

DATA SHEET



Ranger 3+ Monitor Trailer

Description

The Ranger 3+ Monitor Trailer is designed to meet modern industrial firefighting and protection needs especially for mitigating hazards involving flammable liquids in storage and liquid fires under pressure. The trailer is a mobile discharging device capable of delivering up to 4,000 gpm (15,100 Lpm) of water or foam solution. The optional HYDRO-CHEM capability can deliver dry chemicals to suppress 3-dimensional fires or pressurized gas fires.

The Ranger 3+ trailer features an A-frame tow bar construction with an integral waterway and an internal ballast which provides maximum mobility during deployment and increased stability and safety during operations.

Features

The Ranger 3+ Monitor Trailer has the following features:

Advanced Hybrid Nozzle Technology – The Ranger 3+ nozzle has the unique capability to perform as an automatic pressure or fixed-flow nozzle. During automatic operation, the nozzle will respond to varying flows to maintain a nearly constant tip pressure of 100 psi (6.9 bar), maximizing the reach distance for a given discharge flow. This feature enables the monitor to be extremely useful where the water supply is not established or a desirable flow rate is unavailable.

The nozzle functions as a conventional fixed flow nozzle when it reaches the fixed flow set point as the water supply increases. The fixed flow set point is pre-set with included fixed position plugs and is 1,000 gpm – 4,000 gpm (3,790 Lpm – 15,140 Lpm).

To combat specific hazards, there are two nozzle options to choose from as follows:

Nozzle Option 1: HYDRO-FOAM self-educing proportioning

- This option is ideal when foam concentrate is available nearby and requires no separate foam proportioning equipment.
- For easy and efficient foam application, the self-educing Ranger 3+ nozzle is capable of HYDRO-FOAM proportioning. This automatically proportions foam concentrate at a nearly constant percentage of 1% or 3% up to 3,000 gpm (11,360 Lpm) throughout the entire flow range.
- The Ranger 3+ nozzle has the additional capacity to flow up to 4,000 gpm (15,140 Lpm) with 1% proportioning.
- When the concentrate enters the nozzle, a flood-plate disperses foam concentrate around the inner periphery of the master stream for thorough mixing.



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Nozzle Option 2: HYDRO-FOAM jet pump with HYDRO-CHEM capabilities

- This option is ideal for proportioning foam concentrate remotely using jet pumps.
- When in jet pump mode, the Ranger 3+ nozzle is fed by remote jet pumps. These jet pumps can be located thousands of feet away from the Ranger 3+ option 2 nozzle.
- When the rich foam solution enters the nozzle, a flood-plate disperses it around the inner periphery of the master stream for thorough mixing.
- The unit can also be supplied with rich foam solution using easy and convenient Jet Pump Manifold Assembly (JPMA) units. JPMA's can simplify foam proportioning operations of the normal jet pump package by providing proportioning redundancy. For more information see the Common Accessories table.
- Ranger 3+ Monitor Trailers fitted with option 2 nozzles are also shipped with HYDRO-CHEM nozzle conversion tips.
- In HYDRO-CHEM mode, the Ranger 3+ nozzle has interchangeable tips that can be fitted to deliver a 25 lb/sec or 50 lb/sec (11.3 kg/sec or 22.7 kg/sec) dry chemical flow with its dry chemical accessories for 3-dimensional or pressure fires.
- The HYDRO-CHEM option enables dry chemical, such as WILLIAM FIRE & HAZARD CONTROL PKW, to be propelled inside the protective tunnel of the master stream. This allows the dry chemical to reach a greater distance than is possible with conventional equipment. Dry chemical manifolds are available for interconnecting with WILLIAMS Gorilla 500 LB PKW units or common wheeled dry chemical units to produce the required flow. For more information, see the Common Accessories table.

Highly Efficient Waterway – The Ranger 3+ Monitor Trailer has an integrated stainless steel inlet manifold with standard Storz couplings, available in several configurations. The waterway has a 6 in. (150 mm) full-flow stainless steel waterway for minimum friction loss and maximum efficiency and durability. The nozzle features hard coat anodized aluminum and stainless steel assembly fasteners.

Features (Continued)

Easy and Safe Operations – The Ranger 3+ nozzle provides easy pattern control with a full wrap-around handle attached to the outer sleeve. This ranges from full fog for personnel protection to straight stream for maximum reach and delivery. The Ranger 3+ monitor enables a full monitor articulation of 360° rotation and down to -15° and up to +75° vertical travel for the tiller bar models. The trailer is designed with a built-in ballast for stability using the weight of water during operation. This ballast is below an anti-skid grip deck for firm footing even when the surface is completely wet. With a flow rate of up to 4,000 gpm (15,140 Lpm), a firefighter operating the Ranger 3+ Monitor Trailer using the standard tiller-bar or gears will experience the freedom of smooth and rapid horizontal and vertical movement.

To provide enhanced safety and ease of use, an electric over hydraulic version is also available. The monitor and nozzle can be remotely controlled from up to 300 ft (92 m) away and with gear operation as backup. This remote-controlled unit is fully self-contained and requires no additional power supply as it features dual on-board deep cycle batteries and an on-board charger. Simply leave it plugged in at the firehouse to maintain battery charge and take advantage of hours of wireless remote operation when deployed.

For the European market, a version built and certified to European Road Legal standards is available as a dual axle trailer.

Ordering Information

Use the following information when ordering a Ranger 3+ Monitor Trailer:

Part Number	Nozzle Type	Control Type	5 in. Inlets	6 in. Inlets	Trailer Type
10260	Self-educting, selectable 1% or 3%	Tiller bar	4	–	Single axle
10261	Self-educting, selectable 1% or 3%	Tiller bar	–	3	Single axle
20468	Self-educting, selectable 1% or 3%	Tiller bar	–	4	Single axle
10266	HYDRO-CHEM and HYDRO-FOAM Jet pump feeding foam	Tiller bar	4	–	Single axle
10267	HYDRO-CHEM and HYDRO-FOAM Jet pump feeding foam	Tiller bar	–	3	Single axle
19825*	HYDRO-CHEM and HYDRO-FOAM Jet pump feeding foam	Tiller bar	–	4	Single axle
19859**	HYDRO-CHEM and HYDRO-FOAM Jet pump feeding foam	Tiller bar	–	4	European, dual axle
10262	Self-educting, selectable 1% or 3%	Gear Operated	4	–	Single axle
10263	Self-educting, selectable 1% or 3%	Gear Operated	–	3	Single axle
20469	Self-educting, selectable 1% or 3%	Gear Operated	–	4	Single axle
10268	HYDRO-CHEM and HYDRO-FOAM Jet pump feeding foam	Gear Operated	4	–	Single axle
10269	HYDRO-CHEM and HYDRO-FOAM Jet pump feeding foam	Gear Operated	–	3	Single axle
20471	HYDRO-CHEM and HYDRO-FOAM Jet pump feeding foam	Gear Operated	–	4	Single axle
10264	Self-educting, selectable 1% or 3%	Wireless Remote Control	4	–	Single axle
10265	Self-educting, selectable 1% or 3%	Wireless Remote Control	–	3	Single axle
20470	Self-educting, selectable 1% or 3%	Wireless Remote Control	–	4	Single axle
10270	HYDRO-CHEM and HYDRO-FOAM Jet pump feeding foam	Wireless Remote Control	–	3	Single axle
10271	HYDRO-CHEM and HYDRO-FOAM Jet pump feeding foam	Wireless Remote Control	–	3	Single axle
20472	HYDRO-CHEM and HYDRO-FOAM Jet pump feeding foam	Wireless Remote Control	–	4	Single axle

* Part number 19825 is typically built for stock, is more readily available than other models, and can be adapted if needed.

** Part number 19859 is European Road Legal.

- Notes:**
1. Self-educting is feasible up to 4,000 gpm (15,100 Lpm) at 1% and up to 3,000 gpm (11,300 Lpm) at 3%.
 2. HYDRO-CHEM and HYDRO-FOAM models include a foam proportioning system and can apply dry chemical.
 3. May also use jet pump manifold JPMA 2-180 proportioner for simplified foam proportioning operation.
 4. Custom trailers are available with additional lead time and cost.
 5. Chemical inlets: Self-educting for foam concentrate, 2.5 in. (M)NPT; HYDRO-FOAM with jet pump for rich foam solution, 3 in. (M)NPSH; HYDRO-CHEM for dry chemical, 3 in. (M)NPSH.

Ordering Information (Continued)

Use the following information when ordering accessories for the Ranger 3+ Monitor Trailer:

Common Accessories*	
Part Number	Description
10227	Kit, HYDRO-CHEM accessories, monitor trailer applications, up to 14 x 350 lb common wheeled dry chemical units
15461	Kit, HYDRO-CHEM accessories, monitor trailer applications, up to 7 x 350 lb common wheeled dry chemical units
10228	Kit, HYDRO-CHEM accessories, monitor trailer applications, up to 2 x 500 lb Gorilla dry chemical units
20121	Kit, adapter, Ranger 3+, BI JRC, converts Ranger 3+ jet pump accessories to British Instantaneous connection
20122	Kit, adapter, Ranger 3+, BSP JRC, Ranger 3+ jet pump accessories to BSP connection

* Common accessories are sold separately.

Jet Pump Manifold Assembly*

Use the following information when ordering a Jet Pump Manifold Assembly:

JPMA 2-180 Standard Units		
Part Number	Water Inlet Connections	Rick Solution Discharge Connections
10229	2.5 in. (F)NST	4 in. Storz
16214	2.5 in. (M)BI**	4 in. Storz
10230	2.5 in. (F)NST	5 in. Storz
16215	2.5 in. (M)BI	5 in. Storz
10231	2.5 in. (F)NST	6 in. Storz
16216	2.5 in. (M)BI	6 in. Storz
Adaptors		
Part Number	Inlet from JPMA 2-180	Outlet to 3 in. Ranger 3+ Foam Hose
15848	4 in. Storz	3 in. (M)NPSH
15849	5 in. Storz	3 in. (M)NPSH
20131	6 in. Storz	3 in. (M)NPSH

* As an alternative to jet pumps for foam proportioning, Jep Pump Manifold Assemblies may be used.

** British Instantaneous (BI).

- Notes:**
1. The JPMA 2-180 will proportion up to 180 gpm (680 Lpm) of foam concentrate.
 2. The JPMA 2-180 will facilitate 1% proportioning with up to 8,000 gpm (30,000 Lpm) and 3% with up to 6,000 gpm (22,700 Lpm) of water.
 3. NST and NH are compatible.
 4. Customized models are available but the lead time and cost may be affected.

Range and Elevation Performance

Use the following information for the range and elevation performance of the Ranger 3+ Monitor Trailer:

Nozzle Operating Pressure 100 psi (6.9 bar)									
Flow Rate gpm (Lpm)	Nozzle Angle 30°			Nozzle Angle 45°			Nozzle Angle 80°		
	Maximum Range ft (m)	Maximum Height ft (m)	Height Location ft (m)	Maximum Range ft (m)	Maximum Height ft (m)	Height Location ft (m)	Maximum Range ft (m)	Maximum Height ft (m)	Height Location ft (m)
1000 (3,785)	211 (64)	34 (10)	143 (44)	190 (58)	76 (23)	127 (39)	87 (27)	94 (29)	59 (18)
2000 (7,571)	286 (87)	45 (14)	191 (58)	211 (64)	95 (29)	141 (43)	112 (34)	130 (40)	75 (23)
3000 (11,356)	309 (94)	49 (15)	207 (63)	232 (71)	105 (32)	155 (47)	117 (36)	150 (46)	78 (24)
4000 (15,142)	333 (102)	53 (16)	223 (68)	276 (84)	124 (38)	185 (56)	121 (37)	162 (49)	81 (25)

- Notes:**
1. The data for straight stream in still air to 5 mph tail wind condition using water only.
 2. Foam decreases range by 5% – 20% in still air. Winds increase stream aspiration and reduce range further.

Note: The converted metric values in this document are provided for reference only and do not reflect an actual measurement.

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