

Ci IV8 GA400 discharge valve

Item numbers covered by this datasheet

305433	Ci IV8-150 GA400 Manosw
305434	Ci IV8-200 GA400 Manosw
305421	Ci IV8-200 Basic

General

Valve for use in INERGEN fire extinguishing systems.

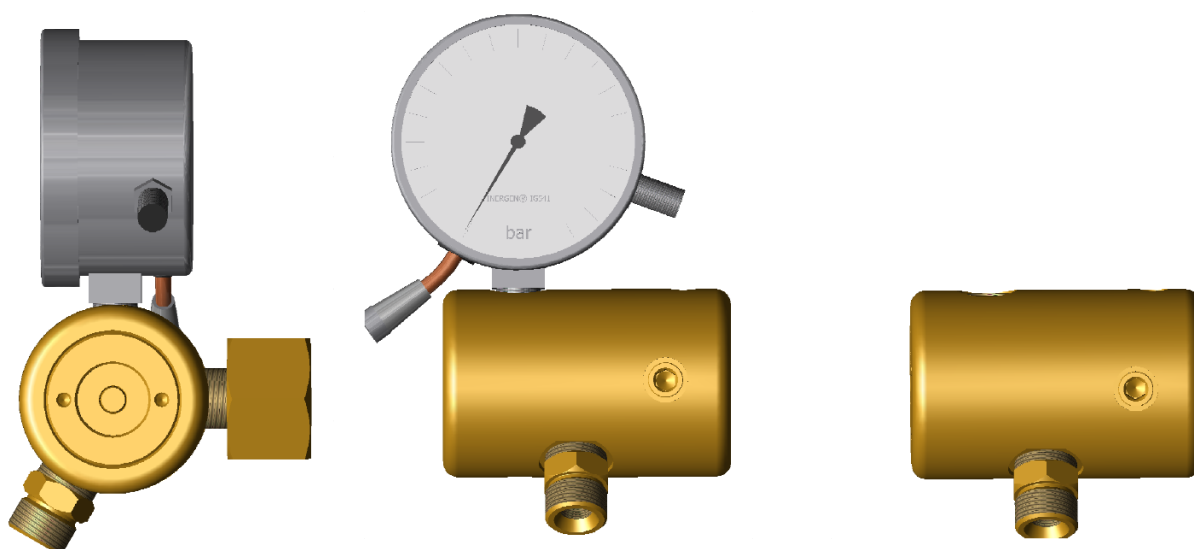
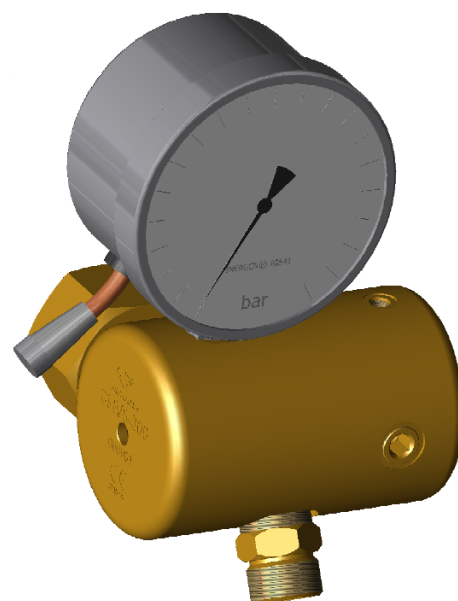
The valve has built-in pneumatic activation for inter-system activation, back pressure activation and mechanical activation interface.


The discharge outlet is connected internally to the Pneumatic Actuator (PA) via a check valve (the check valve allows pressure from the discharge side to enter the actuator side), this allows for the discharge port to be used as activation port also (back pressure), hence eliminating the needs for PA circuitry between valves connected to the same manifold. When more manifolds are used the PA system must be connected at least on one IV8 valve on each manifold.

The port for the PA function works as inlet as well as outlet, hence the same connection is used on pilot as well as slave cylinders, and the pilot cylinders can be placed anywhere in the line of IV8 valves.

Equipment connected to the PA connection must be rated at 17.2/23.2 for 15 and 20MPa systems.

The standard valve is supplied with a burst disc relieving to the open and is hence classified as a Type 2 valve.



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Specifications**Pressure:**

Work: See table 1
 Proof (burst): > 1200 bar
 Burst disc: 430 ±20 bar

Temperature: -20 to +70°C

Flow way: 50mm² (ø8mm)

Smallest container: 2l (200 or 300 bar @ 15°C)

Activation (pneumatic and back pressure):

Triggering pres.: 10 - 400 bar
 Min.: 8 bar 2 sec (0.01 l/sec)
 Max. no triggering: 2 bar 10 sec

Activation (Mechanical):

Connection tread: M20×1.5 (Female)
 Stroke × diameter: 6×ø6mm
 Force: 350 N

Tread connections:

Cylinder valve: W24.32×1/14
 Discharge outlet: ISO228 3/8 (+ISO7 1/8")
 Pneu. Active. (in/out): ISO7 1/8"
 Pres. gauge/switch: ISO228 1/4" + EN837)

Function:

Operation time: < 1 sec
 Remains fully open, also after activation.

Materials: Brass, stainless steel, Viton.

Dimension:

L×H×W: 90×125/46×90
 Weight: 1.5 kg

Table 1

Part number	Marking	Designation	Pressure		
			Work (max)	Fill @ 20°C	
			MPa	MPa	
305433	Ci-IV8-150	Ci IV8-150 GA 400 Manosw	17.2	15	
305434	Ci-IV8-200	Ci IV8-200 GA 400 Manosw	23.2	20	
305421	Ci-IV8-200	Ci IV8-200 Basic	< 23.2	15/20	

Markings

Fire Eater Logo, Ci-IV8-xxx, Serial number, CE 1116

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Installation

The IV8 valve is fitted to the hand wheel valve (on the cylinder) and the union nut is tightened to 80Nm. Before fitting the valve, the o-ring must be inspected as per Fire Eater instruction INMON100.

The discharge hose is fitted to the IV8 valve and to the manifold.

Only valves connected to the same manifold will be actuated through the discharge hose. The PA (Pneumatic Activation) system must be used for activation between manifolds.

If the pneumatic system is used, the PA adapter is fitted and the hoses connected.

The actuator is fitted to the valve.

The hand wheel valve is opened for 1 minute and then closed. After 6 hours the hand wheel valve is opened again and it is checked that there has been no pressure drop.


The hand wheel valve is opened to the full position and sealed with coarse sealing wire and seal.

Operating

The valves on the pilot cylinders are activated by the actuator (see datasheet for these components).

The additional cylinders are activated by either the

- a) Pneumatic (PA) system connected between the cylinders.
This system features both inlet and outlet through the same connection and hence the hoses are only connected one place on each IV8 valve.
- b) Backpressure (BP) from the pressure generated in the manifold during discharge.
Only valves connected to the same manifold can be activated this way. When multiple manifolds are used the PA system (see A) must be used between the manifolds to activate at least one valve for each manifold.

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Maintenance


After discharge the piston assembly has to be replaced in order to ensure leak free operation.
Use service kit item number 305403.

The procedure for replacing the piston is:

1. Make sure that the IV8 valve is depressurised.
2. Unscrew the screw [2] to unlock the end plug 305020 with a 2.5mm In-hex key.
3. Unscrew the end plug [20] 305020 with FE tool 305491.
4. Extract drive piston [18] 305018 (with rod and other parts) and place it in the end plug.
5. Unscrew separator disc [16] 305011 with FE tool 305490.
6. Insert a 4mm in hex wrench in the IV8 valve from the opposite side (through the ø5 hole) and push out the piston [23].
7. Assembly is the reverse procedure of dismantling.
O-rings must be lubricated (use lubricant FE part number 203012).
Damaged or dirty o-rings must be replaced.
8. Piston with o-rings (3) is inserted in the valve, piston rod 305019 (with drive piston) may be used to guide in the piston, but must be removed afterwards.
9. Separator disc is inserted and tightened to 10Nm.
10. Piston 305018 with rod is inserted
11. End plug 305020 is fastened to the valve and tightened to 20Nm.
12. The set-screw is fastened
13. The piston is pushed back with a 4mm hex wrench through the 5 mm hole.

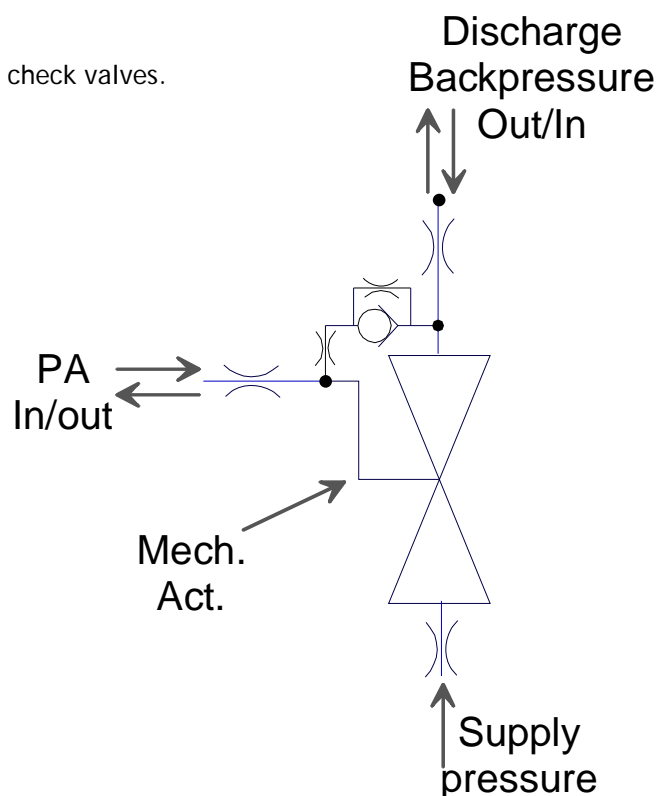
Routine testing

No requirements.

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Symbols of valve function

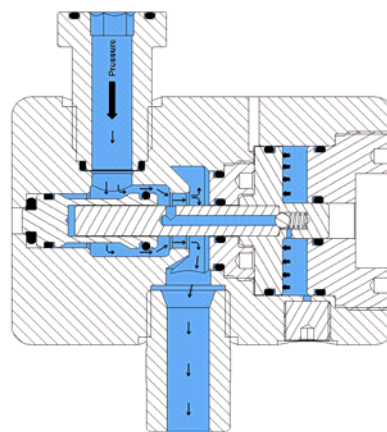
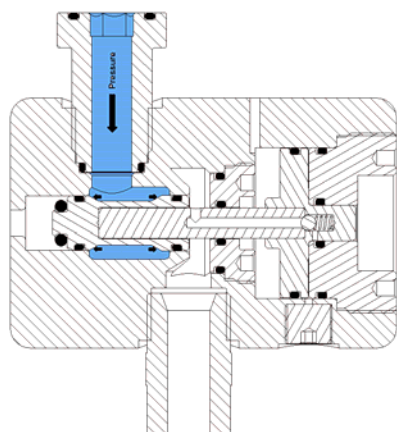
Internal valve functions showing restrictions and check valves.

**Section drawings****Valve in normal closed and fully opened position**

When the valve is closed, pressure is contained in the inlet and between the two O-rings on the piston (blue areas are the pressurised chambers).

When the valve is opened, pressure is allowed to exit through the outlet port as well as the PA inlet/outlet.

Notice that there is a check valve with a limited leakage between the discharge outlet and the PA inlet/outlet allowing pressure to go from the discharge outlet to the PA inlet/outlet, hence restricting flow from PA inlet/outlet to the discharge outlet.



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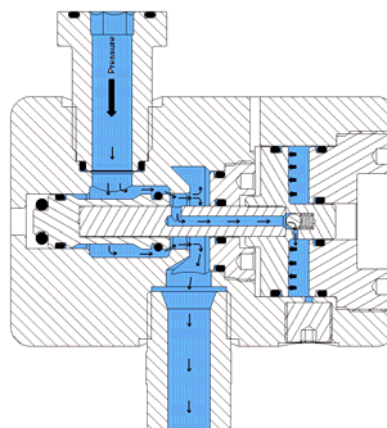
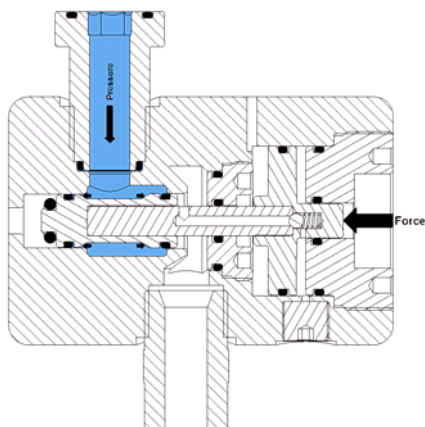
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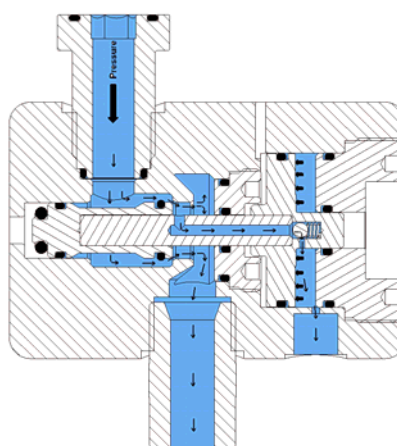
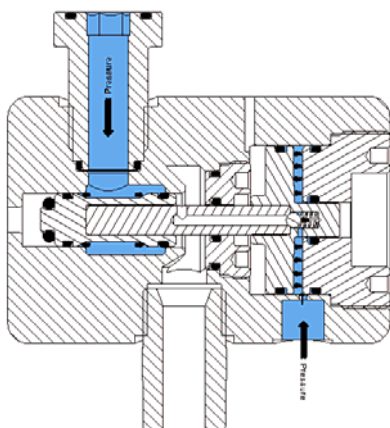
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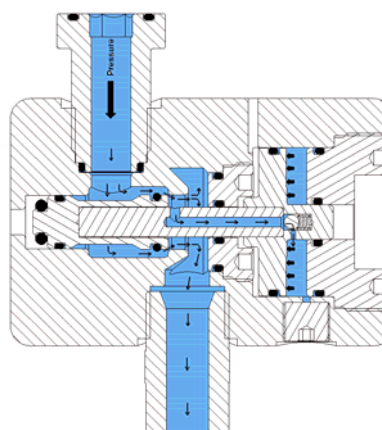
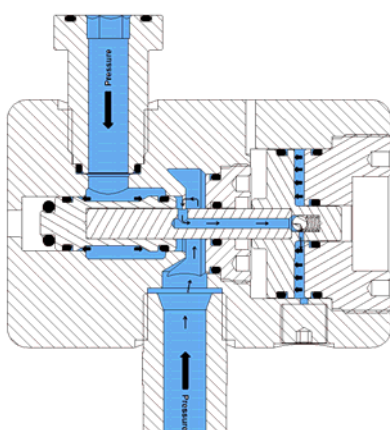
Valve operated mechanically (initial and half opened)



Valve operated pneumatically (initial and half opened)



Valve operated by pneumatic backpressure (initial and half opened)

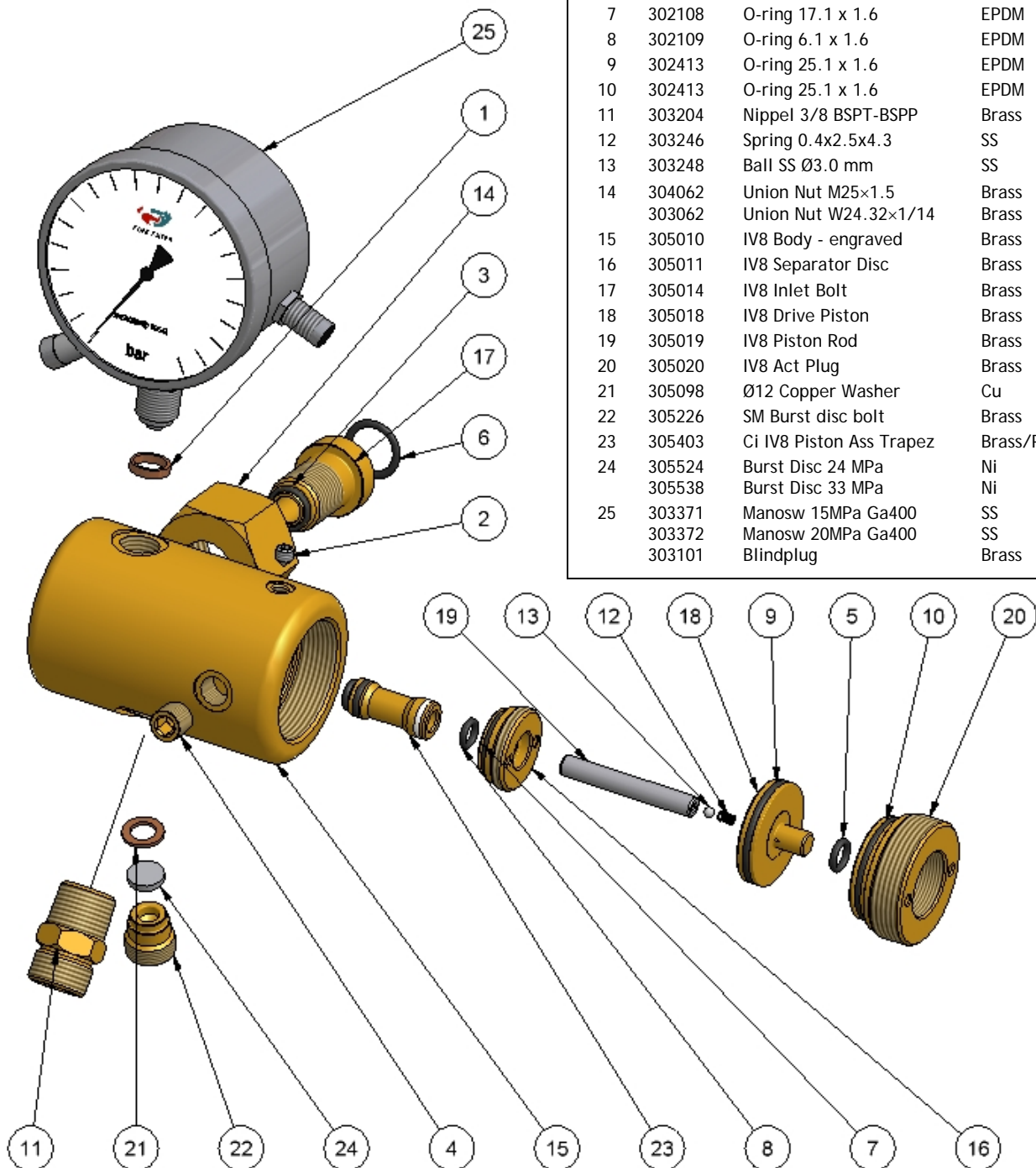


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Exploded view

Pos.	Item	Description	Material
1	212181	Cu Seal 1/4	Cu
2	212221	Screw DIN 914 M5xL6	SS
3	302070	O-ring 10.1 x 1.6	EPDM
4	302083	Plug 1/8" BSPT	Brass
5	302104	O-ring 7.1 x 1.6	EPDM
6	302107	O-ring 14.1 x 1.6	EPDM
7	302108	O-ring 17.1 x 1.6	EPDM
8	302109	O-ring 6.1 x 1.6	EPDM
9	302413	O-ring 25.1 x 1.6	EPDM
10	302413	O-ring 25.1 x 1.6	EPDM
11	303204	Nippel 3/8 BSPT-BSPP	Brass
12	303246	Spring 0.4x2.5x4.3	SS
13	303248	Ball SS Ø3.0 mm	SS
14	304062	Union Nut M25x1.5	Brass
	303062	Union Nut W24.32x1/14	Brass
15	305010	IV8 Body - engraved	Brass
16	305011	IV8 Separator Disc	Brass
17	305014	IV8 Inlet Bolt	Brass
18	305018	IV8 Drive Piston	Brass
19	305019	IV8 Piston Rod	Brass
20	305020	IV8 Act Plug	Brass
21	305098	Ø12 Copper Washer	Cu
22	305226	SM Burst disc bolt	Brass
23	305403	Ci IV8 Piston Ass Trapez	Brass/PUR
24	305524	Burst Disc 24 MPa	Ni
	305538	Burst Disc 33 MPa	Ni
25	303371	Manosw 15MPa Ga400	SS
	303372	Manosw 20MPa Ga400	SS
	303101	Blindplug	Brass

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Declaration of conformity & EC certificate (CPD)



Manufacturer:

Fire Eater A/S
Vølundsvej 14
DK-3400 Hillerød
Denmark

EN12094-4

Container valve assembly and their actuators

Control Inert IV8 discharge valve

Type 2

For inert gas (INERGEN)

Without diptube

Work pressure 300, 364, 400 bar

Free flow diameter 8mm

Pneumatic actuator nom pressure 300 bar

Pressure supply 8 - 400 bar min 2 sec

Smallest container 2l

Based upon attached Certificate of conformity, we declare
that the Container valve assembly designated above meets
the provision of Annex ZA of the EN12094-4 standard.

The discharge valve is to be used in combination of Fire Eater
Hand wheel valve and actuator with the Ci designation

Certification body for this product is

CNPP, B.P. 2265, F-27950 Saint_Marcel, www.cnpp.com

CNPP certificate: 1116-CPD-017

Signature: 

Michael Kroneder, Technical manager

Date: 2006-12-14

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