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C1Or2B-06: Quick-replacement high-temperature superconducting current leads for use in a research cryostat

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We report the use of a series of high-temperature superconducting leads in a cryostat that require no soldering to replace in the event of a failed lead. The temperature range spanned by the leads is 50 to 3 Kelvin and they typically carry currents up to 4 amperes although they have a much higher capacity in this temperature range. The leads are integrated into the cryostat by clamping both ends to gold-plated copper pads. Support of the leads over the 25 cm length is provided by a simple G10 strong back. Details of the clamping interface, measurements of joint resistances, and other interesting observations will be discussed.

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