Camlock Fitting

Producing replacement parts on-site to keep operations moving.

Value Summary

Customized fluid fittings are often needed for special purpose equipment such as marine firefighting vessels, undersea operations of ROV and submarines, and for use on ocean-based drilling rings. SPEE3D's Cold Spray additive manufacturing can produce custom designed Nickel Aluminum Bronze fluid fittings on-demand in as little as 24 hours.

Production Method	Production Time
CNC Machining (from billet)	2 weeks
SPEE3D CSAM	19.5 hours

Background

In the diverse world of fluid handling, custom fittings must often be designed and produced to support interconnections between reservoirs, pumps, hoses and plumbing. These fittings must be designed to support the constraints of unique devices or systems, as well as the operating conditions, pressure, flow requirements, and potential corrosiveness of the environment and fluid-bearing handles.

The Challenge

The production of customized fittings through traditional means usually requires large raw stock billet, which depending on the desired material, may be difficult to procure and come with long lead time. Additionally, it requires a long time to machine since significant portions of the of the material are removed from the billet as the fitting is machined into form.

The Solution

SPEE3D's CSAM (Cold Spray Additive Manufacturing) technology was used to 3D print Nickel Aluminum Bronze camlock fittings from design to deployment in as little as 1 day.

The Value

Custom components produced in low-volume are common for special purpose vehicles, equipment, and infrastructure. These can frequently be found on anything from a marine firefighting vessel, a crude oil transfer station on an ocean-based oil rig, or an underwater ROV. Often the cost and time it takes to produce these custom low volume items is unacceptable. With CSAM technology customers can reduce the wait time for critical custom fluid handling components from weeks to less than a day.

Design to deployment in less than a day

Print: 0.5 hours

Nickel Aluminum Bronze,
1.7kgs of material

Cook: 17 hours

Heat treated in a standard
air furnace

Cut: 2 hours

Critical surfaces machined
on CNC

About The Equipment

Camlock fittings are commonly made from Aluminum, Bronze and stainless steel for their structural rigidity, machinability, and corrosion resistant properties. The camlock fitting highlighted here is representative of an item whose level of customization means it cannot be purchased off a shelf or from a catalogue but can be produced in about 24 hours with under 2 kg of Nickle Aluminum Bronze powder.

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