

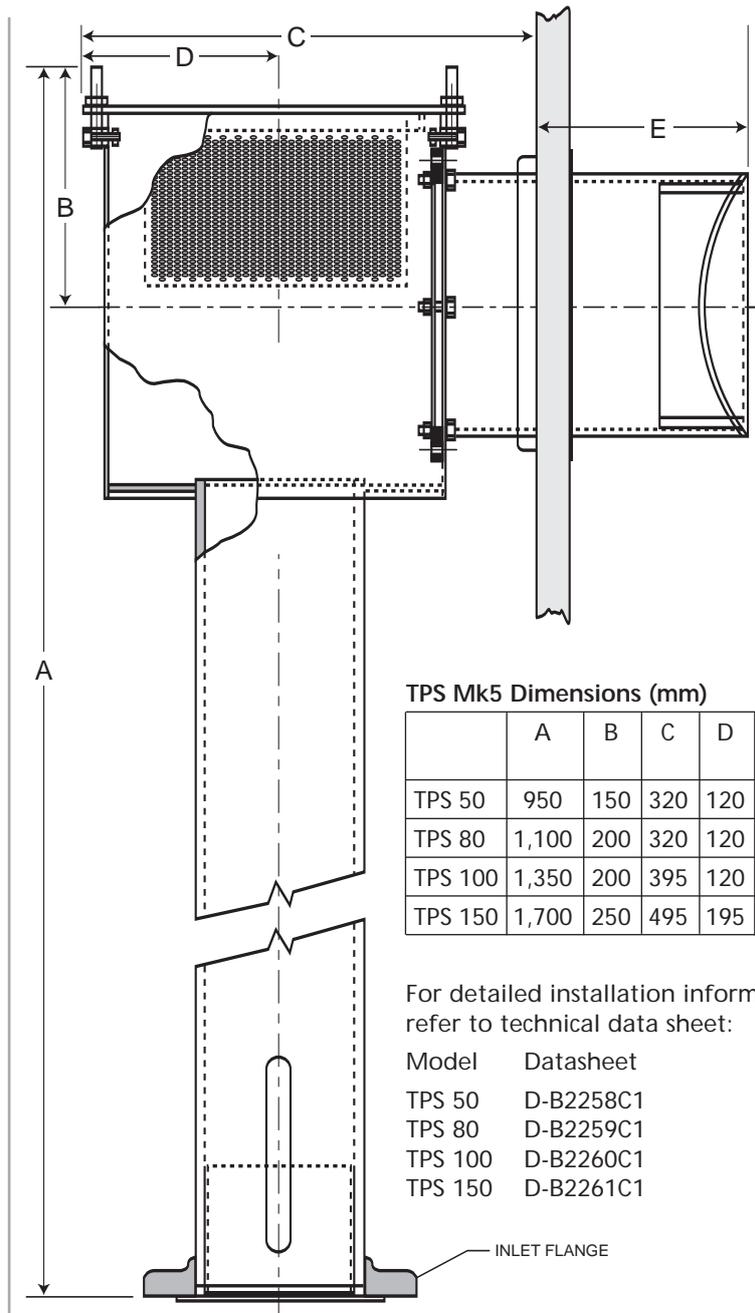
Foam Top Pourer Set Mk5

The Angus Fire **Top Pourer Set Mk5** is the latest in a long line of Angus Top Pourer Sets and represents over 30 years of product development and operating experience. Modern materials such as graphite and stainless steel are employed to ensure each unit performs to the precise pressure and flow standards laid down by Underwriters Laboratories (UL) and NFPA.

The Angus Fire **Top Pourer Set (TPS) Mk5** is designed for use in foam systems for the protection of flammable liquid storage tanks and combine foam generation, vapour sealing and foam pouring in a robust, low-maintenance integral unit.

There are four basic body sizes with capacities ranging from 75 to 3,300 litres/min. at inlet pressures between 3 and 10 bar g. Each unit is factory calibrated to perform at a fixed flow and pressure point within the limits shown overleaf. The system designer is therefore able to make the most cost-effective use of available water and foam concentrate resources.

The discharge characteristics of the **TPS Mk5** are enhanced by the deflector plate fitted to the outlet which disperses the finished foam against the tank wall. This ensures a rapid spread across the surface of the fuel, whilst lowering the application velocity to reduce contamination of the foam by the fuel. An important consideration especially on polar solvent fuels.



TPS Mk5 Dimensions (mm)

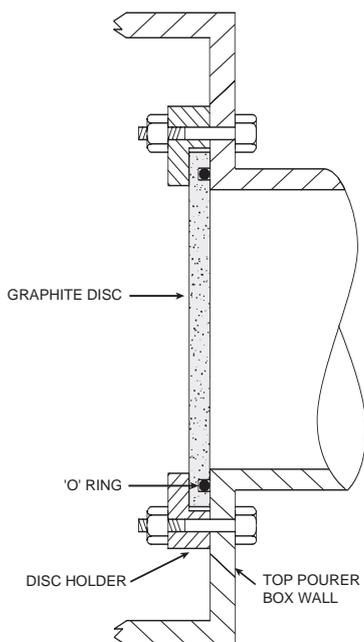
	A	B	C	D	E (Min)	Weight (kg)
TPS 50	950	150	320	120	143	27
TPS 80	1,100	200	320	120	113	53
TPS 100	1,350	200	395	120	167	75
TPS 150	1,700	250	495	195	167	112

For detailed installation information refer to technical data sheet:

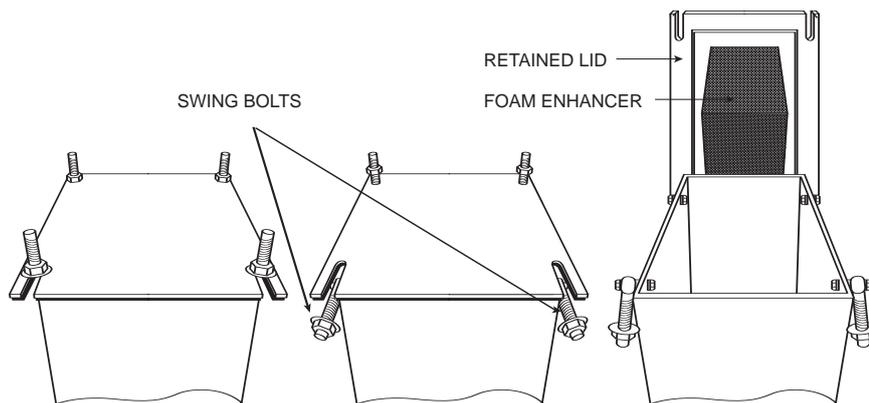
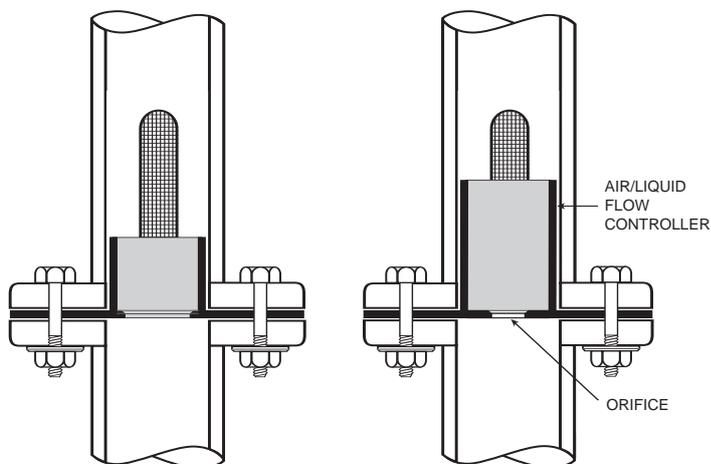
Model	Datasheet
TPS 50	D-B2258C1
TPS 80	D-B2259C1
TPS 100	D-B2260C1
TPS 150	D-B2261C1

Foam Top Pourer Set Mk5

TPS Mk5 units are fitted with a unique bursting disc fabricated from impregnated graphite to seal the tank and prevent vapour loss. Graphite is used to ensure that the disc will burst when subjected to the pressure of foam entering the top chamber but will not burst during normal tank operations such as filling and discharging. The use of graphite enables the bursting pressure to be held within tolerances of ± 0.05 bar (± 0.75 psi).



Improvements to the design of the disc holder and the use of an "O" ring seal allow the graphite disc to be replaced quickly and easily without changing the holder.



To allow access to the foam generating box for test purposes and to inspect or replace the graphite disc the box lid has been designed to allow quick and easy access. Four retained stainless steel bolts swing away to allow the lid to pivot giving access without the risk of any components being lost or falling from the unit.

The Angus Fire **TPS Mk5** is designed for tanks where the internal pressures will not exceed 0.17 bar (2.5 psi). Where the tank is pressurised, for example with a nitrogen blanket, or where high pressures may be experienced during normal operation, the Angus **Top Pourer Set Mk4** is recommended (see data sheet 6171).

The **TPS Mk4** incorporates a bursting disc designed to withstand internal tank pressures up to 0.34 bar (5 psi). During operation the unique design of the foam generator allows the full pressure of the foam solution entering the unit to be applied to the bursting disc to ensure it operates in an emergency situation.

To provide precise control over the ratio of foam and air the **TPS Mk5** is fitted with a unique orifice plate assembly. Each orifice is specifically designed to allow the correct amount of foam pre-mix into the foam-making tube after taking into account the supply pressure at the inlet flange, the foam type and concentration. In addition, a stainless steel sleeve above the orifice, blocks off part of the air inlet duct ensuring the amount of air drawn into the foam generator is correct for the quantity of foam pre-mix supplied. The unique combination of orifice and sleeve ensure that optimum expansion is achieved and the foam supplied is fully utilised in the event of a fire.

Angus Fire **Top Pourer Sets** are supplied as standard with a unique yellow thermoplastic powder paint finish suitable for most operating conditions.

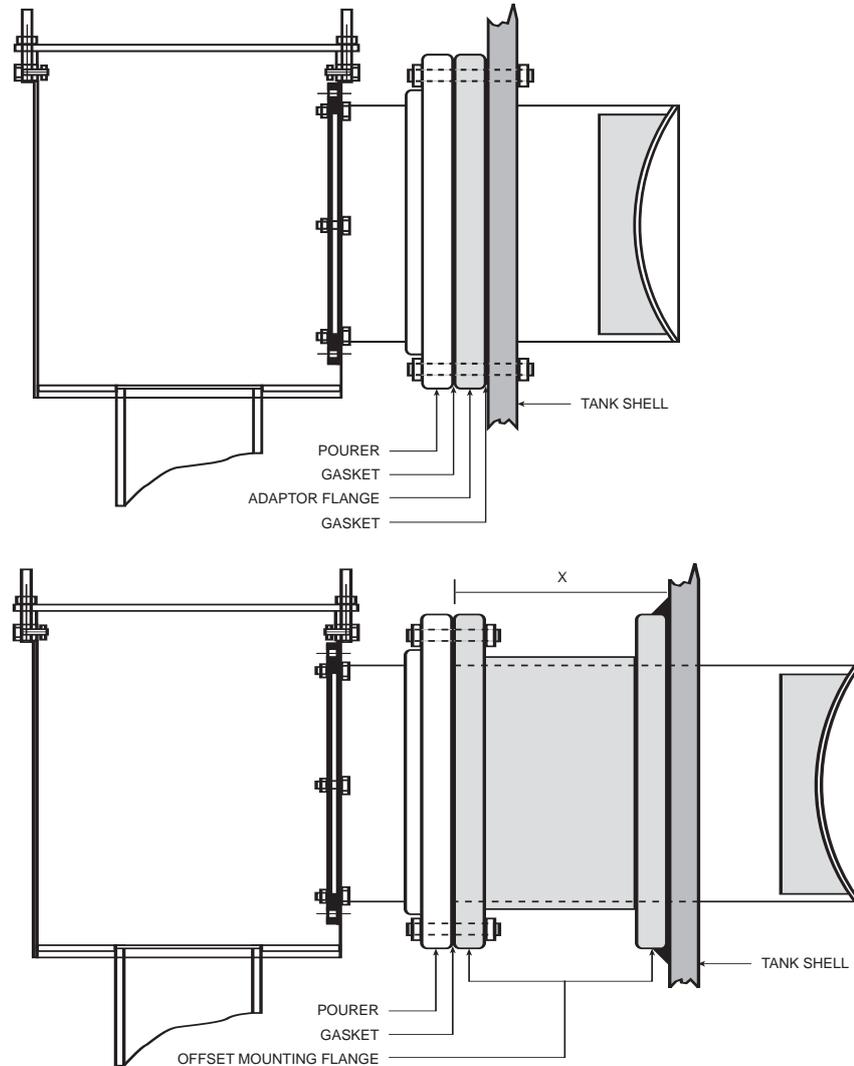
Standard bodies are fabricated from carbon steel and the orifice plate, internal parts and all fixings are manufactured from stainless steel A2 or SS316.

Foam Top Pourer Set Mk5

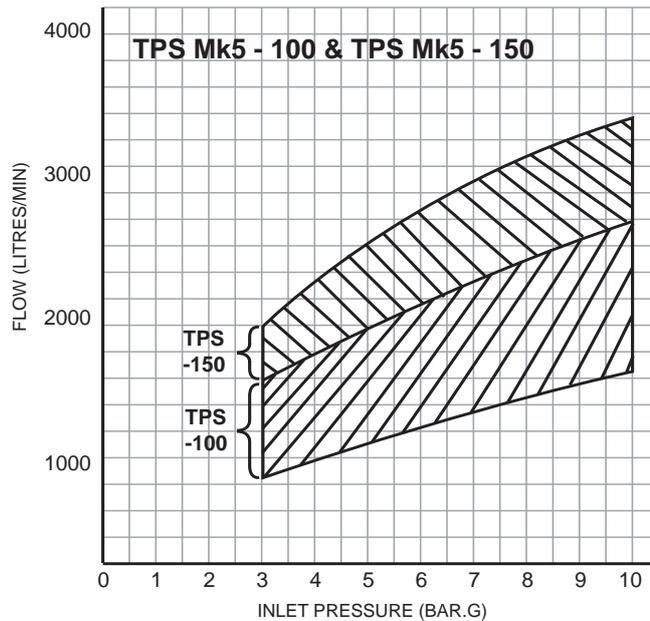
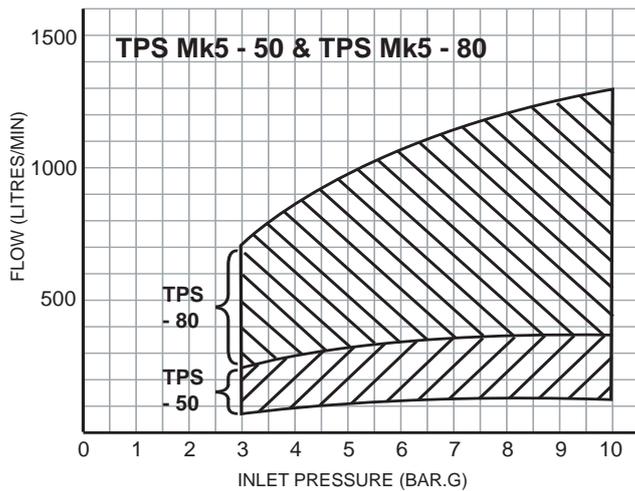
With a suitable foam concentrate, **Top Pourer Sets** can be used in applications involving either hydrocarbon or water miscible fuels. The properties of the finished foam depend on the concentrate and inlet pressures used.

Tankmaster foam is recommended for hydrocarbon fuels and Alco seal or Tridol ATF where polar solvent chemicals are stored.

The length of the foam dispersal tube projecting into the tank interior can be specified by the customer to accommodate site specific mounting arrangements. The standard or minimum length of the foam dispersal tube is designed for pourers mounted (usually using the Angus Fire mounting kit) directly on to the tank wall and positions the deflector plate at the optimum position inside the tank to spread the foam evenly around the interior. Where pourers have to be mounted on flanges away from the tank outer wall the dispersal tube length can be increased by the length of the offset "X" to allow the deflector plate to be in the optimum position inside the tank.

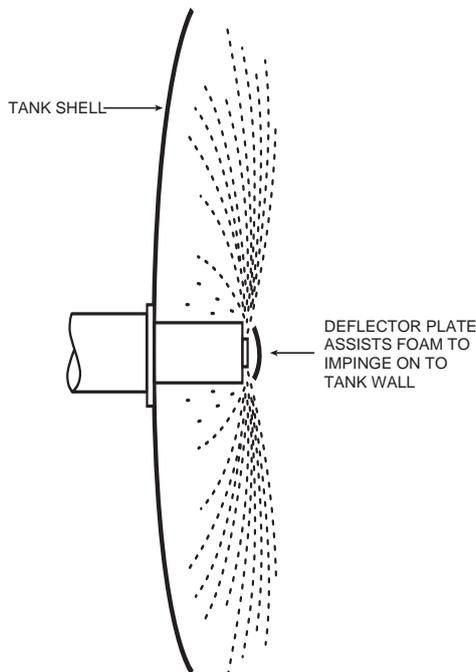


PERFORMANCE GRAPHS



FOAM TOP POURER SETS MK5 SPECIFICATION AND OPTIONS

Materials		Standard Specification		Options	
Body and foam generator tube	Carbon steel to EN10025			Stainless Steel SS316	
Air/liquid flow controller	Stainless Steel SS316				
High performance bursting disc	Impregnated Graphite				
Reusable bursting disc holder	Zinc plated steel			Stainless Steel SS316	
Bursting disc "O" ring seal	Nitrile rubber (for Hydrocarbons)			Viton (for Polar Solvents)	
Captive foam enhancer	Stainless Steel SS316				
Fixings (nuts, bolts, washers)	Stainless Steel 304, A2			Stainless Steel SS316	
Flange gaskets (3)	Neoprene rubber			PTFE	
External finish	Yellow thermoplastic powder coated - 250/450 microns			Customer specification	
Typical Performance					
Maximum internal tank pressure	0.17 bar (2.5 psi)			High pressure model for internally pressurised tanks (see Mk4 data sheet)	
Bursting disc pressure tolerance band	0.05 bar (0.75 psi)				
Minimum / Maximum pressure (at TPS inlet flange)	2.5 bar (37 psi) / 10 bar (150 psi)				
Construction			Inlet	Outlet	
Inlet/outlet flanges ANSI RF Class 150	TPS 50	2"	4"		
	TPS 80	3"	6"		
	TPS 100	4"	8"		
	TPS 150	6"	10"		
Minimum nozzle length	Model 50	143mm			To customer specification
	Model 80	148mm			To customer specification
	Model 100	167mm			To customer specification
	Model 150	167mm			To customer specification
Captive access panel	Retained by captive hinged eye bolts				
Foam enhancer location	Accessed via top access panel				
Integral foam delivery mechanism	Via deflector on to tank shell				



TPS Mk5 Features List

- Narrow pressure tolerance bursting disc for increased reliability
- Impregnated graphite bursting disc for leak free operation
- Reusable bursting disc holder
- Air/liquid flow controller for optimum foam quality
- Body lid retained by stainless steel swing bolts for increased safety
- Captive foam enhancer for ease of access and maximum foam quality
- Integral one piece construction, including deflector, for quick and reliable installation
- Heavy duty welded construction to minimise distortion during operation