Fiber polishing machine?

Originated by: Brennan Phillips on Wed, 11 Jan 2012

From: Brennan Phillips (IFE) on Wed, 11 Jan 2012

Hello RVTEC,

Our ROV team is looking towards purchasing a fiber polishing machine for single-mode fibers. We don't do anything in bulk and having something portable would be a major plus.

Does anyone own a machine or know of a good model/line to recommend? Experiences to share?

Thanks,
Brennan

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Brennan Phillips
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Reply From: Pete Zerr (Schmidt Ocean Inst) on Wed, 11 Jan 2012

Brennan,

Try contacting Ricard @ http://www.richardloschinc.com/about.htm

Regards,
Pete

Reply From: Steve Foley (UCSD) on Wed, 11 Jan 2012

I asked around the seismology field teams here that use a lot of fiber strands. This is one of the comments I got back, FWIW:

We (and many others) hand polish connectors rather than use a polishing machine (we used to do that many years ago with one made by Buhler). The time sink in making four or five connectors is not the polishing, it's the thermal epoxy. You have to cook the connectors in a little oven for about an hour. Hand polishing takes about five minutes per connector. The ROV group we work with in the North Sea has changed to a new system that doesn't use any polishing. It uses connectors that have a pre-polished
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end; a cleaved fiber is put into the ferrule and then crimped with a handheld electrically controlled crimp tool. Their ROV is 3000 m rated and they've switched to this method because it's so fast and easy.

Reply From: "Phillips, Brennan" (IFE) on Wed, 11 Jan 2012

Thanks Steve, appreciate the advice.

I'll chime back into this thread; we've used hot-melt connectors for years because of the time that thermal epoxy takes to cure. They're great and an industry standard.

As for hand polishing, that's what we do now, but after investing in a good fiberscope and becoming vigilant about cleaning the ends we've discovered that even the best hand-polish has scratches and doesn't hold a candle to a factory machine polish.

I've heard about the pre-polished connectors; I wonder how they perform loss-wise. That, along with loss due to scratches & defects from hand-polishing, really shows itself when you get into high-bandwidth applications like HD and Gig-E transmission. I'll be giving a presentation at Underwater Intervention in a couple weeks about this topic; systems like ours that have 50+ fiber connections force you to get into the optimization business, and we're just getting started.

-Brennan

Reply From: Steven Hartz (UAF) on Wed, 11 Jan 2012

I used the pre-polished terminations for our Triaxus. UAF operated the Triaxus for a short period. OJT for pre polished termination was a 15 minute video at 2:00 am. I even got some sleep before the 8:00 amdeparture. I also used pre-polished terminations for a towed camera sled. They worked well for our application.

Steven Hartz