

FOR fixed systems
& mobile units



Turbinator
Foam Mixing Technology



Designed to be unique

Turbinator is unique. From the outset it has been designed specifically as fire fighting equipment with due regard to the special needs and practices for fire fighting applications.

The **Knowsley SK Turbinator** is a positive displacement foam concentrate dosing machine which uses the firewater supply as a power source but which produces zero waste water.

The **Turbinator** is in fact a progression from the highly successful original Knowsley 2P and 3P foammaking systems.

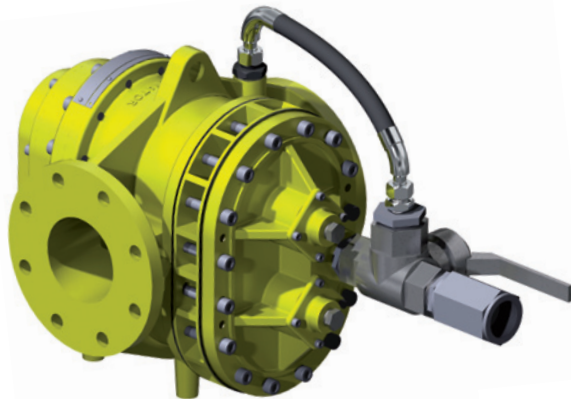
Product Details

The **Turbinator** is designed to accurately mix foam concentrate liquid with either freshwater or seawater and is suitable for use in fixed systems or in mobile units for portable use.

The **Turbinator** is available in a range of sizes and comprises of two main parts; a water powered motor and a foam concentrate pump.

The motor and pump are close coupled and integrated within a single compact body and both are 'positive displacement' rotary devices. Consequently for every revolution of the water motor a fixed volume of water passes through the machine, and similarly for every revolution of the foam pump a fixed volume of concentrate is delivered. In this way the required water to foam mixing ratio is obtained regardless of operating pressure.

The unique design of the **Turbinator** makes the device inherently self priming. The gear type foam pump develops a strong inlet suction leading to a reliable and uninterrupted foam concentrate supply.

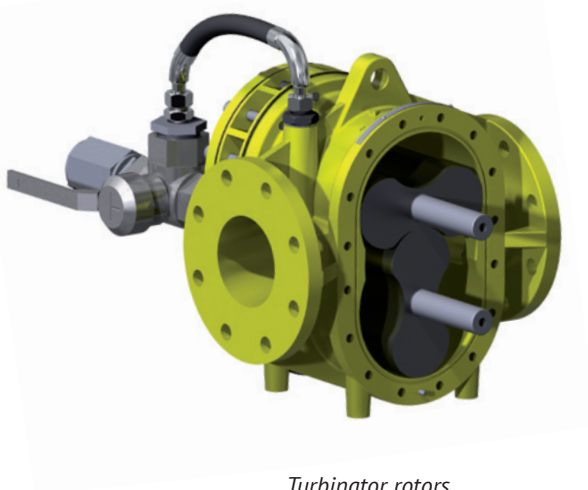


Key Features

- > Can be used in hazardous areas
- > Compact
- > No external power source required
- > Easy to use - no special start-up procedures
- > Low pressure drop
- > Variable flow
- > Highly tolerant to overspeed
- > Can be installed in vertical or horizontal pipes

Designed for:

- > Low maintenance
- > Fresh water and sea water versions
- > Proportioning over a wide flow
- > Available in 1% and 3% proportioning rates
- > Resistant to debris in firewater
- > CE marked
- > NFPA compliant for dry running
- > Low noise emissions



Turbinator rotors

Materials of Construction

Turbinator is manufactured from the highest grade material selections to ensure corrosion resistance in the harshest of environments. Standard materials are:

Body:	Gunmetal BS 1400 LG2
Rotors:	Nitrile coated Stainless Steel 431
Gears:	Acetal
Gear Housing:	Gunmetal BS 1400 LG2
Mechanical Seals:	Stainless steel / rubber
Fasteners:	Stainless steel 316

For applications offshore the above material selections can be as follows:

Body:	Gunmetal BS 1400 LG2
Rotors:	Nitrile coated Super Duplex F55
Gears:	Acetal
Gear Housing:	Gunmetal BS 1400 LG2
Mechanical Seals:	Hastelloy / rubber
Fasteners:	Stainless steel 316

Certification

For the European market, the products will be CE Marked under the Machinery Directive 2006/42/EC and under the ATEX Directive 94/9/EC.

Dimensions (see below)

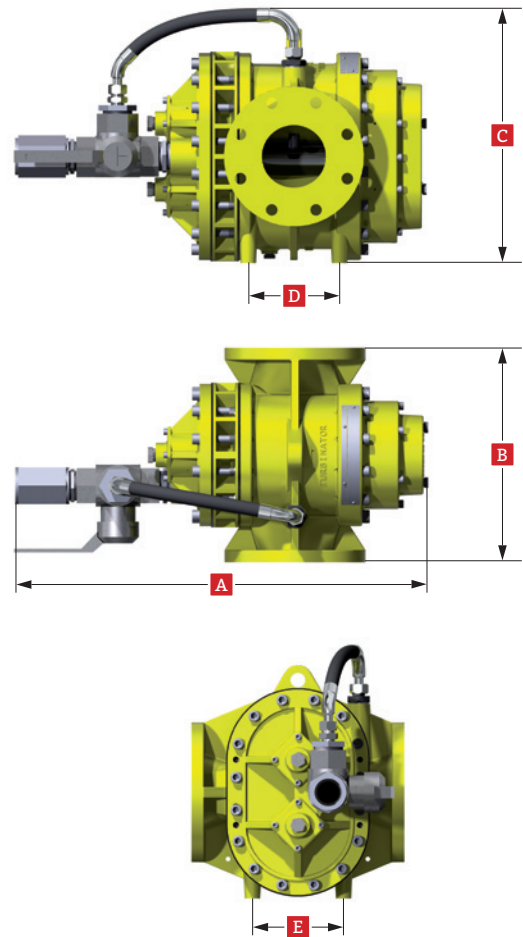
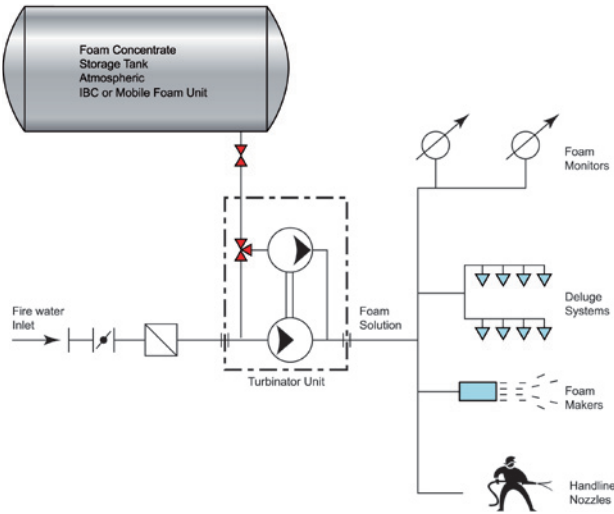


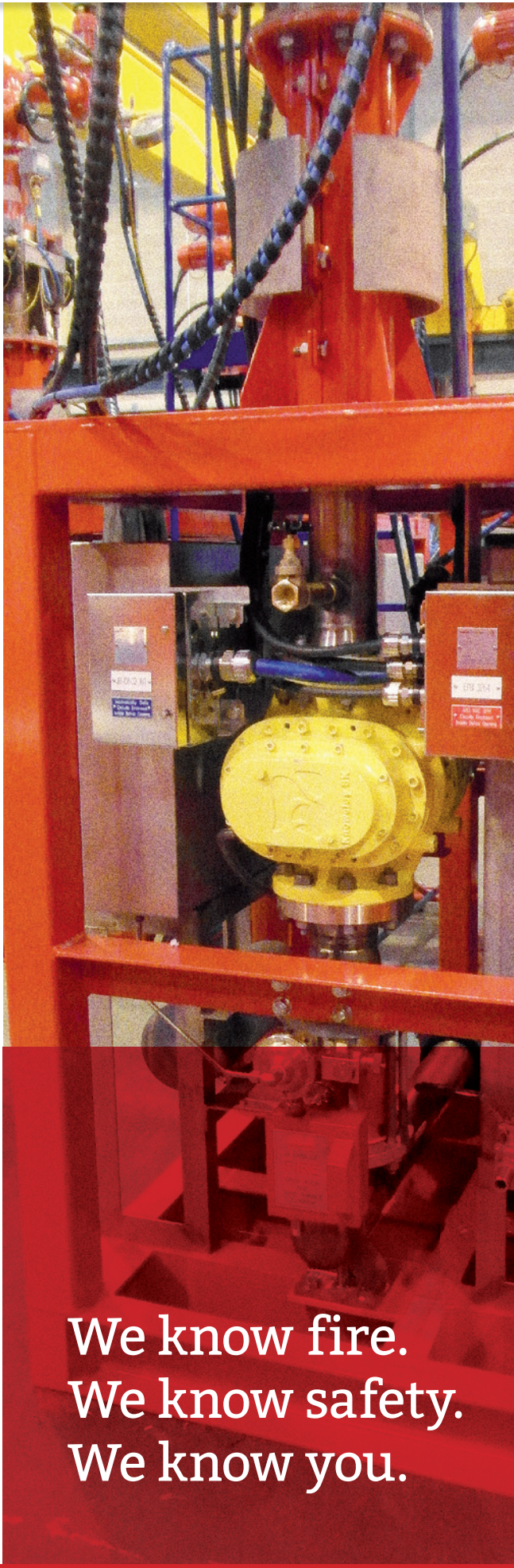
Table 1. Product Details				
MODEL		Turbinator MIDI	Turbinator MIDI-PLUS	Turbinator MAXI
Nominal Size		4"	6"	8"
Flow Range (l/min)		500 - 3000	1000 - 6500	1500 - 12000
Water Connection		4"ANSI 150# Flange	6" ANSI 150# Flange	8" ANSI 150# Flange
Foam Connection		1.1/2"BSP	2"ANSI 150# or 2"BSP	2.1/2"BSP or 3"ANSI 150#
Dimensions (mm) Figure 2.	A	669	742	936
	B	350	400	500
	C	418	515	645
	D	150	200	250
	E	150	200	270
Foot Holes		M10	M12	M16
Temperature range 5 °C to 50 °				

Technical Information

Table 2. Pressure Loss vs Flowrate			
Flowrate (l/min)	Pressure drop (barg)		
	Midi	Midi Plus	Maxi
500	0.80		
1000	1.06	0.80	
1500	1.31	0.91	0.80
2000	1.56	1.02	0.86
2500	1.81	1.13	0.91
3000	2.00	1.24	0.97
3500		1.34	1.03
4000		1.45	1.08
4500		1.56	1.14
5000		1.67	1.20
5500		1.78	1.26
6000		1.89	1.31
6500		2.00	1.37
7000			1.43
7500			1.48
8000			1.54
8500			1.60
9000			1.65
9500			1.71
10,000			1.77
10,500			1.83
11,000			1.88
11,500			1.94
12,000			2.00



P&ID of typical Turbinator Installation



We know fire.
We know safety.
We know you.



We know fire.
We know safety.
We know you.

ESTABLISHED IN 1896, Knowsley Ltd. has an enviable reputation for manufacturing quality fire fighting equipment and systems for high value asset protection that can be relied upon when danger strikes.

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Due to continual product developments and improvements, Knowsley SK Limited reserve the right to change or modify the published performance characteristics without notice.

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We know fire. We know safety. We know you.