

# FiWaRec® Products for High Pressure Fire Suppression Systems



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

**FiWaRec® Product Catalogue**  
**for High Pressure Fire Suppression Systems**



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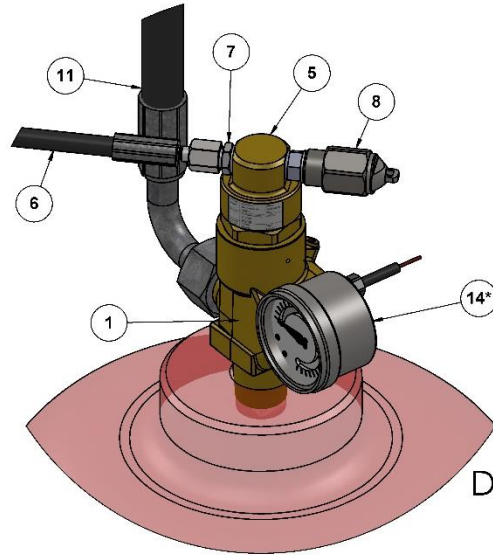
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# Overview: FiWaRec® Products for High Pressure Fire Suppression Systems



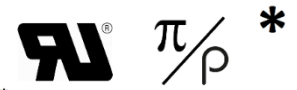
\*these products meet the requirements of FM standards and have been successfully tested by FM Approvals

## Slave Valve

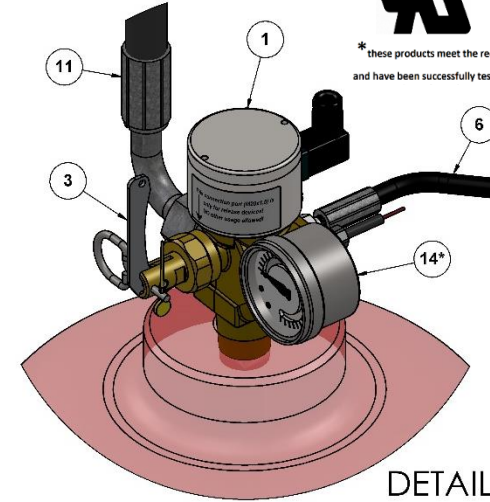


DETAIL B

## Master Valve



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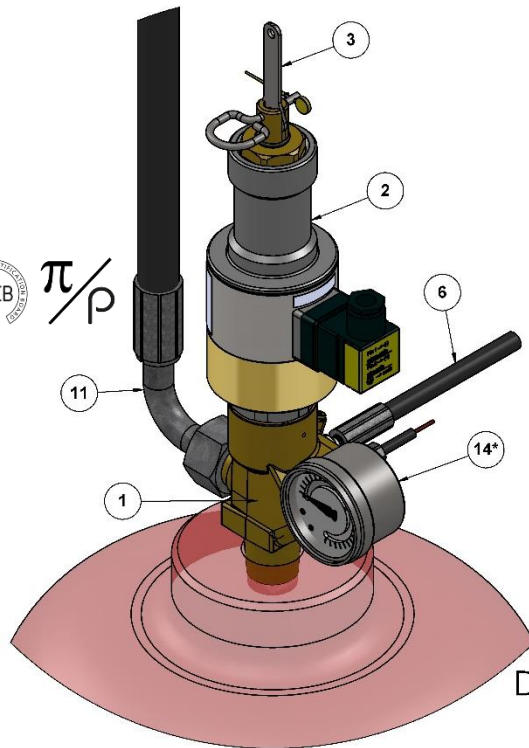
DETAIL A

\* Gauges are not suitable for CO<sub>2</sub> Systems

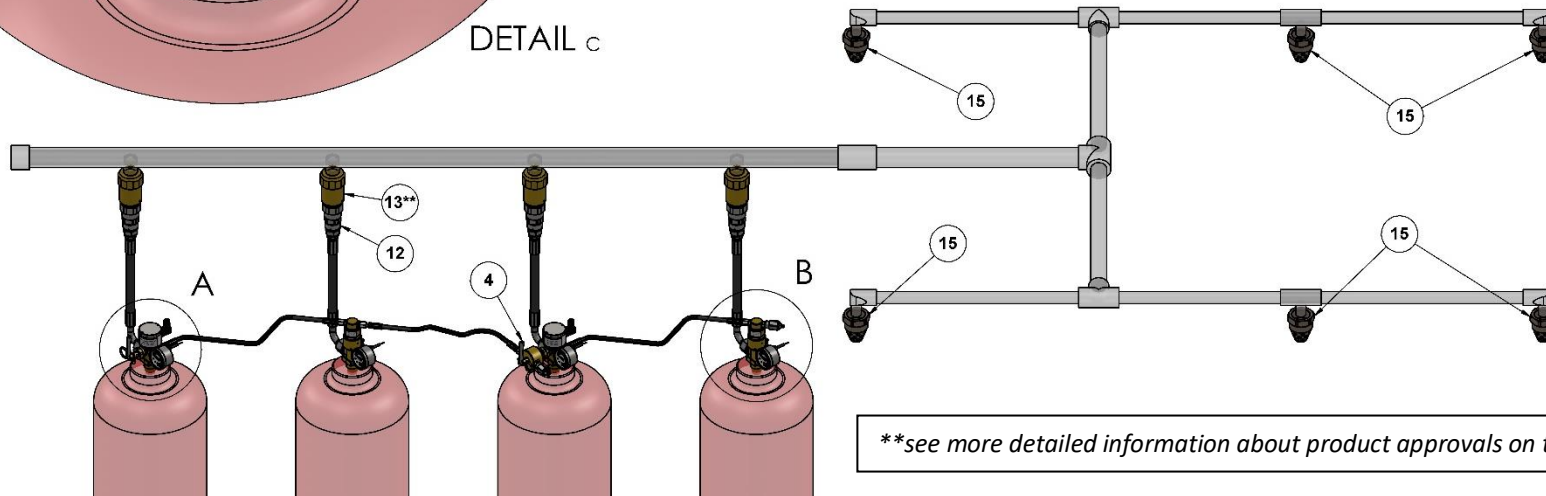
\*\* Constant Flow Regulator only for Inter Gas Systems



## Master Valve



DETAIL C



**\*\*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			CO <sup>2</sup>		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 (only for use with Valves F202)	F1120004							7/8		
3	Manual Actuator	for F202/F242 Valves		F1120005							11
		for F203/F243 Valves		F1120013							7/8
4	Manual -Pneumatic Actuator	for F202/F242 Valves		F1120006							11
		for F203/F243 Valves		F1120025							7/8
5	Pneumatic Actuator	for F202/F242 Valves		F1120011							alternative Pos.
				F1120007							
		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							optional features		
9	vent valve	F0150018									
10	non-return valve for pilot line	F0160001									
11	discharge hose, straight	F1050xxx					/		17 - 20		
		/					F1060xxx				
	discharge hose with 90° elbow	F1052xxx					/		alternative Pos.		
12	check valve DN12	F0170000							20		
13	constant pressure regulator	/				F2120010		F2120010		22	
14	gauge with electric contact (NC)	F0530016 / F0580005 / F0580007	F0530020 / F0580009	F0530046 / F0580013			F0530022 / F0580003	F0530024 / F0580001		21	
	gauge with electric contact (NO)	F0530015 / F0580004 / F0580006	F0530019 / F0580008	F0530045 / F0580012			F0530021 / F0580002	F0530000 / F0580000		alternative Pos.	
	pressure gauge without electric contact	F0520006					F0520002	F0520005			
15	discharge nozzles	F0071xxx							23 - 25		



**Cylinder Valves (Type F202)**

- Seat Diameter – 12mm
- Also available as ATEX-Version

 II 3GD  
 Ex h IIB T6-T4 Gc  
 Ex h IIB T135°C Dc



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

**Cylinder Valves (Type F242)**

- Seat Diameter – 12mm



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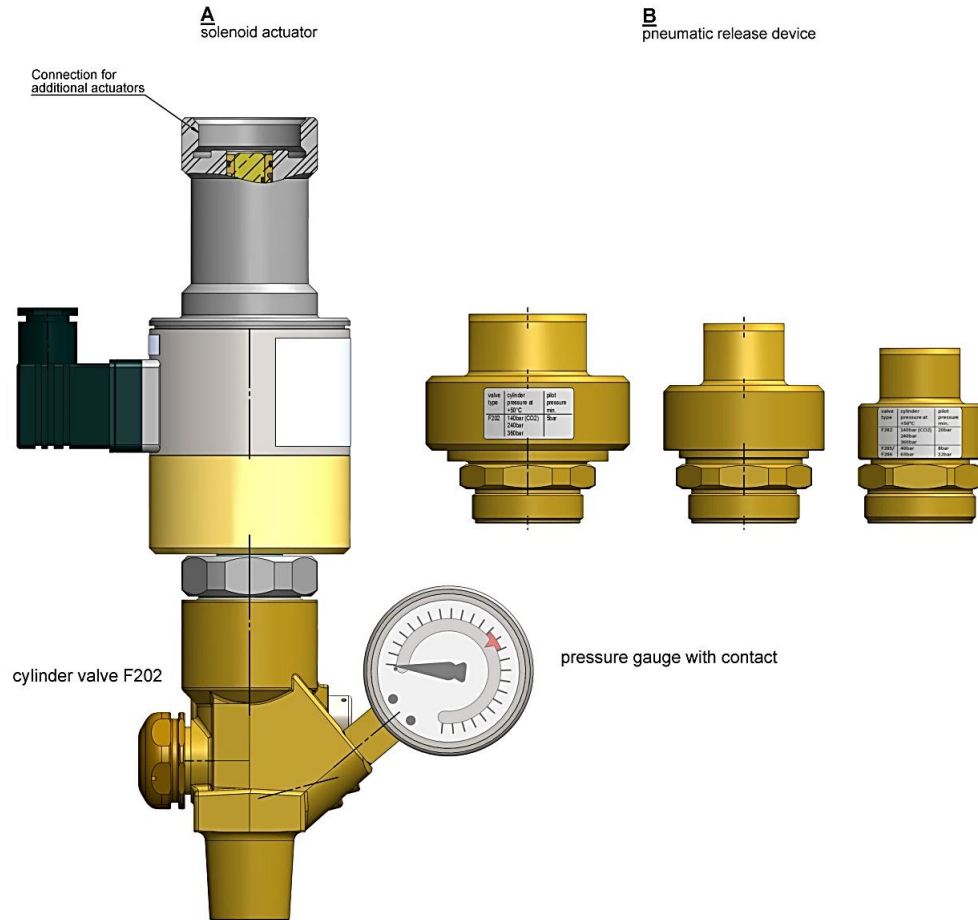
Article no.	for System Type	Inlet Thread	Outlet Thread	Burst Disc	Gauge Port?	Dip Tube Connection?
<b>F2420001</b>	Chemical Gases	ISO 11363-1 25E	W21,8x1/14"	90bar	M12x1mm	M16x1mm
<b>F2421001</b>	CO <sup>2</sup>			190bar	/	
<b>F2422000/ F2422001</b>	Inert Gases (200bar)		M24x1,5mm/ W21,8x1/14"	270bar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

**Actuators for Cylinder Valves DN12\* (Type F112)**

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



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Article no.	Type	Actuation	Technical Details	
F112 0004	A	Electrical	Refer to the Instruction Manual of the Electrical Actuator for all Technical Details	
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

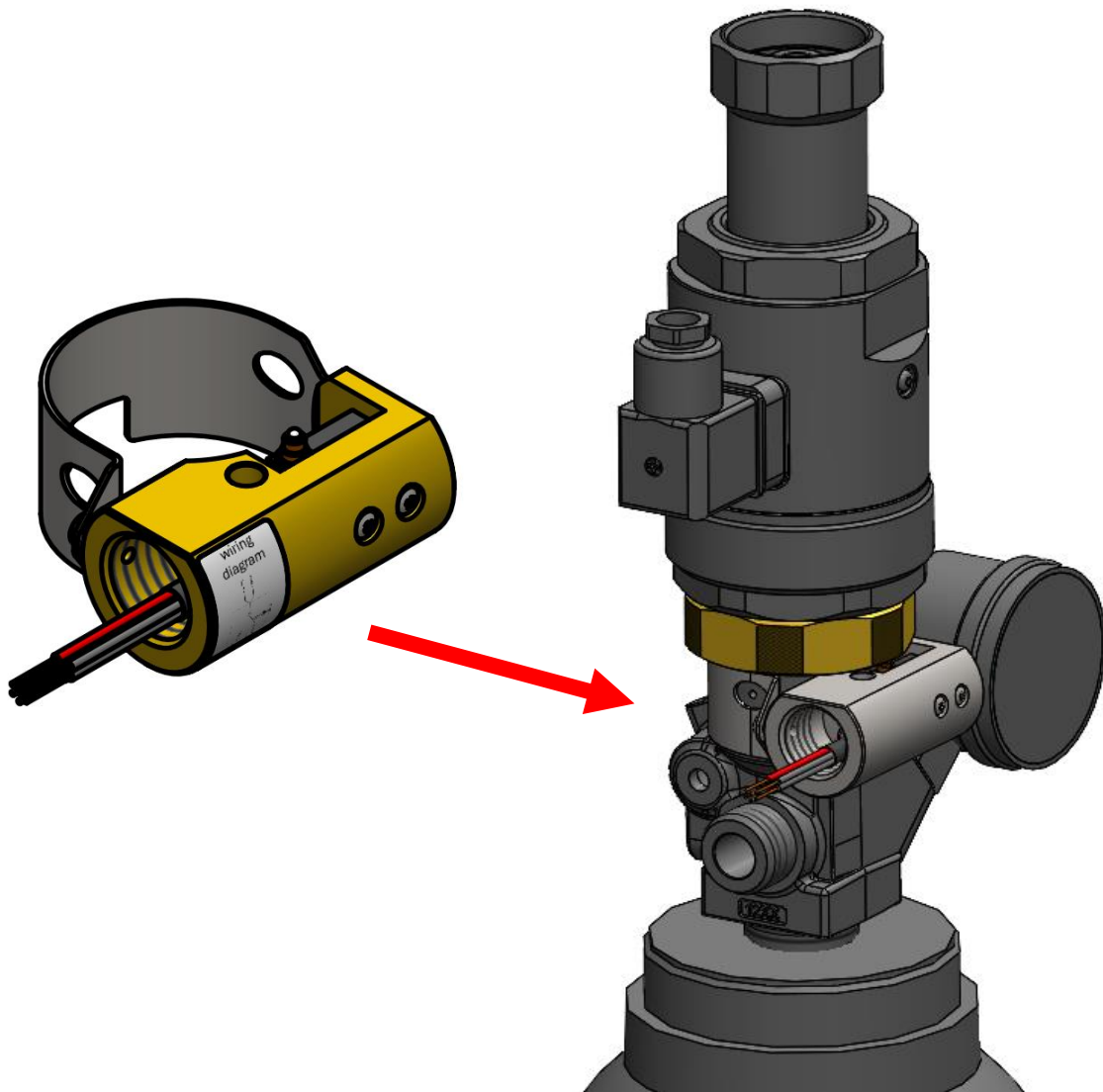
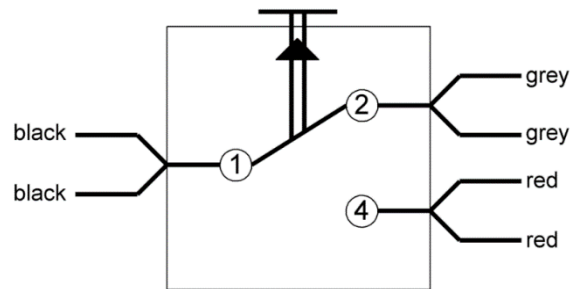
(\*) for system pressure of p1=300bar (360bar at +50°C)



**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:





**Solenoid Cylinder Valves (Type F203)**

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

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



Total Discharge Valves (TD):

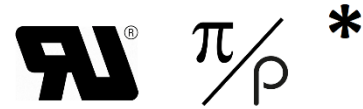
Article no.	for System Type	Inlet Thread	Outlet Thread	Burst Disc	Gauge Port?	Dip Tube Connection?
<b>F2030001</b>	Chemical Gases	ISO 11363-1 25E	W21,8x1/14"	90bar	M12x1mm	M16x1mm
<b>F2031000/ F2031001</b>	CO <sup>2</sup>			250bar/ 190bar	/	
<b>F2032000</b>	Inert Gases (200bar)			270bar	M12x1mm	/
<b>F2033000/ F2033001</b>	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?
<b>F2030501</b>	Chemical Gases	ISO 11363-1 25E	W21,8x1/14"	90bar	M12x1mm	M16x1mm
<b>F20315xx</b>	CO <sup>2</sup>			250bar/ 190bar	/	
<b>F20325xx</b>	Inert Gases (200bar)			270bar	M12x1mm	/
<b>F20335xx</b>	Inert Gases (300bar)		W21,8x1/14"/ M24x1,5mm	405bar		

**Solenoid Cylinder Valves (Type F243)**

- Seat Diameter – 12mm

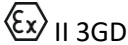


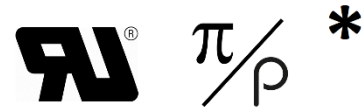
\* these products meet the requirements of FM standards  
 and have been successfully tested by **FM Approvals**

Total Discharge Valves (TD):

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

**Solenoid Cylinder Valves ATEX-type (Type F244)**

- Seat Diameter – 12mm
- ATEX-Classification:  
 II 3GD  
 Ex h ec IIB T4 Gc  
 Ex h tc IIIB T135°C Dc

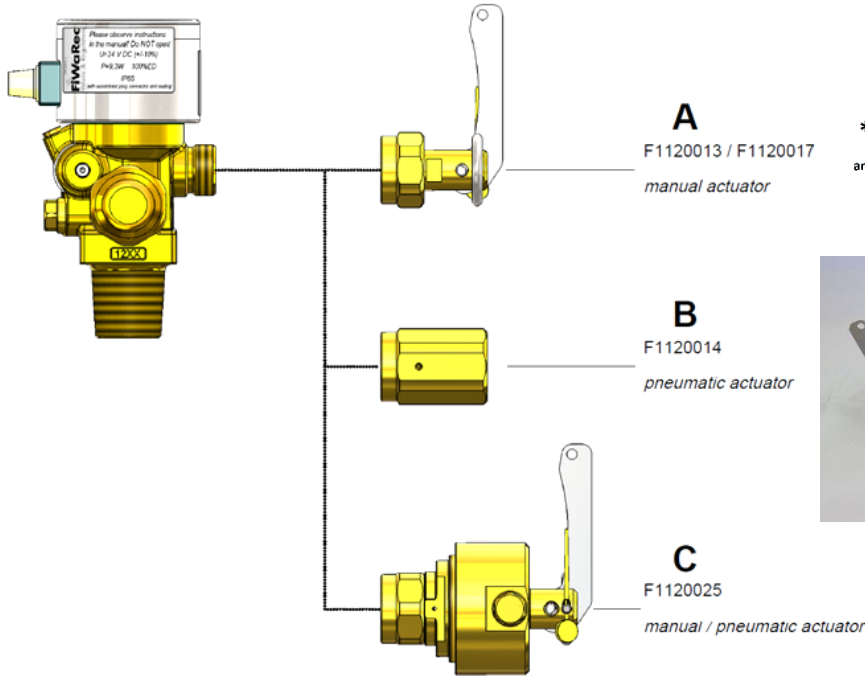


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Total Discharge Valves (TD):

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

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



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

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

**Reset Tool for Electrical Actuator Type F1120004**



Article no.	Type
<b>F0150007</b>	Lever operated

**Pilot Hoses (Type F104)**

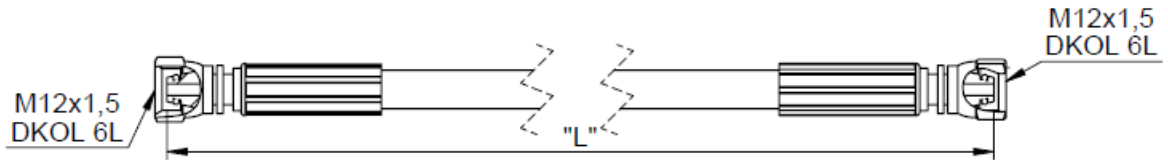
- $P_{W_{max}}$  – 360bar
- Nominal Wide – 4mm



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Pilot Hose F1040xxx



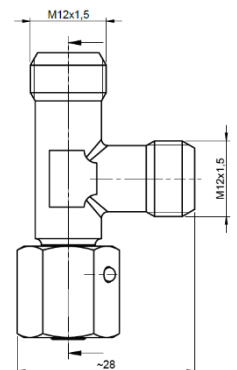
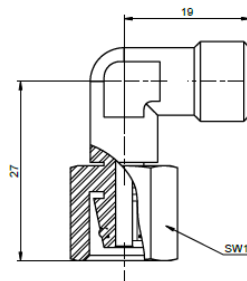
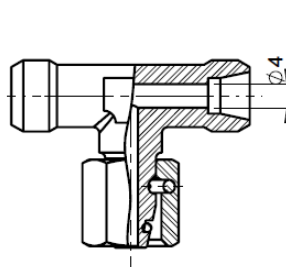
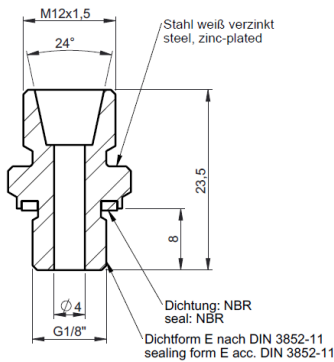
Article no.	Length "L"	Article no.	Length "L"	Article no.	Length "L"
F1040001	150mm	F1040009	550mm	F1040017	950mm
F1040002	200mm	F1040010	600mm	F1040018	1000mm
F1040003	250mm	F1040011	650mm	F1040019	1100mm
F1040004	300mm	F1040012	700mm	F1040020	1200mm
F1040005	350mm	F1040013	750mm	F1040021	1300mm
F1040006	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



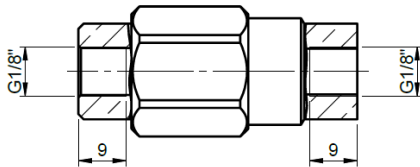
Non-Return Valve for Pilot Line F0160001

- $P_{W_{max}}$  – 360bar
- Nominal Wide – 4mm



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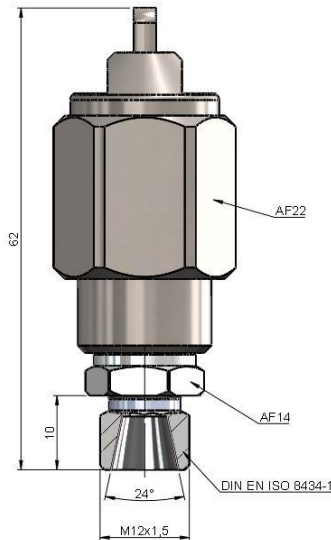
flow direction / Durchflussrichtung:  
 <-- open / geöffnet  
 closed / geschlossen-->



Bleed Valve (Type F0150009)

- $P_{W_{max}}$  – 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)

\*officially tested by , ,



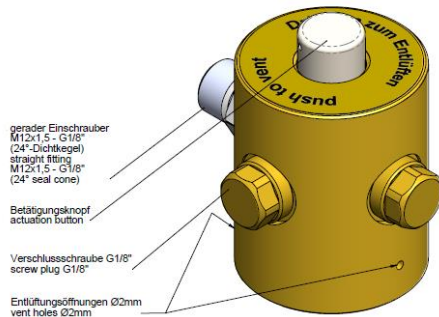
Article no.	Connection Type
<b>F0150009</b>	M12x1,5mm – DKOL 6L (DIN EN ISO 8434-1) – Male
<b>F0150010</b>	G1/8" – Male
<b>F0150011</b>	M12x1,5mm – DKOL 6L (DIN EN ISO 8434-1) – Female
<b>F0150012</b>	G1/8" – Female

\* Test Report from Notified Body upon request

Vent Valve for Pilot Line (Type F0150018 /43)

\*officially tested by , ,

- $P_{W_{max}} - 360\text{bar}$
- To Evacuate the Pressure from the Pilot Line after Function Test or System Discharge

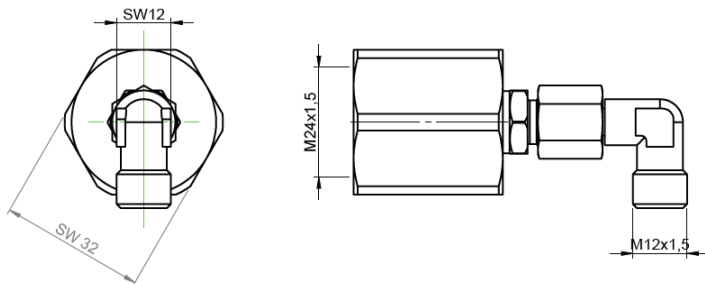


\* Test Report from Notified Body upon request

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

\*officially tested by ,

- $P_{W_{max}} - 360\text{bar}$ 
  - 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)

- $P_{W_{max}} - 360\text{bar}$
- For Safe release of cylinder pressure
  - Connection M12x1mm for gauge connection port





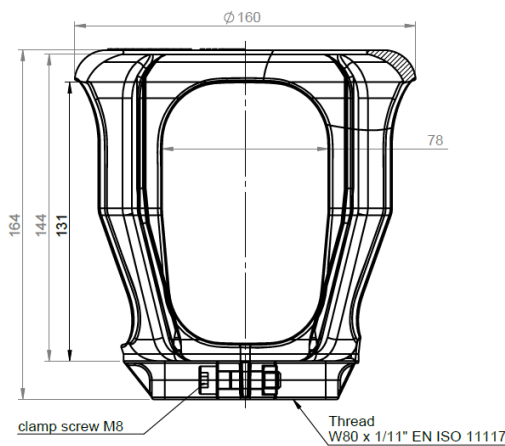
**Valve Protection Caps (Type F009)**

- 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)**

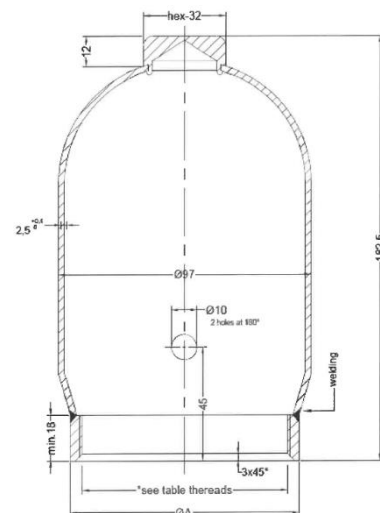
- For Cylinder Assemblies with Package Weights up to max. 180kg
- The Cap can be left on the Cylinder even when the Valve is in Use
  - Large Openings ensure a good access to all Valve Connections and Functions
- Made of Steel, painted in Black



\* 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)**

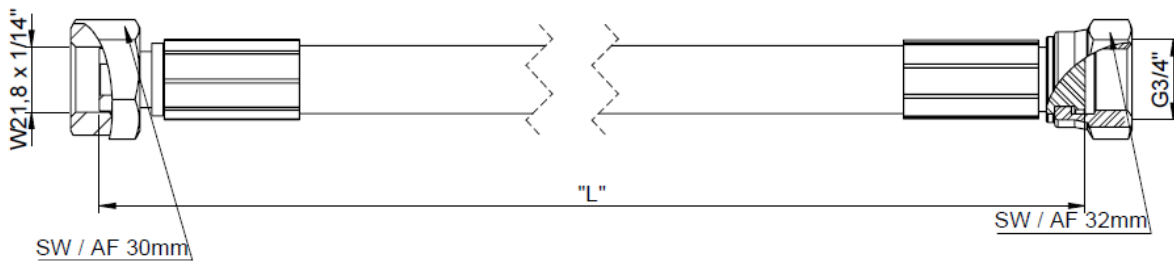
- $PW_{max}$  – 360bar
- Nominal Wide – 12mm



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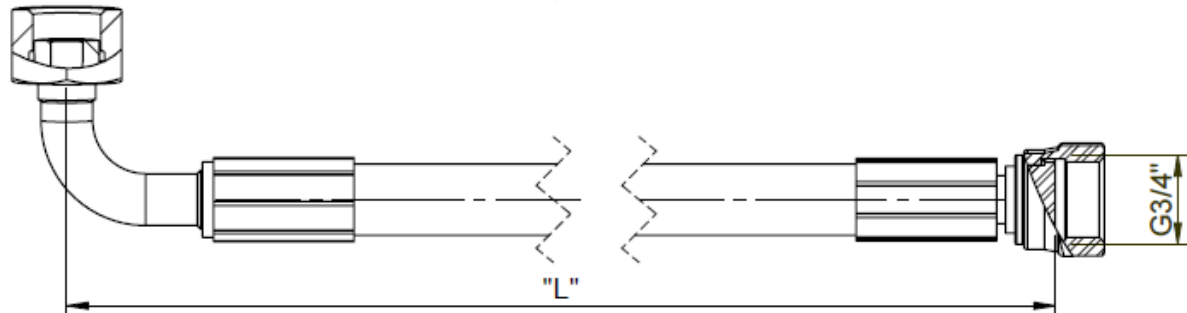


**Discharge Hose F1050xxx – W21,8x1/14" (Female, turnable) to G3/4" (Female, turnable)**



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

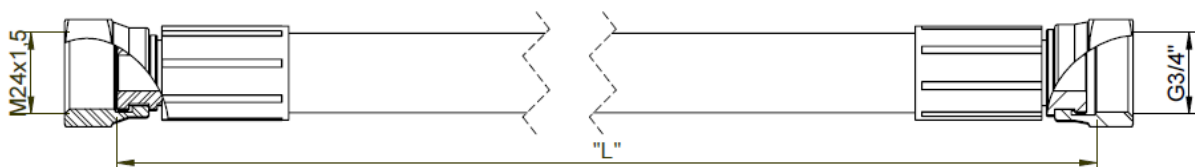
**Discharge Hoses DN16 (Type F106)**

- P<sub>wmax</sub> – 360bar
- Nominal Wide – 16mm



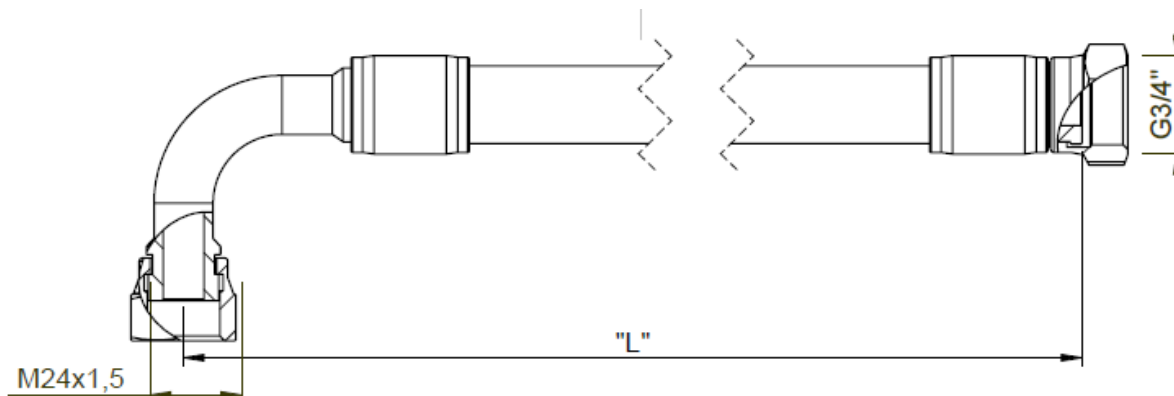
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Discharge Hose F1060xxx – M24x1,5mm (Female, turnable) to G3/4” (Female, turnable)



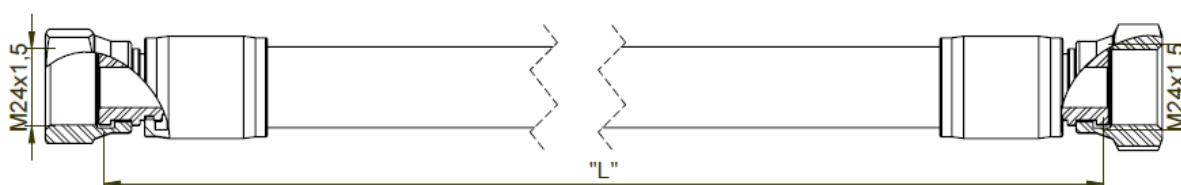
Article no.	Length “L”	Article no.	Length “L”
F1060001	250mm	F1060010	700mm
F1060002	300mm	F1060011	750mm
F1060003	350mm	F1060012	800mm
F1060004	400mm	F1060013	850mm
F1060005	450mm	F1060014	900mm
F1060006	500mm	F1060015	950mm
F1060007	550mm	F1060016	1000mm
F1060008	600mm	F1060017	1100mm
F1060009	650mm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

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



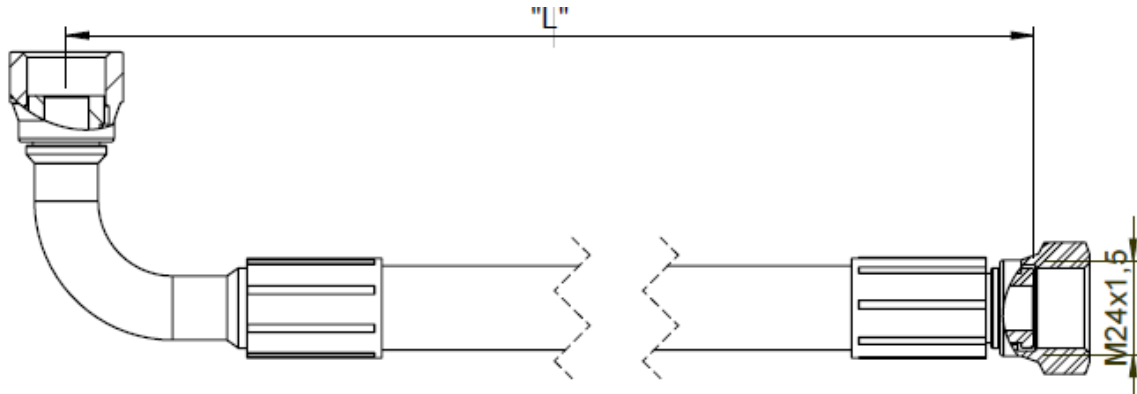
Article no.	Length "L"		Article no.	Length "L"
F1061001	250mm		F1061010	700mm
F1061002	300mm		F1061011	750mm
F1061003	350mm		F1061012	800mm
F1061004	400mm		F1061013	850mm
F1061005	450mm		F1061014	900mm
F1061006	500mm		F1061015	950mm
F1061007	550mm		F1061016	1000mm
F1061008	600mm		F1061017	1100mm
F1061009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



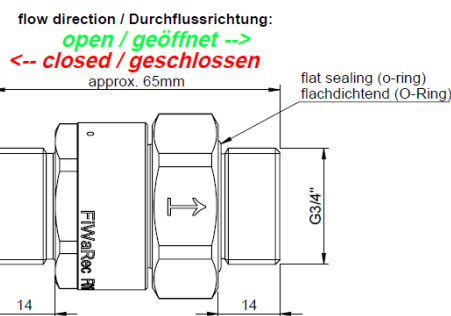
Article no.	Length "L"	Article no.	Length "L"
F1063001	250mm	F1063010	700mm
F1063002	300mm	F1063011	750mm
F1063003	350mm	F1063012	800mm
F1063004	400mm	F1063013	850mm
F1063005	450mm	F1063014	900mm
F1063006	500mm	F1063015	950mm
F1063007	550mm	F1063016	1000mm
F1063008	600mm	F1063017	1100mm
F1063009	650mm	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
<b>F0520006</b>	0-100bar
<b>F0520002</b>	0-315bar
<b>F0520005</b>	0-400bar



Pressure Gauge (Type F05201xx)

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

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



Article no.	Pressure Range	Set Point	Switching Type*
<b>F0530015</b>	0-60bar	22,5bar	Normally open (NO)
<b>F0530016</b>			Normally closed (NC)
<b>F0530019</b>	0-100bar	38bar	Normally open (NO)
<b>F0530020</b>			Normally closed (NC)
<b>F0530045</b>	0-100bar	45bar	Normally open (NO)
<b>F0530046</b>			Normally closed (NC)
<b>F0530069</b>	0-160bar	90bar	Normally open (NO)
<b>F0530070</b>			Normally closed (NC)
<b>F0530021</b>	0-315bar	180bar	Normally open (NO)
<b>F0530022</b>			Normally closed (NC)
<b>F0530000</b>	0-400bar	270bar	Normally open (NO)
<b>F0530024</b>			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
<b>F0580000</b>	0-450bar	270bar	Normally Open (NO)	only for IG-01, IG-100, IG-55 and IG-541
<b>F0580001</b>			Normally Closed (NC)	
<b>F0580002</b>	0-300bar	180bar	Normally Open (NO)	
<b>F0580003</b>			Normally Closed (NC)	
<b>F0580004</b>	0-60bar	22,5bar	Normally Open (NO)	only for HFC227ea
<b>F0580005</b>			Normally Closed (NC)	only for FK5-1-12
<b>F0580006</b>			Normally Open (NO)	
<b>F0580007</b>	0-80bar	38bar	Normally Closed (NC)	only for HFC227ea and FK5-1-12
<b>F0580008</b>			Normally Open (NO)	
<b>F0580009</b>	0-90bar	45bar	Normally Closed (NC)	
<b>F0580012</b>			Normally Open (NO)	
<b>F0580013</b>			Normally Closed (NC)	

\*switching type for condition without pressure

**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.

- $P_{w_{max}}$  – 360bar (Inlet)
- for Cylinder Sizes up to 140Litre and all Inert Gases
- Very High Flow Performance

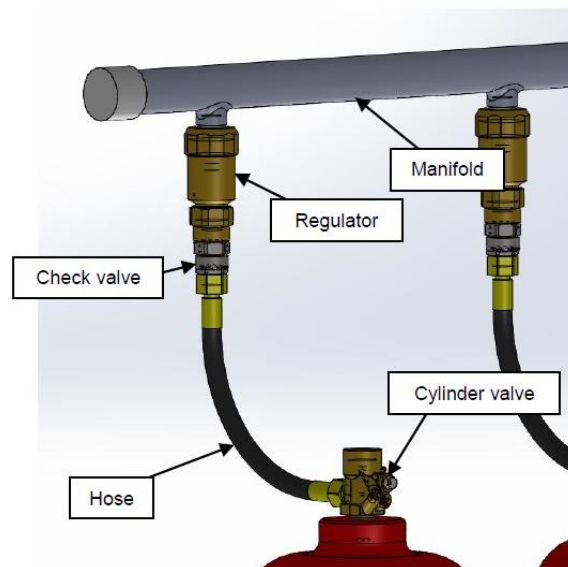


\* these products meet the requirements of FM standards and have been successfully tested by **FM Approvals**

- **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
<b>F2120010</b>	G3/4" (Female)	G3/4" (Male)	for installation directly to the Manifold
<b>F2120011</b>	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.





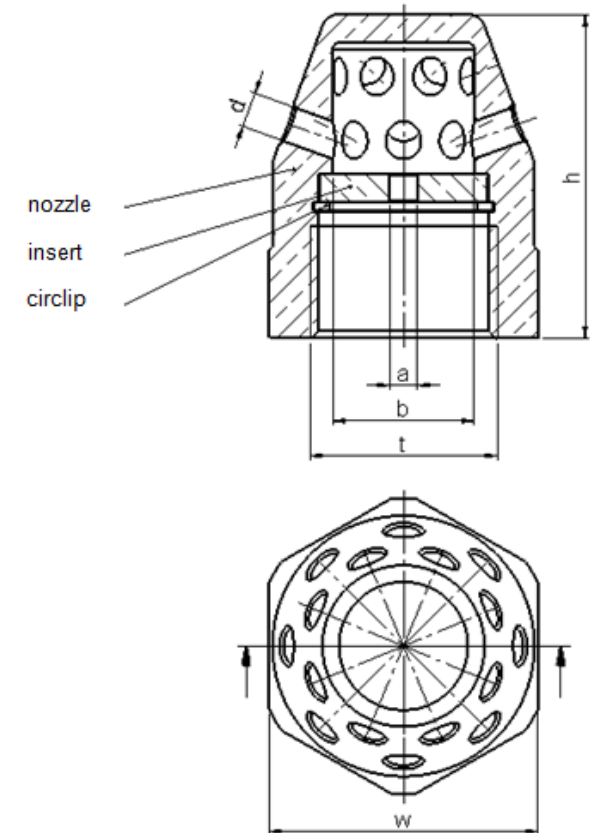
# FiWaRec® Product Catalogue for High Pressure Fire Suppression Systems

## 360°-Nozzles

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	mm <sup>2</sup>	mm	mm	mm
<b>F0071002</b>	90	90	Ø10	G 3/8"	8 x Ø3,6	81,4	29	24	<b>3 – 9,5</b>
F0071002-030									3,0
F0071002-xxx									xx,x
F0071002-095									9,5
<b>F0071004</b>	90	90	Ø15	G 1/2"	8 x Ø5,4	183,2	36	30	<b>3 – 12</b>
F0071004-030									3,0
F0071004-xxx									xx,x
F0071004-120									12,0
<b>F0071006</b>	90	90	Ø20	G 3/4"	16 x Ø5	314,2	46	38	<b>4 – 16</b>
F0071006-040									4,0
F0071006-xxx									xx,x
F0071006-160									16,0
<b>F0071008</b>	90	90	Ø25	G 1"	16 x Ø6,3	498,8	55	45	<b>6 – 20</b>
F0071008-060									6,0
F0071008-xxx									xx,x
F0071008-200									20,0
<b>F0071010</b>	90	90	Ø32	G 1 1/4"	16 x Ø8	804,2	64	50	<b>8 – 25</b>
F0071010-080									8,0
F0071010-xxx									xx,x
F0071010-250									25,0
<b>F0071012</b>	n.a.	90	Ø40	G 1 1/2"	24 x Ø8,2	1267,4	77	60	<b>10 – 32</b>
F0071012-100									10,0
F0071012-xxx									xx,x
F0071012-320									32,0
<b>F0071014</b>	n.a.	90	Ø50	G 2"	24 x Ø10,2	1961,1	94	80	<b>12 – 40</b>
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!!!



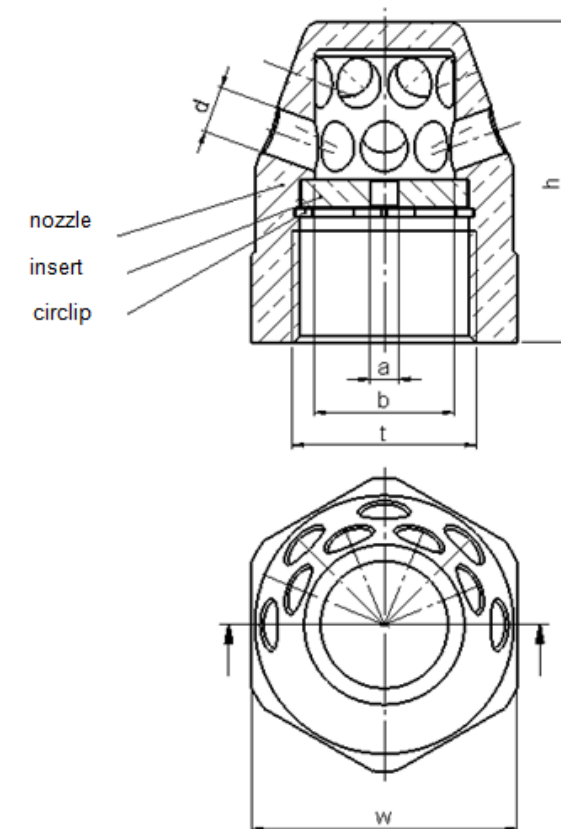
# FiWaRec® Product Catalogue for High Pressure Fire Suppression Systems

## 180°-Nozzles

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	mm <sup>2</sup>	mm	mm	mm
<b>F0071001</b>	90	90	Ø10	G 3/8"	5 x Ø4,5	79,5	29	24	<b>3 – 9,5</b>
F0071001-030									3,0
F0071001-xxx									xx,x
F0071001-095									9,5
<b>F0071003</b>	90	90	Ø15	G 1/2"	5 x Ø6,7	176,3	36	30	<b>3 – 12</b>
F0071003-030									3,0
F0071003-xxx									xx,x
F0071003-120									12,0
<b>F0071005</b>	90	90	Ø20	G 3/4"	9 x Ø6,7	317,3	46	38	<b>4 – 16</b>
F0071005-040									4,0
F0071005-xxx									xx,x
F0071005-160									16,0
<b>F0071007</b>	90	90	Ø25	G 1"	9 x Ø8,4	498,8	55	45	<b>6 – 20</b>
F0071007-060									6,0
F0071007-xxx									xx,x
F0071007-200									20,0
<b>F0071009</b>	90	90	Ø32	G 1 1/4"	9 x Ø10,7	809,3	64	50	<b>8 – 25</b>
F0071009-080									8,0
F0071009-xxx									xx,x
F0071009-250									25,0
<b>F0071011</b>	n.a.	90	Ø40	G 1 1/2"	14 x Ø10,7	1258,9	77	60	<b>10 – 32</b>
F0071011-100									10,0
F0071011-xxx									xx,x
F0071011-320									32,0
<b>F0071013</b>	n.a.	90	Ø50	G 2"	14 x Ø13,4	1974,4	94	80	<b>12 – 40</b>
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!!!



## **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<sup>2</sup> 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<sup>2</sup> 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<sup>2</sup> 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<sup>2</sup> 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](mailto:sales@fiwarec.de)

Or visit the download area on our website under:

<http://fiwarec.de/de/login.html>

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**FiWaRec® GmbH**

Europa-Allee 51  
54343 Föhren

Germany