

10 Settings and Checks & Tests

As all spare/replacement modules have been pretested and preadjusted at the factory, the correct basic setting is guaranteed when replacing an electronics module, so no special adjustment is necessary. Nonetheless, certain safety checks and tests are mandatory after any repair as proof that the unit has been correctly reassembled.

10.1 Check and Adjustment of Settings

Following replacement of the main board, the power management board or the controller board, the basic setting of the three output regulators – for voltage, power limitation, and arc control – must be checked for correctness. If the optical transmission path from the monopolar board to the power management board has been interrupted (i.e. optical fiber disconnected), the basic setting of the signal transfer must be checked.

This work requires the following tools and aids:

- Portable HF power and current meter. This tool should allow setting at least the following resistances: 50 Ω , 75 Ω , 100 Ω , 200 Ω , 400 Ω , and 500 Ω .
- Monopolar test cables (cable with shorted jack plug for connecting the NE socket to the analyzer, plus laboratory cables with 4-mm plugs for connecting the active electrode to the analyzer).
- Voltmeter with a measuring range of up to 200 V.
- Screwdriver for making adjustments.

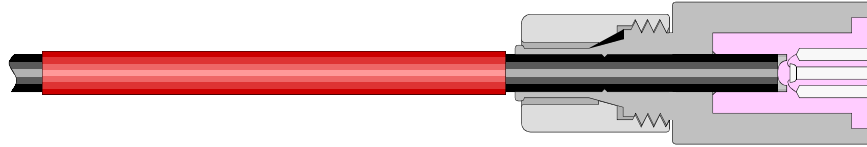
The values measured initially (reference values) as indicated in the Works Test Report should be available for comparison.

10.2 Checking the Proper Mounting of the Optical Link

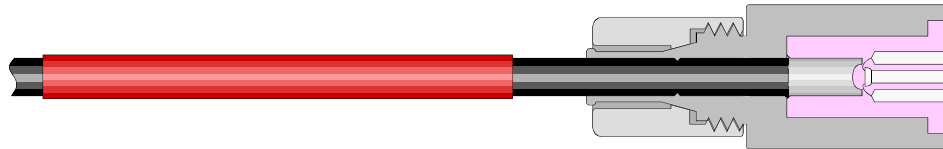
From SW release 3.395, the CE 200 features new power-on selftest routines and a new service menu item that, among other functions, meets the requirement to check the integrity of the optical link between monopolar board and power manager board and enables the realignment if required. This should be checked whenever the optical link was separated and reconnected again.

On power-on, there is a selftest that checks the ability of the monopolar regulators to drop the power controller's output to zero via the optical link to make sure that the full signal range of this link can be controlled. If this test fails, an error message "Error 390: Fibre link of mono-HW disconnected or out of calibration" will appear and the unit freezes in the startup state.

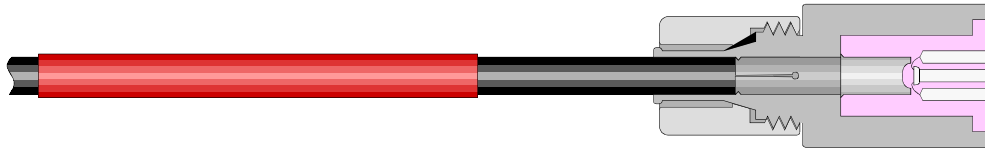
For realignment of the link, the unit must be disconnected from mains and the cover of the unit must be removed. First of all, the correct placing of the plastic fiber into the transmitter and receiver elements is to be checked by loosening the screw and pressing the fiber into the orifice, then retightening the screw. For this purpose, a special wrench is available, but fingerforce would do. The inner surface of the element's receptacles are not smooth in whole length but show two ledges where the fiber on insertion could get stuck so that one may assume that the bottom of the receptacle is already reached. Therefore the fibers are now equipped with sleeves that make that kind of misplacement visible.



Correct insertion of fiber: sleeve ends at the bottom of the transmitter/receiver element



Incomplete insertion: end of fiber jams at the entry of the inner transmitter/receiver element

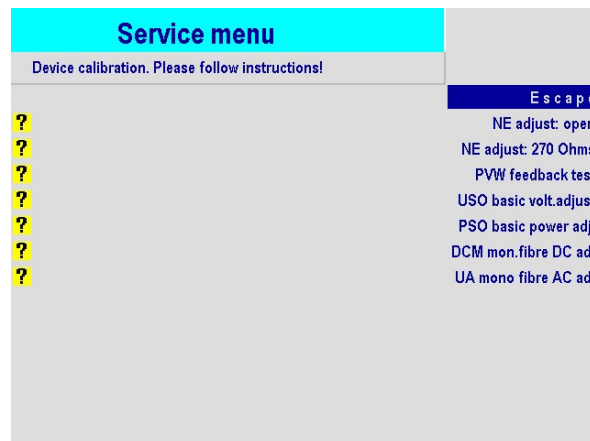


Incomplete insertion: end of fiber jams between the clamping edges

When the proper mounting is checked, then reconnect the unit to mains and switch power on.

If the “Error 390” message appears, then press the MENU button what will show the text editor. Inputting “2020” will enter the service menu. If the error message does not appear, then enter the service menu via menu items “SETUP” and “SERVICE” and input of “2020” as explained in 4.1.

The service menu features a new item “Device Calibration”. Selecting this item enters a menu of seven tests. Those which matter the optical link are the last ones. Any of them can be performed alone while skipping the others. All of them are described in 10.3.1.



DCM mon fibre DC adj. This test checks the proper function and enables setting of the optical link's crossover point. It requires activation of HF power **with the HF output M1 left open** by footswitch, fingerswitch operation does not work. The NE alarm need not be disabled. Optionally, a voltmeter may