



Fire Protection



## FIRE-FIGHTING SAFETY



Ed. 01/2020

Fire-Fighting Safety. From every point of view

Download  
General Catalogue on

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In a world of words we prefer facts ..... this is who we were



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OUR EQUIPMENT ARE DESIGNED,  
PRODUCED AND TESTED IN **FAS S.p.A. - ITALY**

FIRE FIGHTING SYSTEMS  
**FAS**   
since 1967<sup>®</sup>  
S.p.A.





Fire Protection

# Company presentation

## LET US INTRODUCE OURSELVES

Since its foundation in 1967, F.A.S. (Fire Fighting Systems) has always encouraged innovation and has welcomed new opportunities to make its firefighting systems and equipment more reliable by personalizing its products to suit a wide variety of specific requirements.

FAS SpA has been designing and manufacturing its own firefighting equipment and systems for over forty years.

All the phases of production starting from the initial project to the purchase of raw materials used in the manufacturing process right through to the testing of the final product are done in FAS SpA premises.

This long tradition in the firefighting field has allowed FAS SpA to gain an important position in national and international firefighting market, as having complete control of all the phases of production made it more flexible to adapt its products to suit the Customers' needs, who range from companies working in the petrochemical and oil & gas processing fields.

It can also boast customers involved in the power generation industries, those who work in off-shore installation as well as industrial sectors of low, medium and high risk levels



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*In order to improve their efficiency, FAS may modify characteristics and dimensions of its own products without prior notice.*

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since 1967®  
S.p.A.



Fire Protection

# Company presentation

## THIS IS WHAT WE LIKE: CUSTOMIZED RELATIONSHIP

The firefighting world is always in constant evolution and FAS SpA is constantly expresses its mission: achieve positive results through collaboration, research and investment in order to be able to look towards the future with optimism.

The capacity FAS SpA has, to constantly renew its activities, has put it in a competitive position as regards the quality of its products and services. All the phases of production are carried out within the company from the initial stage of research to the project phase, to the choice of construction materials, right through to the manufacturing phase, adapting and diversifying every system to its specific sector of application and customers'

needs. "On site" experiences and knowledge gained over the years by FAS team are the starting point for detecting critical points that could lead to negative consequences and also for making personalized firefighting systems to extinguish possible fires in manufacturing units.



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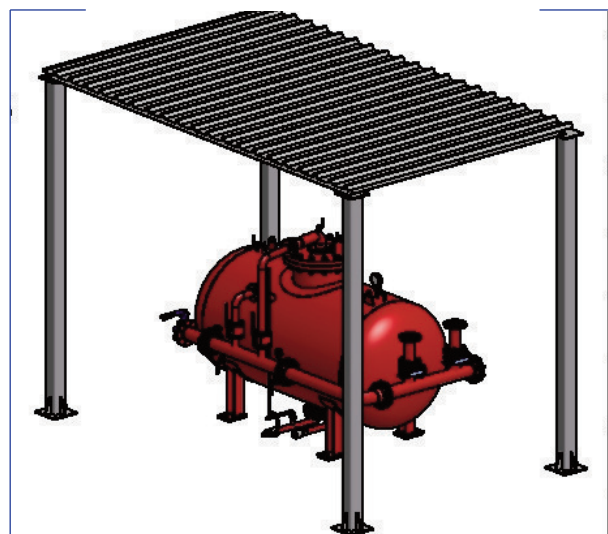
Fire Protection

# Company presentation

## ENGINEERING: THIS IS WHAT WE DO

Research and development of new products, and especially the realization of big and small firefighting systems ready to use, require an adequate Technical Department, up to the task. FAS SpA can count on its highly qualified technical team with years of experience, able to respond to any and every need of our clients.

Excellent organization combined with high technology instruments make FAS SpA an avant-garde company regarding design and projects of components and plants, a 360° range of firefighting products and equipment.



## MANUFACTURING: THIS IS WHAT WE PRODUCE

Direct production of all our equipment represents, since 1967, FAS SpA distinctive element. The manufacturing activity of our products requires the availability of highly qualified personnel, along with the presence of modern machinery and an ongoing updating. These resources permits FAS SpA to have full control of the whole production chain, allowing an accurate quality warranty and the possibility of realization of special execution, meeting required specifications of our customers.



## TEST CENTER: THIS IS WHERE WE TEST & SHOW OUR PRODUCTS

FAS SpA can also count on a functional Testing Center in which verify and show to clients the performances of its products, directly manufactured in the adjacent production department.

The center is equipped with water reserve, pumping unit, foam bladder tanks and piping dedicated to deluge valve and monitors supply and dike for low, medium, high expansion foam tests.



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**FAS**   
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Fire Protection

# Company presentation

## CUSTOMER SERVICE

Customer Service is a must for a Company that supplies services and products. FAS SpA Customer Service corporate branch is created in order to satisfy always increasing needs and requests of Customers, who work in all various risk sectors.

FAS SpA Customer Service aims to be the ideal interlocutor for any problem the Client may meet and that inhere our field of competence, starting from consultancy to design, to installation and finally to maintenance of firefighting plants. FAS SpA Customer Service/Customer Care branch is fundamental and allows FAS SpA to have a continuous dialogue with the Client, resulting in Customer loyalty. The Customer loyalty FAS SpA looks for, allows it to have continuity, to know and facilitate the Customer, trying, as far as possible, to customized the relationship.

A good quality Customer Service is essential in order to build durable relationships.



## TRAINING CENTER

After 50 years of experience, FAS SpA is proud to present the “Center for Safety and Environmental Management SGA Giampiero Barilati”. It is a brand new corporate sector created to satisfy always increasing needs and requests of Customers concerning work safety.

This new Center aims to convey the implementation of theoretical and practical knowledge relating to the whole safety field, in all working sectors in order to meliorate technical capacities of learners, as well through behavior's modification.

In all most recent safety regulations a strategic role is given to training, since it guarantees an indispensable support for the proper functioning of the Company organization.



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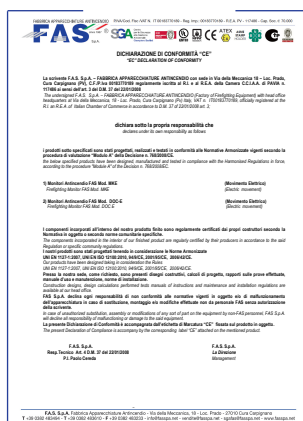
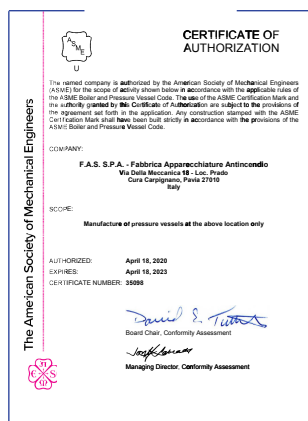
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Fire Protection

# Certifications



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## MONITOR MB3

Monitor in Bronze or corrosion proof light alloy

### Mod. MB3 L - Manual control with lever

#### Standard characteristics

**Body Size:** ~ Ø 3.7 inch (casting)

**Maximum Body Flow Rate:** Max. 1200 gpm

**Pressure Loss:** See diagram  $\Delta P$  Vs Flow rate

**Flow rate:** On customer Request link to compatible nozzles or branchpipes

**Flow rate recommended:** See diagram Pressure Loss Vs Flow Rate

**Recommended maximum pressure loss:** 17.4 psi

**Rotation with lever:** 360° continuous

**Elevation and deflection with lever:** ~ +85° - 50°

**Horizontal throw:** See dedicated page on compatible nozzles or branchpipes

**Test Pressure:** 400 psi - **Custom. req.** Up to 700 psi

**Base Flange:** Carbon Steel

**Outlet Flange:** External diameter Ø 6.3 inch

**Coating:** Epoxy Primer + Polyurethane red coat RAL3000, Total DFT >120 µm

**Weight:** Bronze: ~53 lbs - Light alloy: ~22 lbs

#### Approvals



MARINE DIVISION



#### Optional

- > Pressure gauge on outlet
- > Drain Valve
- > Nozzle for thermal irradiation protection
- > Elevation lever with compass system

#### Compatible Nozzles Or Branchpipes

- > Foam and self inducing foam branchpipes mod. LS and LSA
- > Water branchpipe mod. LA
- > Jet spray nozzles mod. Mini GN - GN - Super GN
- > Jet spray self inducing nozzles mod. GNA & Super GNA

#### Available on Demand

- > Base Flange: Other material
- > Outlet Flange: Other outlet connection with adapter (NH, Ghost, Storz)
- > Coating: Other painting cycles

#### Key configuration

- > Application for manual control with double handwheel
- > Application for self-oscillating
- > Application for oil - hydraulic actuation

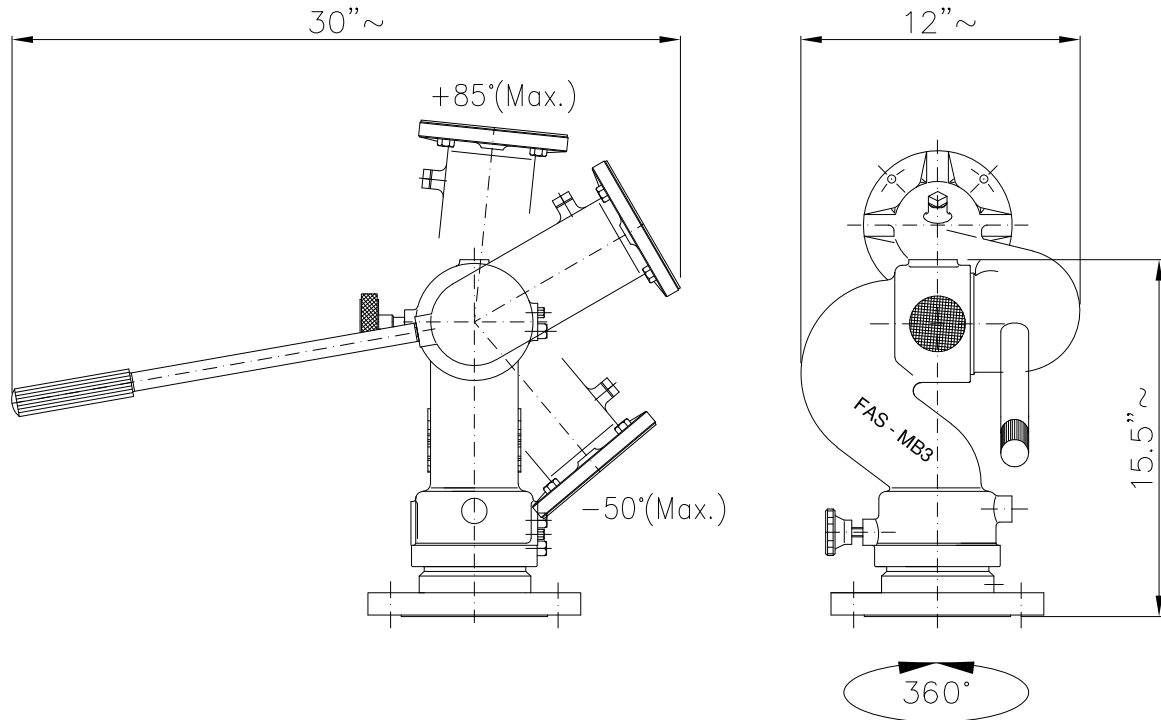
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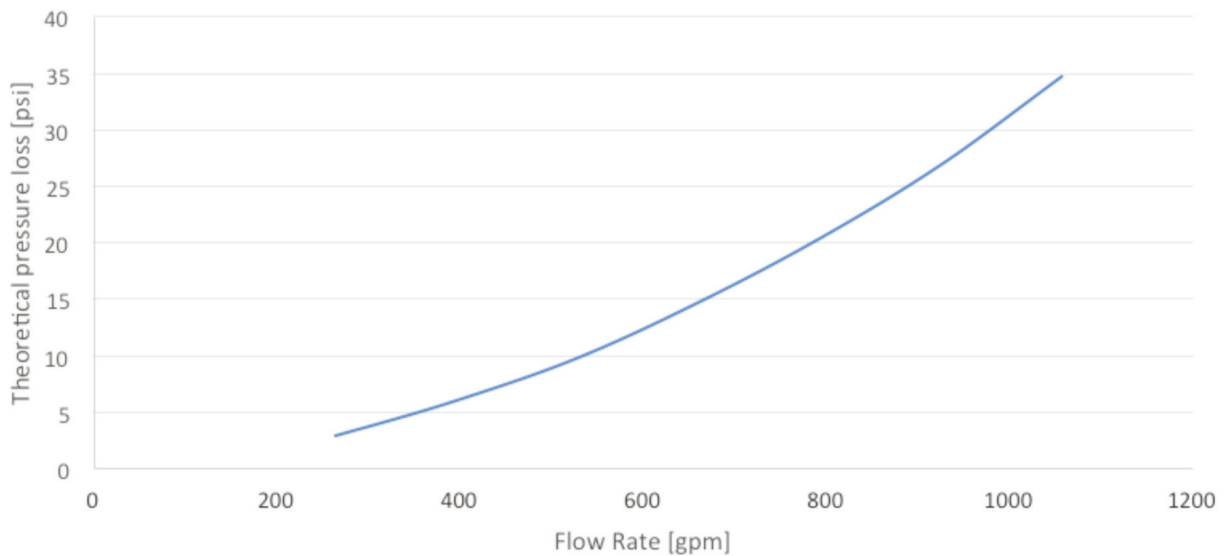
## MONITOR MB3

Monitor in Bronze or corrosion proof light alloy

### Layout & Overall Dimension - MB3 L Monitor



### Pressure Loss $\Delta P$ Vs Flow Rate





## MONITOR MB3 KEY CONFIGURATION

**Mod. MB3 2V - Application for manual control with double handwheel**

### Standard characteristics

**Body Size:** ~ Ø 3.7 inch (casting)

**Rotation with handwheel:** 360° continuous

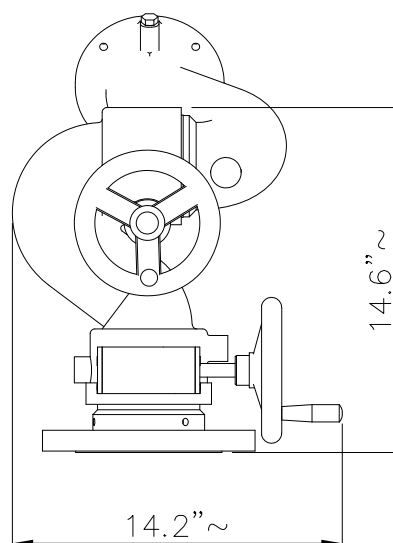
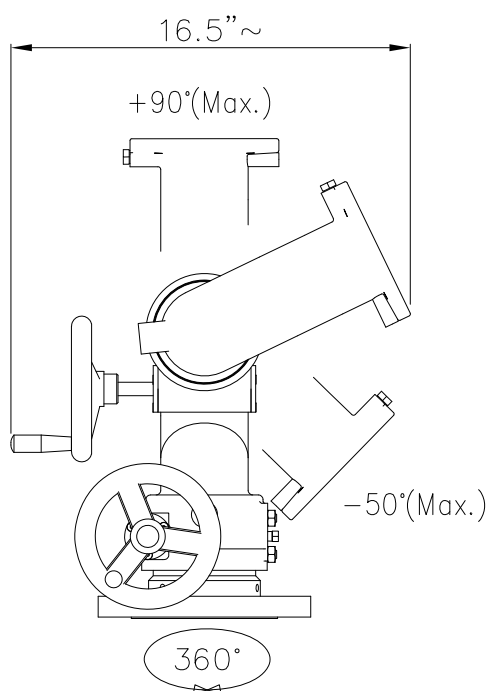
**Elevation and deflection with handwheel:** ~ +90° - 50°

**Weight:** Bronze: ~60 lbs - Light alloy: ~35 lbs



MARINE DIVISION

### Layout & Overall Dimension - MB3 2V Monitor with double handwheel



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## MONITOR MB3 KEY CONFIGURATION

**Mod. MBA3 L - Application for self oscillating**

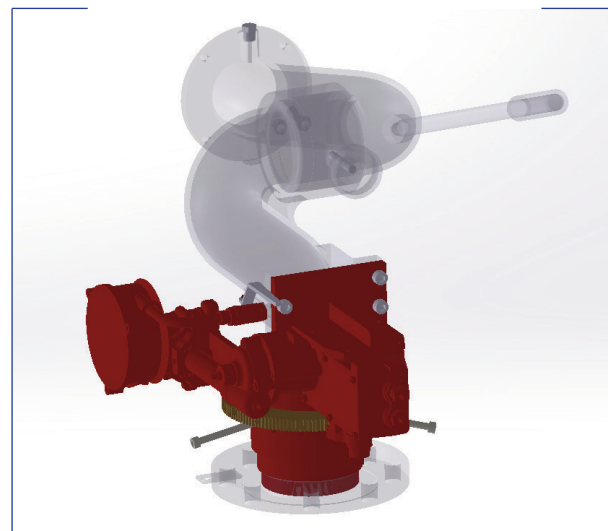
### Standard characteristics

**Body Size:** ~ Ø 3.7 inch (casting)

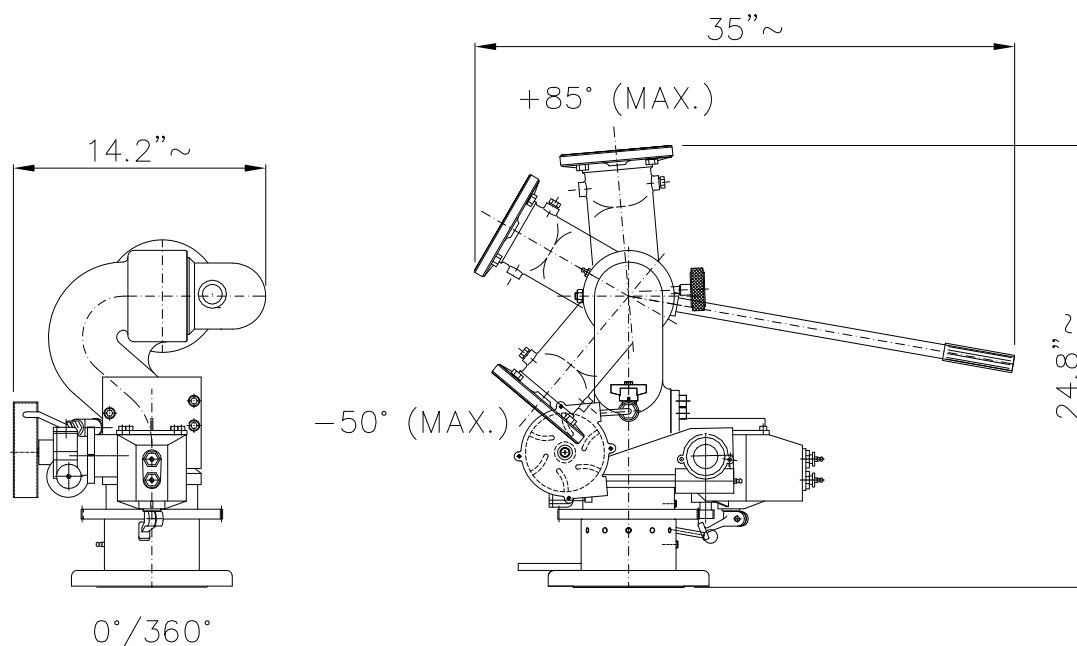
**Automatic oscillation with Hydraulic Motor:** 360° continuous, by 30° step

**Elevation and deflection with lever:** ~ +85° - 50°

**Weight:** Bronze: ~112 lbs - Light alloy: ~68 lbs



### Layout & Overall Dimension - MBA3 L Monitor self oscillating



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## MONITOR MB3 KEY CONFIGURATION

### Mod. MBO3 - Application with oil-hydraulic actuation

#### Standard characteristics

**Body Size:** ~ Ø 3.7 inch (casting)

**Rotation with Oil Hydraulic Motor:** 360° continuous

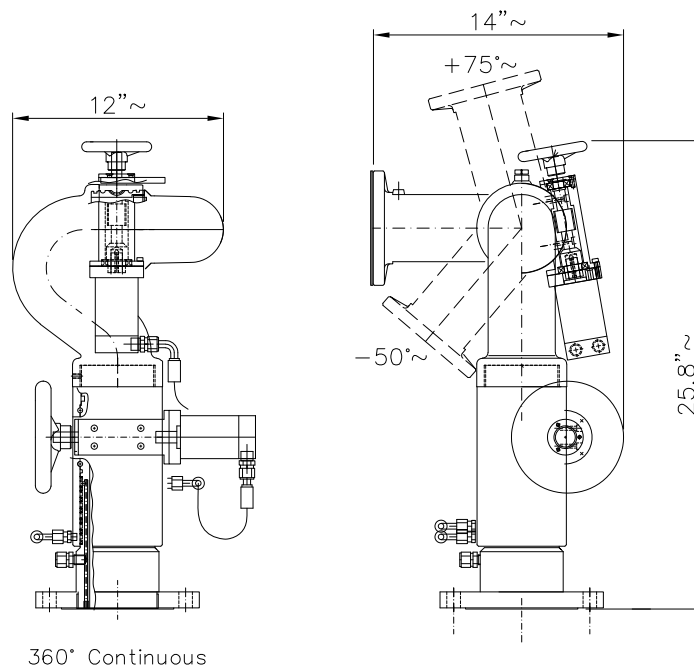
**Elevation and Deflection with Oil Hydraulic Motor:** ~ +75° - 50°

**Weight:** Bronze: ~81 lbs - Light alloy: ~51 lbs

Usable with electric-oil hydraulic mini power pack device  
(see dedicated page)



### Layout & Overall Dimension - MBO3 Monitor with oil-hydraulic actuation



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## MONITOR DOC

Monitor in Bronze or corrosion proof light alloy

### Mod. 2V - Manual control with double handwheel

#### Standard characteristics

**Body Size:** ~ 4.9 inch (casting)

**Maximum Body Flow Rate:** Max. 2300 gpm

**Pressure Loss:** See diagram  $\Delta P$  Vs Flow rate

**Flow rate:** On customer Request link to compatible nozzles or branchpipes

**Flow rate recommended:** See diagram Pressure Loss Vs Flow rate.

**Recommended maximum pressure loss:** 17.4 psi

**Rotation with handwheel:** 360° continuous

**Elevation and deflection with handwheel:** ~ +90° - 70°

**Horizontal throw:** See dedicated page on compatible nozzles or branchpipes

**Test Pressure:** 400 psi - **Custom. req.** Up to 700 psi

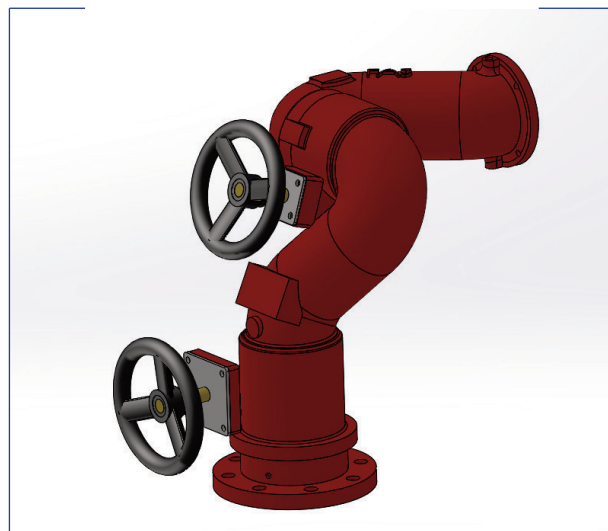
**Base Flange:** Carbon Steel

**Outlet Flange:** External diameter Ø 6.3 inch

**Coating:** Epoxy Primer + Polyuretanic red coat RAL3000, Total DFT >120 µm

**Weight:** Bronze: ~121 lbs - Light alloy: ~70 lbs

#### Approvals



#### Optional

- > Pressure gauge on outlet
- > Drain Valve
- > Nozzle for thermal irradiation protection

#### Compatible Nozzles Or Branchpipes

- > Foam and self inducing foam branchpipes mod. LS and LSA
- > Water branchpipe mod. LA
- > Jet spray nozzles mod. GN - Super GN
- > Jet spray self inducing nozzles mod. GNA & Super GNA

#### Available on Demand

- > Base Flange: Other material
- > Outlet Flange: Other outlet connection with adapter (NH, Ghost, Storz)
- > Coating: Other painting cycles

#### Key configuration

- > Application for electrical actuation
- > Application for oil-hydraulic actuation
- > Application for self-oscillating

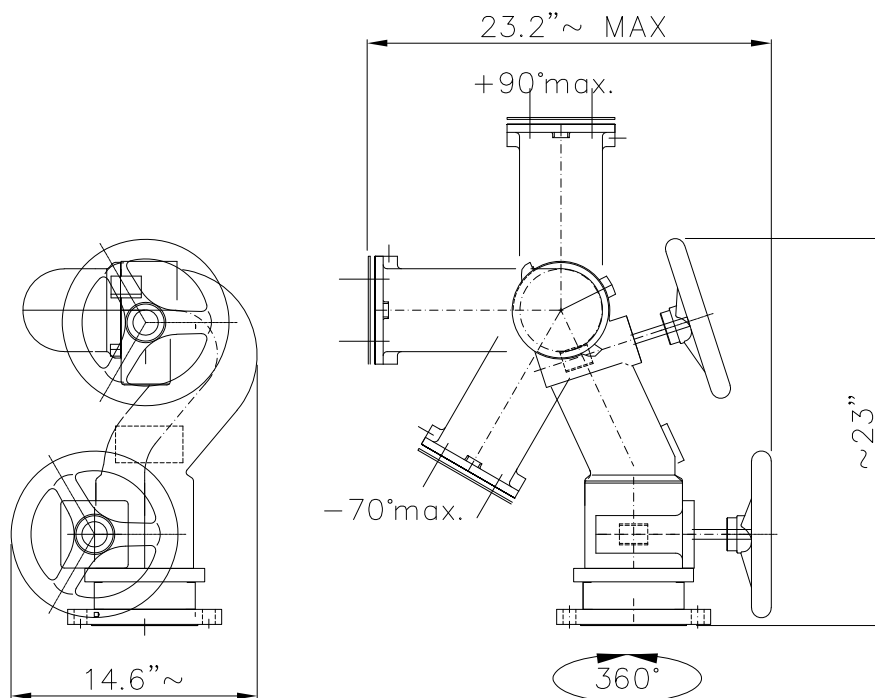
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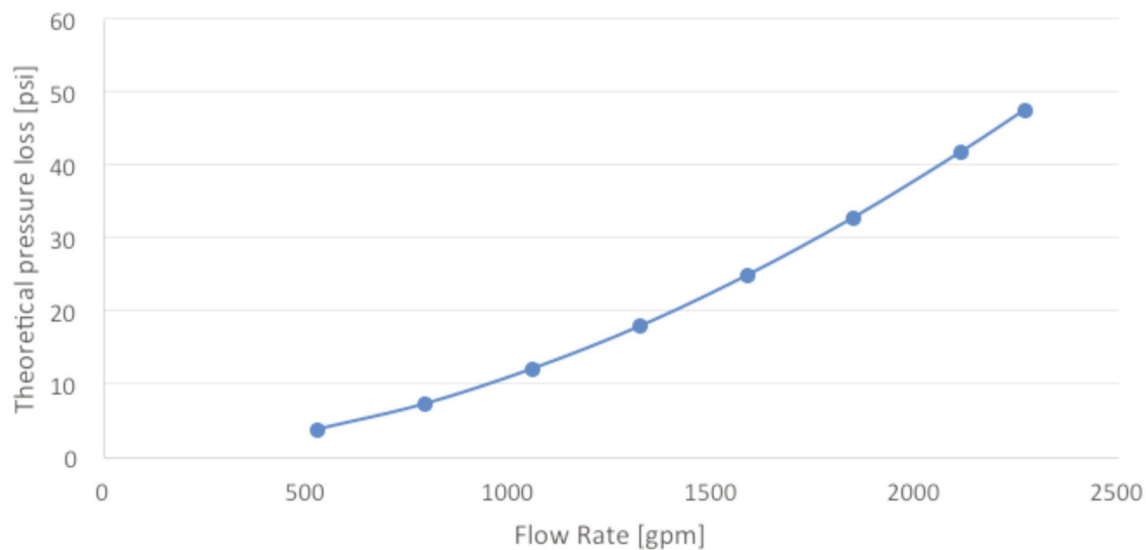
## MONITOR DOC

Monitor in Bronze or corrosion proof light alloy

### Mod. 2V - Manual control with double handwheel



### Pressure Loss $\Delta P$ Vs Flow Rate



## MONITOR DOC KEY CONFIGURATION

### Mod. DOC-E - Application for electrical actuation

#### Characteristics

**Rotation with electric motor:** From 0° to ± 175° (350° total)

**Elevation and deflection with electric motor:** ~ +90° - 70°

**Weight:** Bronze ~220 lbs - Light alloy ~180 lbs

**Electric Motor:** Actuator with Limit switch / torque switch integrated

**IP Protection:** IP 66/67

**Custom. req.** ATEX Version Ex II 2 G Ex de [ia] II CT4 Gb - IP68

Nema Protection equivalent (4 or 6P)

**Operational Temp. (for IP):** -13°F + 140°F

**Operational Temp. (for ATEX):** -4°F + 104°F

**Custom. req.** Available other Operational Temp.  
(min: -58°F - Max. + 140°F)

**Feeding Voltage:** 400V AC 50/60Hz. 3ph.

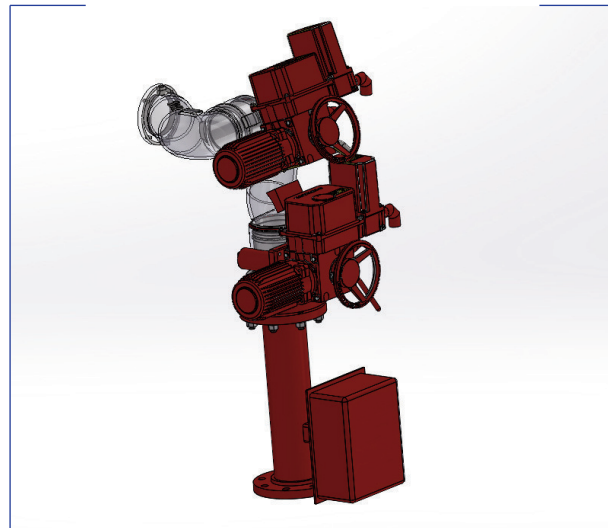
*Standard 3-phase voltages*

V	380	400	415	440	460	480	500

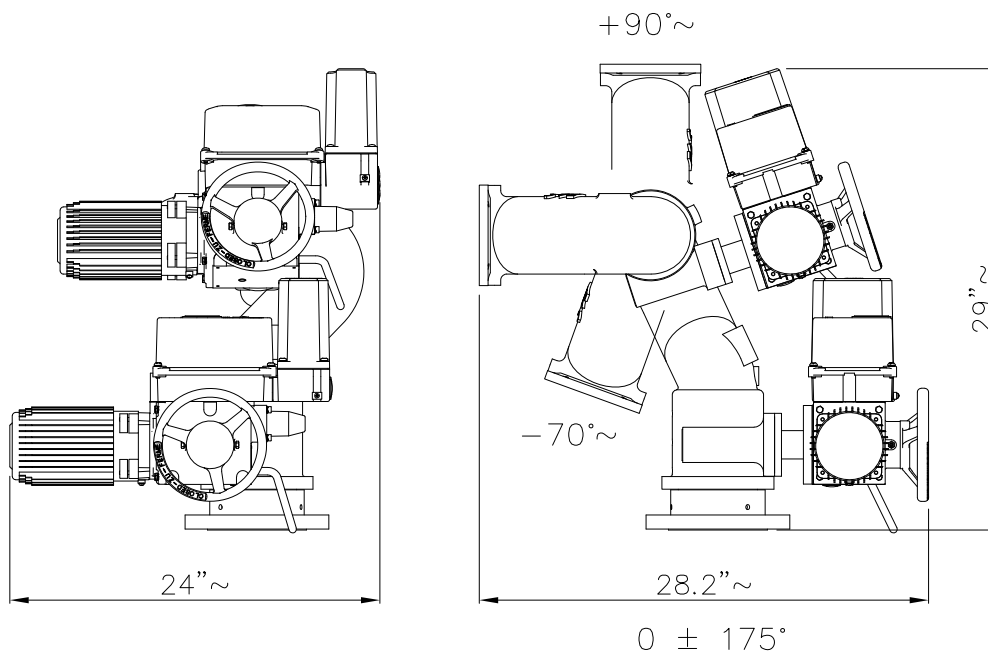
**Custom. req.** Other Feeding Voltage (such as 208 V 3ph.)

**Custom. req.** Safety Integrity Level SIL 2 Certification

**Custom. req.** UL Approval



### Layout & Overall Dimension - DOC Monitor with electrical actuation



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## MONITOR DOC KEY CONFIGURATION

### Mod. DOC-O - Application for oil-hydraulic actuation

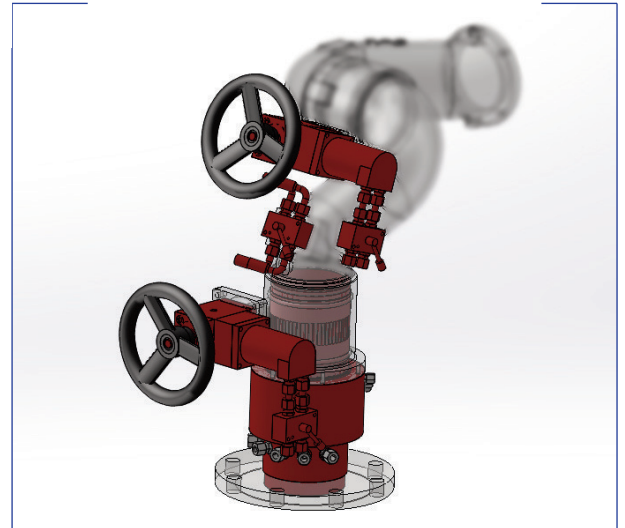
#### Characteristics

**Rotation with oil hydraulic motor:** 360° continuous  
(both direction)

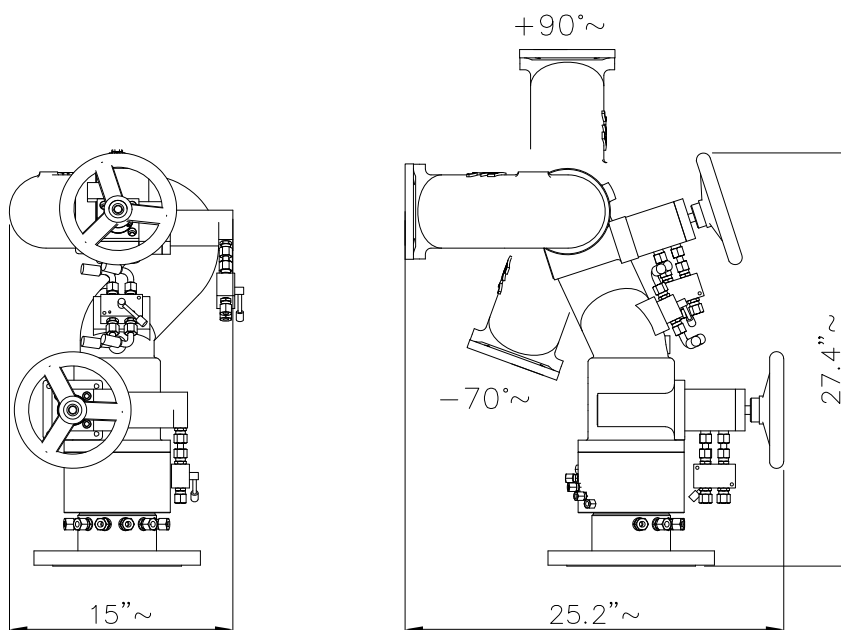
**Elevation and deflection with oil hydraulic motor:** ~ +90° - 70°

**Weight:** Bronze ~138 lbs - Light alloy ~80 lbs

Usable with electric-oil hydraulic mini power pack device  
(see dedicated page)



### Layout & Overall Dimension - DOC Monitor with oil-hydraulic actuation



360° CONTINUOUS BOTH DIRECTION

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## MONITOR DOC KEY CONFIGURATION

### Mod. DOC-A - Application for self oscillating

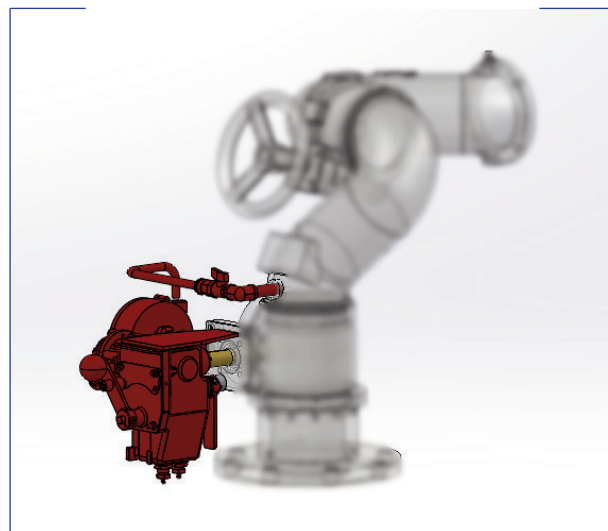
#### Characteristics

**Automatic oscillation with Hydraulic Motor with lever for neutral position for manual with handwheel:**

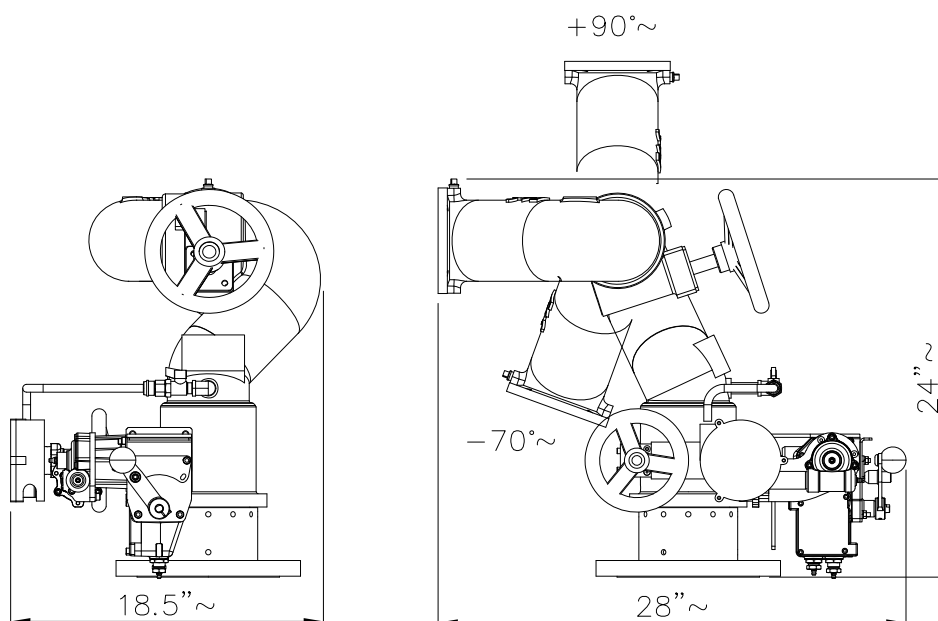
360° continuous, by 30° step

**Elevation and deflection with handwheel:** ~ +90° - 70°

**Weight:** Bronze ~138 lbs - Light alloy ~80 lbs



### Layout & Overall Dimension - DOC Monitor self oscillating



360° CONTINUOUS BOTH DIRECTION  
STEP 30°

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## Mod. H

Horizontal bladder tank with foam outside the bladder, 2014/68 UE PED certificate

### Standard characteristics

**Body Material:** Carbon Steel

**Manhole:** Ø18"

**Membrane material:** Neoprene

**Design pressure:** 175 psi

**Test Pressure:** 260 psi

**Maximum working pressure:** 175 psi

**External finish:** Epoxy Primer + Polyurethane red coat  
RAL3000, Total DFT >120 µm

**Capacity:** From 265 to 2640 gal

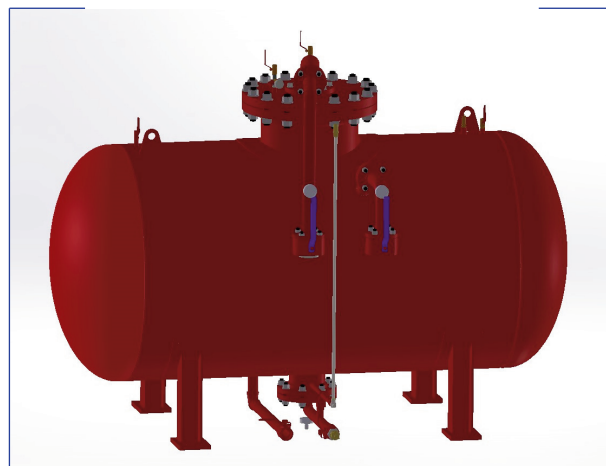
**Foaming charge control:** With visual level indicator

**Tie rods and nuts in Stainless Steel**

**Mixer:** See dedicated page

**Suitable for seismic zone level 2b UBC - PGA 0,25 g**

### Approvals



### Optional

- > Manual pump
- > Ladder for manhole access
- > Vents control kit at mixer's height
- > Base frame

### Notes

In case of inquiry and/or order specify the following datas:

- > Tank capacity, flow rate range, mixing percentage, flow direction, mixer's flange

### Available on Demand

- > Body Material: Other Material
- > Different Design Pressure
- > Capacity: 2900 gal to 3170 gal
- > Insulated tank
- > Coating: Other Painting Cycles
- > ASME Stamped
- > Designed for other seismic zone

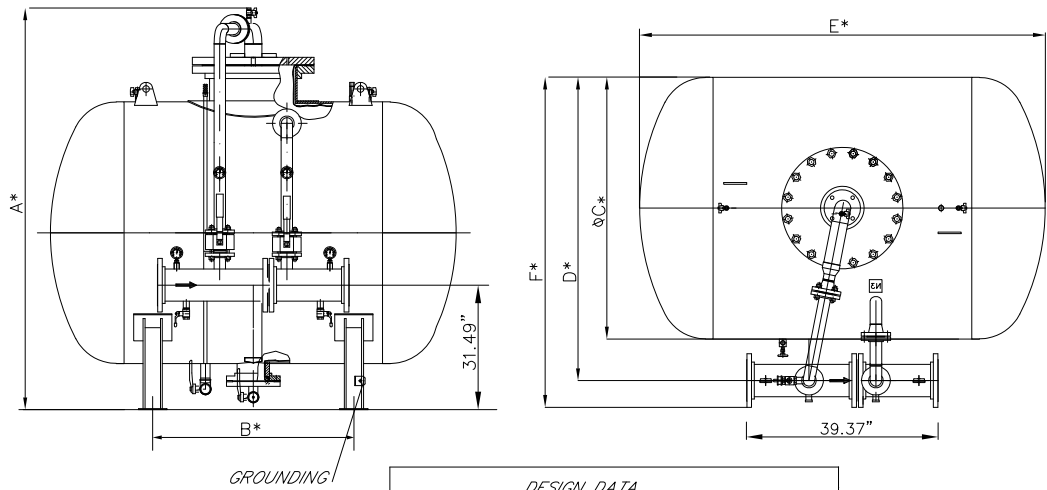
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# Mod. H

Horizontal bladder tank with foam outside the bladder, 2014/68 UE PED certificate



DESIGN DATA
CALCULATION RULES: DIRECTIVE "PED" ASME VIII Div.1
DESIGN PRESSURE: 175 psi
WORKING PRESSURE: 175 psi Max
TEST PRESSURE: 260 psi
DESIGN TEMPERATURE: -20,2°F +176°F
JOINT EFFICENCY : HEADS=1 - SHELL=0.85
CORROSION ALLOWANCE: NO
X RAYS: 10%
SEISMIC CLASSIFICATION:
ZONE 2 (ITALY) - ZONE 2b (UBC)
GROUND ACCELERATION: 0,225 g (MAX)

\* FOR DIMENSIONS PLEASE CONTACT FAS  
TECHNICAL DEPARTMENT

MODEL	CAPACITY
H-10	265 gal
H-15	400 gal
H-20	530 gal
H-25	660 gal
H-30	795 gal
H-40	1060 gal
H-50	1325 gal
H-60	1585 gal
H-70	1850 gal
H-80	2115 gal
H-90	2380 gal
H-100	2640 gal

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## Mod. HI

Horizontal bladder tank with foam inside the bladder, 2014/68 UE PED certificate

### Standard characteristics

**Body Material:** Carbon Steel

**Manhole:** Ø18"

**Membrane material:** Neoprene

**Design pressure:** 175 psi

**Test Pressure:** 260 psi

**Maximum working pressure:** 175 psi

**External finish:** Epoxy Primer + Polyurethane red coat  
RAL3000, Total DFT >120 µm

**Capacity:** From 265 to 2640 gal

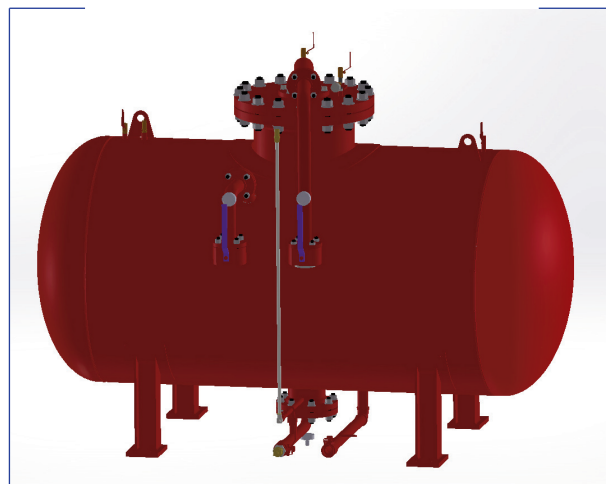
**Foaming charge control:** With visual level indicator

**Tie rods and nuts in Stainless Steel**

**Mixer:** See dedicated page

**Suitable for seismic zone level 2b UBC - PGA 0,25 g**

### Approvals



### Optional

- > Manual pump
- > Ladder for manhole access
- > Vents control kit at mixer's height
- > Base frame

### Notes

In case of inquiry and/or order specify the following datas:

- > Tank capacity, flow rate range, mixing percentage, flow direction, mixer's flange

### Available on Demand

- > Body Material: Other Material
- > Different Design Pressure
- > Capacity: 2900 gal to 3170 gal
- > Insulated tank
- > Coating: Other Painting Cycles
- > ASME Stamped
- > Designed for other seismic zone

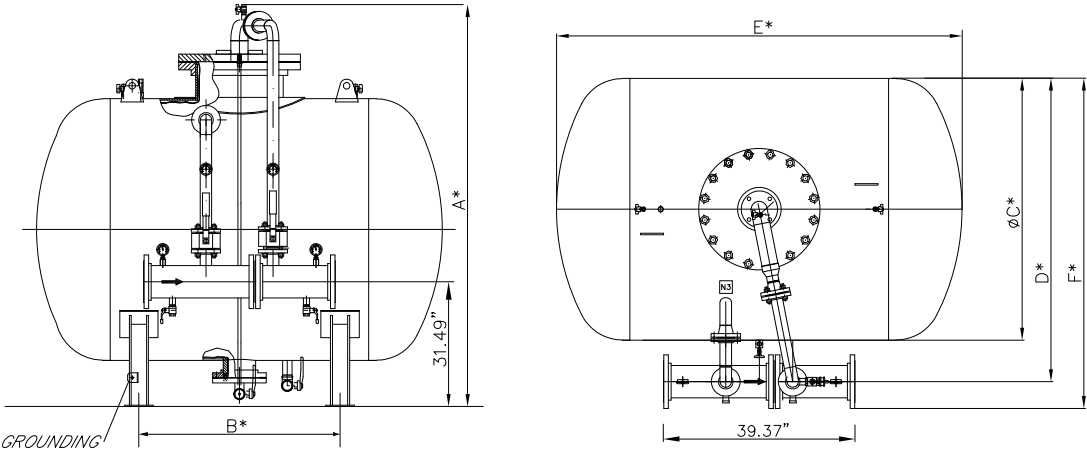
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# Mod. HI

Horizontal bladder tank with foam inside the bladder, 2014/68 UE PED certificate



DESIGN DATA
CALCULATION RULES: DIRECTIVE "PED" ASME VIII Div.1
DESIGN PRESSURE: 175 psi
WORKING PRESSURE: 175 psi Max
TEST PRESSURE: 260 psi
DESIGN TEMPERATURE: -20,2°F +176°F
JOINT EFFICIENCY : HEADS=1 - SHELL=0.85
CORROSION ALLOWANCE: NO
X RAYS: 10%
SEISMIC CLASSIFICATION:
ZONE 2 (ITALY) - ZONE 2b (UBC)
GROUND ACCELERATION: 0,225 g (MAX)

\* FOR DIMENSIONS PLEASE CONTACT FAS  
TECHNICAL DEPARTMENT

MODEL	CAPACITY
HI-10	265 gal
HI-15	400 gal
HI-20	530 gal
HI-25	660 gal
HI-30	795 gal
HI-40	1060 gal
HI-50	1325 gal
HI-60	1585 gal
HI-70	1850 gal
HI-80	2115 gal
HI-90	2380 gal
HI-100	2640 gal

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## Mod. F

Vertical bladder tank with foam outside the bladder, 2014/68 UE PED certificate

### Standard characteristics

**Body Material:** Carbon Steel

**Manhole:** Ø18"

**Membrane material:** Neoprene

**Design pressure:** 175 psi

**Test Pressure:** 260 psi

**Maximum working pressure:** 175 psi

**External finish:** Epoxy Primer + Polyurethane red coat  
RAL3000, Total DFT >120 µm

**Capacity:** From 50 to 2640 gal

**Foaming charge control:** With valves on different levels

**Tie rods and nuts in Stainless Steel**

**Mixer:** See dedicated page

**Suitable for seismic zone level 2b UBC - PGA 0,25 g**

### Approvals



### Optional

- > Manual pump
- > Ladder for manhole access
- > Vents control kit at mixer's height
- > Foaming charge control with visual level indicator
- > Base frame

### Notes

In case of inquiry and/or order specify the following datas:

- > Tank capacity, flow rate range, mixing percentage, flow direction, mixer's flange

### Available on Demand

- > Body Material: Other Material
- > Different Design Pressure
- > Capacity: 2900 gal or 3170 gal
- > Insulated tank
- > Coating: Other Painting Cycles
- > ASME Stamped
- > Designed for other seismic zone

For additional options or special versions  
contact FAS SpA

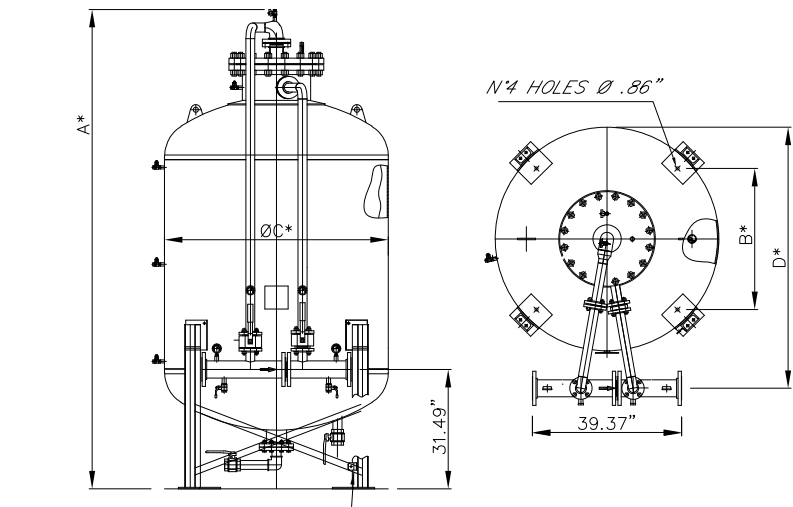
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Mod. F

Vertical bladder tank with foam outside the bladder, 2014/68 UE PED certificate



GROUNDING

DESIGN DATA
CALCULATION RULES: DIRECTIVE "PED" ASME VIII Div.1
DESIGN PRESSURE: 175 psi
WORKING PRESSURE: 175 psi Max
TEST PRESSURE: 260 psi
DESIGN TEMPERATURE: -20,2F +176F
JOINT EFFICIENCY : HEADS=1 - SHELL=0.85
CORROSION ALLOWANCE: NO
X RAYS: 10%
SEISMIC CLASSIFICATION:
ZONE 2 (ITALY) - ZONE 2b (UBC)
GROUND ACCELERATION: 0,225 g (MAX)

\* FOR DIMENSIONS PLEASE CONTACT FAS  
TECHNICAL DEPARTMENT

MODEL	CAPACITY
F-6	160 gal
F-10	265 gal
F-15	400 gal
F-20	530 gal
F-25	660 gal
F-30	795 gal
F-40	1060 gal
F-50	1325 gal
F-60	1585 gal
F-70	1850 gal
F-80	2115 gal
F-90	2380 gal
F-100	2640 gal

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## Mod. FI

Vertical bladder tank with foam inside the bladder, 2014/68 UE PED certificate

### Standard characteristics

**Body Material:** Carbon Steel

**Manhole:** Ø18"

**Membrane material:** Neoprene

**Design pressure:** 175 psi

**Test Pressure:** 260 psi

**Maximum working pressure:** 175 psi

**External finish:** Epoxy Primer + Polyurethane red coat  
RAL3000, Total DFT >120 µm

**Capacity:** From 50 to 2640 gal

**Foaming charge control:** With visual level indicator

**Tie rods and nuts in Stainless Steel**

**Mixer:** See dedicated page

**Suitable for seismic zone level 2b UBC - PGA 0,25 g**

### Approvals



### Optional

- > Manual pump
- > Ladder for manhole access
- > Vents control kit at mixer's height
- > Base frame

### Notes

In case of inquiry and/or order specify the following datas:

- > Tank capacity, flow rate range, mixing percentage, flow direction, mixer's flange

### Available on Demand

- > Body Material: Other Material
- > Different Design Pressure
- > Capacity: 2900 gal or 3170 gal
- > Insulated tank
- > Coating: Other Painting Cycles
- > ASME Stamped
- > Designed for other seismic zone

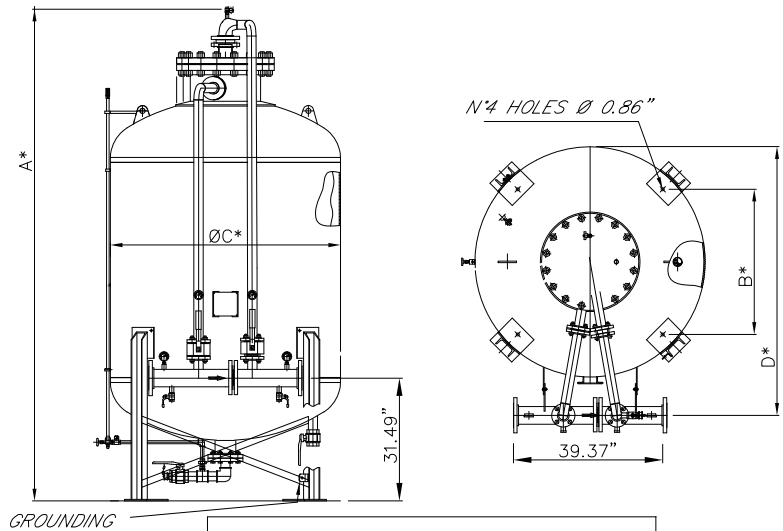
For additional options or special versions  
contact FAS SpA

[www.fasspa.net](http://www.fasspa.net)



Mod. FI

Vertical bladder tank with foam inside the bladder, 2014/68 UE PED certificate



DESIGN DATA
CALCULATION RULES: DIRECTIVE "PED" ASME VIII Div.1
DESIGN PRESSURE: 175 psi
WORKING PRESSURE: 175 psi Max
TEST PRESSURE: 260 psi
DESIGN TEMPERATURE: -20,2°F +176°F
JOINT EFFICENCY : HEADS=1 - SHELL=0.85
CORROSION ALLOWANCE: NO
X RAYS: 10%
SEISMIC CLASSIFICATION:
ZONE 2 (ITALY) - ZONE 2b (UBC)
GROUND ACCELERATION: 0,225 g (MAX)

\* FOR DIMENSIONS PLEASE CONTACT FAS  
TECHNICAL DEPARTMENT

MODEL	CAPACITY
FI-6	160 gal
FI-10	265 gal
FI-15	400 gal
FI-20	530 gal
FI-25	660 gal
FI-30	795 gal
FI-40	1060 gal
FI-50	1325 gal
FI-60	1585 gal
FI-70	1850 gal
FI-80	2115 gal
FI-90	2380 gal
FI-100	2640 gal

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## Mod. Fx2

Vertical double bladder tank with foam outside the bladder, 2014/68 UE PED certificate

### Standard characteristics

**Body Material:** Carbon Steel

**Manhole:** Ø18"

**Membrane material:** Neoprene

**Design pressure:** 175 psi

**Test Pressure:** 260 psi

**Maximum working pressure:** 175 psi

**External finish:** Epoxy Primer + Polyurethane red coat  
RAL3000, Total DFT >120 µm

**Capacity:** From 320 gal (160x2) to 5280 gal (2640x2)

**Foaming charge control:** With valves on different levels

**Tie rods and nuts in Stainless Steel**

**Mixer:** See dedicated page

**Suitable for seismic zone level 2b UBC - PGA 0,25 g**

### Approvals



### Optional

- > Manual pump
- > Ladder for manhole access
- > Vents control kit at mixer's height
- > Foaming charge control with visual level indicator
- > Base frame

### Notes

In case of inquiry and/or order specify the following datas:

- > Tank capacity, flow rate range, mixing percentage, flow direction, mixer's flange

### Available on Demand

- > Body Material: Other Material
- > Different Design Pressure
- > Capacity: 5800 gal (2900x2) or 6340 gal (3170x2)
- > Insulated tank
- > Coating: Other Painting Cycles
- > ASME Stamped
- > Designed for other seismic zone

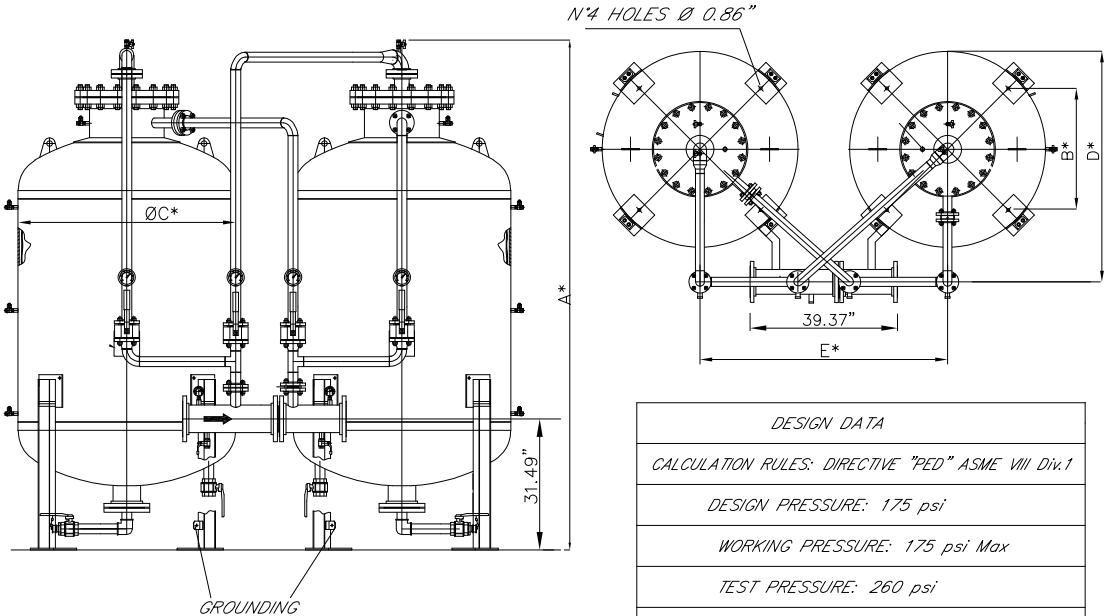
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Mod. Fx2

Vertical double bladder tank with foam outside the bladder, 2014/68 UE PED certificate



DESIGN DATA
CALCULATION RULES: DIRECTIVE "PED" ASME VIII Div.1
DESIGN PRESSURE: 175 psi
WORKING PRESSURE: 175 psi Max
TEST PRESSURE: 260 psi
DESIGN TEMPERATURE: -20,2°F +176°F
JOINT EFFICIENCY : HEADS=1 - SHELL=0.85
CORROSION ALLOWANCE: NO
X RAYS: 10%
SEISMIC CLASSIFICATION:
ZONE 2 (ITALY) - ZONE 2b (UBC)
GROUND ACCELERATION: 0,225 g (MAX)

MODEL	CAPACITY
F-6x2	320 gal
F-10x2	530 gal
F-15x2	800 gal
F-20x2	1060 gal
F-25x2	1320 gal
F-30x2	1590 gal
F-40x2	2120 gal
F-50x2	2650 gal
F-60x2	3170 gal
F-70x2	3700 gal
F-80x2	4230 gal
F-90x2	4760 gal
F-100x2	5280 gal

\* FOR DIMENSIONS PLEASE CONTACT FAS  
TECHNICAL DEPARTMENT

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## Mod. Flx2

Vertical double bladder tank with foam inside the bladder, 2014/68 UE PED certificate

### Standard characteristics

**Body Material:** Carbon Steel

**Manhole:** Ø18"

**Membrane material:** Neoprene

**Design pressure:** 175 psi

**Test Pressure:** 260 psi

**Maximum working pressure:** 175 psi

**External finish:** Epoxy Primer + Polyurethane red coat  
RAL3000, Total DFT >120 µm

**Capacity:** From 320 gal (160x2) to 5280 gal (2640x2)

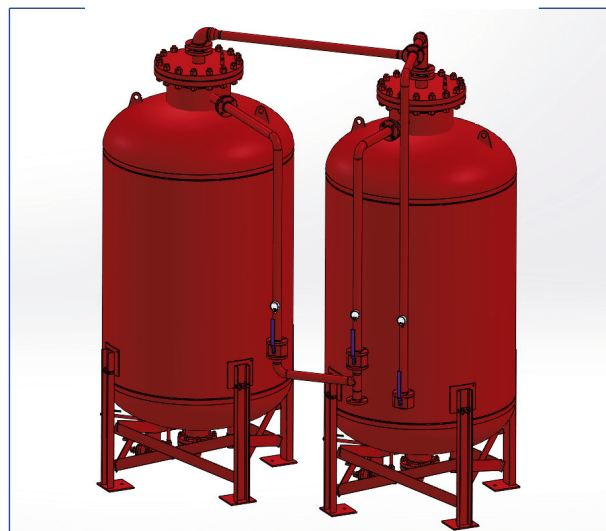
**Foaming charge control:** With visual level indicator

**Tie rods and nuts in Stainless Steel**

**Mixer:** See dedicated page

**Suitable for seismic zone level 2b UBC - PGA 0,25 g**

### Approvals



### Optional

- > Manual pump
- > Ladder for manhole access
- > Vents control kit at mixer's height
- > Base frame

### Notes

In case of inquiry and/or order specify the following datas:

- > Tank capacity, flow rate range, mixing percentage, flow direction, mixer's flange

### Available on Demand

- > Body Material: Other Material
- > Different Design Pressure
- > Capacity: 5800 gal (2900x2) or 6340 gal (3170x2)
- > Insulated tank
- > Coating: Other Painting Cycles
- > ASME Stamped
- > Designed for other seismic zone

For additional options or special versions  
contact FAS SpA

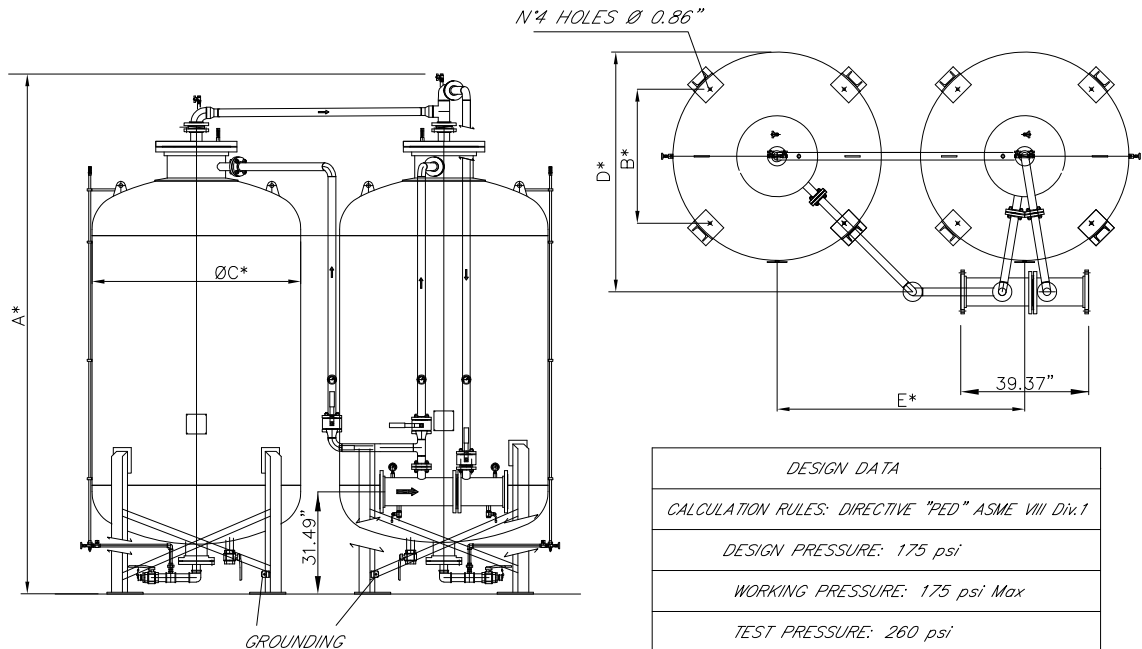
[www.fasspa.net](http://www.fasspa.net)





# Mod. Flx2

Vertical double bladder tank with foam inside the bladder, 2014/68 UE PED certificate



DESIGN DATA
CALCULATION RULES: DIRECTIVE "PED" ASME VIII Div.1
DESIGN PRESSURE: 175 psi
WORKING PRESSURE: 175 psi Max
TEST PRESSURE: 260 psi
DESIGN TEMPERATURE: -20,2°F +176°F
JOINT EFFICENCY : HEADS=1 - SHELL=0,85
CORROSION ALLOWANCE: NO
X RAYS: 10%
SEISMIC CLASSIFICATION:
ZONE 2 (ITALY) - ZONE 2b (UBC)
GROUND ACCELERATION: 0,225 g (MAX)

\* FOR DIMENSIONS PLEASE CONTACT FAS  
TECHNICAL DEPARTMENT

MODEL	CAPACITY
Fl-6x2	320 gal
Fl-10x2	530 gal
Fl-15x2	800 gal
Fl-20x2	1060 gal
Fl-25x2	1320 gal
Fl-30x2	1590 gal
Fl-40x2	2120 gal
Fl-50x2	2650 gal
Fl-60x2	3170 gal
Fl-70x2	3700 gal
Fl-80x2	4230 gal
Fl-90x2	4760 gal
Fl-100x2	5280 gal

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## Mixer for bladder tanks

### Standard characteristics

**Body size:** From 3" to 8"

**Body Material:** Carbon Steel

**Inlet and outlet flanges:** ANSI 150# RF according to the size

**Design pressure:** 175 psi

**Coating:** Epoxy Primer + Polyurethane red coat RAL3000,  
Total DFT >120 µm

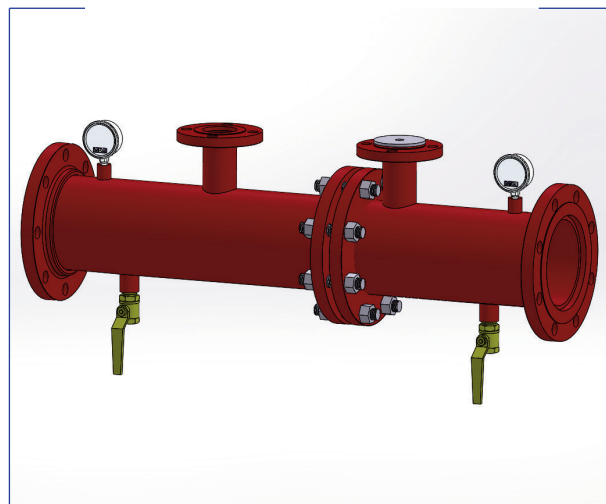
**Calibrated water nozzle between flanges:** In stainless steel

**Foaming nozzle:** In stainless steel

**Upstream and downstream pressure gauges:** Scala 0÷360 psi

**STD working range:** 1÷10

### Approvals



### Notes

In case of inquiry and/or order specify the following datas:

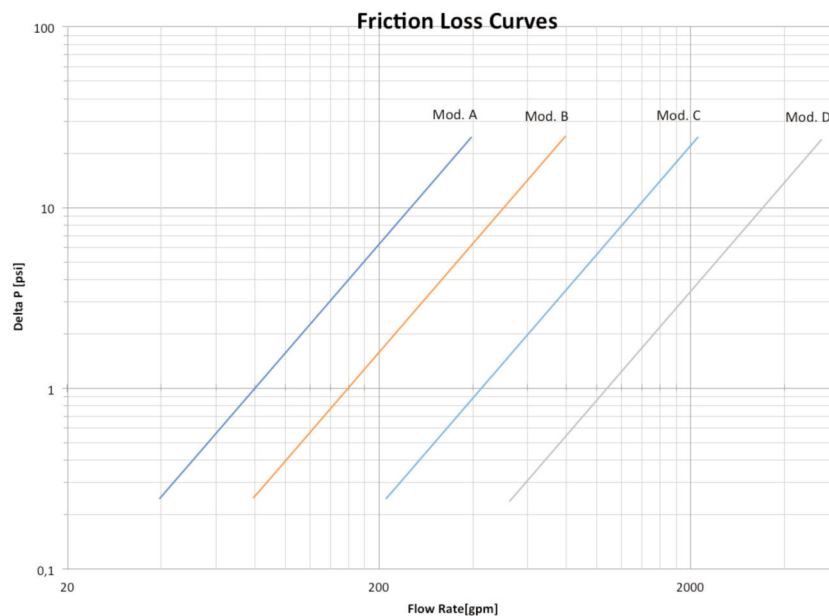
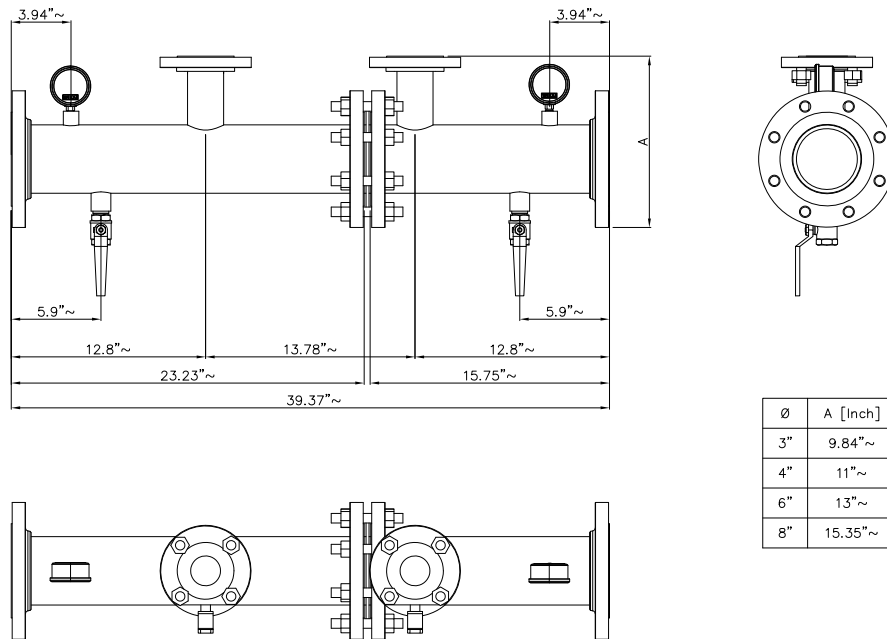
> Flanges type, body diameter, body material

### Available on Demand

- > Body Material: Other Material
- > Inlet and outlet flanges: Other type
- > Other Design Pressure
- > Other Body Size
- > Coating: Other Painting Cycles

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# Mixer for bladder tanks



The Friction Loss Curves are based on Hydraulic Calculations according to NFPA Standard  
Contact FAS Team for specific pressure loss depending by Hydraulic Calculation of your system

MIXER	FLOW RATE RANGE [gpm]	Ø WATER NOZZLE [inch]
MOD. A	40 ÷ 400	STD
MOD. B	80 ÷ 800	STD
MOD. C	200 ÷ 2000	STD
MOD. D	400 ÷ 4000	STD

[www.fasspa.net](http://www.fasspa.net)





## Mod. LS

Foam branchpipe for monitors

### Standard characteristics

**Body Size:** 3", 4", 5", 6" - Depending on flow rate

**Flow Rate:** From 265 gpm to 2650 gpm calculated at 100 psi

**Body material:** Stainless steel

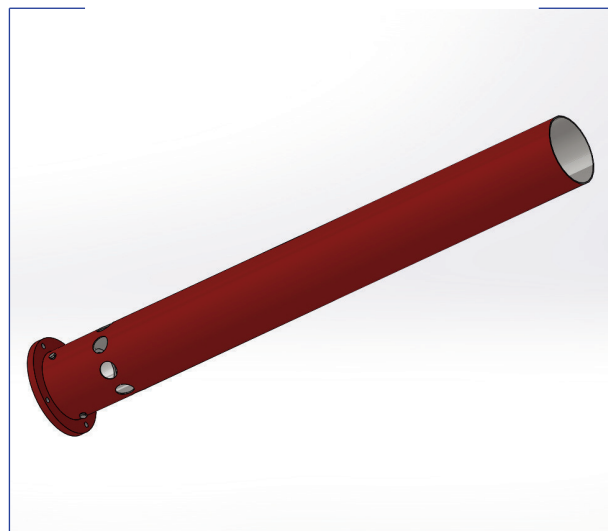
**Horizontal throw:** See diagram on next page

**Base flange made in carbon steel:** External diameter Ø 6.3" or Ø 9.4" please leave in mm, as this depending on requested flow rate

**Coating:** Epoxy Primer + Polyurethane red coat RAL3000, Total DFT >120 µm

**Weight:** LS-3: ~15 lbs  
LS-4: ~17 lbs  
LS-5: ~26 lbs  
LS-6: ~35 lbs

### Approvals



### Notes

In case of inquiry and/or order specify the following datas:

> Requested flow rate, Working pressure

### Compatible monitors

> MB3, MB4, DOC, MKW, MKDB, MKL

### Available on Demand

- > Branchpipe body material AISI 316
- > Base flange material stainless steel
- > Threaded connection
- > Nozzle material in aluminium, bronze or stainless steel
- > Flow rates higher than 2650 gpm
- > Coating: Other Painting Cycles

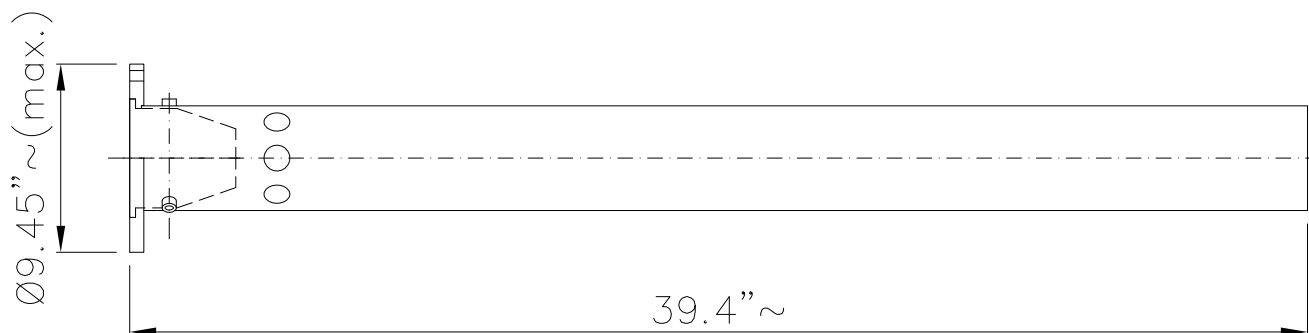
[www.fasspa.net](http://www.fasspa.net)



## Mod. LS

Foam branchpipe for monitors

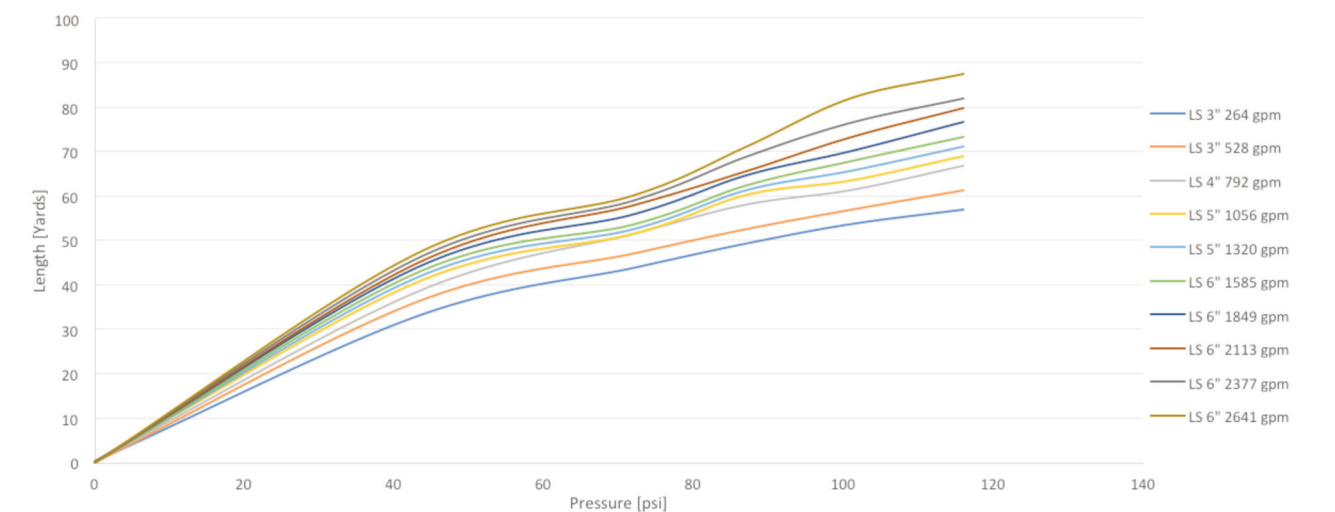
### Layout & Overall Dimension



### Horizontal throw diagram

#### Foam branchpipe LS

Horizontal throw tested by F.A.S. up to 80 meters due to pump capacity, tests over 80 meters performed on site by customers



[www.fasspa.net](http://www.fasspa.net)



## Mod. MINI-GN

Water/Foam nozzle made in bronze or aluminium

### Standard characteristics

**Nominal flow rate:** From 106 to 185 gpm calculated at 72 psi

**Body material:** Alluminium or Bronze

**Actuation:** Manual

**Jet Type:** Fog, Full (Jet)

**Horizontal throw and covering angle:** See diagram on next page

**Base flange made in carbon steel:** External diameter Ø160 mm

**Coating:** Epoxy Primer + Polyurethane red coat RAL3000,  
Total DFT >120 µm

**Weight:** ~8,8 lbs

### Approvals



### Notes

In case of inquiry and/or order specify the following datas:

- > Working pressure

### Available on Demand

- > Base Flange: Other Material
- > Other Inlet connection with adapter (NH, Ghost, Storz)
- > Coating: Other painting cycles

### Compatible monitors

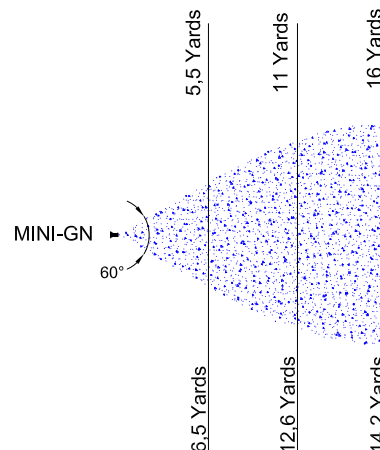
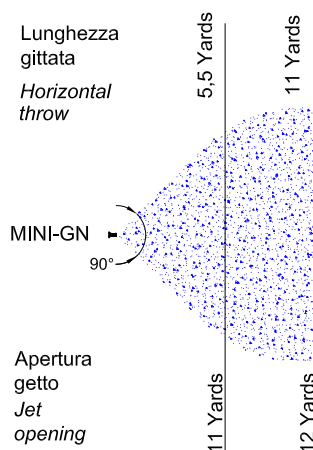
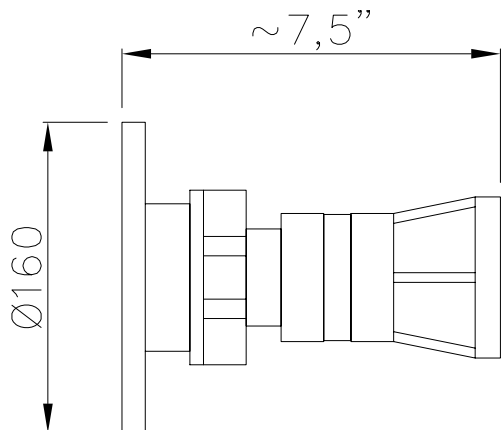
- > MB3, MKW, MKL, MKP

[www.fasspa.net](http://www.fasspa.net)

## Mod. MINI-GN

Water/Foam nozzle made in bronze or aluminium

### Layout & Overall Dimension

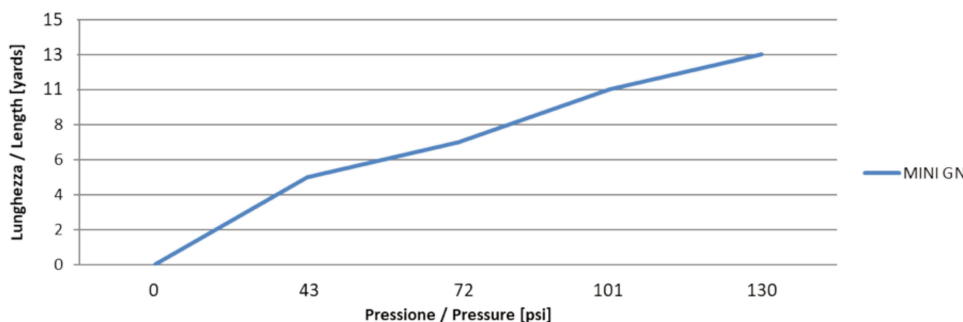


### Grafico di gittata - Horizontal throw diagram

Bocchello - Nozzle MINI GN

Gittate a getto nebulizzato - Fog jet horizontal throw

Elevazione bocchello - Nozzle elevation 20° ± 30°

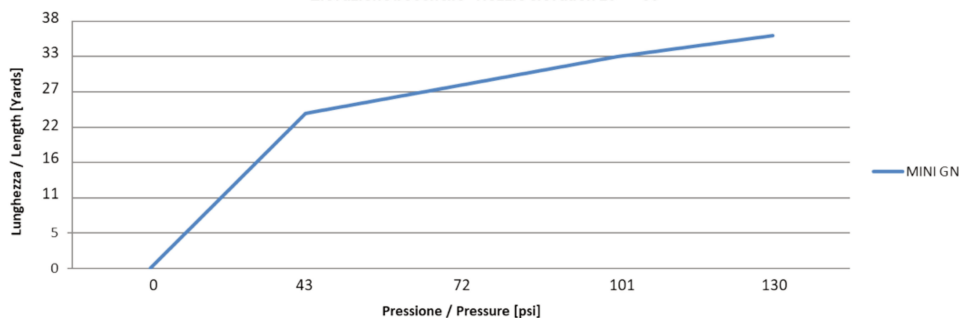


### Grafico di gittata - Horizontal throw diagram

Bocchello - Nozzle MINI GN

Gittate a getto pieno - Full jet horizontal throw

Elevazione bocchello - Nozzle elevation 20° ± 30°



Test in still air, throw length dependent on flow rate and pressure at the nozzle

[www.fasspa.net](http://www.fasspa.net)





## Mod. GN

Water/Foam nozzle

### Standard characteristics

**Nominal flow rate:** From 265 to 795 gpm calculated at 100 psi

**Body material:** Stainless steel and bronze

**Actuation:** Manual

**Jet Type:** Fog, Full (Jet)

**Horizontal throw and covering angle:** See diagram on next page

**Base flange made in carbon steel:** External diameter Ø160 mm

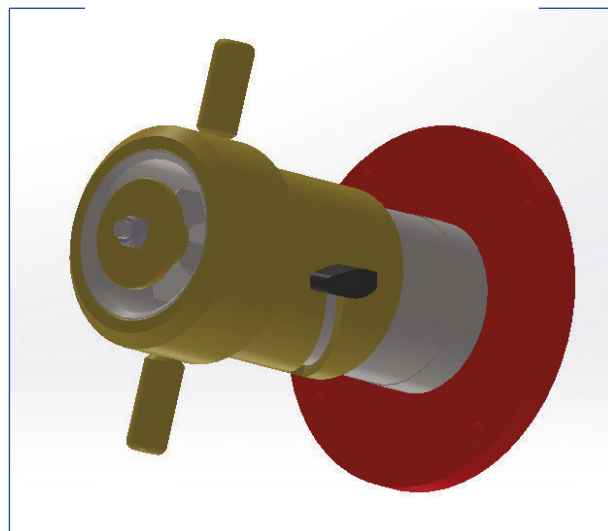
**Coating:** Epoxy Primer + Polyurethane red coat RAL3000,  
Total DFT >120 µm

**Weight:** ~11 lbs

### Approvals



In pending



### Notes

In case of inquiry and/or order specify the following datas:

> Working pressure

### Available on Demand

- > Base Flange: Other Material
- > Other Inlet connection with adapter (NH, Ghost, Storz)
- > Coating: Other painting cycles

### Compatible monitors

> MB3, MB4, DOC, MKDB, MKL, MKP, MKW

### Key configuration

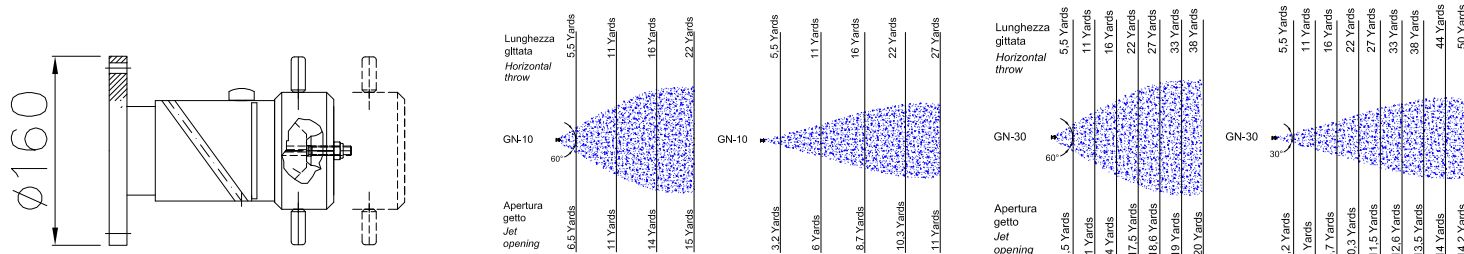
- > application for electric remote actuation
- > application for oil - hydraulic actuation

[www.fasspa.net](http://www.fasspa.net)

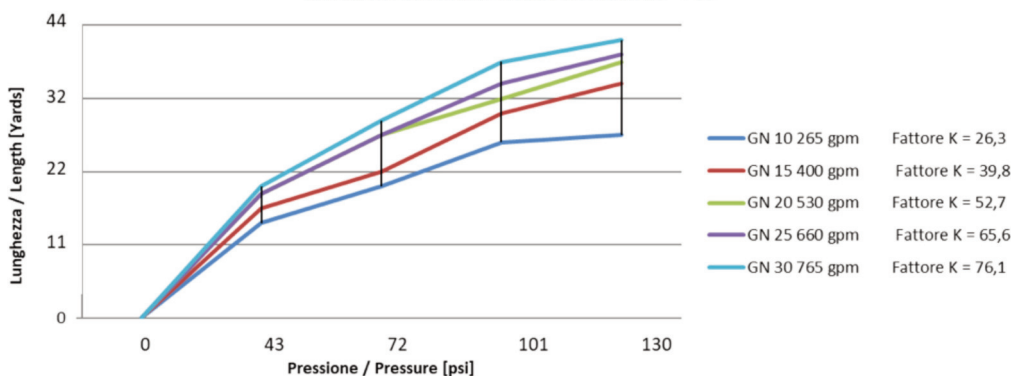
## Mod. GN

Water/Foam nozzle

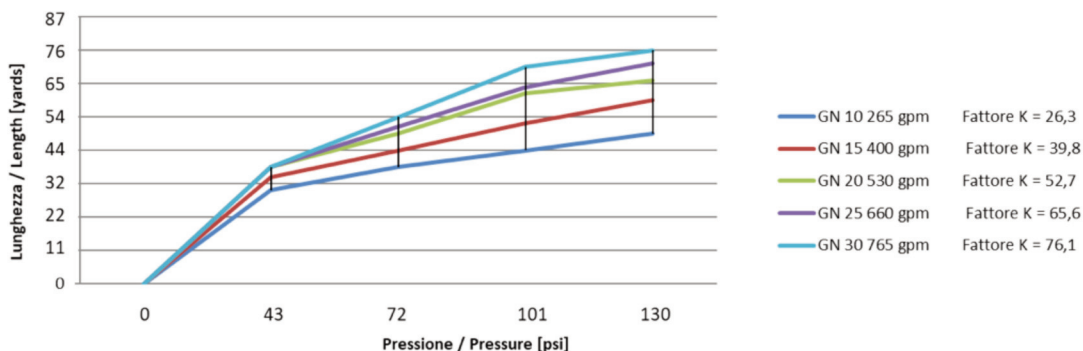
### Layout & Overall Dimension



**Grafico di gittata - Horizontal throw diagram**  
**Bocchello - Nozzle GN**  
**Gittate a getto nebulizzato - Fog jet horizontal throw**  
 Elevazione bocchello - Nozzle elevation  $20^\circ \div 30^\circ$



**Grafico di gittata - Horizontal throw diagram**  
**Bocchello - Nozzle GN**  
**Gittate a getto pieno - Full jet horizontal throw**  
 Elevazione bocchello - Nozzle elevation  $20^\circ \div 30^\circ$



Test in still air, throw length dependent on flow rate and pressure at the nozzle

[www.fasspa.net](http://www.fasspa.net)

## GN NOZZLE KEY CONFIGURATION

### Mod. GN-E - Application for electric remote actuation

#### Characteristics

**Actuation:** With electric motor + emergency manual handwheel

**Jet Type:** Fog, Full (Jet)

**Feeding voltage:** 100 - 240V AC 50/60 hz. 1 ph.

**Custom. Req.** Other Feeding voltage (such as 400 V)

**Custom. Req.** ATEX Version: II 2 G D Ex d IIB T6 Gb

Ex tb IIIC T80°C Db

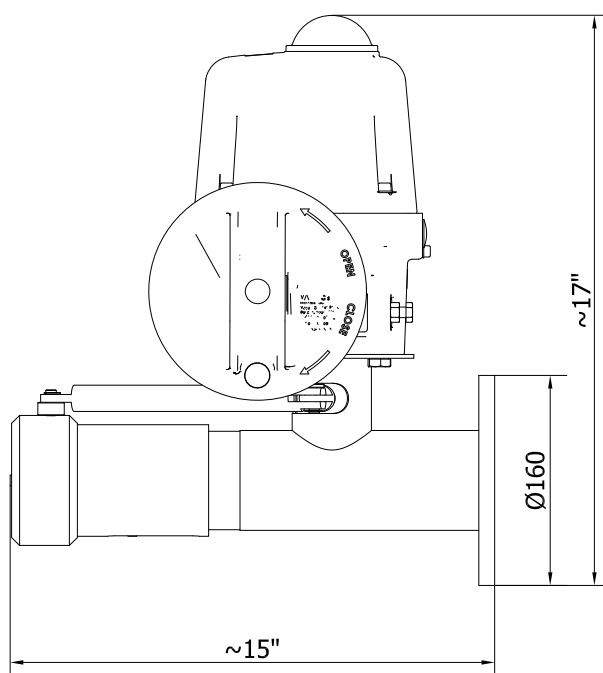
For 400V: II 2 G D Ex d IIB T5 Gb

Ex tb IIIC T95°C Db

**Weight:** ~26 lbs



### Layout & Overall Dimension - GN Nozzle with electrical actuation



[www.fasspa.net](http://www.fasspa.net)

## GN NOZZLE KEY CONFIGURATION

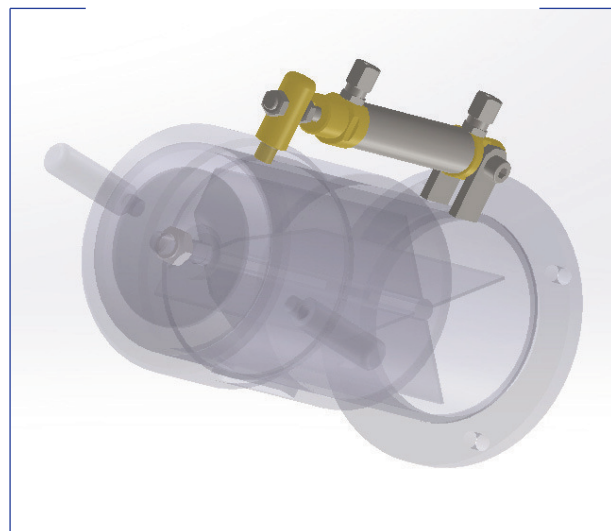
Mod. GN-O - Application for oil-hydraulic actuation

### Characteristics

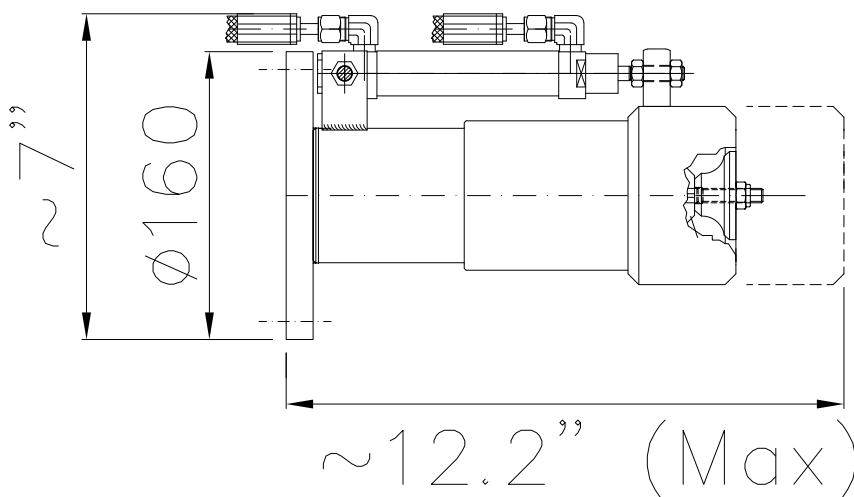
**Actuation:** Oil Hydraulic

**Jet Type:** Fog, Full (Jet)

**Weight:** ~18 lbs



### Layout & Overall Dimension - GN Nozzle with oil-hydraulic actuation



[www.fasspa.net](http://www.fasspa.net)





## Mod. GNA

*Self induction water/foam nozzle*

### Standard characteristics

**Nominal flow rate:** From 265 to 400 gpm calculated at 100 psi

**Body material:** Stainless steel and bronze

**Actuation:** Manual

**Jet Type:** Fog, Full (Jet)

**Snuction percentage:** Fixed

**Horizontal throw and covering angle:** See diagram on next page

**Base flange made in carbon steel:** External diameter Ø160 mm

**Reinforced PVC Pick-up pipe**

**Coating:** Epoxy Primer + Polyurethane red coat RAL3000,  
Total DFT >120 µm

**Weight:** ~13 lbs

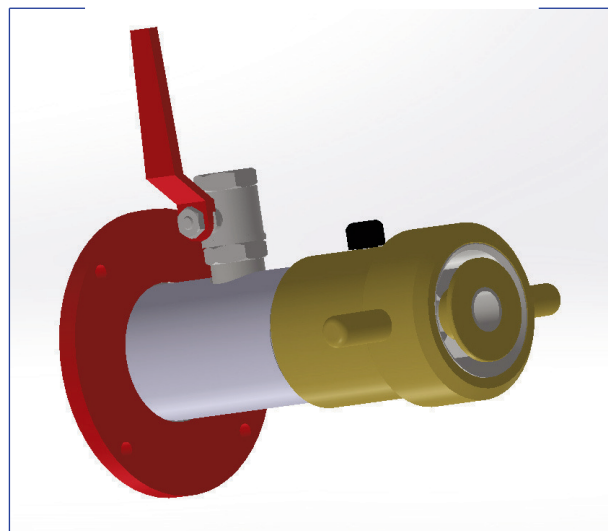
### Approvals



In pending



ON HOLD



### Notes

In case of inquiry and/or order specify the following datas:

- > Working pressure
- > Mixing percentage

### Compatible monitors

- > MB3, MB4, DOC, MKW, MKDB, MKL, MKP

### Available on Demand

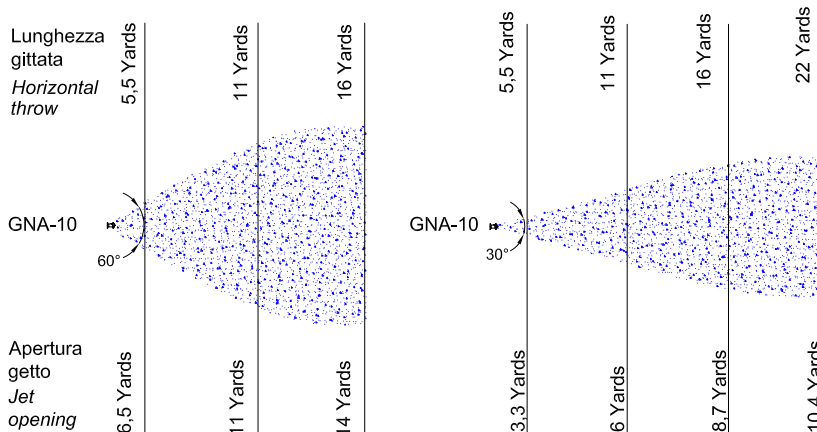
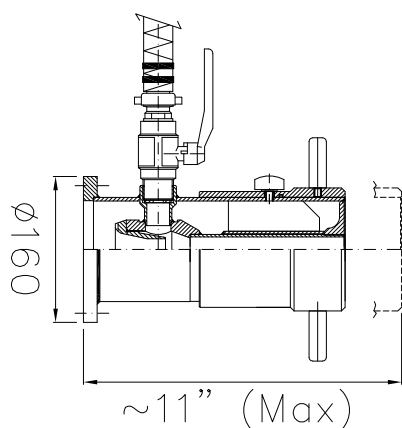
- > Base Flange: Other Material
- > Other Inlet connection with adapter (NH, Ghost, Storz)
- > Regolable mixing percentage
- > Coating: Other painting cycles

[www.fasspa.net](http://www.fasspa.net)

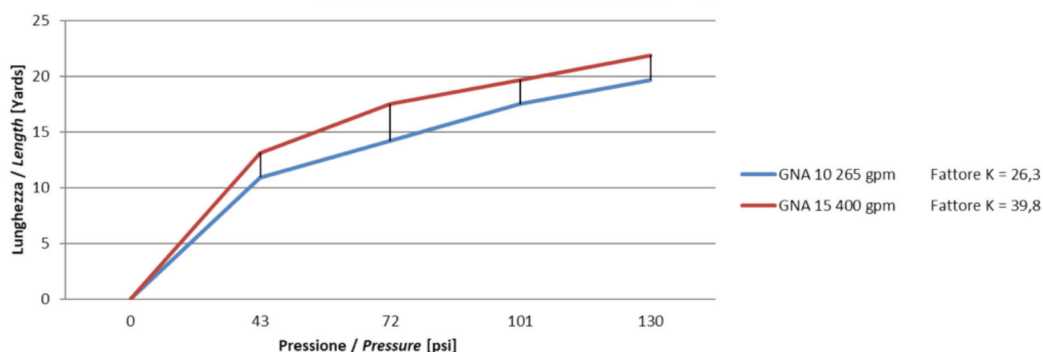
## Mod. GNA

Self induction water/foam nozzle

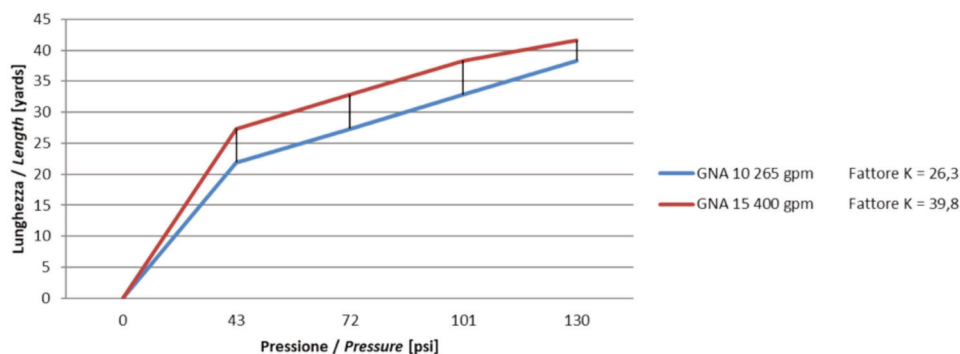
### Layout & Overall Dimension



**Grafico di gittata - Horizontal throw diagram**  
**Bocchello - Nozzle GNA**  
**Gittate a getto nebulizzato - Fog jet horizontal throw**  
 Elevazione bocchello - Nozzle elevation 20° ± 30°



**Grafico di gittata - Horizontal throw diagram**  
**Bocchello - Nozzle GNA**  
**Gittate a getto pieno - Full jet horizontal throw**  
 Elevazione bocchello - Nozzle elevation 20° ± 30°



Test in still air, throw length dependent on flow rate and pressure at the nozzle

[www.fasspa.net](http://www.fasspa.net)



## Mod. Super GN

Water/Foam nozzle

### Standard characteristics

**Nominal flow rate:** From 925 to 1585 gpm calculated at 100 psi

**Body material:** Stainless steel and bronze

**Actuation:** Manual

**Jet Type:** Fog, Full (Jet)

**Horizontal throw and covering angle:** See diagram on next page

**Base flange made in carbon steel:** External diameter Ø160 mm or Ø240 mm

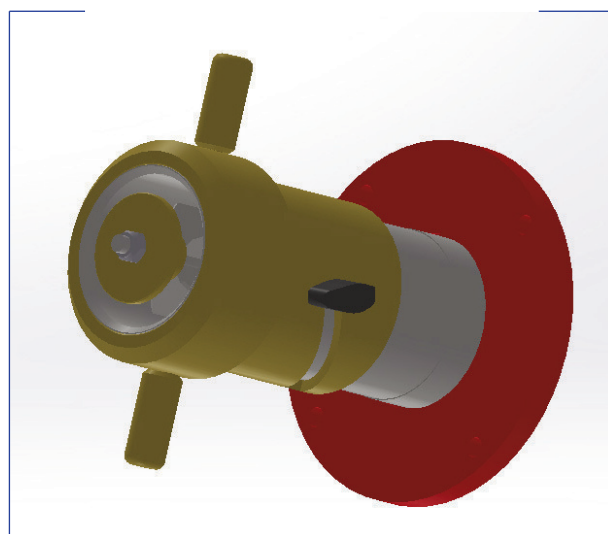
**Coating:** Epoxy Primer + Polyurethane red coat RAL3000, Total DFT >120 µm

**Weight:** ~26 lbs

### Approvals



In pending



### Notes

In case of inquiry and/or order specify the following datas:

> Working pressure

### Available on Demand

- > Base Flange: Other Material
- > Other Inlet connection with adapter (NH, Ghost, Storz)
- > Coating: Other painting cycles

### Compatible monitors

> MB3, MB4, DOC, MKW, MKDB

### Key configuration

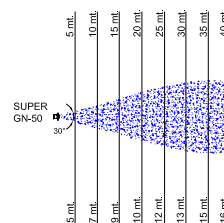
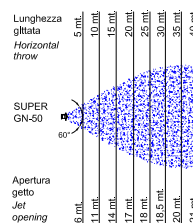
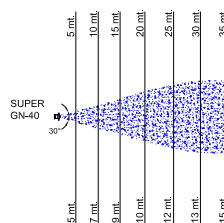
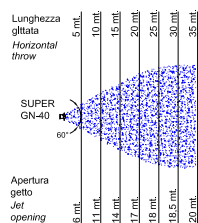
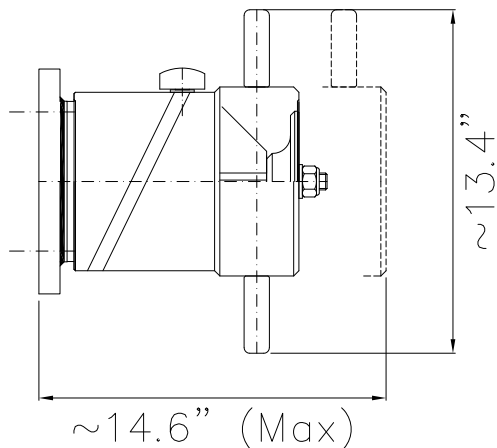
- > Application for electric remote actuation
- > Application for oil - hydraulic actuation

[www.fasspa.net](http://www.fasspa.net)

## Mod. Super GN

Water/Foam nozzle

### Layout & Overall Dimension

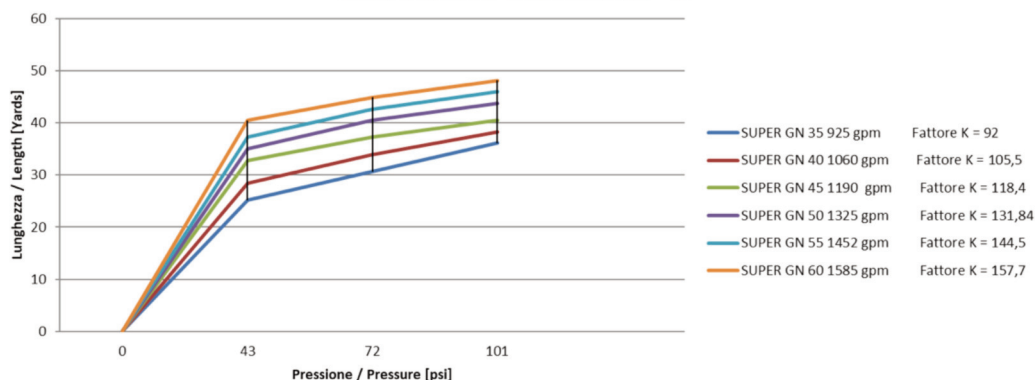


### Grafico di gittata - Horizontal throw diagram

#### Bocchello - Nozzle SUPER GN

#### Gittate a getto nebulizzato - Fog jet horizontal throw

Elevazione bocchello - Nozzle elevation 20° ± 30°

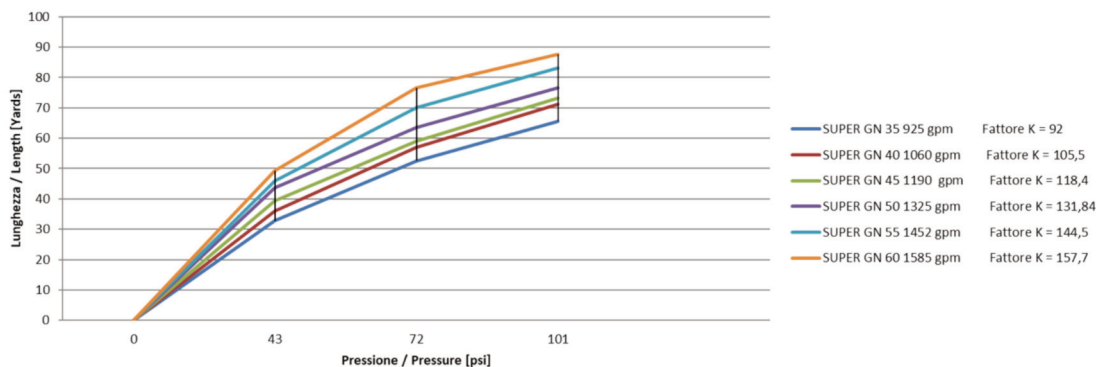


### Grafico di gittata - Horizontal throw diagram

#### Bocchello - Nozzle SUPER GN

#### Gittate a getto pieno - Full jet horizontal throw

Elevazione bocchello - Nozzle elevation 20° ± 30°



Test in still air, throw length dependent on flow rate and pressure at the nozzle

[www.fasspa.net](http://www.fasspa.net)



## SUPER GN NOZZLE KEY CONFIGURATION

### Mod. Super GN-E - Application for electric remote actuation

#### Characteristics

**Actuation:** With electric motor + emergency manual handwheel

**Jet Type:** Fog, Full (Jet)

**Feeding voltage:** 100 - 240V AC 50/60 hz. 1 ph.

**Custom. Req.** Other Feeding voltage (such as 400 V)

**Custom. Req.** ATEX Version: II 2 G D Ex d IIB T6 Gb

Ex tb IIIC T80°C Db

For 400V: II 2 G D Ex d IIB T5 Gb

Ex tb IIIC T95°C Db

**Weight:** ~39 lbs

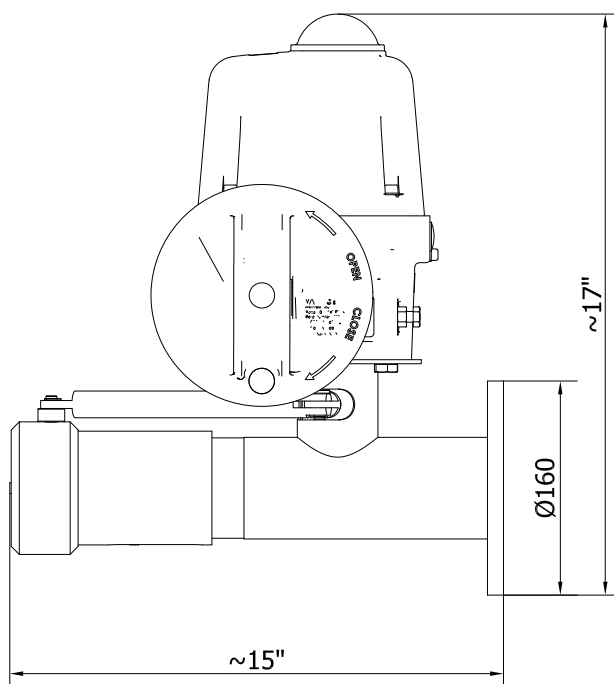


#### Compatible monitors

> DOC E, MKE



### Layout & Overall Dimension - Super GN Nozzle with electrical actuation



[www.fasspa.net](http://www.fasspa.net)

## SUPER GN NOZZLE KEY CONFIGURATION

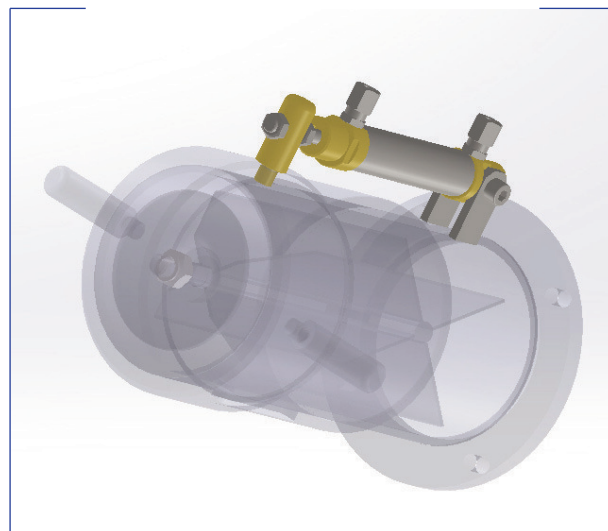
Mod. Super GN-O - Application for oil-hydraulic actuation

### Characteristics

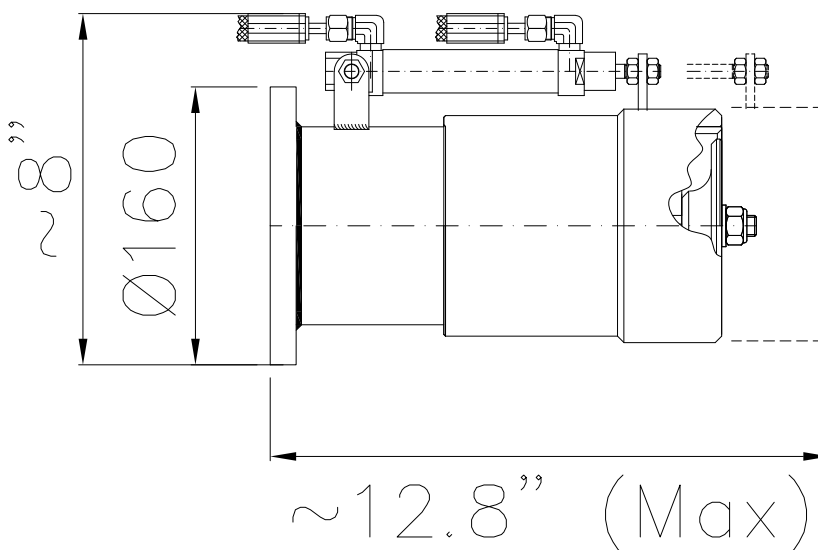
**Actuation:** Oil Hydraulic

**Jet Type:** Fog, Full (Jet)

**Weight:** ~26 lbs



### Layout & Overall Dimension - Super GN Nozzle with oil-hydraulic actuation



[www.fasspa.net](http://www.fasspa.net)



## Mod. Super GNA

Self induction water/foam nozzle

### Standard characteristics

**Nominal flow rate:** From 422 to 795 gpm calculated at 100 psi

**Body material:** Stainless steel and bronze

**Actuation:** Manual

**Jet Type:** Fog, Full (Jet)

**Snuction percentage:** Fixed

**Horizontal throw and covering angle:** See diagram on next page

**Base flange made in carbon steel:** External diameter Ø160 mm or Ø240 mm

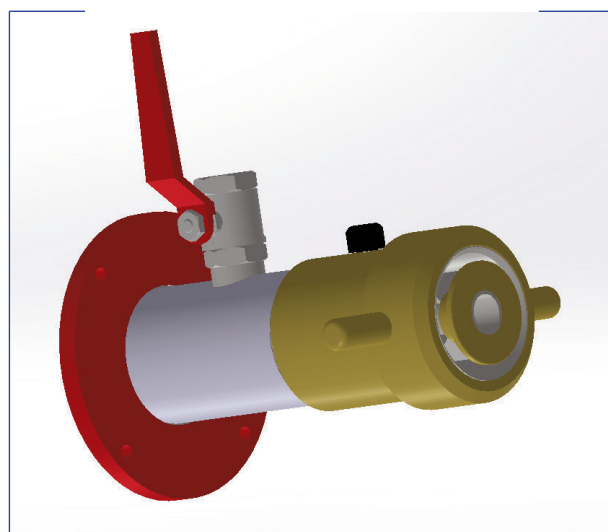
**Coating:** Epoxy Primer + Polyurethane red coat RAL3000, Total DFT >120 µm

**Weight:** ~26 lbs

### Approvals



In pending



### Notes

In case of inquiry and/or order specify the following data:

- > Working pressure
- > Mixing percentage

### Compatible monitors

- > MB3, MB4, DOC, MKW, MKDB

### Available on Demand

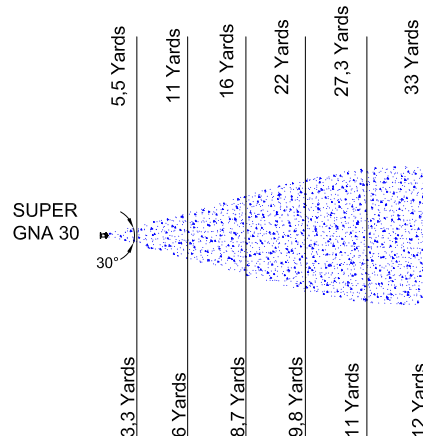
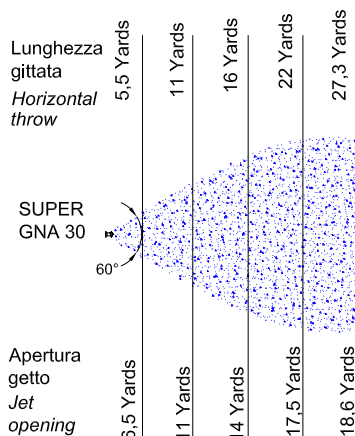
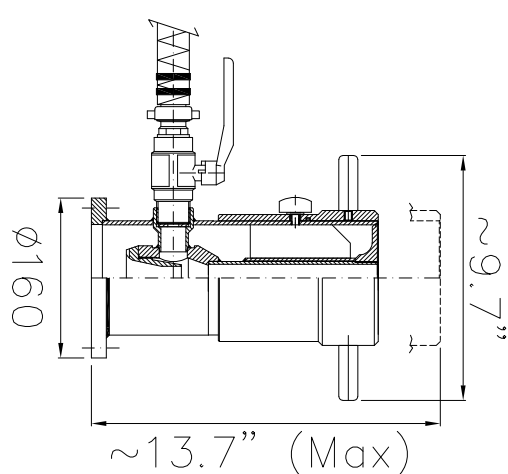
- > Base Flange: Other Material
- > Other Inlet connection with adapter (NH, Ghost, Storz)
- > Regolable mixing percentage
- > Coating: Other painting cycles

[www.fasspa.net](http://www.fasspa.net)

## Mod. Super GNA

Self induction water/foam nozzle

### Layout & Overall Dimension

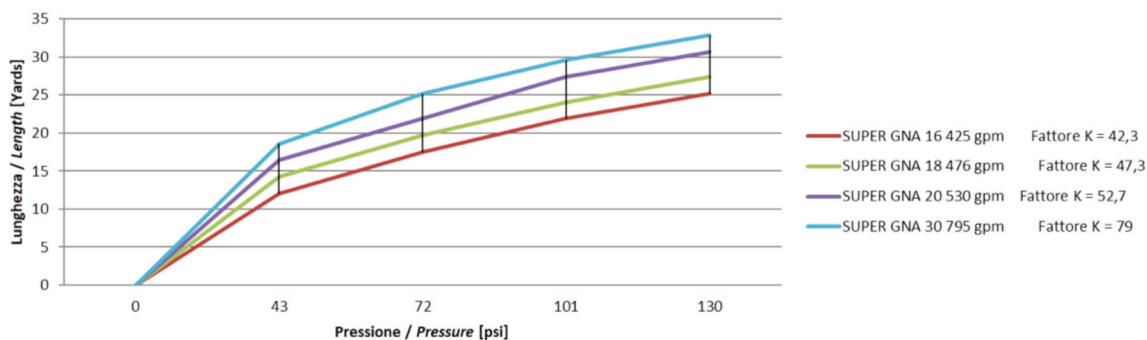


### Grafico di gittata - Horizontal throw diagram

Bocchello - Nozzle SUPER GNA

Gittate a getto nebulizzato - Fog jet horizontal throw

Elevazione bocchello - Nozzle elevation 20° ± 30°

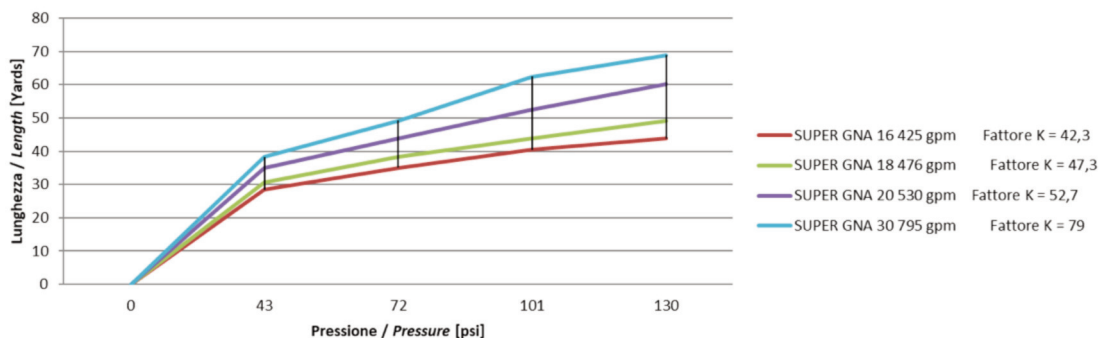


### Grafico di gittata - Horizontal throw diagram

Bocchello - Nozzle SUPER GNA

Gittate a getto pieno- Full jet horizontal throw

Elevazione bocchello - Nozzle elevation 20° ± 30°



Test in still air, throw length dependent on flow rate and pressure at the nozzle

[www.fasspa.net](http://www.fasspa.net)





# References



*FOLLOW US AROUND THE WORLD*



## ITALY



**Project n° P73850**  
**GAS PETROCHEMICAL PLAN**  
**SAIPEM SPA for POLIMERI EUROPA**

- Hydrants
- Monitors
- Nozzles
- Safety Showers
- Deluge Valve Inside Special Box with Heating System

**Project : AUTO OIL 2 - high pressure fire fighting system**  
**P.O. n° 102866**

**IPLOM BUSALLA REFINERY (GE)**

- Special Electric/Hydraulic Monitors with Explosion Proof Control Panels
- Remote Control Valves

**Jetty revamping / P.O.n° SS/sc N. 544**  
**COSTIERI D'ALELIO LIVORNO (ITALY)**

- N. 3 Elevated Towers
- N. 3 Oil Hydraulic Remote Controlled Monitors
- N. 1 Control Panel

**Project 3560 - for ENI RAVENNA (Italy)**  
**P.O. n° 7500018730 / TECNIMONT SPA FOR ENI RAVENNA**

- Hydrants
- Deluge Skids
- Elevated Monitors
- N. 15 Self Oscillating Monitors
- Safety Equipments
- Remote Controlled Valves

**Project n° 3500012792**  
**PUMPING FOAM STATION**  
**ENI REFINING AND MARKETING LIVORNO**

Special Skid with Pumps and Foam Tank 18000 Litres Capacity

**VAMP-TECH SPA - CHEMICAL COMPANY**  
**BUSNAGO (MILAN)**  
**FIRE FIGHTING SYSTEM AND ENGINEERING FOR**

- Gas System
- Foam System
- Detection System

**GIUSEPPE OLMO SPA - POLYURETHANE FOAMS**  
**COMUN NUOVO (BERGAMO)**  
**FIRE FIGHTING SYSTEM AND ENGINEERING FOR**

- Foam System
- Bladder Tanks
- High Expansion Foam Generators

**S.I.P. SPA - SUD ITALIA POLIURETANI**  
**RESINS - RESIN FOAMS**  
**MATERA**  
**FIRE FIGHTING SYSTEM AND ENGINEERING FOR**

- Foam System
- Bladder Tanks
- High Expansion Foam Generators
- Remote Control Valves
- Remote Control Panel

**ELF ATOCHEM ITALIA**  
**CASTELLAZZO BORMIDA (AL)**  
**PLASTICS PRODUCTIONS**

- Foam System
- Bladder Tanks
- High Expansion Foam Generators

**WYETH LEDERLE SPA (PFIZER ITALIA GROUP)**  
**APRILIA (LT)**  
**PHARMACEUTICAL INDUSTRY**

- Deluge Systems
- Detection System
- Fire Fighting Pumps
- Installation According To Fm

**BRISTOL - MYERS SQUIBB SPA**  
**SERMONETA (LT)**  
**PHARMACEUTICAL INDUSTRY**

- Elevated Towers For Monitors
- Remote Electric Control Monitors
- Remote Valves
- Remote Control Panels

**CIBA - GEYGY SPA ITALY FOR**  
**CIBA BASILEA**  
**PHARMACEUTICAL INDUSTRY**  
**FIRE FIGHTING SYSTEM AND ENGINEERING FOR**

- Foam System
- Bladder Tanks

**TECHINT SPA**  
**ENGINEERING AND CONTRACTING**  
**MILAN - FOR ENI SANNAZZARO (PV)**

- Monitors
- Minosse Pump
- Elevated Towers
- Hose Reels
- Hydrants
- Safety Showers

**TECHNIP ITALY S.P.A. ROME**  
**PROJECT N° 1990 FOR MILAZZO REFINERY - (ME)**

- Hydrant
- Monitors
- Deluge Systems
- Safety Materials
- Monitors On Pole (Elevated)
- Bladder Tanks

**ABB SAE SADELMI SPA - MILAN**  
**FOR TERMOVALORIZZATORE AMSA - SILLA 2 (INCENERATOR)**

- Gas Systems
- Foam Systems Packages
- Deluge Systems
- Detection Systems
- Monitors
- Erection

**ISAB - GENOVA FOR PRIOLO REFINERY - ITALY**  
**SAFETY REVAMPING - 3° STEP PROJECT**

**P.Order N. 4700025034**  
**P.Order N. 4700025040**  
**P.Order N. 4700025114**

- N. 9 Monitors & Nozzles
- N. 19 Bladder Tanks
- Foam Makers

**TURISTIC AND COMMERCIAL LOADING WHARF**  
**PALERMO MUNICIPALITY**  
**ITALY**

- N. 5 Elevated Monitor Towers
- N. 5 Monitors And Nozzle
- Remote Control Valve

**FERROVIE DELLO STATO SPA**  
**STATE RAILWAY NETWORK OF ITALY**  
**ORTE TUNNEL (VITERBO)**  
**ITALY**

- Fire Fighting Protection System
- Foam Bladder Tanks
- Water Foam Shields
- Remote Control Valve

**PRESIDI OSPEDALIERI (HOSPITALS)**  
**ROVERETO (TN)**

**ARCO (TN)**  
**VALLI DEL NOCE (CLES)**

**SONDRIO**  
**MESTRE**  
**MILANO**  
**LUBJANA**

- Protezione Elisuperfici (Heliports Fire Fighting Systems)

**NAVALMARE SRL - LERICI (SP)**  
**“EMILIO PLATFORM”**

- Pressurized Foam Vessel
- Powder Systems
- Safety Materials
- Fire Extinguishers

**ENEL POWER SPA (ROME) FOR FIUME SANTO ITALY**  
**CENTRALE TERMoeLETRICA DI FIUME SANTO**

- N.4 Special Bending Down Hydraulic Elevated Monitors
- Fixed Elevated Monitors With Oil Hydraulic Remote Monitors
- Control Panels

**ROSETTI MARINO ITALY SPA**  
**MARINA DI RAVENNA (RA)**  
**“TEA PLATFORM”**

- Pressurized Foam Vessels
- Powder Systems
- Monitors And Nozzles
- Safety Materials

**FOSTER WHEELER SPA - MILAN**  
**FOR ERG ISAB REFINERY - PRIOLO (SR)**

- Fire Water Monitors
- Foam Trailers
- Bladder Tanks
- Hose Reels

**FOSTER WHEELER SPA - MILAN**  
**FOR LOMELLINA ENERGIA IN PARONA (PV)**  
**TERMOVALORIZZATORE DI PARONA (INCENERATOR)**

- Gas Systems
- Detection Sytems
- Deluge Systems

**ECODECO SRL - GRUPPO A2A**  
**GIUSSAGO (PV)**  
**TRATTAMENTO RIFIUTI DI CEDRASCO (SO)**

- Foam Bladder Tanks
- High Expansion Foam Generators
- Medium Expansion Foam Generators
- Water Nozzles

**RC GROUP SPA (DET CLIMA GROUP)**  
**VALLE SALIMBENE (PV)**

- Special Fire Fighting Systems
- Special Hoses
- Foam Trailers

**RISO SCOTTI SPA - (RICE PRODUCTION COMPANY)**  
**PAVIA**

- Special Water Systems
- Detection Systems

**CHEMTEX ITALIA S.p.A.**  
**BIOETHANOL PRODUCTION PLANT PROJECT - CRESCEN-**  
**TINO**  
**ITALY**

- Monitors
- Bladder Tanks
- Hydrants
- Fire Fighting Complements

**F.LLI BRANCA DISTILLERIE SRL**  
**MILAN**

- Bladder Tanks
- Detection System
- High Expansion Foam Generators

**RINO MASTROTTO GROUP SPA**  
**DIVISIONE BASMAR / UPHOLSTERY LEATHER**  
**TRISSINO (VI)**

- Special Foam System For Tannery Machines
- Bladder Tanks
- Foam Generators
- Detection Systems

**COLLEGIO UNIVERSITARIO GHISLIERI**  
**COLLEGIO UNIVERSITARIO MARIANUM**  
**COLLEGIO NUOVO**  
**PAVIA**

- Detection Systems

- Gas System
- Safety Equipments

**UNIVERSITÀ DEGLI STUDI DI PAVIA**  
**AREA SERVIZI TECNICI**  
**PAVIA**

- Bladder Tanks
- Foam Generators
- Detection Systems

**MONASTERO CERTOSA DI PAVIA**  
**(MONASTERY AND COMPLEX)**  
**PAVIA**  
**FIRE FIGHTING SYSTEM FOR ANCIENT LIBRARY**

- Bladder Tank
- Foam Generators
- Detection Systems

**SAIPEM**  
**VERSALIS LINEA EPDM/OSBL FERRARA**  
**PO 1096130**

- N. 6 powder system
- N. 2 bladder tank foam systems
- Fire hydrant
- Fire monitors
- Deluge valves

**ENI REFINING & MARKETING**  
**RAFFINERIA DI LIVORNO**  
**PO 5700025643**

- Steam system

**TIS FOR B.PACK SPA**  
**PO 027/FAS/290216**

- Foam system

**ENI REFINING & MARKETING**  
**RAFFINERIA DI TARANTO**  
**PO 5700031174**

- N. 2 Bladder tank foam system
- Deluge valve
- Remote controlled elevated monitors

**ENI REFINING & MARKETING**  
**RAFFINERIA DI SANNAZZARO**  
**PO 5700031713**

- Tank farm revamping

**NERI DEPOSITI COSTIERI LIVORNO**

- Foam package for jetty

**PRODOTTI CHIMICI ALIMENTARI SPA**

- Medium expansion foam system

**ITALFLUID GEOENERGY**

- N. 2 Bladder tank system
- N. 12 Foam trailers

**ENI REFINING & MARKETING**  
**REBUILDING IMPIANTO EST RAFINERIA DI SANNAZZARO**  
**PO APR/R&M/1267/2018/P**

- N. 6 Elevated remote control monitors
- N. 10 Remote control monitors
- N. 3 Monitor control station with wireless joystick
- Deluge systems
- Foam proportioning system
- Fire hydrants
- Safety shower
- Hose reels

**VERSALIS SPA**  
**STABILIMENTO DI PORTO MERGHERA**  
**PO 4520110327**

- N. 6 Elevated water monitors

**A2A AMBIENTE**  
**TERMOVALORIZZATORE MILANO SILLA 2**  
 • Revamping argon fire suppression system



## ALGERIA



### GROUPEMENT SONATRACH AGIP - Algeria

- Fire Fighting Pump stations
- Monitors and nozzles
- Monitor Trailers

### MINISTERE DE L'ENERGIE ET DES MINES - Algeria PROJECT: OLEODUC 34 HAOUD EL HAMRA ARZEW (OZ-2) LOT 3

- Foam Bladder tanks
- Deluge valve skids

### MINISTERE DE L'ENERGIE ET DES MINES ALGERIA PROJECT : OLEODUC 30" - NK1 - LOT 3 - PHASE 1 SONATRACH - ALGERIE

- Welded Hydrants
- Trailers with monitors
- Foam bladder tanks

### NUOVO PIGNONE - GENERAL ELECTRIC For BIR REBAA - Algeria

- CO2 System
- Powder System
- Detection System

### For SONATRACH HASSEI RIMEL Algeria

- Fire detection system

### SAIPEM S.p.A. - ITALY For RAFFINERIE SONATRAK - ARZEW Algeria

- Telecontrolled Monitors
- Oleodinamic plant
- Miscellaneous

### SONELGAZ ALGERIE PROJECT: CENTRALE TURBINES A GAZ DE LARBAA de 4X139.9MW

- N.6 Foam Tanks 10.000 Litres Capacity Hot Dip Galvanized
- N.2 Bladder Tanks 10.000 Lt.Capacity
- N. Bladder Tanks 9.000 Lt.Capacity

### JOB P32076 SH-FCP MLE MENZEL LEDJMENT EAST PROJECT (MLE) ALGERIE P.O.RDER N. 502503 SAIPEM SPA FANO FOR SONATRACH ALGERIE

- N. 220 Wet Hydrants
- N. 220 Special Hose Cabinets
- N. 60 Water Foam Monitors
- N. 84 Water Foam Deluge Skids
- N. 33 Hose Reels
- N. 35 Windsock
- N. 1400 Hoses
- 232.000 Litres OF Foam Liquid
- Varius Safety Showers - Nozzles - Safety Equipments - Pumps

### PROJECT 005/006/007/2009 CENTRALE TURBINE A GAZ DE ILLIZI / IN AMENAS / EL GOLEA TURBOMACH / SPE / AIR FIRE FOR SONELGAZ ALGERIE

- N. 12 Bladder Tanks
- N. 30 Welded Hydrants
- N. 12 Monitors & Nozzles
- Medium Expansion and High Back Pressure Foam Maker
- Varius Pressurized Tanks

## ARGENTINA



### PETROQUIMICA BAHIA BLANCA - POLISUR (PBBP) ARGENTINA P.O.n° 665003 - CHRICHER SA - ARGENTINA

- Special Bladder Tank Moody Approved

### BERMAD FOR TEX ARGENTINA SRL MENDOZA PROJECT

- N. 8 Deluge skids in isothermic cabinets

## BRAZIL



### NUOVO PIGNONE - GENERAL ELECTRIC - ITALY For ELF OFF SHORE Brazil

- CO2 System
- Detection System

### TECHNIP - ITALY For ISLA REFINERY - CURACAO BRAZIL

- Hydrants
- Water monitors
- Fire fighting equipment

## CHINA



### LINDE AG PROCESS ENGINEERING AND CONTRACTING DIVISION For JILIN CHEMICAL INDUSTRIES IMPORT & EXPORT COMPANY - China JILIN AMMONIA PLANT

- Detection systems e Control Panels
- Foam systems
- Deluge systems
- CO2 - Gas Extinguishing System

### SNAMPROGETTI S.p.A. - ITALY For CHINESE REFINERY

- Dry chemical powder systems for pyrophoric materials
- Carbon dioxide total flooding
- Automatic water spray deluge system
- Manual water deluge systems

### For CHINA ETILENE COMPLEX China

- Deluge System
- Detection System

## COLOMBIA



### ECOPETROL S.A. - COLOMBIA Project: I-RP-2-03120 Proyecto Hidrotratamiento de combustibles Refineria de Barrancabermeja

- Clean Agent Systems
- Deluge valve skids
- Welded Hydrants
- Monitors and nozzles
- Hoses - safety material
- Fire Extinguishers

## CONGO



### INTERMARE SARDA / SAIPEM ENERGY INTERNATIONAL FOR ENI CONGO - DMS PROJECT 000023 DV AWA PALOUKOU OFFSHORE PLATFORM - KONGO

- Foam Systems
- Deluge skids
- Monitors
- Powder Systems
- Gas Systems

### M'BOUNDI GAS GATHERING/EPMS JOB Nr. 8100000019/101 P.O. N° 195 / 10 PROGER SPA FOR ENI CONGO M'BOUNDI GAS VALORIZATION

- System Foam Package Generator



**SAIPEM MILAN FOR BOSCONGO S.A.  
 ZATCHI FIELD DECENNIAL SHUTDOWN PROJECT ZAP  
 PLATFORM**

**ORDER N. 782564**

- Deluge Skids Made In CU-NI
- Nozzles

**ABB SPA - PROCESS AUTOMATION DIVISION  
 PW1 M'BOUNDI - PO20030 - 4580028810 - MR66100 -  
 FIRE FIGHTING EQUIPMENT FOR SITE P.O N° 4580028810**

- Welded Hydrants
- Self Oscillating Monitors
- Trailers
- Hose Boxes
- Safety Showers
- Fire Extinguishers

## EGYPT



**AGIBA PETROLEUM CO.  
 Egypt**

- Pressurized Foam Tank
- Dry Chemical Tank
- Foam Monitors
- Portable Extinguishers
- Safety Materials
- Hydrants

**ANSALDO - ITALY  
 For New Esna - Egypt**

- Powder System
- Water System
- Detection System
- CO2 System

**For ASSIUT THERMAL POWER PLANT - Egypt**

- CO2 System
- Halon System
- Foam System
- Power System
- Detection System

**ARAB PETROLEUM PIPELINES CO. SUMED  
 ALEXANDRIA - Egypt**

- Above Ground Dry Barrel Fire Hydrant
- Dry barrel fire hydrants

**ENPPI - ENGINEERING FOR THE PETROLEUM AND PROCESS  
 INDUSTRIES**

**For PETROBEL EGYPT  
 Project : TUNA PLATFORM**

- Foam Systems / Nitrogen Pressurized "U" Stamp Vessel
- Self Oscillating Monitors and nozzles
- Fire extinguishers

**EGYPTIAN METHANEX METHANOL COMPANY SAE  
 Emethanex Damietta 1 Project - Egypt  
 Job N.3228 - Mr 2386-0000-Eo-K-03-0116**

- N.2 Monitor Towers 4 Mt H
- N.4 Monitor Towers 4 Mt H
- N.2 Monitor Towers 10 Mt H
- N.3 Monitor Towers 15 Mt H

**GUPCO SAQQARA PROJECT - EGYPT**

- "U" stamp vessels 6000 Lt. made in Stainless Steel 316 L

**I P S - INTERNATIONAL PROCUREMENT  
 & SERVICE CORP. S.A. - LUXEMBOURG  
 For TOYO ENGINEERING CORPORATION TOKIO  
 Japan - Plant in Egypt**

- Outdoor water hydrant
- Fire hose
- Fixed Water Monitor
- Miscellaneous
- Water Hydrants
- Water Monitors

- Air Foam Chambers
- Hose box
- Miscellaneous

**KTI SpA - ITALY  
 FOR SUEZ OIL PROCESSING COMPANY (S.O.P.Co.) Egypt**

- Welded Hydrant
- Monitors and nozzles
- Deluge systems
- Safety Materials
- Detection System

**PETROBEL BELAYIM PETROLEUM COMPANY - EGYPT  
 BARBONI & TEMSAH PLATFORMS**

- Foam systems
- Powder systems
- Extinguishers
- Fire water monitors and nozzles

**NEW TEMSHA PLATFORM-2**

- Twin Agent System for Off-Shore
- Foam systems

**For PETROBEL ABU MADI GAS PLANT EXPANSION Egypt**

- Fire hydrants
- Hose storage box
- Water spray cooling nozzles
- Foam feeding station
- High expansion foam generator
- Fire extinguisher
- Foam compound
- Smoke detection and automatic Gas system for powder substation
- LPG spreading detection system

**TECNICAS REUNIDAS S.A. - SPAIN**

**For AMOC - EGYPT**

- Bladders tanks ASME U stamped
- Strainers
- Water hydrant
- Water hose cabinet
- Foam and Foam monitors
- Detection system

**TECHNIP - ITALY**

**For MIDOR REFINERY - ALEXANDRIA EGYPT**

- Hydrants
- Fire fighting equipment

**TECHNIPETROL ITALY**

**For EGYPT AMERYA Egypt**

- Detection System
- Halon System

**SUMED PROJECT N. 6681**

**P.O. n° 148/2010F - ARAB PETROLEUM PIPELINES CO. SUMED  
 EGYPT**

- N. 15 Special Dry Barrel Hydrant with N. 4 Outlets

**P.O. n° BGCP-10 PETROBEL - / ENPPI PROJECT**

- Deluge Skids
- Hydrants
- Fire Extinguishers

**ENPPI - EGYPT**

**PROJECT n° 3467-200, SETH ODP, SETH-55**

**P.ORDER N° 3467-200-190-01-(SETH-55)-08**

- Foam Tank 6000 Litres - U STAMP
- Powder Tanks 150 Litres - U STAMP
- Nitrogen Cylinders
- Hose Reels
- Hydrants
- Hose Boxes

**ENPPI - EGYPT/ GUPCO-BP**

**PROJECT HILAL REDEVELOPMENT - HILAL "B" PLATFORM**

**P.ORDER N° 4229-420-190-01-27**

- Foam Tank 6000 Litres - U STAMP
- Nitrogen Cylinders

## ESTONIA



### EURODEK SYNERGY MAARDU BY FIRETEK OU - ESTONIA

- n. 2 Bladder Tanks 10000 Litres Capacity
- n. 58 Medium Expansion Foam Makers
- n. 4 Remote Controlled Monitors

## ETHIOPIA



### TECHNIPETROL ROME For ETIOPIA PROJECT 2 Ethiopia

- Deluge system
- Water system
- GAS system
- Detection system

## FRANCE



### ANSALDO - ITALY For GRENOBLE SYNCROTRON PROJECT - France

- Detection System

### FRENCH NAVY By Tyco Building Services Products / LPG SPAIN / DCS PROJECT "FREMM" FOR THE FRENCH NAVY

- Special Foam Bladder Tanks on Fremm Frigates

## GREECE



### TECHNIP - ITALY For MOTOR OIL CORINTH REFINERY - GREECE

- Hydrants
- Water monitors
- Eye wash and safety showers
- Hose reels and hose box
- Fire fighting equipment

## INDIA



### SAIPEM SPA - ENI GROUP - ITALY For RELIANCE PETROLEUM LIMITED JAMNAGAR REFINERY COMPLEX - India

- Hydraulic Remote Control Monitors
- Dry Chemical Group With Hose And Monitor
- Mobile Foam Units
- Deluge System
- Portable Extinguishers
- Safety Materials
- Deluge System Suitable For Sea Water

## ISRAEL



### BERMAD FOR BAZAN REFINERY

- N. 67 Deluge skid

## KUWAIT



### KSC KUWAIT New Ethane Recovery Plant at MAA Refinery Kuwait

- Welded Hydrants
- Monitor Trailers
- Water Hose reels

### PETROCHEMICAL INDUSTRIES Co. (K.S.C.) KUWAIT

- Fire water hydrants
- Valves

## LEBANON



### ANSALDO ENERGIA - ITALY For ZHARANI and BEDDAWI - Lebanon

- Fire Detection Systems
- Foam-Water Fire Suppression Systems

## LITHUANIA



### SIA WALKERS - LATVIA - LITHUANIA

- N. 36 Foam Chambers
- N. 36 Foam Pourers

## MALTA



### ALBERTA - MALTA For ENEMALTA NATIONAL POWER PLANT Malta

- Foam System
- Detection System
- Fire Hydrants

### For ENEMALTA CORPORATION Malta

- Foam Bladder Tanks
- High Back Pressure
- Foam System

## MEXICO



### BERMAD MESSICO

- N. 5 Foam bladder tank system

### BERMAD MESSICO FOR PEMEX

- N. 14 Foam bladder tank skids with monitors for helideck
- N. 49 Water/foam monitors

### BERMAD MESSICO FOR JOHNSON CONTROL ENI AMOCA PROJECT

- N. 1 premixed foam system pressurized for helideck
- N. 2 powder system
- Hose reels



## MOROCCO



### **SAMIR REFINERY - MOHAMMEDIA, MOROCCO** **(SNAMPROGETTI SPA PROJECT n° 313600)** **SAMIR UPGRADE PROJECT - SAMIR REFINERY**

- Welded Hydrants and valves
- Monitors and nozzles
- Hose reels and Cabinets
- Foam chambers
- Safety shower & eye wash
- Breathing apparatus

### **SAMIR REFINERY MOROCCO** **PROJECT CDU-4**

#### **SAMIR P.O CDU4-MA-067**

- Welded Hydrants and valves
- Monitors and nozzles
- Hose reels and Cabinets
- Deluge System
- Deluge System Distribution Piping

## MONACO



### **CORIMEC S.p.A. - ITALY** **For MONTECARLO NATIONAL ELIPORT** **Monaco**

- Smoke Detection System
- Flame Detection System
- Various Equipment

## NIGERIA



### **COMERINT S.p.A. - ITALY** **For WARRY REFINERY Nigeria**

- ADPE Control Panels
- Monitors
- Liquid displacement Premixer 2x3000
- Fixed Medium Expansion Foam Generators
- Liquid displacement Premixer 2x5000
- Fixed foam Premixer 2x4000

### **NIGERIAN AGIP OIL CO. LTD.** **Lagos NIGERIA**

- Hose Reels
- Portable foam water branch pipes

### **AFAM – RIVERS STATE GOVERNMENT OPEN CYCLE POWER PLANT** **NIGERIA - P.O n° 524575 - SAIPEM SPA - MILAN**

- N. 7 Fire Water Hydrants
- N. 2 Fire Water Monitors
- N. 7 Hose Storage Boxes
- Automatic Water Deluge Valves
- Extinguishers
- Shower and Eye Wash

## NORWAY



### **F.P.E. - FIRE PROTECTION ENGINEERING - A.S.** **For: ORMEN LANGE PROJECT - Norway**

- N° 71 Self oscillating Fire water monitors

## POLAND



### **SNAMPROGETTI S.p.A. - ITALY** **For PETROCHEMICAL PLOCK S.A. - Poland**

- Emergency booth
- Foam conc. Storage prop. Unit
- Fire hydrants with monitors
- Water hose reels
- CO2 extinguishers
- Hose storage boxes

### **For PETROCHEMICAL PLOCK Poland**

- Deluge Water Spray System
- Fire Hydrants
- Hose Storage boxes
- Fixed water foam monitors
- Deluge System for transformers protection

### **For PETROCHEMICAL PLOCK Poland**

- Deluge Systems
- Safety showers

### **SNAMPROGETTI Ltd BASINGSTOKE U.K.** **For Petrochemia Plock Poland**

- Deluge systems
- Water hydrant
- Fire extinguishers
- Hose boxes

### **TECHNIP - ITALY** **For POLISH REFINERY**

- Hydrants
- Polar Booth (Special Safety Shower And Eye Wash)
- Water Spray Nozzles
- Deluge Systems

### **TECHNIP - ITALY** **For LOTOS SA POLAND** **2299 - GDANSK REFINERY PROJECT**

- Deluge Valves
- Safety shower & eye wash
- Welded Hydrants
- Monitors and Nozzles
- Fire Extinguisher - Sprinklers

## QATAR



### **RTS ABUS FONTAS DESALINATION PLANT Qatar**

- CO2 System
- Halon System
- Foam System
- Detection System

### **QATAR LIQUIFIED GAS COMPANY LIMITED** **Qatar Gas II Development Project**

- N.2 Nitrogen Pressurized "U" Stamp Powder Vessels - 2000 Kg Capacity

### **SNAMPROGETTI S.p.A. - ITALY** **For QATAR REFINERY**

- Deluge water spray system
- Automatic Sprinkler System

### **FOR QATOFIN - QATAR** **QATOFIN 450 KTI LINEAR LOW DENSITY** **POLYETHYLENE PLANT**

- Foam Systems
- Deluge skids
- Monitors
- Powder Systems
- Fire Extinguishers

## TECHNIP - ITALY

For QATARGAS - Qatar

Oryx Gtl Project - Technological Improvement - Proj.2158

Oryx Gtl Project Ras Laffan City - Qatar

- Deluge Valves
- Safety showers & eye wash
- Welded Hydrants
- Fire Extinguishers

## ROMANIA



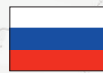
### INDUSTRIAL CRUMAN ROMANIA

- N. 2 Special Bladder Tanks 8000 Litres Capacity

### ROM FIRE SRL - PLOJESTI

- N. 45 Self oscillating monitors

## RUSSIA



Novorossisk port – RUSSIA

FAS RUSSIA (PTV)

FOR Novorossisk port – RUSSIA

- N.8 Special Explosion Proof Electric Remote Controlled Monitors Ø 6"

### PTV FAS RUSSIA FOR GAZPROM GAZPROM - MOSCOW

- N. 25 Electric Monitors
- N. 25 Electric Nozzles
- N. 25 Eexd Control Panel

### PTV FAS FOR TUAPSE PROJECT

- N. 4 Bladder Tanks 10000 Litres
- Monitors

## SAUDI ARABIA



TECNIMONT SPA - ITALY

For TASNEE PETROCHEMICALS AL JUBAIL (Saudi Arabia)

HD / LDPE EPC TASNEE

- N.47 Safety Showers & Eye Wash

## SPAIN



SP FIRE - SOLUCIONES PROCONI

PO 1907/113/114/115/116/117

- N. 23 Bladder tanks systems

## SURINAME



SAIPEM S.p.A./ STAATSOLIE MAATSCHAPPIJ SURINAME N.V.  
STAATSOLIE REFINERY EXPANSION PROJECT  
P.O. 736081

- Monitors
- Bladder Tanks
- Hydrants
- Fire Fighting Complementments

## SWITZERLAND



CIMO - COMPAGNIE INDUSTRIELLE DE MONTHEY SA  
Switzerland

- Foam Bladder Tanks / Premixers

FOSTER WHEELER ITALIANA - ITALY

For: SWITZERLAND REFINERY

- Safety showers and eye wash

## THAILAND



THAILAND POLIPROPILENE COMPLEX

- Foam System
- Detection System
- Portable units

## TRINIDAD & TOBAGO



EUROTECNICA Contractors & engineering Spa

Gas Process Unit for De Nove Energy Block 1 A Ltd Pont Lisas

PO 1656400540

- N. 8 Bladder tanks foam package
- Fire hydrants
- Devuge valves

EUROTECNICA Contractors & engineering Spa

Gas Process Unit for De Nove Energy Block 1 A Ltd Pont Lisas

PO 1656400540 Addendum 2

- Water monitors
- Foam monitors

## TURKEY



GENERAL DIRECTORATE OF TURKIYE

PETROLLERI AO ORTA ANADOLU

REFINERISI BOLGE MUDURLUGU CIHAN

SK SIHHIYE/ANKARA - TURKEY

Through ICPTTR Rumania

- N. 418 Fire fighting equipments, foam makers, foam chambers

TECNICAS REUNIDAS S.A. - SPAIN

For TUPRAS - IZMIR REFINERY - TURKEY

- Foam trailers
- Water monitors
- Fire fighting equipment

TECNICAS REUNIDAS S.A. - SPAIN

For TUPRAS - TURKIYE PETROL RAFINERILERI A.S.

KIRIKKALE RAFINERI MUDURLUGU - TURKEY

DHP-CCR PROJECT n° 01730

- Welded Hydrants
- Monitors and nozzles
- Safety Materials
- Hose reels
- Foam chambers
- Monitor trailers



## TURKMENISTAN



### PETRO GAS FZE

#### PROJECT: TG-CSM (MALAY)

#### PO : 079/AS/19/EURO/FAS

- N. 12 Foam bladder tanks systems

## UAE



### ENOC PROCESSING COMPANY LLC (EPCL)

#### DUBAI - UNITED ARAB EMIRATES

#### NAPHTHA HYDRO TRATER REFORMER

- Hydrant
- Monitors
- Foam bladder tank
- Deluge systems
- Foam and water manifold internal cemented lined
- Special Welded Hydrants Cemented Lined
- Welded Carbon Steel Hydrants
- N. 66 Welded Carbon Steel Hydrants
- N. 40 Monitors and Nozzles
- N. 25 Water Hose Reels

### TECHNIPETROL ITALY

#### For ENOC - PROCESSING COMPANY L.L.C. DUBAI

#### United Arab Emirates

- Hydrant
- Monitors
- Foam bladder tank
- Deluge Systems
- Foam and water manifold internal cemented lined

### GENERAL ELECTRIC - ITALY

#### For ABU DHABI United Arab Emirates

- CO2 System
- Detection System

### FOSTER WHEELER ENERGY (UK) LTD

#### For ENOC Processing Company L.L.C. (EPCL) U.A.E

#### ESR-00214 NAPHTHA HYDRO TREATER REFORMER Project

- Welded Carbon Steel Hydrants
- Water Hose Reels
- Monitors and Nozzles

## UNITED KINGDOM



### COOPER ENERGY SERVICES U.K.

- Cryogenic low pressure system for compressor building
- Carbon dioxide high pressure system for gas turbine enclosure

### ECODECO - A2A ITALY

#### HESPIN WOOD PROJECT

- Bladder Tanks
- High Expansion Foam Generators
- Deluge Valves
- Medium Expansion Foam Generator

### ANGUS FIRE ENGINEERING

#### PO CP 15822 - CP 16259

- N. 177 Foam hose reel

## UNITED STATES OF AMERICA



### MOSSI GHISOLFI GROUP / CHEMTEX

#### JUMBO PROJECT CORPUS CHRISTI - TEXAS



