

## Ranger 3 and 3+ Monitor Nozzles

### Features

**Advanced Hybrid Nozzle Technology** – The Ranger 3 nozzle has the unique capability to function as either an automatic pressure or fixed flow nozzle. In automatic operation, the nozzle will respond automatically to varying flow rates to maintain a tip pressure of approximately 100 psi (6.9 bar), thus maximizing effective reach for a given discharge flow. This feature is useful in situations where stable water supply has not been established or desirable flow rate is not available. Once the nozzle reaches the fixed flow set point, which is established by using the fixed position plugs, the nozzle functions as a conventional fixed flow nozzle as water supply increases. A full wrap-around handle attached to the nozzle outer sleeve provides easy pattern control from full fog to straight stream.

**HYDRO-FOAM\* Self-Educting Proportioning** – For easy and efficient foam application, the self-educting Ranger 3 nozzle is capable of HYDRO-FOAM proportioning which automatically proportions foam concentrate at a nearly constant percentage (1% or 3% up to 3,000 gpm or 11,360 Lpm) throughout the entire flow range.

The Ranger 3+ nozzle has additional capacity to flow up to 4,000 gpm (15,140 Lpm) but only with 1% proportioning at the higher flow rate. After the concentrate enters the nozzle, a flood-plate disperses the rich water/foam solution around the inner periphery of the master stream for thorough mixing.

**HYDRO-FOAM Jet Pump Proportioning Capability** – This version of the Ranger 3 nozzle is capable of proportioning foam remotely using jet pumps. In HYDRO-FOAM jet pump mode, the nozzle is fed by remote jet pumps that can be located at the foam source, thousands of feet away from the incident (distance varies).

**Hydro-Chem Capability** – This version of the Ranger 3 nozzle is capable of discharging 25 lb (11.3 kg) or 50 lb (22.7 kg) of dry chemical per second with its dry chemical accessories for combating 3-dimensional or pressure fires. The Hydro-Chem option allows dry chemical, such as WILLIAMS FIRE & HAZARD CONTROL (WFHC) PKW, to be discharged inside the protective tunnel of the master stream. This enables the dry chemical to reach a greater distance than is normally possible with conventional equipment.

Dry chemical manifolds are available for interconnecting with the WILLIAMS FIRE & HAZARD CONTROL GORILLA 500 lb PKW units or common wheeled dry chemical units to produce the required flow. The nozzle has interchangeable tips that can be fitted to provide 25 lb/sec or 50 lb/sec (11.3 kg/sec or 22.7 kg/sec) of dry chemical flow rate. HYDRO-FOAM proportioning capability is not included in this version of the nozzle. Foam proportioning should be provided by a separate foam system.

**Note:** Ranger 3/3+ nozzles can include both Hydro-Foam jet pump proportioning and Hydro-Chem capability on the same nozzle.



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### Ranger 3/3+ HYDRO-FOAM Nozzle Proportioning Options

Flow Rate		Self-Educting Proportioner		Remote Proportioning with Jet Pump		
		1%	3%	1%	3%	6%
1,000	3,790	Yes	Yes	Yes	Yes	Yes
2,000	7,570	Yes	Yes	Yes	Yes	No
3,000	11,360	Yes	Yes	Yes	Yes	No
4,000	15,140**	Yes	No	Yes	No	No

\*\*Available with Ranger 3+

### Description

The Ranger 3 and 3+ Nozzles were designed for today’s municipal and industrial firefighters by providing superior performance and protection in one device. These nozzles are unique large volume monitor nozzles designed to combat challenging fire hazards involving flammable liquids in storage and liquids under pressure.

The Ranger 3 Nozzle is capable of self-educting foam concentrate while maintaining a nearly constant pressure and a nearly constant foam percentage (1% or 3% selectable) regardless of the flow rate. Flow rates are available from 1,000 gpm to 3,000 gpm (3,790 Lpm to 11,360 Lpm).

The nozzle is capable of discharging water only, a water foam solution with HYDRO-FOAM technology using jet pumps or utilizing the automatic self-educting feature with constant/selectable metering, or dry chemical using the Hydro-Chem technology.

## Performance

Ranger 3+ Range and Elevation Performance at Nozzle Operating Pressure 100 psi (6.9 bar)																			
		Nozzle Angle 30°			Nozzle Angle 45°			Nozzle Angle 80°											
Flow Rate gpm	(Lpm)	Maximum Range		Maximum Height		Height Location		Maximum Range		Maximum Height		Height Location							
		ft	(m)	ft	(m)	ft	(m)	ft	(m)	ft	(m)	ft	(m)						
1,000	(3,785)	211	(64)	34	(10)	143	(44)	190	(58)	76	(23)	127	(39)	87	(27)	94	(29)	59	(18)
2,000	(7,571)	286	(87)	45	(14)	191	(58)	211	(64)	95	(29)	141	(43)	112	(34)	130	(40)	75	(23)
3,000	(11,356)	309	(94)	49	(15)	207	(63)	232	(71)	105	(32)	155	(47)	117	(36)	150	(46)	78	(24)
4,000	(15,142)	333	(102)	53	(16)	223	(68)	276	(84)	124	(38)	185	(56)	121	(37)	162	(49)	81	(25)

- Notes:**
1. The data are 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.

## Ordering Information

Ranger 3/3+ nozzles are available with a 6 in. flat-face ANSI flange inlet connection. Nominal weight is 85 lb (38.6 kg). Nominal length including standard flow stop is 24 in. (610 mm). Nominal width is 17.5 in. (445 mm).

Part No.	Model	Flow Range	Proportioning	Pattern Control
14484	HYDRO-FOAM Ranger 3	1,000 gpm to 3,000 gpm (3,790 Lpm to 11,360 Lpm)	Self-educing	Manual
14150	HYDRO-FOAM Ranger 3	1,000 gpm to 3,000 gpm (3,790 Lpm to 11,360 Lpm)	Jet Pump <sup>1</sup>	Manual
14701	HYDRO-FOAM Ranger 3+	1,000 gpm to 4,000 gpm (3,790 Lpm to 15,140 Lpm)	Self-educing	Manual
14485	HYDRO-FOAM Ranger 3+	1,000 gpm to 3,000 gpm (3,790 Lpm to 11,360 Lpm)	Jet Pump <sup>1</sup>	Manual
14487	HYDRO-CHEM Ranger 3	1,000 gpm to 3,000 gpm (3,790 Lpm to 11,360 Lpm)	None	Manual
10329	HYDRO-CHEM Ranger 3+	1,000 gpm to 4,000 gpm (3,790 Lpm to 15,140 Lpm)	None	Manual

**Note:** 12VDC, 24VDC, and hydraulic pattern control available, consult WFHC engineering.

Chemical inlet on nozzle:  
 HYDRO-FOAM self-educing foam concentrate port: 2 1/2 in. (M)NPT  
 HYDRO-FOAM jet pump rich foam solution port: 3 in. (M)NPSH  
 HYDRO-CHEM port: 3 in. (M)NPSH

<sup>1</sup>Jet Pump is not included. Order separately.

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

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