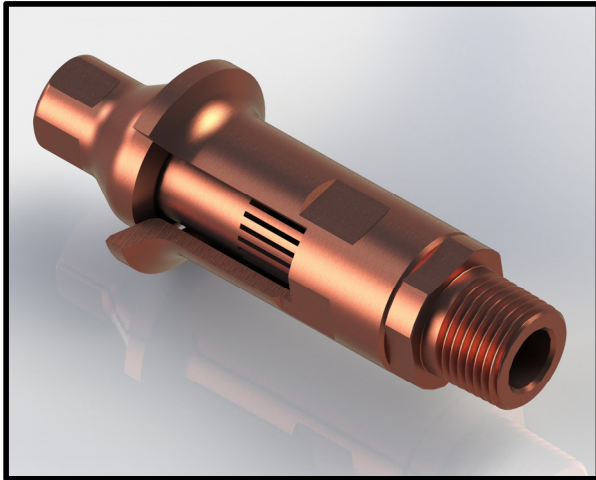
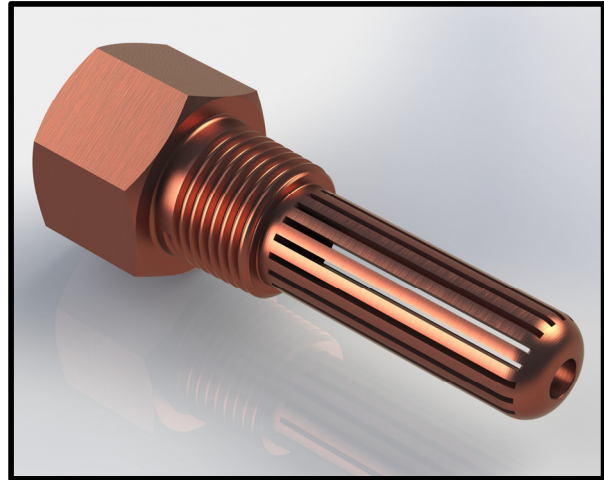


The RigDeluge® Award Winning Patented Free Flow Nozzles™ have been developed through 20 years real time experience in the rig cooling / heat suppression industry. They are designed to attenuate thermal radiation to within the safety parameters set in API 521 and align with firefighting codes API 14G and good engineering practices ASME B31.1: 2010. They attenuate thermal radiation to a greater level than 90% transmissivity (0.1t) and operate without blocking where debris and delivery line contaminants are present allowing for a consistent barrier to be implemented against the adverse effects of thermal radiation.



FFN™ Designed to operate with debris present



FF™ Adaptor to be used where debris is excessive

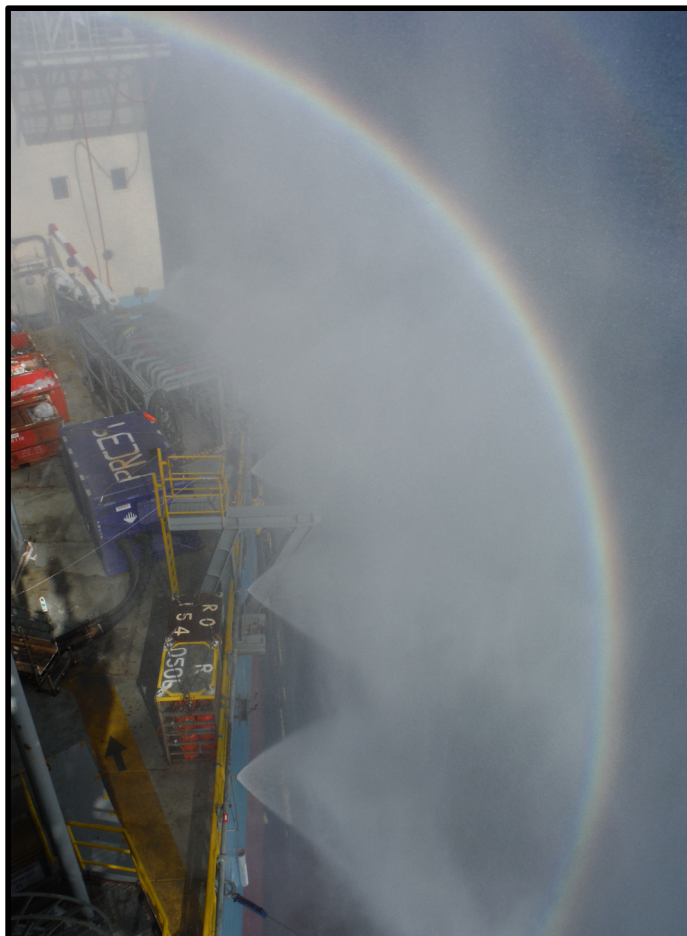
Design Details:

Certified By Bureau VERITAS:	0.5" Cert No 12ABD61665 Rev. B
Design Working Pressure:	1 - 16 Bar Max (10-16 Bar for Heat Suppression Activities)
Design Test Pressure:	30 Bar
Service:	Sea Water
Design Reference:	API 521 / ASME B31.3 2012 / API 14G 2007
Materials:	Brass (CW602N) Yield ≥ 120 Mpa; Tensile ≥ 280 Mpa Gunmetal (LG2) Yield ≥ 100 Mpa; Tensile ≥ 270 Mpa Stainless Steel (GR. 304) Yield ≥ 210 Mpa; Tensile ≥ 520 Mpa
Thermal Attenuation:	90% +
Profile Angle:	30 Degree
Profile Diameter:	5.5 Meters
K-Factor:	60 @ 16 Bar (240Lpm)
Weight:	0.36Kg



REDUCE HAZARDS | REDUCE RISKS | REDUCE ENVIRONMENTAL IMPACT | REDUCE COSTS

PROVEN TECHNOLOGY



Safe Environment for personnel



Flame Temp Greater Than 350°C @ 52ft



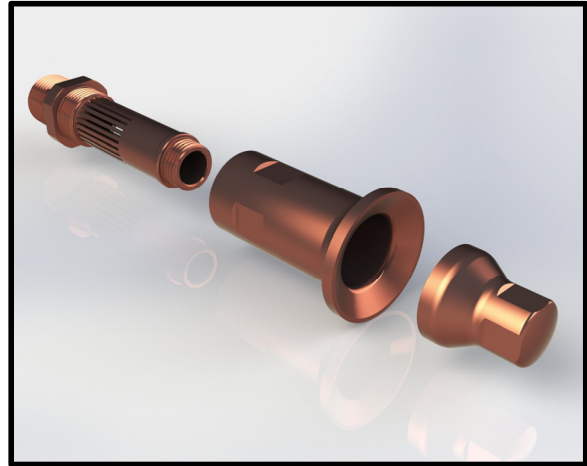
Air Temp Less Than 12.1°C @ 52ft

A safe working environment and escape route is created for personnel while ensuring the integrity of the asset and the environment.

No longer do designers of heat suppression systems have to use nozzles designed for low pressure deluge systems they can now use nozzles proven and independently witness tested to be the most effective and efficient heat suppression nozzle in the industry.



REDUCE HAZARDS | REDUCE RISKS | REDUCE ENVIRONMENTAL IMPACT | REDUCE COSTS



INDUSTRY BENEFITS:

- Operates with debris in delivery line fluid (Salt Water Bi-Products)
- Proven Attenuation of greater than 90% thermal attenuation
- Efficient water utilisation
- Water profile forces water away from structures reducing salt water contamination
- Water profile forces water away from personnel allowing for safer passage and work activities
- Operates efficiently at 10 Bar Pressure
- Reduced Non Productive Time
- Debris management built in
- Independently Certified
- Complies to API 521 Safety Parameters
- Complies with API 14G
- Designed to ASME B31.3
- Sea Water Compliant

20 Years' experience in the field of rig cooling and heat suppression has allowed all lessons learnt and problems encountered with these systems and operations be considered while designing the Free Flow Nozzles™. Risks encountered through this period have been mitigated and reduced where efficiency and performance cannot be matched.



REDUCE HAZARDS | REDUCE RISKS | REDUCE ENVIRONMENTAL IMPACT | REDUCE COSTS