



Natura™ Inert Gas Fire Suppression

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Kidde: One-stop suppression-shop

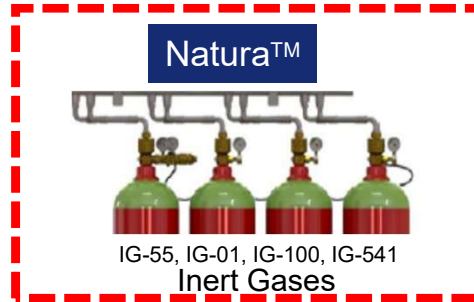
Gaseous
Engineered



ECS-360 & ECS-500



Advanced Delivery System



IG-55, IG-01, IG-100, IG-541
Inert Gases



HPCO2



LPCO2

Carbon Dioxide (CO2)

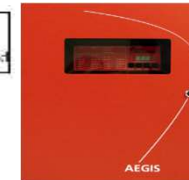
Detection
& Control



Smoke & Heat Detection

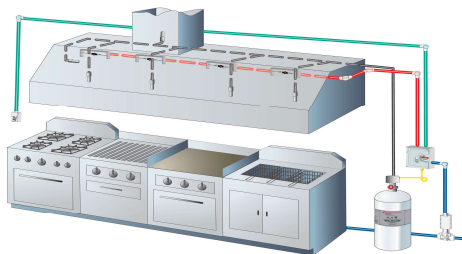


High Sensitivity Smoke & Linear Heat Detection



Conventional & Intelligent Suppression Controllers

Pre-Engineered
Chemical

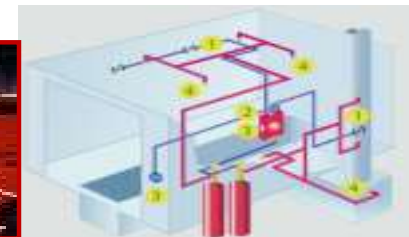


Wet Chemical

Commercial Cooking

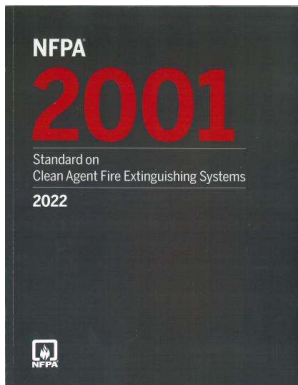


Paint Spray Booth



Dry Chemical

NFPA 2001 - Natura branded Inert gases



Type	Agent	Nitrogen	Argon	CO ₂
Pure	IG-100	100%	-	-
	IG-01	-	100%	-
Blend	IG-55	50%	50%	-
	IG-541	52%	40%	8%



How to choose an Inert Gas agent

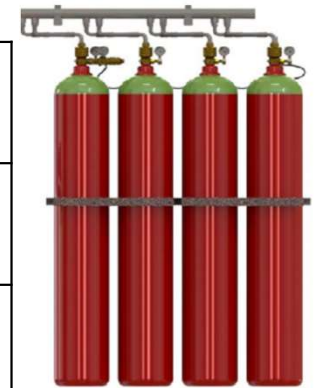
Factors to Consider			
Agent	Constituent	All Natural	Other Factors
IG-100	Nitrogen (N2)	√	• Lowest room leak rate • Global refill ability
IG-01	Argon (Ar)	√	• Ideal for Class D
IG-55	N2 + Ar	√	• Retrofit legacy systems • EU applications
IG-541	N2 + Ar + CO2	√	• Globally specified

Inert Gases are Naturally Occurring	
Factor	Inert Gases
Ozone Depletion Potential (ODP)	Zero
Global Warming Potential (GWP)	Zero
Obscuration after discharge	None
Residue after discharge	None

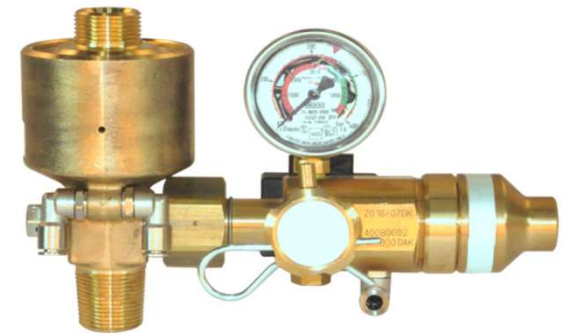
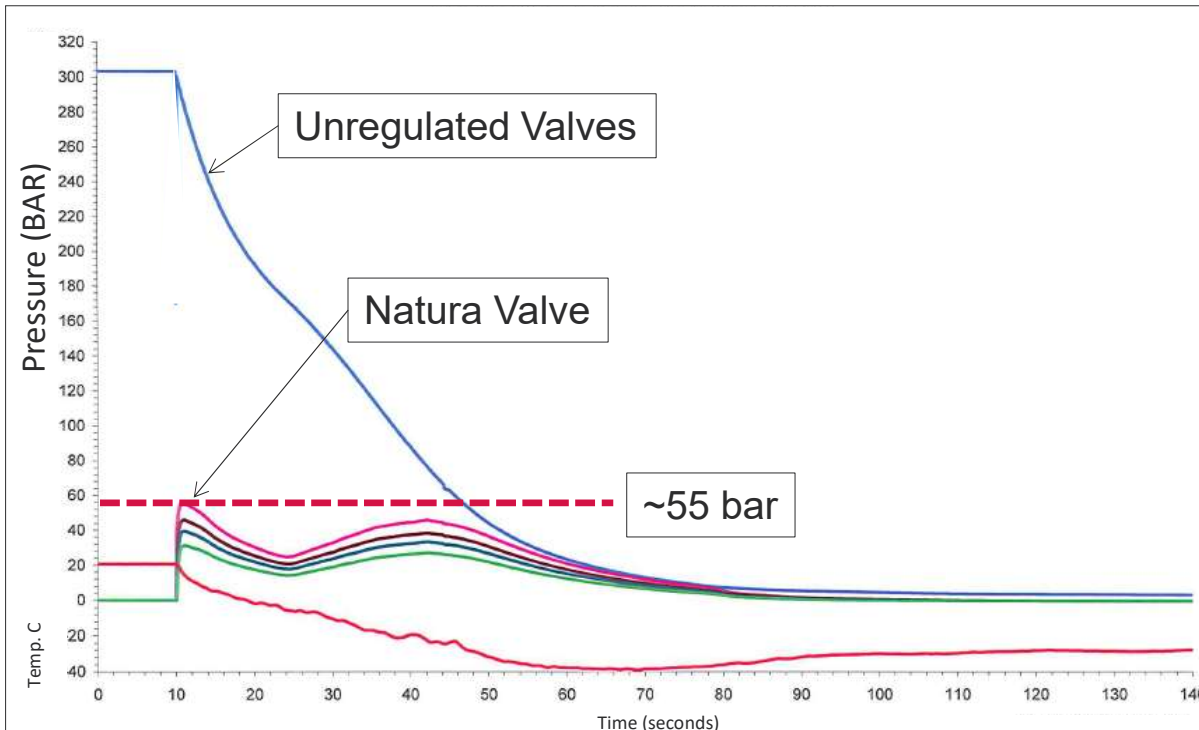
Natura system offering – At a Glance

System Pressure & Cylinder Sizes	80 Liter	200 & 300 Bar	Wt.: 227 Lbs. Dims: 10.5"ø x 73" Height
	140 Liter*	300 Bar	Wt.: 437 Lbs. Dims: 14.2"ø x 75" Height
Nozzles	180°	Pendant & Upright	Max Height: 16 ft
	360°		Min Height: 1 ft Coverage: 35.5 ft x 35.5 ft
Listings & Approvals	cULus FM LPCB	IG-55, IG-100, IG-01, IG-541	

*140L Cylinder holds ~75% more agent



Self-regulated Flow & Pressure-controlled Valve



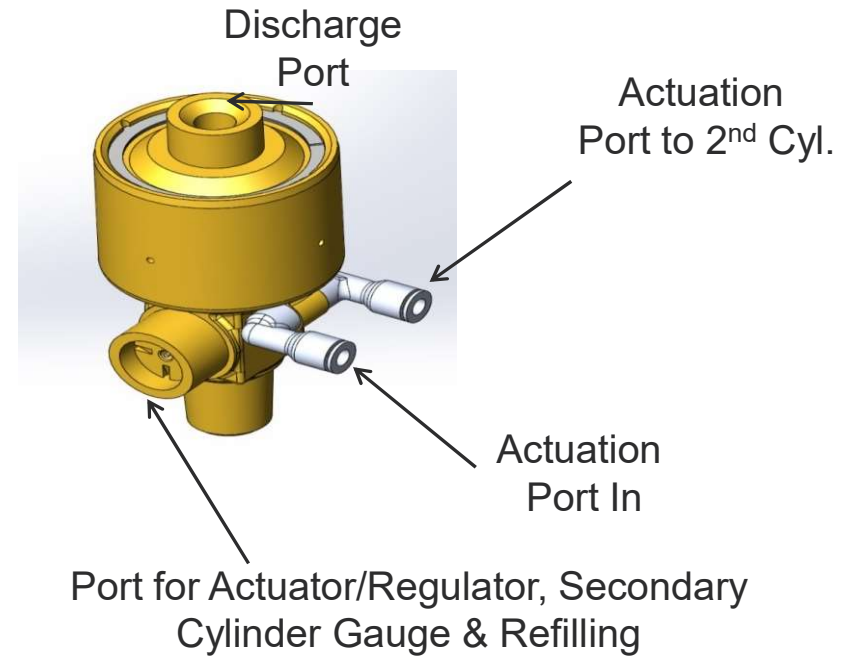
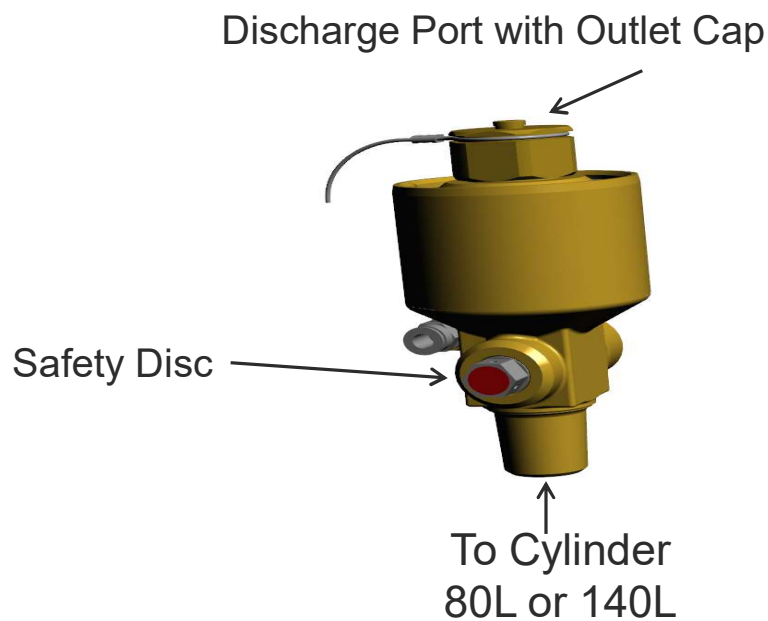
Lower mass flow

Smaller vent sizes

Pressure regulated
at 55 bar

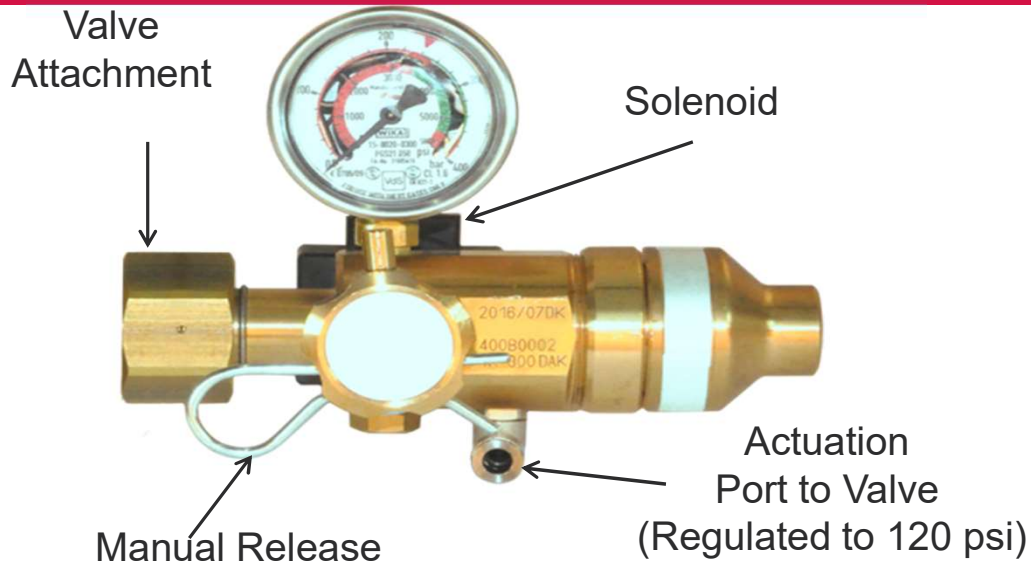
Sch 40 pipe replaces
thick walled Sch 160

The Valve Assembly



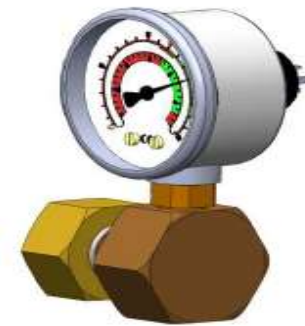
Enables quick & easy installation of Discharge Hoses, Valve Actuator & Hoses

Actuation & pressure monitoring



Actuator/Regulator Assembly

Only on the Primary Cylinder
(Activates up to 60 Secondary Cylinders)

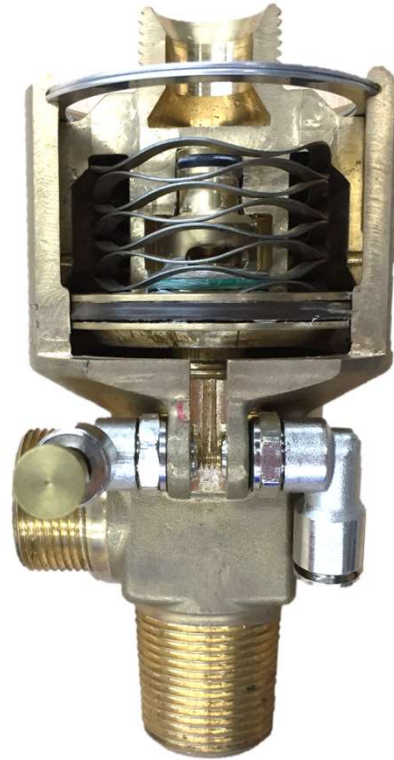


Quick Connect harness goes here for pressure supervision

Secondary Cylinder Gauge

With built-in pressure switch
for supervisory monitoring

Look inside 400 series valve



Designed for quick and easy installation



Pre-fabricated manifold with check valve

90/90 Discharge Hose

Quick Connect Actuation Hose



Quick installation saves time & reduces cost

Manifolds

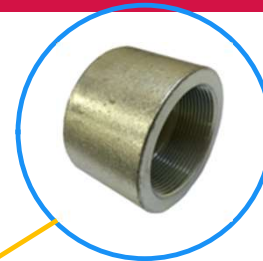
Single-row manifold (2, 3, 4, 5, 6 stubs/ports)



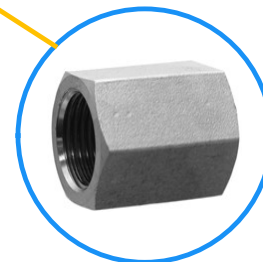
Double-row manifold (4, 6, 8 stubs/ports)



Manifold Check

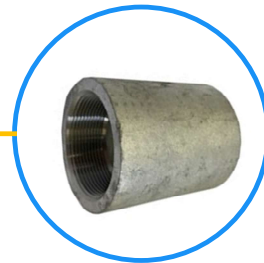


End-cap



BSPT to NPT Adapter

Attachments to BSPT-threaded ends



Manifold Coupling



Manifold bracket

Discharge hose

3/4" (20 mm) fitted with 90° couplings

Cylinder volume	Length
80L	16.1" / 410mm
140L	20" / 510mm



Actuation hoses & bleeder valve



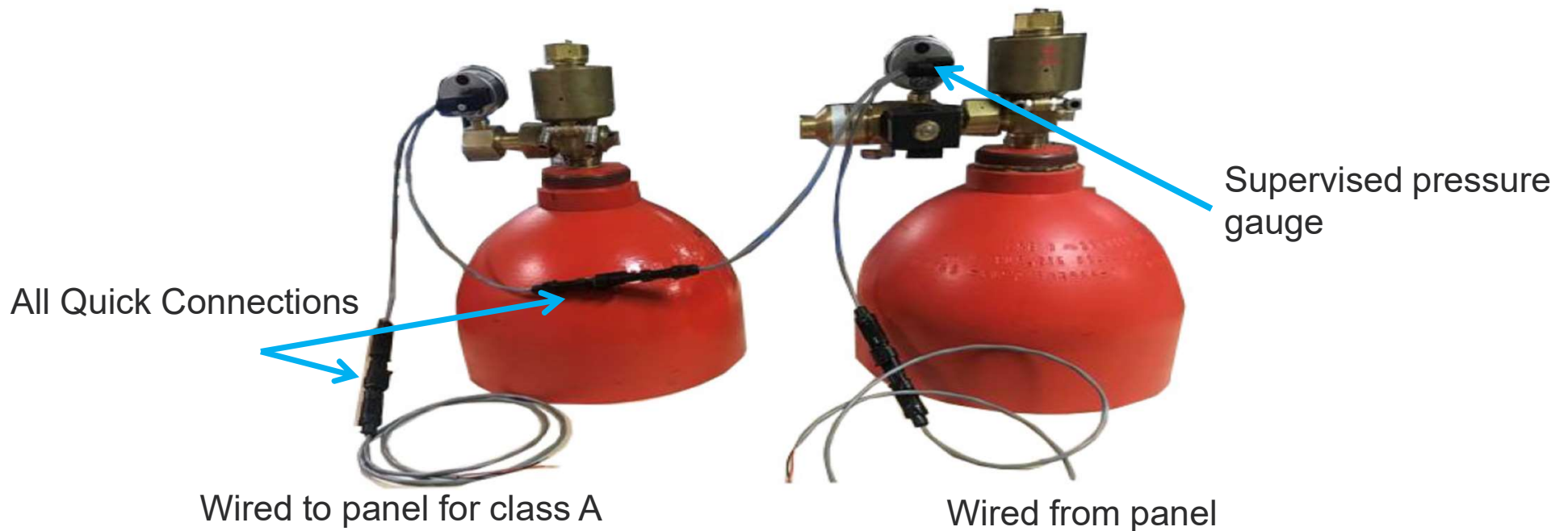
Stainless steel braid on top of Teflon hose



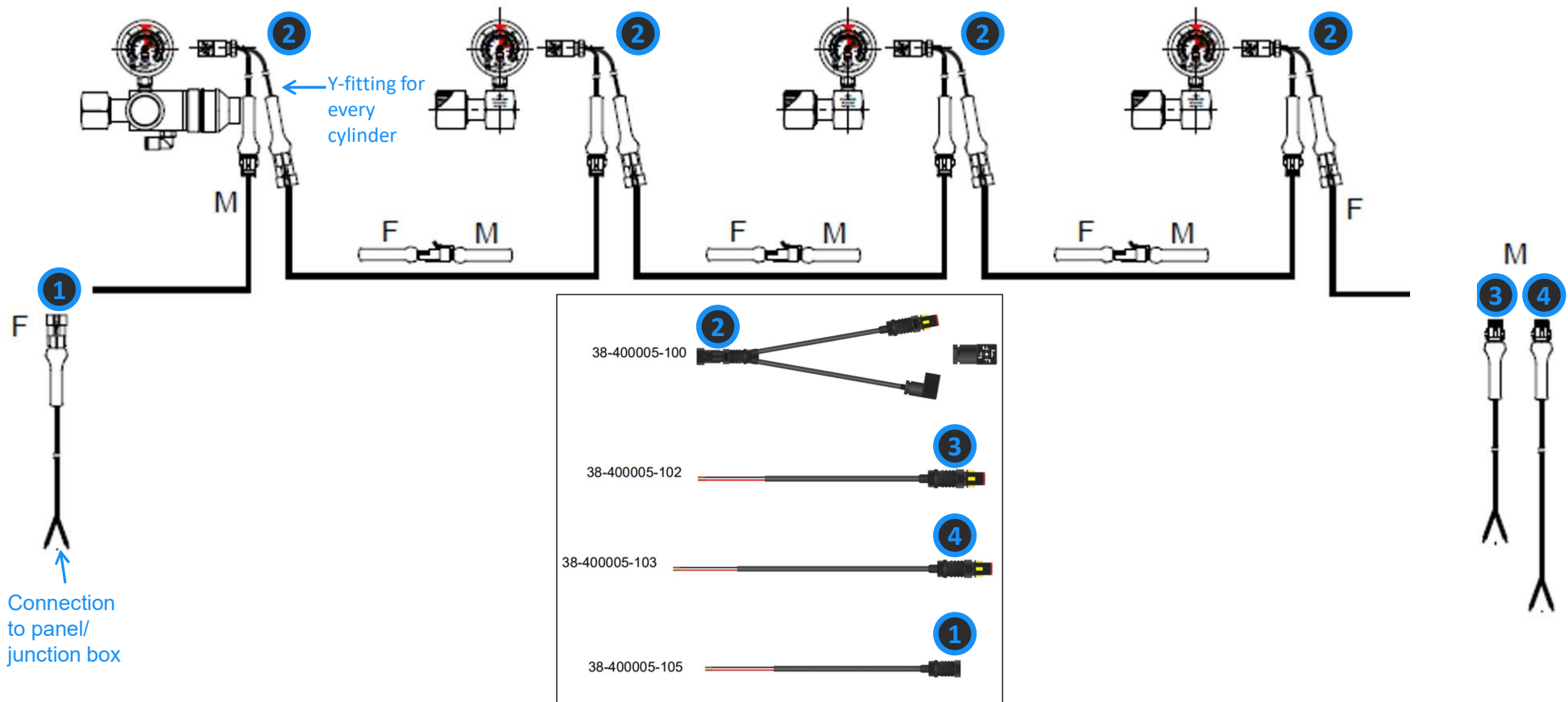
Bleeder valve



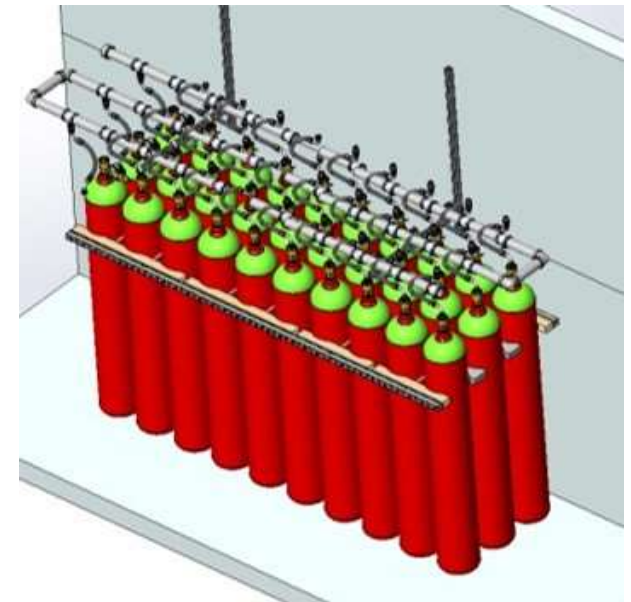
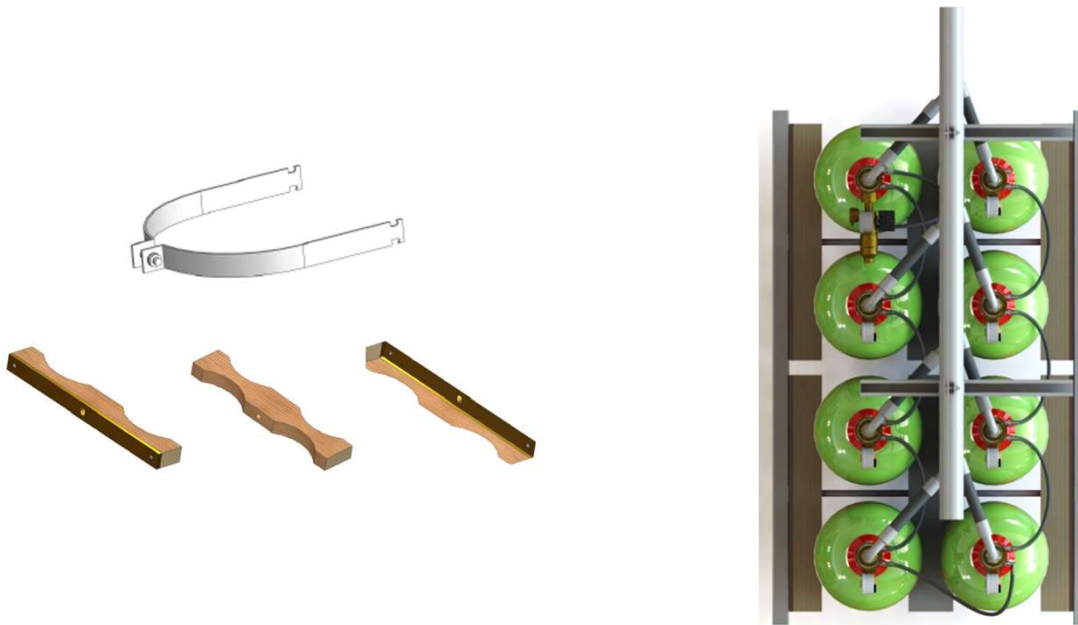
Pressure supervisory connections



Pressure supervisory circuit



Row Configurations



Could Natura improve your profitability?

Post Discharge Cost for a 10 ft ³ Hazard			
	HFC-227ea	FK-5-1-12	NATURA
Agent Refill	In USA a lot Higher	50%	1-2%
Your Labor Charge to End User	1% to 2%	1% to 2%	6% to 9%

Lower Replacement Agent Cost

Key selling point when helping owners decide on suppression strategy

Could Natura improve your profitability?

From this



Complex
Expensive
Limited

To this



Simple
Cost-Effective
Expanded Approvals, Cylinder Sizes, Agents

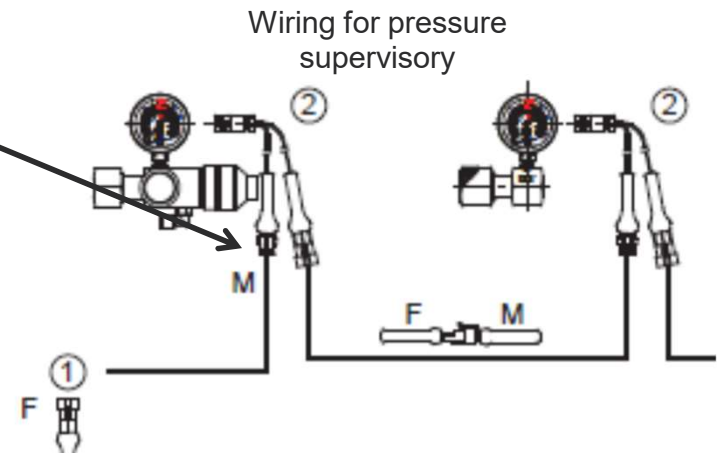
Could Natura improve your profitability?

If installation is faster using quick connect actuation hoses and electrical connectors?



Quick
connect
Adapters

Provide a professional
appearance of the
wires cascading
through all cylinders



Customer remarks:

“...well thought out system that addresses many shortcomings of competitor systems”

“...very impressed with system. Predict labor saving through less man-hours for install”

Could Natura improve your profitability?

If Sch. 40 pipe can be used, even in multi-hazard applications?

- Output pressure is limited to 55 Bar, with auto-shutoff when pressure exceeds 70 Bar

NPS Pipe size	A-106C	A-106B A-53B	A-53B ERW	A-106A A-53A	A-53A ERW	A-53F Furnace
1/4						
3/8						
1/2						
3/4						
1						
1-1/4						
1-1/2						
2						
2-1/2						
3						
4						

Legend→ Allowable



Could Natura improve your profitability?

If system commissioning or periodic testing actuates all cylinders without expending agent?

Anti-recoil
cap installed



Anti-recoil cap will indicate if valve has been opened

Back pressure will then close the valve

Pressure is released at the bleed valve on last cylinder

Caps can be removed, and discharge hoses attached

Easy to save time when testing or commissioning

Could Natura improve your profitability?

10,000 ft³ hazard requires 9.3 ft² of ventilation @ 60 second discharge (Legacy)



10,000 ft³ hazard requires ~4 ft² of ventilation @ 60 second discharge (even smaller when @ 120 second discharge)

Vs. other agents

System	Pressure Venting Area for Volume	
	5,000 Cu. Ft.	35,000 Cu. Ft.
IG-100	1.9 Sq. Ft.	9.9 Sq. Ft.
FK-5-1-12	2.0 Sq. Ft.	14.6 Sq. Ft.
HFC-227ea	1.0 Sq. Ft.	11.0 Sq. Ft.

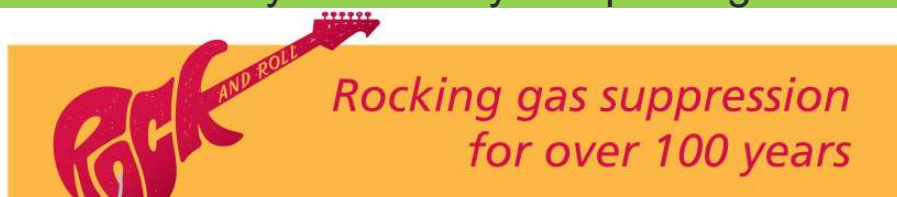
Competitive Analysis

Features	Kidde	A	B	C	D	E	F	G
Available Agents	IG-55, IG-01, IG-100, IG-541	IG-541	IG-55, IG-01, IG-100, IG-541	IG-55, IG-100, IG-541	IG-01, IG-100	IG-55, IG-01, IG-100, IG-541	IG-541	IG-55, IG-01, IG-100, IG-541
Pressure (bar)	200 300	200 300	200 300	200 300	300	200 300	200 300	200 300
Cylinder Capacity	80L, 140L	80L, 140L	80L, 140L 180L	80L	10L, 20L*, 80L, 140L	67L, 80L, 140L	30L, 50L, 80L, 140L	26.8L, 40L, 67.5L, 80L, 100L, 120L, 140L, 150L
Cylinder Actuation	Electric & Manual (Primary)	Electric & Manual (Requires Pilot)	Electric & Manual (Requires Pilot)	Electric & Manual (Primary)	Electric & Manual (Primary)	Electric & Manual (Primary)	Electric & Manual (Primary)	Electric & Manual (Requires Pilot)
Maximum Discharge Time	Class A & C 120s Class B 60s	Class A & C 120s Class B 60s	Class A & C 120s Class B 60s	60s	UNK	Class A & C 120s IG-01 & CL B 60s	60s	60s
Storage Temperature (°F)	-4 to 130	-4 to 130	-4 to 120	-4 to 120	32 to 130	-4 to 150	32 to 150	-4 to 120
Nozzle Patterns	180, 360	180, 360	180, 360	180, 360	180, 360	360	360	180, 360
Agencies - Performance	cULus, FM, LPCB	cULus, FM, LPCB	LPCB (IG-55), VdS	cULus, FM, LPCB	cULus, FM, LPCB	cULus, FM, LPCB	cULus, FM, LPCB	cULus, FM, VdS

Note - competitive data was obtained from agency web sites, company websites and similar publicly available sources and is accurate to the best of our knowledge.

Natura allows you to easily compete against local & global players

* 10L 20L IG-100 200 BAR only



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Competitive Analysis

And here is where it really matters

Features	Kidde Fire Systems Natura	All Others
Actuation Lines	Quick-Connect Fittings save time	Threaded Connections – take up valuable time
Supervisory Wiring	Quick-Fastening Connectors save time	Hard-wired - take up valuable time
Testing & Commissioning	Activate electric actuator and all cylinders without expelling agent to test and confirm the entire system is operational	Confirms only the electric actuator is operating
Cylinder Piping	Cost effective Pre-Fabricated Manifolds with check valves included	Pre-Built at shop or Built on-site

Natura saves you installation time & money → Makes you more competitive



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Features & Benefits

Features	Benefits	KFS	A	C
Quick Connect Hoses	Reduces the installation time & cost	✓		
Quick Connect Wiring	Reduces the installation time & cost	✓		
Pre-fabricated Manifolds	Savings on assembly time	✓		
Actuation System Test Capability	Actuation of live system	✓		
Large Capacity Cylinder	140L reduces cylinder & hardware count	✓	✓	
Up to 120 s discharge time	Allows flexible design	✓	✓	
<u>Selector Valve System</u>	Multi-hazard protection to economize on system cost	✓	✓	✓



Advantage – Kidde Natura



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Features & Benefits

Features	Benefits
Environmentally Responsible	0 ODP, 0 GWP
Low Power Consumption	Single solenoid (0.5 Amp) can trigger up to 60 cylinders. Saving # of release circuits
NFPA 2001 Compliant	Solenoids at pilot cylinder and at selector valve compliant with NFPA 2001 supervisory monitoring



Post-discharge strategy

Kidde recommends choosing strategy dependent on end-user and application needs, space available, geographical location, turn-around time required

Option 1

- Instantly switch to a Reserve cylinder bank
- Follow option 3 or 4 for refill

Option 2

- Maintain a set of reserve cylinders in stores for immediate installation
- Follow option 3 or 4 for refill

Option 3

- Purchase refill adapter
- Use local industrial gas supplier to fill agent cylinder(s) using Kidde re-fill instructions

Option 4

- Return agent cylinder(s) to Kidde for re-fill
- Anticipated turn-around time is 2 weeks at receipt



Natura sales tools



Kidde Fire Systems
Clean Agent
Fire Suppression

Natura™ Inert Gas System
Flexible. Efficient. Sustainable.

The Kidde Fire Systems Natura™ Inert Gas System provides fire suppression with your choice of inert agent, efficient installation and minimal impact on your facility. Natura is the most sustainable, most effective, most reliable and most cost-effective fire suppression system available today.

Compared with other high pressure inert gas systems, our system delivers superior flow and pressure to allow for a wide range of piping for most applications. Natura's low flow and low pressure system is the most sustainable choice for all gas fire suppression needs, with correct installation and correct components.

System Benefits

- Choice of two 80L and 150L agent cylinders for suppression through standard and custom manifolds.
- High quality, low pressure piping and components.
- Agent flow is used for application and 100% CO₂ is maintained for 100% fire suppression.
- Available for low temperature applications.
- Available for use in a rack or in a wall and gas supply with materials and data.

System Features

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Carrier



Kidde Fire Systems
Inert Gas
Fire Suppression

Inert Gas™ The clean agent fire suppression choice for sustainability.

Available for use in a rack or in a wall and gas supply with materials and data.

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Carrier

Tools	Content
Sell Sheets	Product description features and benefits
White paper	Advocates the benefits of Inert Gas Platform
Data Sheets	Technical description of system components
Racking Calculator	Calculates all the items needed for cylinder storage

Select or enter info into the yellow cells	80L	Qty to order
What size cylinders?	80L	0
How many cylinders for the main discharge?	30	1
Main with connected reserve?	Yes	0
Are the reserve cylinders in the same rack?	Yes	0
Number of rows (per rack)?	3	0
	01-8121-1000 Unistrut 80L Cylinder Wall Bracket - 1 80L Cylinder 400mm	0
	01-8122-1000 Unistrut 80L Cylinder Wall Bracket - 2 80L Cylinder 650mm	1
	01-8123-1000 Unistrut 80L Cylinder Wall Bracket - 3 80L Cylinder 950mm	0
	01-8124-1000 Unistrut 80L Cylinder Wall Bracket - 4 80L Cylinder 1250mm	0
	01-8125-1000 Unistrut 80L Cylinder Wall Bracket - 5 80L Cylinder 1550mm	0
	01-8126-1000 Unistrut 80L Cylinder Wall Bracket - 6 80L Cylinder 1850mm	3
	03-8266-0000 Clamping Bar 1 x 2 for 80L Cylinder (Front)	1
	03-8267-0000 Clamping Bar 1 x 3 for 80L Cylinder (Front)	6
	03-8162-0000 Wooden Spacer 1 x 2 for 80L Cylinder (Rear)	1
	03-8163-0000 Wooden Spacer 1 x 3 for 80L Cylinder (Rear)	6
	03-8164-0000 Wooden Spacer 2 x 2 for 80L Cylinder (Center)	2
	03-8165-0000 Wooden Spacer 2 x 3 for 80L Cylinder (Center)	12
	01-8131-0000 Single Clamp 80L Cylinder Galvanized Steel	0
	01-8337-0200 Clamping Bolt, 2 Row, 80L Cylinder - 715mm Long	0
	01-8337-0300 Clamping Bolt, 3 Row, 80L Cylinder - 1030mm Long	13
	01-8131-0002 End cover, White PVC 34mm X 40mm	2
	03-8331-0000 Distance Pipe 3/4" + Washers 80L Cylinder	0



Kidde Fire Systems
Natura™ Inert Gas
Fire Suppression System

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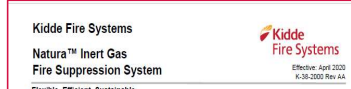
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Natura™ Inert Gas
Fire Suppression System

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Think Design Flexibility

Fun with flow calcs

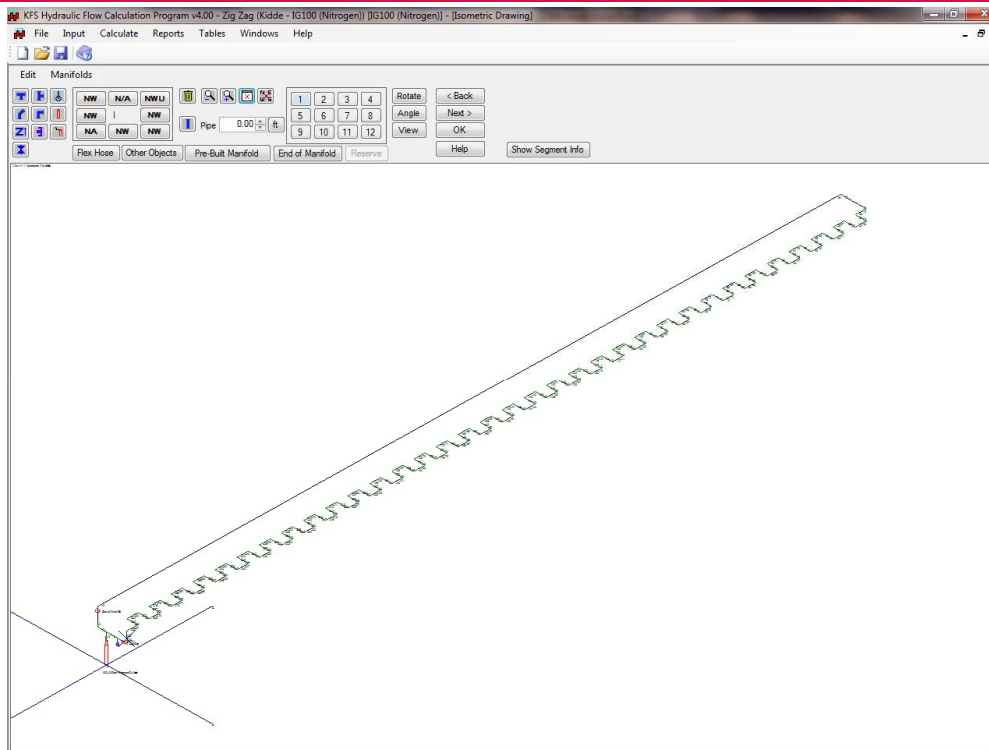


Natura flow calculation



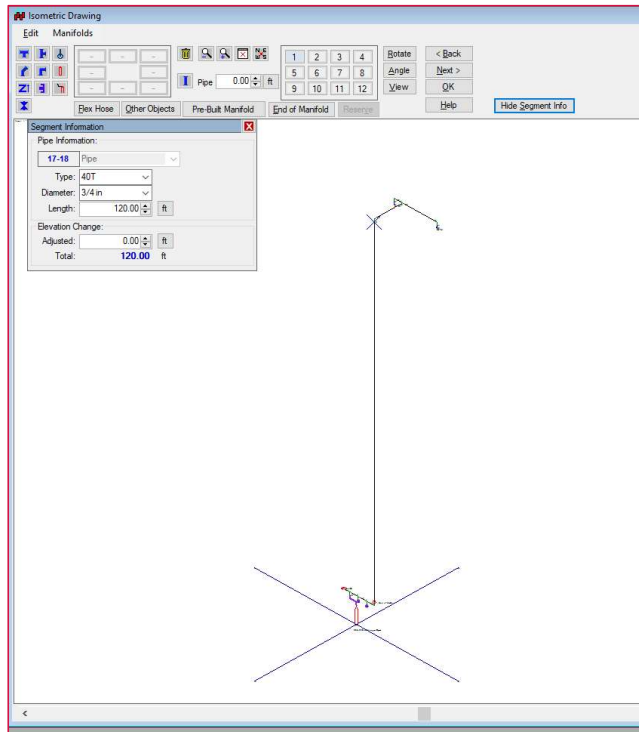
The Natura Inert Gas platform is part of the Version 4.0 software suite.

Fun with flow calcs



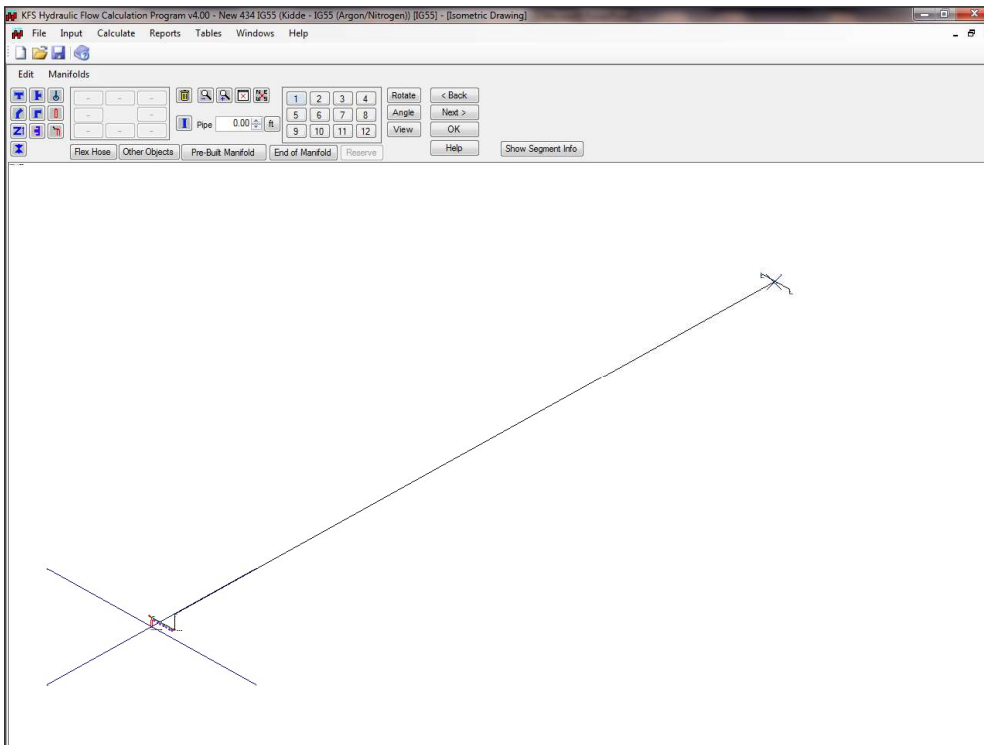
2 - 80 L cylinders
Top of riser to first tee: 200 ft.
138 elbows
All 1-inch pipe
Discharge time: 116.9s

Fun with flow calcs



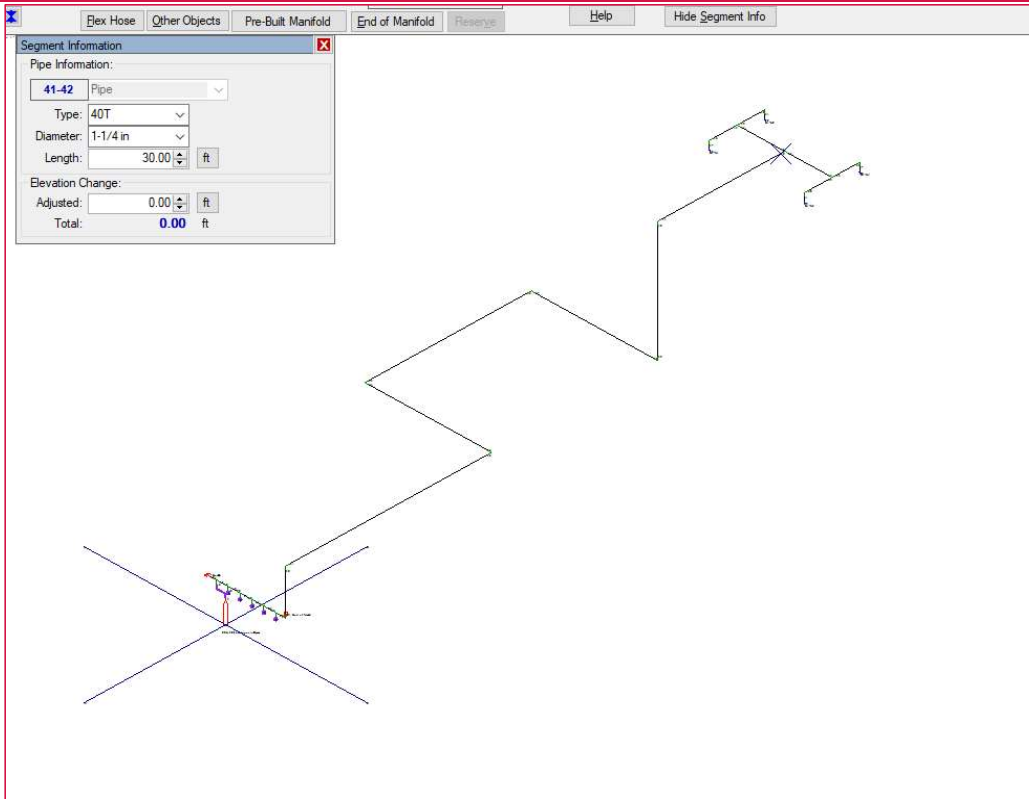
3 - 80 L cylinders
2,250 ft³ hazard
Elevation 120 ft. (12 stories)
2-inch manifold and 3/4-inch pipe
Discharge time 117s

Fun with flow calcs



6 - 80 L cylinders
8,000 ft³ hazard
Top of Riser to First tee 500 ft.
All 1 1/2-inch pipe
Discharge time 109.1s

Fun with flow calcs

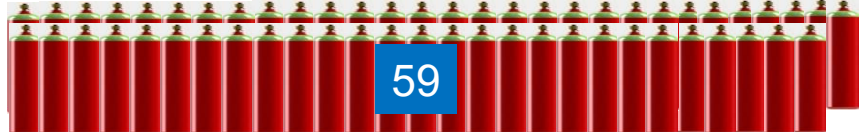
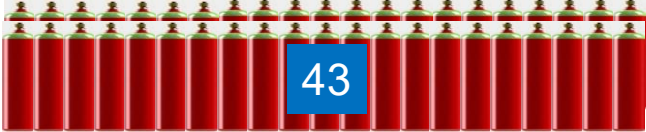


6 - 80 L cylinders
8,000 ft³ hazard
Elevation 40 ft. (4 stories)
Overall distance to hazard 120ft.
30ft. x 40ft. diversion
2-inch manifold, 1 1/4 & 1-inch pipe
Discharge time 97.4s

Hazard Volume Vs Cylinder Foot-Print Area



Natura Pressure And Capacity Choices

Example	10,000 CFT	50,000 CFT
200 bar, 80 L	 12	 59
300 bar, 80 L ~25% reduction	 9	 43
300 bar, 140 L ~40% reduction	 5	 25

Hazard Volume Vs Cylinder Foot-Print Area

Hazard Volume (Cu. Ft.)	ECS HFC-227ea System	ECS-500 Ketone System	Natura™ IGS (x#) 80L Cylinders	Natura™ IGS (x#) 140L Cylinders
5K	1.0 Ft ²	2.0 Ft ²	(5) 5-6 Ft ²	(3) 7 Ft ²
10K	1.4 Ft ²	1.4 Ft ²	(9) 10 Ft ²	(5) 14 Ft ²
15K	2.6 Ft ²	3.1 Ft ²	(13) 15 Ft ²	(8) 18 Ft ²
20K	3.1 Ft ²	3.1 Ft ²	(17) 18 Ft ²	(10) 23 Ft ²
50K	7.3 Ft ²	10.8 Ft ²	(43) 44 Ft ²	(25) 59 Ft ²

Hazard Volume Vs Cylinder Foot-Print Area

Hazard Volume (Cu. Ft.)	ECS HFC-227ea System	ECS-500 Ketone System	Natura™ IGS 80L Cylinders	Natura™ IGS 140L Cylinders
5K	1.0 x 1.0 Ft	1.2 x 1.2 Ft	1R 1.0 x 5.0 Ft 2R 2.0 x 3.0 Ft	1R 1.5 x 4.5 Ft
10K	1.2 x 1.2 Ft	1.2 x 1.2 Ft	2R 2.0 x 5.0 Ft	2R 3.0 x 4.5 Ft
15K	1.6 x 1.6 Ft	1.8 x 1.8 Ft	3R 3.0 x 5.0 Ft	2R 3.0 x 6.0 Ft
20K	1.8 x 1.8 Ft	1.8 x 1.8 Ft	3R 3.0 x 6.0 Ft	2R 3.0 x 7.5 Ft
50K	2.7 x 2.7 Ft	3.3 x 3.3 Ft	3R 3.0 x 14.5 Ft	2R 3.0 x 19.5 Ft

Natura Value Proposition

Channel Partner Value Proposition:

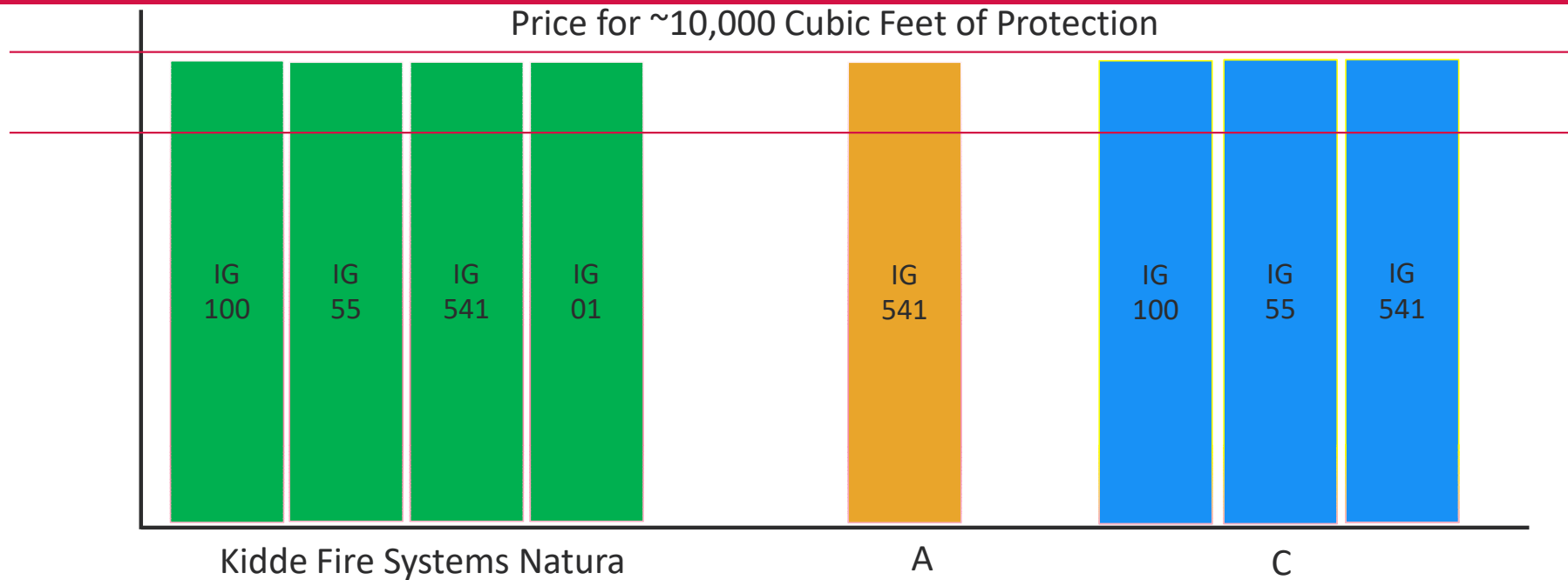
- Globally compliant product with four agents
- Low installation cost thanks to:
 - Pre-built manifold and Sch. 40 pipe-network
 - Quick-connect actuation hoses
 - Plug-in daisy-chain supervisory pressure switch wiring
 - 55% reduction in venting area
- 25-40% reduction in the number of cylinders vs 200 Bar
- Far more design flexibility

End-user Value Proposition:

- Truly “Green” choice
- Minimal refill costs = Low TCO
- Less likely to be subject to future restrictive environmental regulations



Pricing



Contact your RSM - we can match competitors' pricing



Distributor Summit 2022

Discussion





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System with selector valves

