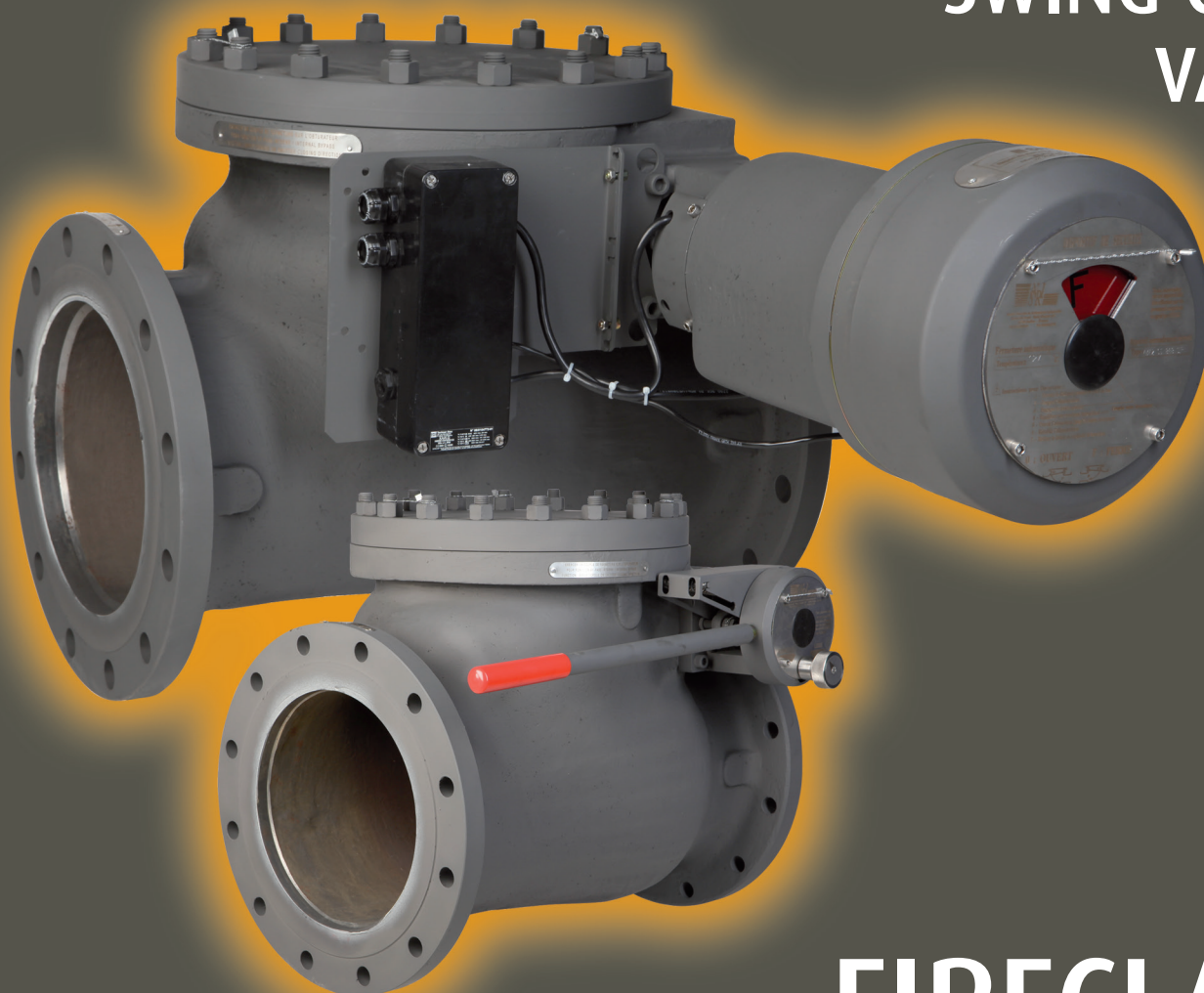




VALCO

POSITIVE SAFETY SWING CHECK VALVES



FIRECLAP® & FEEDERCLAP®

GROUPE VALCO



SNRI



MALBRANQUE



VVS

INTRODUCTION

Fireclap® & Feederclap® are the VALCO Group answers to avoid huge disasters on tank farms within the Oil & Gas industry in order to :

- Keep human lives safe
- Avoid pollution of the environment
- Protect the wealth of installations and natural resources



They are based upon swing check valves, designed to secure tanks containing flammable products. They are normally open in tank operation and the action of a rotative system made of fuses and spring will close them automatically when the temperature increases above a preset value, like for example in case of a fire.

HISTORY

Following dramatic accidents that had occurred on the 4th January 1966 at Feyzin, France and on the 2nd June 1987 at the Edouard HERRIOT port, near Lyon France, Valco-SNRI sat down with tank farm owners at their request, with the vision of designing and manufacturing a device that complies with French and European safety regulations concerning industrial sites that are potentially dangerous for the environment in case of an accident (EEC Directive N°82/501/CEE a.k.a. Seveso Directive).



The conclusion was that the most reliable solution would be a special design of swing check valve fitted with a fail-safe system.

INTEGRATION OF FIRECLAP® & FEEDERCLAP® ON A STORAGE TANK

Feederclap®
Inlet
pipework
Gate valve

Fireclap®
Outlet
pipework
Gate valve

Feederclap®

Gate valve

Fireclap®

Gate valve

Fluid
withdrawal

Tank filling
Fluid transfer to another tank
once disc opened by lever

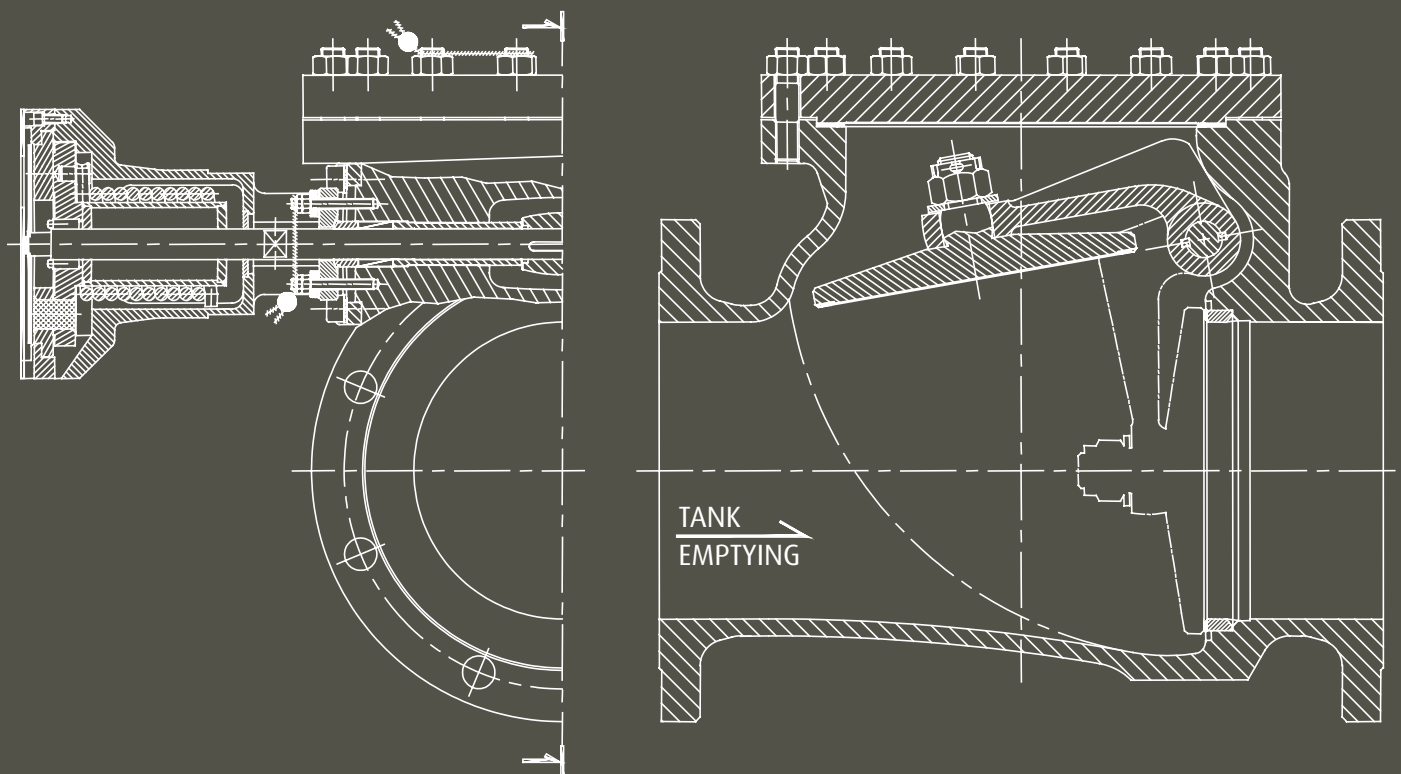
FIRECLAP®

The Fireclap® is a swing check valve equipped with a fail-safe system, used normally open and in inverted direction.

In the event of a fire, it will close automatically to maintain fluid inside the tank so that it cannot feed the fire. When released, it has the function of a standard swing check valve, and allows water or other liquid injection into the tank, even under low pressure.

Thermo fuses hold the disc in the normally open position and are mounted at the end of the disc supporting shaft within an enclosure that includes a loaded spring.

When the ambient on-site temperature reaches a preset value, the fuses will melt instantly thus releasing the pre-tensioned spring which closes the disc automatically.



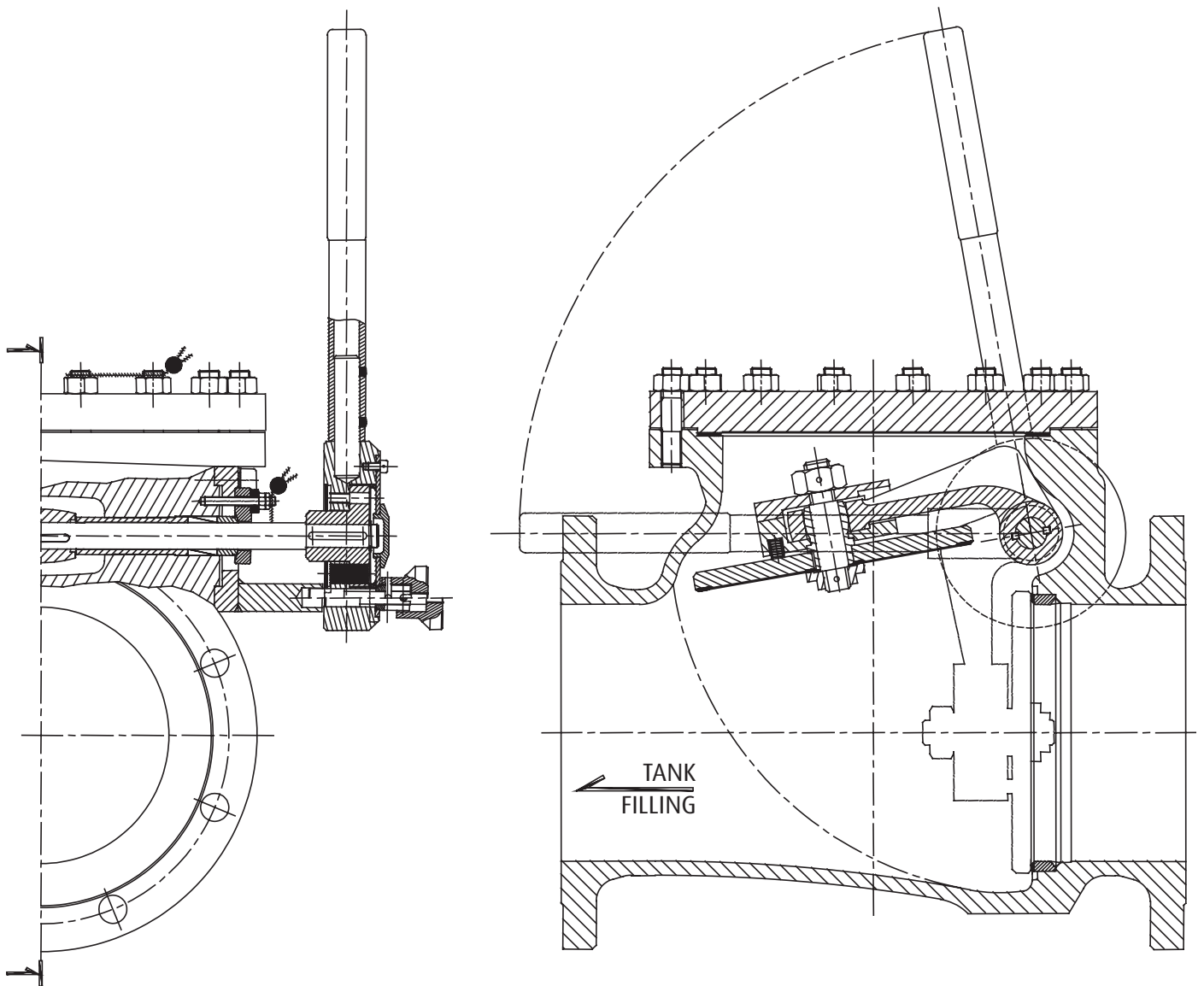
VALCO

FEEDERCLAP®

The Feederclap® is a swing check valve equipped with a fail-safe system, used normally closed and in the normal direction.

The difference compared to the Fireclap® is that it can be operated manually by a lever to ensure fluid transfers from tank to tank. Locking in open position is possible.

When fitted on inlet pipework for tank filling or fluid transfer, its primary role is the same as that of the Fireclap®; to prevent feeding a fire.

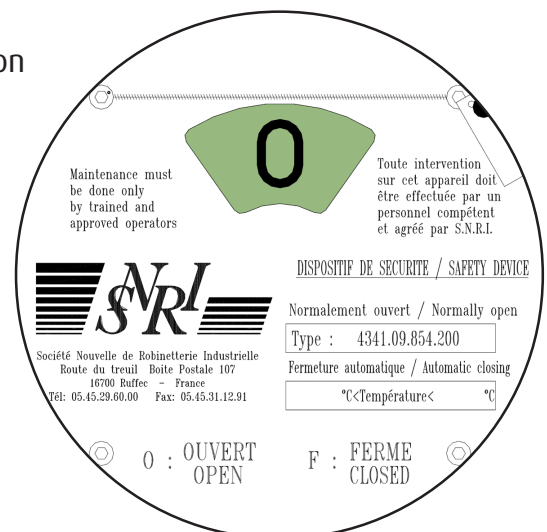
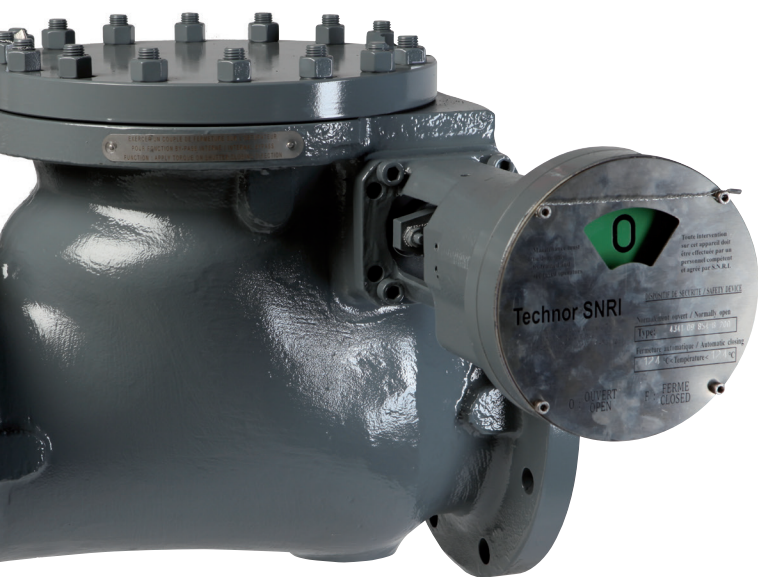


MATERIAL CONFIGURATIONS

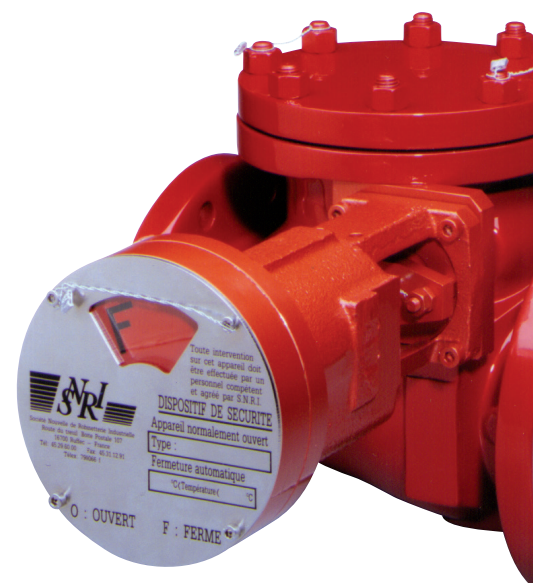
Body	Cover	Seat Surfaces		Bolting	Gasket
		Seat	Disc		
C. Steel A216 Gr WCB	C. Steel A516 Gr 60	13% Cr. or Stellite	13% Cr. or Stellite	A194 Gr 2H A193 Gr B7	Spiral stainless steel/graphite
S. Steel A351 Gr CF3M	S. Steel A182 Gr F316L	316L or Stellite	316L or Stellite	A194 Gr 8M A193 Gr B8M	Spiral stainless steel/graphite

POSITION INDICATOR

All our Fireclaps® are factory equipped with local disc position indicator to provide information to on-site operators.



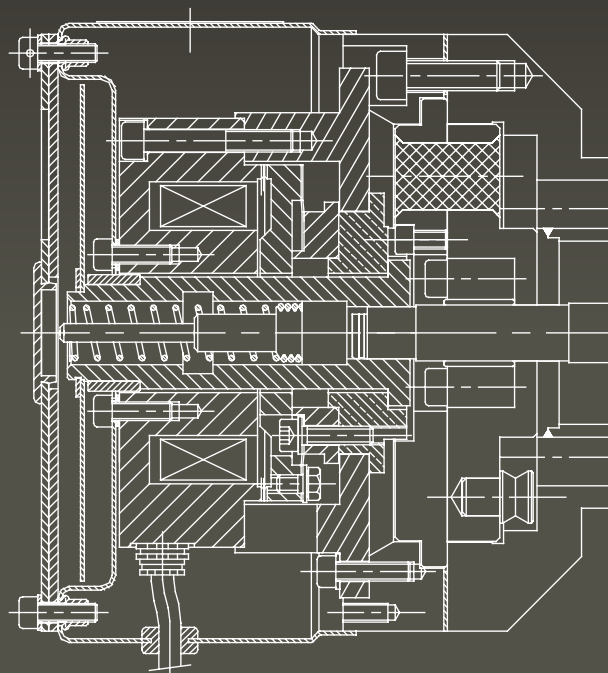
Special tools are supplied at purchase which enable manual opening of the Fireclap® once the fuses have blown during a fire. This is done with extreme caution and only once the fire is totally under control since the automatic shut-off advantage is lost after melting of the fuses.



OPTIONAL ACCESSORIES

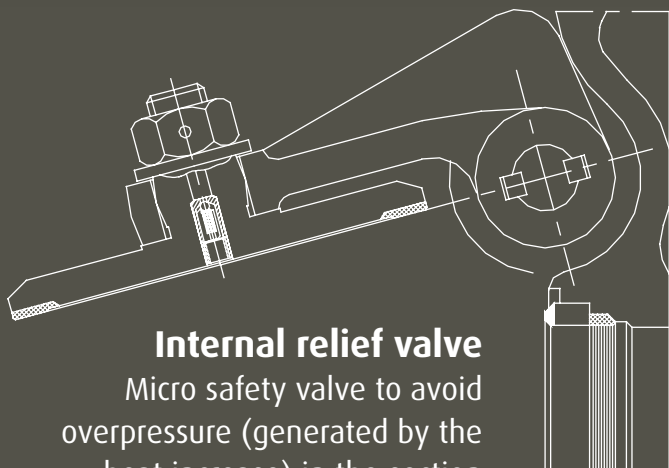
Remote control (*Fireclap® only*)

The Fireclap® can be equipped with an electromagnetic or pneumatic drive, allowing operation of the device from a remote location. These are available on demand before or after the installation



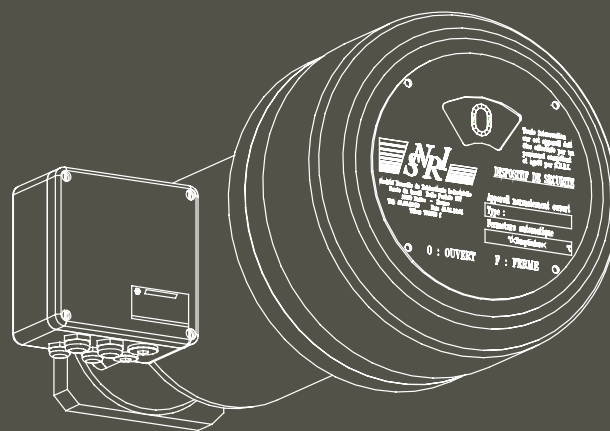
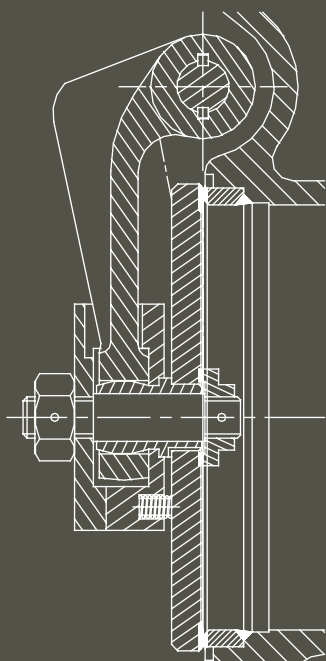
Internal relief valve

Micro safety valve to avoid overpressure (generated by the heat increase) in the section located between the gate valve and the Fireclap® (for NB 4" and below)



Internal by-pass

The by-pass allows manual operation when the gate valve and Fireclap® are closed (for NB above 4")

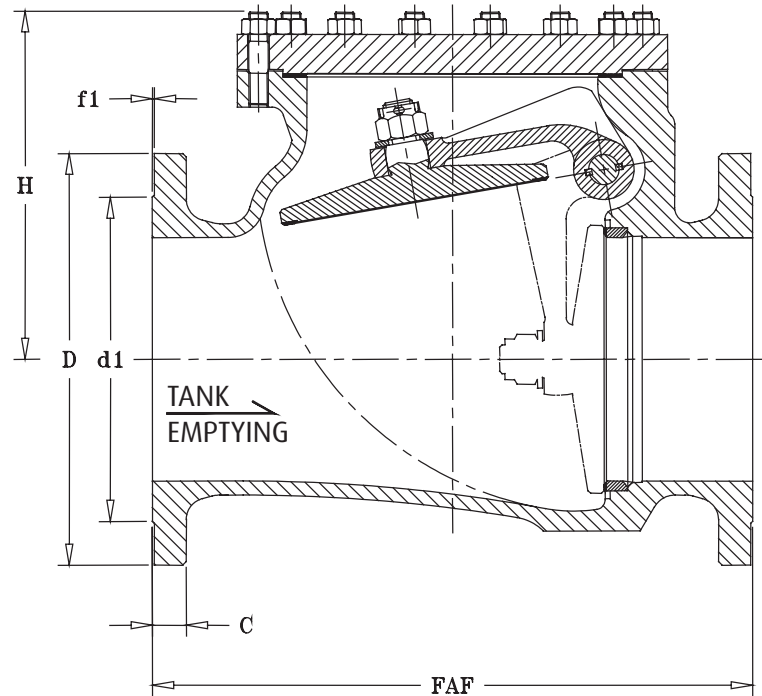
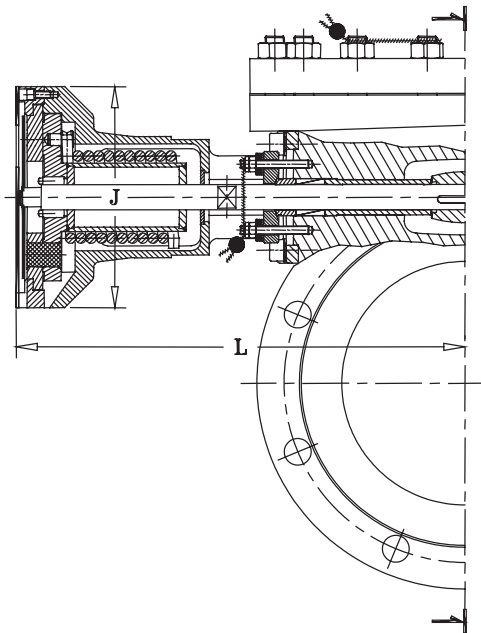


Junction Box (*enclosure EEXeII T6*)

This connection box allows you to get data from our Fireclap® to your DCS in order to control it or other equipment remotely or to check disc position

TECHNICAL DATA & DIMENSIONS

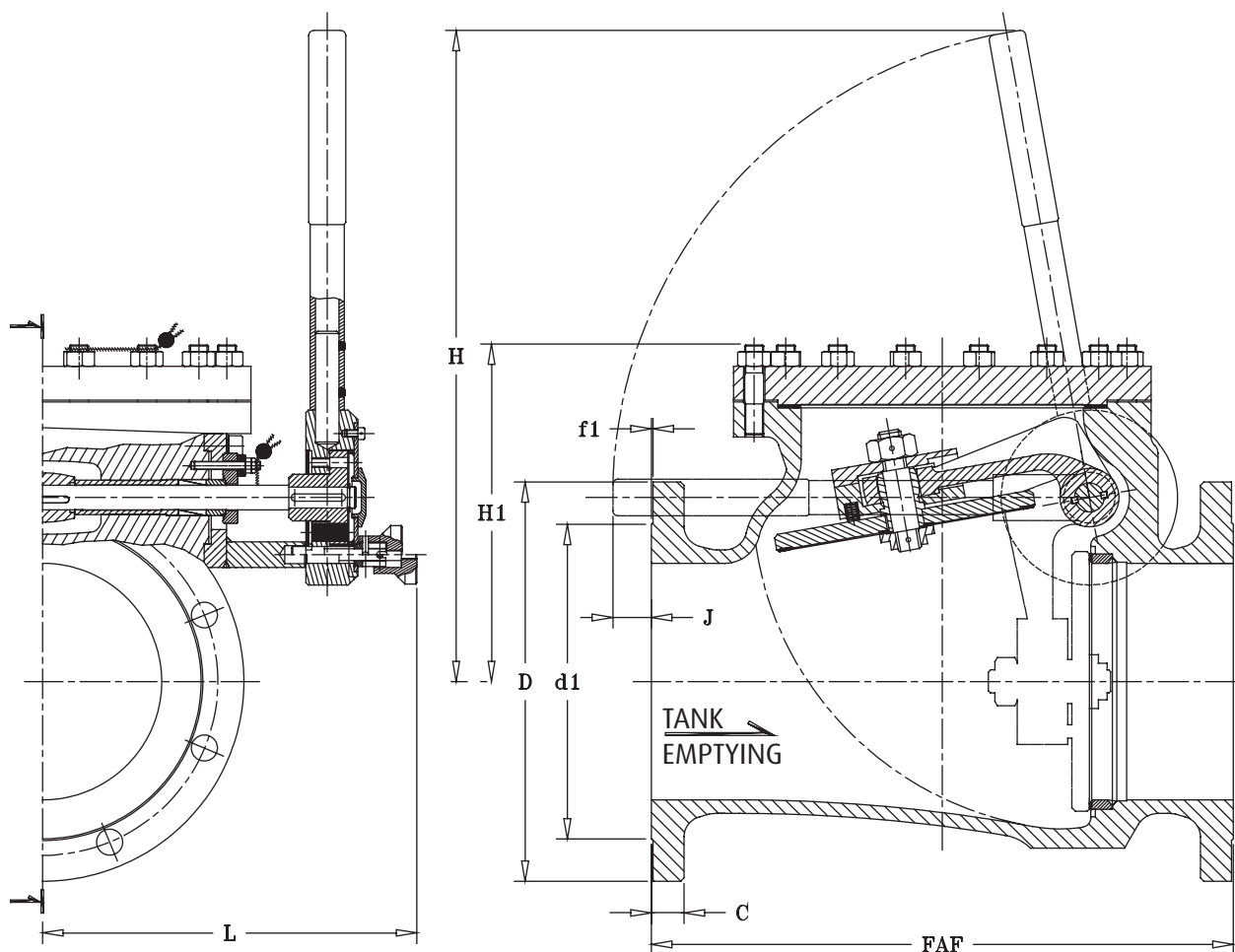
FIRECLAP® & FEEDERCLAP®



FIRECLAP®

ISO PN 16	ND	2"	3"	4"	6"	8"	10"	12"	14"	16"	18"	20"	24"
	FAF	mm	203	241	292	356	495	622,3	698,5	787,4	863,6	977,9	1295,5
	D / C mini	mm	165 / 15,9	200 / 19,1	220 / 23,9	285 / 25,4	340 / 28,6	405 / 30,2	460 / 31,8	520 / 35	580 / 36,6	640 / 39,7	840 / 47,7
	Nbr./Ø Hole		4 / 18	8 / 18	8 / 18	8 / 22	12 / 22	12 / 26	12 / 26	16 / 26	16 / 30	20 / 30	20 / 33
	Ø Drilling	mm	125	160	180	240	295	355	410	470	525	585	770
	d1 / f1	mm	102 / 3	138 / 3	158 / 3	212 / 3	268 / 3	320 / 3	378 / 4	438 / 4	490 / 4	550 / 4	725 / 5
	H	mm	147	165	195	230	292	340	385	460	505	535	655
	J	mm	160	160	160	185	185	255	255	320	320	460	460
	L	mm	205	355	365	470	480	650	660	720	780	850	980
	Weight	kg	25	35	50	85	145	250	315	475	690	1080	1715
	KV		207	552	950	2155	3276	6475	9324	11766	15516	19875	32500

ISO PN 20 (class 150#)	ND	2"	3"	4"	6"	8"	10"	12"	14"	16"	18"	20"	24"
	FAF	mm	203	241	292	356	495	622,3	698,5	787,4	863,6	977,9	1295,5
	D / C mini	mm	152 / 15,9	190 / 19,1	229 / 23,9	279 / 25,4	343 / 28,6	406 / 30,2	483 / 31,8	533 / 35	597 / 36,6	635 / 39,7	812,8 / 47,7
	Nbr./Ø Hole		4 / 19	4 / 19	8 / 19	8 / 22,2	8 / 22,2	12 / 25,4	12 / 25,4	12 / 28,5	16 / 28,5	16 / 31,8	20 / 35
	Ø Drilling	mm	120,6	152,4	190,5	241,3	298,4	362	431,8	476,2	539,8	577,8	739,3
	d1 / f1	mm	92,1 / 1,6	127 / 1,6	157,2 / 1,6	215,9 / 1,6	269,9 / 1,6	323,8 / 1,6	381 / 1,6	412,8 / 1,6	469,9 / 1,6	533,4 / 1,6	692,1 / 1,6
	H	mm	147	165	195	230	292	340	385	460	505	535	655
	J	mm	160	160	160	185	185	255	255	320	320	460	460
	L	mm	205	355	365	470	480	650	660	720	780	850	980
	Weight	kg	25	35	50	85	145	250	315	475	690	1080	1715
	KV		207	552	950	2155	3276	6475	9324	11766	15516	19875	32500



FEEDERCLAP®

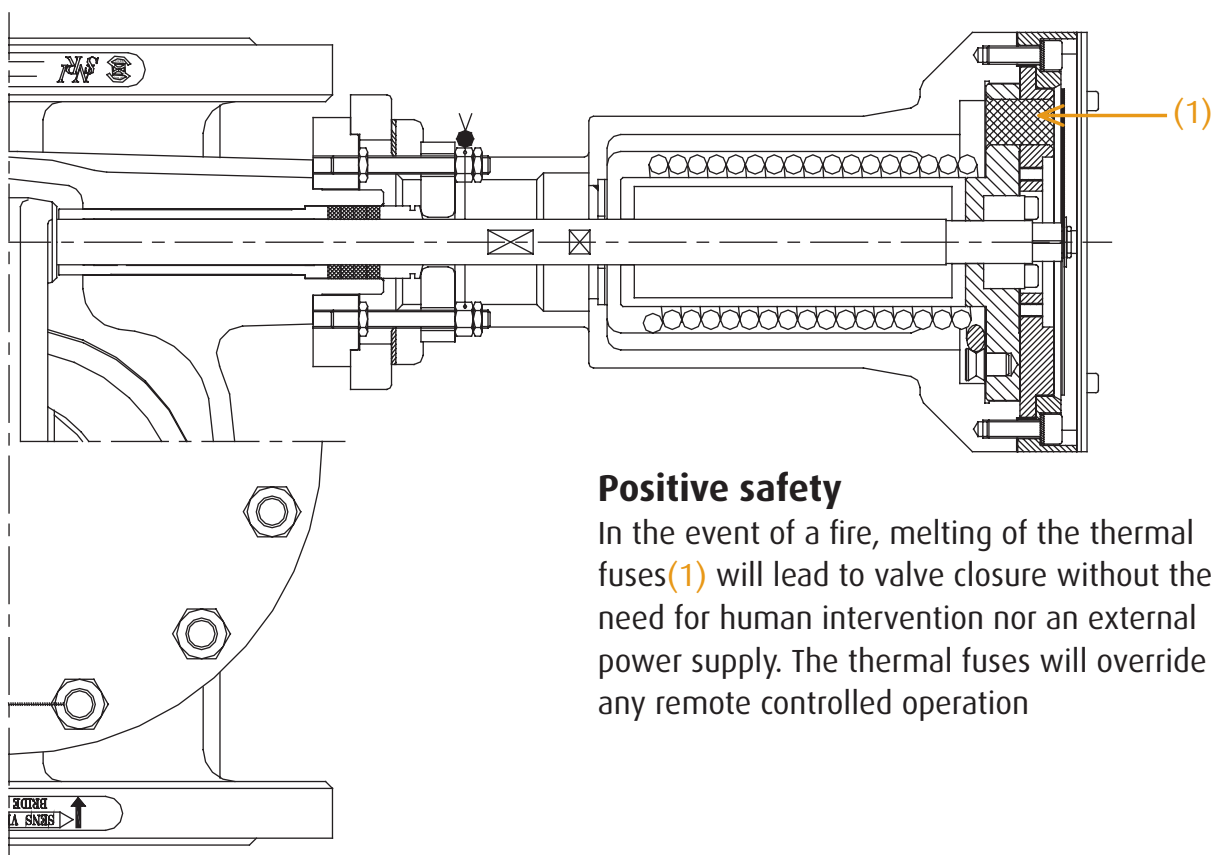
ISO PN 16	ND		2"	3"	4"	6"	8"	10"	12"	14"	16"	18"	20"
	FAF	mm	203	241	292	356	495	622,3	698,5	787,4	863,6	977,9	977,9
	D / C mini	mm	165 / 15,9	200 / 19,1	220 / 23,9	285 / 25,4	340 / 28,6	405 / 30,2	460 / 31,8	520 / 35	580 / 36,6	640 / 39,7	715 / 42,9
	Nbr./Ø Hole		4 / 18	8 / 18	8 / 18	8 / 22	12 / 22	12 / 26	12 / 26	16 / 26	16 / 30	20 / 30	20 / 33
	Ø Drilling	mm	125	160	180	240	295	355	410	470	525	585	650
	d1 / f1	mm	102 / 3	138 / 3	158 / 3	212 / 3	268 / 3	320 / 3	378 / 4	438 / 4	490 / 4	550 / 4	610 / 4
	H	mm	330	350	370	500	540	730	760	1350	1400	1800	1850
	H1	mm	147	165	195	230	292	340	385	460	505	535	575
	L	mm	200	225	230	295	300	370	380	460	470	495	500
	Weight	kg	22	30	44	75	130	220	275	380	550	865	1050
	KV		207	552	950	2155	3276	6475	9324	11766	15516	19875	24169

ISO PN 20 (class 150#)	ND	2"	3"	4"	6"	8"	10"	12"	14"	16"	18"	20"
	FAF mm	203	241	292	356	495	622,3	698,5	787,4	863,6	977,9	977,9
	D / C mini mm	152 / 15,9	190 / 19,1	229 / 23,9	279 / 25,4	343 / 28,6	406 / 30,2	483 / 31,8	533 / 35	597 / 36,6	635 / 39,7	698 / 42,9
	Nbr./Ø Hole	4 / 19	4 / 19	8 / 19	8 / 22,2	8 / 22,2	12 / 25,4	12 / 25,4	12 / 28,5	16 / 28,5	16 / 31,8	20 / 31,8
	Ø Drilling mm	120,6	152,4	190,5	241,3	298,4	362	431,8	476,2	539,8	577,8	635
	d1 / f1 mm	92,1 / 1,6	127 / 1,6	157,2 / 1,6	215,9 / 1,6	269,9 / 1,6	323,8 / 1,6	381 / 1,6	412,8 / 1,6	469,9 / 1,6	533,4 / 1,6	584,2 / 1,6
	H mm	330	350	370	500	540	730	760	1350	1400	1800	1850
	H1 mm	147	165	195	230	292	340	385	460	505	535	575
	L mm	200	225	230	295	300	370	380	460	470	495	500
	Weight kg	22	30	44	75	130	220	275	380	550	865	1050
	KV	207	552	950	2155	3276	6475	9324	11766	15516	19875	24169

CHARACTERISTICS

Fire safe design

The Fireclap® and Feederclap® comply with the Fire test agreement as per BS 6755 and are certified by Lloyd's Register for SNRI



Positive safety

In the event of a fire, melting of the thermal fuses(1) will lead to valve closure without the need for human intervention nor an external power supply. The thermal fuses will override any remote controlled operation

Entirely dedicated to safety

A Fireclap® or Feederclap® is always installed beside a distribution gate valve



QUALIFICATIONS & REFERENCES



Fireclap® & Feederclap® are manufactured with the same materials and are able to sustain a fire for 3 hours, which permits enough time for on-site intervention by firefighters.

The Lloyd's register certificate reveals that no internal nor external leakage were recorded during this test time.

This 3-hour intervention time complies with the most stringent requirements from the fire test department.

Foreign and European requirements :

- British standard BS 6755 part 2 : 1987 and amendments 1 & 2 (equivalent to API 607 3rd edition or ISO 10497 : 2004)
- ATEX 94/9/CE, EU directive on equipment and protective systems intended for use in potentially explosive atmospheres



Other available brochures in our range...



Power

High Pressure
valves

Marine

As of today, more than 2000 Fireclaps® have been sold, mainly in France and Europe to tank farm owners such as:

TOTAL
BP
EXXON MOBIL
DYNEFF
ROMPETROL



SNRI SAS / MALBRANQUE SAS

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francis.dardillac@valco-valves-services.fr



VALCO

Valco Group's product portfolio contains strong and well established valve brands from in-house production as well as provision of third party products.

Our experience has demonstrated our capability to handle the combination of high pressure and very high or very low temperatures. We are also involved in providing products which cover sour services as well as any type of applications where product quality matters.