High performance 3DPro®
DryTube for Additive Manufacturing

Data sheet

Dry gas tubing pipe for preventing the argon / nitrogen gases from moisture contamination.

Defining the problem

In current high-performance Additive Manufacturing (AM) applications, gas borne contamination can lead to problems with:

- Increasing of spatter and fumes
- Purity of the printed structure itself
- Printing tool orifice clogging
- Other issues with the printed products and the printing equipment

Gases such as argon, nitrogen, and various mixtures that are used for AM processes are generally available in sufficiently high purity grades. However, undesirable contamination by oxygen and/or moisture can occur through the gas supplying flex tube itself from environmental atmosphere even if the gases from cylinders or containers are sufficiently taken care of.

Such system contamination events can lead to variable gas purity, which in turn leads to variable system performance and possible production defects.

Our solution

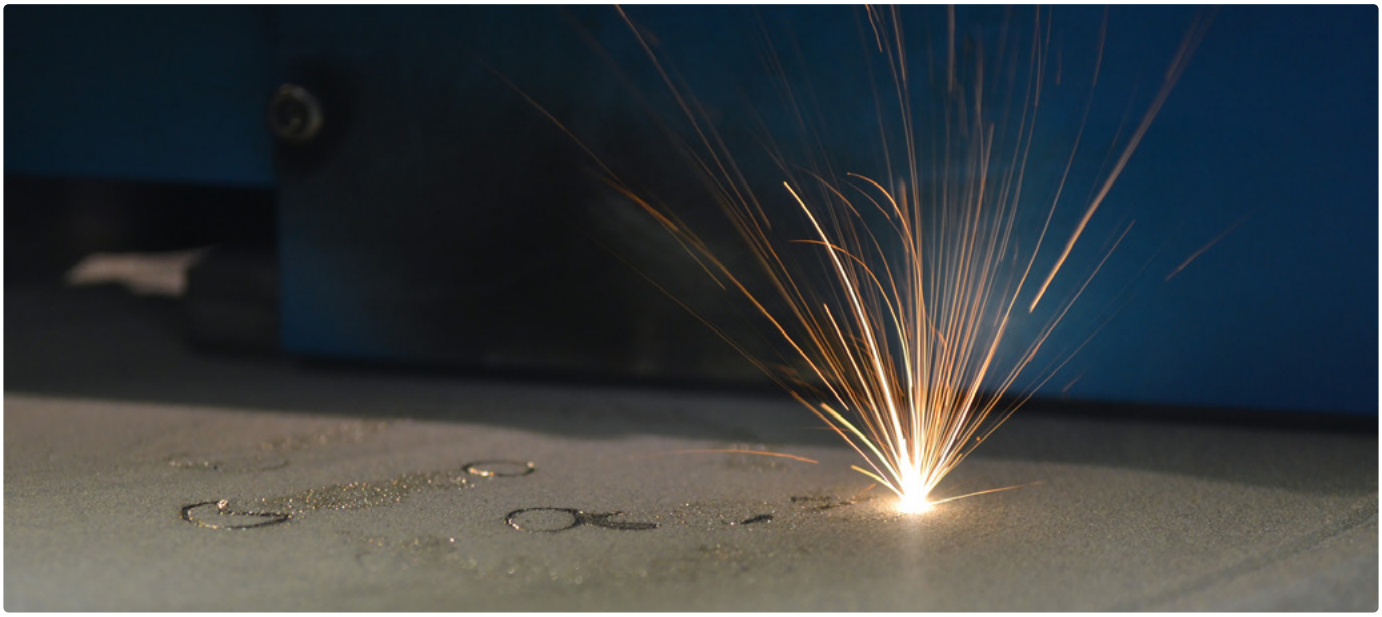
At the point of use gas, using 3DPro® **DryTube** prevents the carried gases from being contaminated through the conventional resin flex tube.

Carried inert gases by 3DPro® **DryTube** remains the high purities by the inlet of any type of AM systems, and, in turn, providing consistently high gas purity output at the printing tool.

NSC 3DPro®

3DPro® **DryTube** is part of the NSC 3DPro® lineups, which are focusing on improvement of metal AM process by optimising the atmospheric gases including argon and nitrogen.

Gas solutions with NSC 3DPro® lineups are based on years of experience on welding gases. As well as the gas supply in the fields of difficult applications in the semiconductor, pharmaceutical, aerospace, welding, and manufacturing industries.



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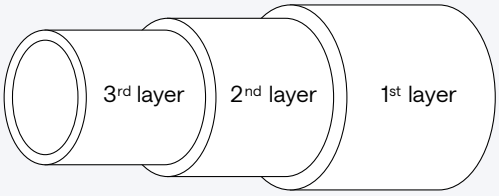
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3DPro® DryTube Technology

3DPro® **DryTube** consists of three layers which protect any undesirable impurities from ambient air and those layers adds light-weight, durability, toughness and heat-resisting, compared with the conventional regin tube, 3DPro® **DryTube**. This also continuous operation application such as AM processes.



1st layer will protect from ambient moisture.
2nd and 3rd layer will protect from carbon dioxide, other impurities, degradation.



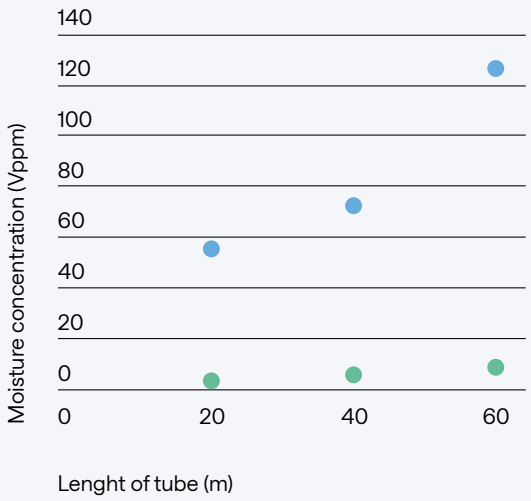
3DPro® DryTube

Specifications

Applicable gases	Ar, Ar / H_2 mixture, Co_2m O_2, He
Inlet pressure	Less than 1.0 MPa
Diameter	OD 11mm, ID 6mm
Allowable bending radius	42mm
Temperature	0~50 (°C)

Typical performance

Impurities from the environmental air are proportional to the tube's length because conventional regin tubes have a porous structure and can easily permeate the impurities. 3DPro® **DryTube** has the properties of flexibility, high-protection of permeations.



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