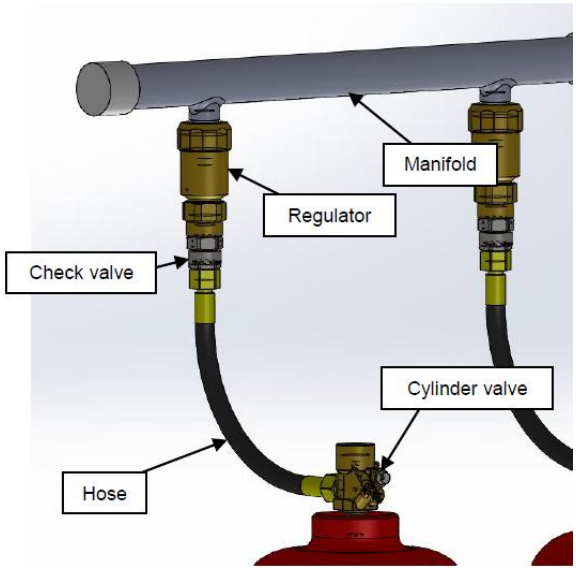
FiWaRec Constant Pressure Regulator F212 regulates the System Pressure to max. 60bar and provides Highest Flow Performance and best Flexibility for System Manufacturers, for most Cost-Effective Systems.

*these products meet the requirements of FM standards and have been successfully tested by FM Approvals

- Pw_{max} – 360bar (Inlet)
- for Cylinder Sizes up to 140Litre and all Inert Gases
- Very High Flow Performance
  - **Discharge Time for 140Litre Cylinders / 300bar** → less than 60s

Discharge with F212 pressure regulator			Discharge Time (5% remaining cyl. Pressure)
Agent	**Pressure**	**Cyl. Size**	**[s]**
Nitrogen	300 bar	140l	38,2
Argon		140l	49,2

  - Gives the possibility to use Less Gas (Less Cylinders) for the same Application*
    - *to reach the Design Concentration in the same Time as Competitive Systems
- Very reliable Design, works even properly in High Pressure (300bar) Argon Systems



Article no.	Inlet Thread	Outlet Thread	Remark
F2120010	G3/4“ (Female)	G3/4“ (Male)	for installation directly to the Manifold
F2120011	W21,8x1/14“ (Female)	W21,8x1/14“ (Male)	to be installed to the Cylinder Valve

Discharge Nozzles (Type F007)

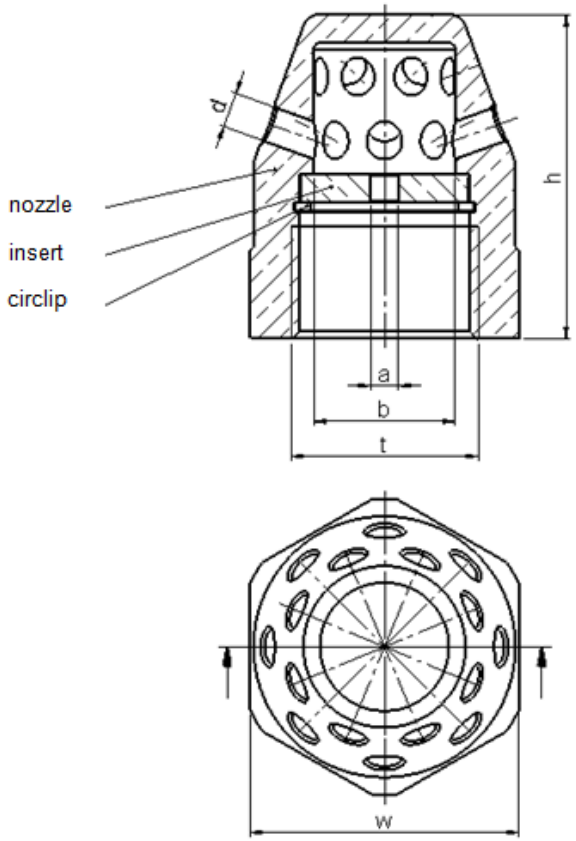
- The required Orifice Diameter has to be determined by an appropriate Calculation Software and Drilled out to the Calculated Orifice Size.

360°-Nozzles – **BSPP thread**

Article no.	Application		Nozzle Bores				External Sizes		Orifice
	CO2	Inert Gases	Bore Diameter	Thread	360°	Nozzle Cross Section	Height	Wrench Size	Orifice Diameter **
	Working Pressure	Working Pressure	b	t	d		h	w	a
	bar	bar	mm		mm	mm²	mm	mm	mm
F0071002	**90**	**90**	Ø10	**G 3/8"**	8 x Ø3,6	81,4	29	24	**3 – 9,5**
F0071002-030									3,0
F0071002-xxx									xx,x
F0071002-095									9,5
F0071004	**90**	**90**	Ø15	**G 1/2"**	8 x Ø5,4	183,2	36	30	**3 – 12**
F0071004-030									3,0
F0071004-xxx									xx,x
F0071004-120									12,0
F0071006	**90**	**90**	Ø20	**G 3/4"**	16 x Ø5	314,2	46	38	**4 – 16**
F0071006-040									4,0
F0071006-xxx									xx,x
F0071006-160									16,0
F0071008	**90**	**90**	Ø25	**G 1"**	16 x Ø6,3	498,8	55	45	**6 – 20**
F0071008-060									6,0
F0071008-xxx									xx,x
F0071008-200									20,0
F0071010	**90**	**90**	Ø32	**G 1 1/4"**	16 x Ø8	804,2	64	50	**8 – 25**
F0071010-080									8,0
F0071010-xxx									xx,x
F0071010-250									25,0
F0071012	**n.a.**	**90**	Ø40	**G 1 1/2"**	24 x Ø8,2	1267,4	77	60	**10 – 32**
F0071012-100									10,0
F0071012-xxx									xx,x
F0071012-320									32,0
F0071014	**n.a.**	**90**	Ø50	**G 2"**	24 x Ø10,2	1961,1	94	80	**12 – 40**
F0071014-120									12,0
F0071014-xxx									xx,x
F0071014-400									40,0

n.a. = not applicable

**** the required Orifice Diameter has to be Calculated by a suitable Flow Calculation Software or Method!!!**

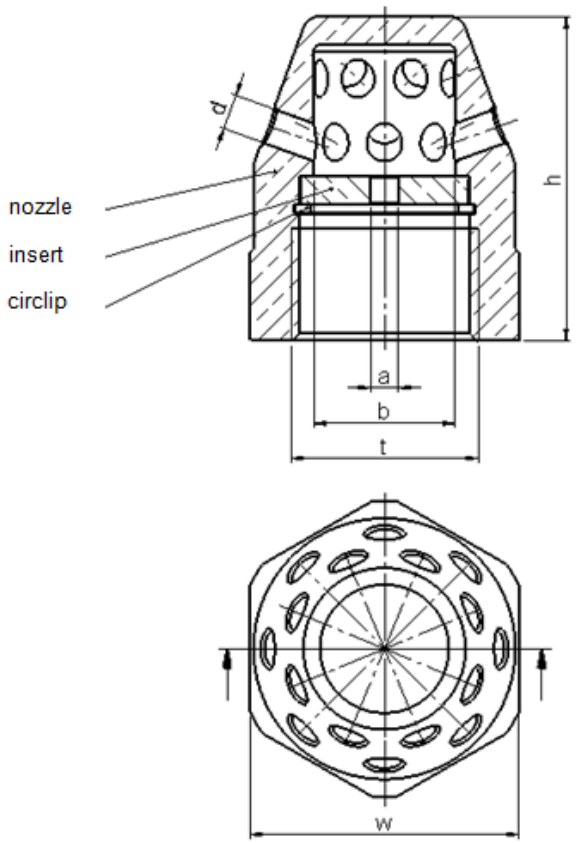


360°-Nozzles – **NPT thread**

Article no.	Application		Nozzle Bores				External Sizes		Orifice
	CO2	Inert Gases	Bore Diameter	Thread	360°	Nozzle Cross Section	Height	Wrench Size	Orifice Diameter **
	Working Pressure	Working Pressure	b	t	d		h	w	a
	bar	bar	mm		mm	mm²	mm	mm	mm
F0072002	**90**	**90**	Ø10	**3/8" NPT**	8 x Ø3,6	81,4	29	24	**3 – 9,5**
F0072002-030									3,0
F0072002-xxx									xx,x
F0072002-095									9,5
F0072004	**90**	**90**	Ø15	**1/2" NPT**	8 x Ø5,4	183,2	36	30	**3 – 12**
F0072004-030									3,0
F0072004-xxx									xx,x
F0072004-120									12,0
F0072006	**90**	**90**	Ø20	**3/4" NPT**	16 x Ø5	314,2	46	38	**4 – 16**
F0072006-040									4,0
F0072006-xxx									xx,x
F0072006-160									16,0
F0072008	**90**	**90**	Ø25	**1" NPT**	16 x Ø6,3	498,8	55	45	**6 – 20**
F0072008-060									6,0
F0072008-xxx									xx,x
F0072008-200									20,0
F0072010	**90**	**90**	Ø32	**1 1/4" NPT**	16 x Ø8	804,2	64	50	**8 – 25**
F0072010-080									8,0
F0072010-xxx									xx,x
F0072010-250									25,0
F0072012	**n.a.**	**90**	Ø40	**1 1/2" NPT**	24 x Ø8,2	1267,4	77	60	**10 – 32**
F0072012-100									10,0
F0072012-xxx									xx,x
F0072012-320									32,0
F0072014	**n.a.**	**90**	Ø50	**2" NPT**	24 x Ø10,2	1961,1	94	80	**12 – 40**
F0072014-120									12,0
F0072014-xxx									xx,x
F0072014-400									40,0

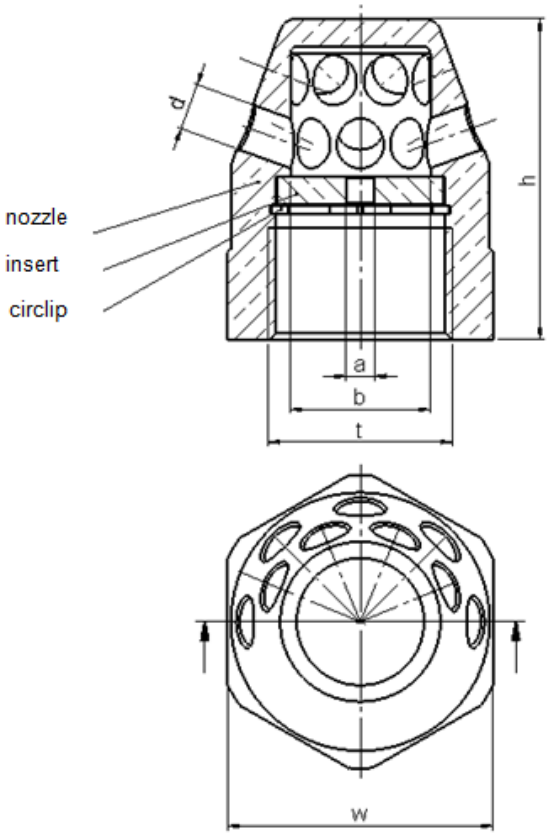
n.a. = not applicable

**** the required Orifice Diameter has to be Calculated by a suitable Flow Calculation Software or Method!!!**



180°-Nozzles – **BSPP thread**

Article no.	Application		Nozzle Bores				External Sizes		Orifice
	CO2	Inert Gases	Bore Diameter	Thread	360°	Nozzle Cross Section	Height	Wrench Size	Orifice Diameter **
	Working Pressure	Working Pressure	b	t	d		h	w	a
	bar	bar	mm		mm	mm²	mm	mm	mm
F0071001	**90**	**90**	Ø10	**G 3/8"**	5 x Ø4,5	79,5	29	24	**3 – 9,5**
F0071001-030									3,0
F0071001-xxx									xx,x
F0071001-095									9,5
F0071003	**90**	**90**	Ø15	**G 1/2"**	5 x Ø6,7	176,3	36	30	**3 – 12**
F0071003-030									3,0
F0071003-xxx									xx,x
F0071003-120									12,0
F0071005	**90**	**90**	Ø20	**G 3/4"**	9 x Ø6,7	317,3	46	38	**4 – 16**
F0071005-040									4,0
F0071005-xxx									xx,x
F0071005-160									16,0
F0071007	**90**	**90**	Ø25	**G 1"**	9 x Ø8,4	498,8	55	45	**6 – 20**
F0071007-060									6,0
F0071007-xxx									xx,x
F0071007-200									20,0
F0071009	**90**	**90**	Ø32	**G 1 1/4"**	9 x Ø10,7	809,3	64	50	**8 – 25**
F0071009-080									8,0
F0071009-xxx									xx,x
F0071009-250									25,0
F0071011	**n.a.**	**90**	Ø40	**G 1 1/2"**	14 x Ø10,7	1258,9	77	60	**10 – 32**
F0071011-100									10,0
F0071011-xxx									xx,x
F0071011-320									32,0
F0071013	**n.a.**	**90**	Ø50	**G 2"**	14 x Ø13,4	1974,4	94	80	**12 – 40**
F0071013-120									12,0
F0071013-xxx									xx,x
F0071013-400									40,0

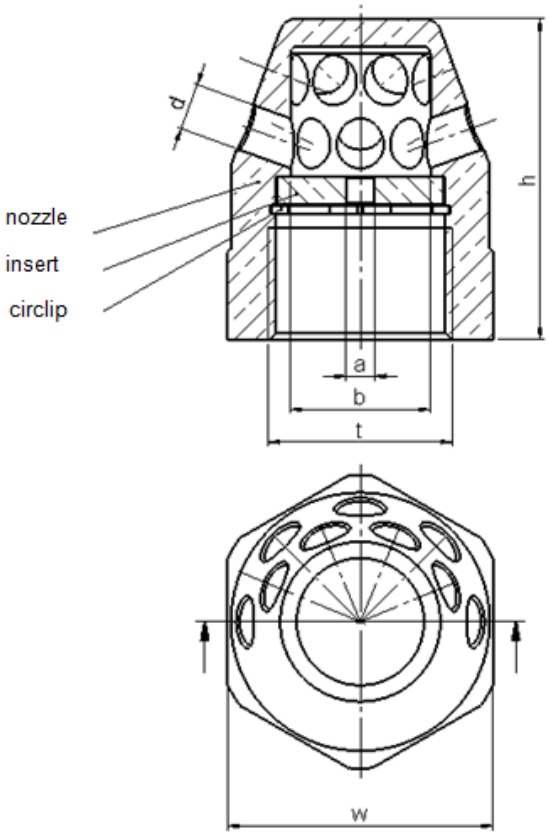


n.a. = not applicable

**** the required Orifice Diameter has to be Calculated by a suitable Flow Calculation Software or Method!!!**

180°-Nozzles – **NPT thread**

Article no.	Application		Nozzle Bores				External Sizes		Orifice
	CO2	Inert Gases	Bore Diameter	Thread	360°	Nozzle Cross Section	Height	Wrench Size	Orifice Diameter **
	Working Pressure	Working Pressure	b	t	d		h	w	a
	bar	bar	mm		mm	mm²	mm	mm	mm
F0072001	**90**	**90**	Ø10	**3/8" NPT**	5 x Ø4,5	79,5	29	24	**3 – 9,5**
F0072001-030									3,0
F0072001-xxx									xx,x
F0072001-095									9,5
F0072003	**90**	**90**	Ø15	**1/2" NPT**	5 x Ø6,7	176,3	36	30	**3 – 12**
F0072003-030									3,0
F0072003-xxx									xx,x
F0072003-120									12,0
F0072005	**90**	**90**	Ø20	**3/4" NPT**	9 x Ø6,7	317,3	46	38	**4 – 16**
F0072005-040									4,0
F0072005-xxx									xx,x
F0072005-160									16,0
F0072007	**90**	**90**	Ø25	**1" NPT**	9 x Ø8,4	498,8	55	45	**6 – 20**
F0072007-060									6,0
F0072007-xxx									xx,x
F0072007-200									20,0
F0072009	**90**	**90**	Ø32	**1 1/4" NPT**	9 x Ø10,7	809,3	64	50	**8 – 25**
F0072009-080									8,0
F0072009-xxx									xx,x
F0072009-250									25,0
F0072011	**n.a.**	**90**	Ø40	**1 1/2" NPT**	14 x Ø10,7	1258,9	77	60	**10 – 32**
F0072011-100									10,0
F0072011-xxx									xx,x
F0072011-320									32,0
F0072013	**n.a.**	**90**	Ø50	**2" NPT**	14 x Ø13,4	1974,4	94	80	**12 – 40**
F0072013-120									12,0
F0072013-xxx									xx,x
F0072013-400									40,0



n.a. = not applicable

**** the required Orifice Diameter has to be Calculated by a suitable Flow Calculation Software or Method!!!**

Software for Hydraulic Flow Calculation

VdS Calculation Programs for Gas Extinguishing

- for Inert Gas Systems with Orifice Plates **
- for Inert Gas Systems with Constant Pressure Regulator *
- for CO^2 Systems **
- for Chemical Gas Systems (HFC's - Halocarbons) **

All Software Licenses have to be purchased from VdS in Germany!

*** Customized FiWaRec Software for Inert Gases with Constant Pressure Regulator**

- Software is based on the Flow Performance of the FiWaRec F212 Regulator
- Flow Coefficients of other FiWaRec components are also implemented
- Only available for Regulator Installation directly at the Manifold (Type F2120010)

**** Standard VdS Software for Inert Gases (with Orifice Plates), CO^2 and Chemical Gases**

- Flow Coefficients of FiWaRec Components are available on request to implement into the existing Flow Calculation Software Version

Jensen Hughes Flow Calculation Software

- for Inert Gas Systems with Constant Pressure Regulator and Orifice Plates *
- for CO^2 Systems **
- for Chemical Gas Systems (HFC's - Halocarbons) **

*** Customized FiWaRec Software for Inert Gases**

- Software Licenses will be sold by FiWaRec Valves and Regulators
- Flow Coefficients of each Components are already included
- Software will be UL/FM- tested and approved***
  - ***only if all FiWaRec Components are used
  - ***if other Products shall be used the Software Approval will not be valid

**** Standard Jensen Hughes Software for CO^2 and Chemical Gases**

- Software Licenses have to be purchased from Jensen Hughes
- Equivalent Length data of FiWaRec Components will be available on request to implement into the existing Flow Calculation Software Version

For more details and information like

- Datasheets
- Technical Drawings
- Instruction Manuals
- Additional Catalogues
- …

Please send a request to: sales@fiwarec.de

Or visit the download area on our website under:
http://fiwarec.de/de/login.html

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