Status of Module Assembly at MPI: 13.5.99.

Module Assembly

- CR19: finished, ready for shipment to CERN
- CR21: stacking+cabling finished, now long term HV test running
- shipment of CR19 and CR21 to CERN: 31.5.99.
- CR18: PAD boards arrived, pins have been soldered
  few EST boards are missing (LARG week!)
  $\Rightarrow$ Ready for shipment: not before 7.6.
- hexcel mats: 12 Rear and 8 Front in house (3 used)
- CR25 and CR26: Start assembly 5.7.
  Cu from Molniya ! (31.5.99.)
  PAD (CR26) from Mainz (test+pins)
  EST from LPI !
- CF19 and CF20: Cu from Dubna ! (18.6.99.)
  PAD from Mainz (test+pins) (1.8.99./15.8.99.)
  EST from LPI ! (1.7.99.)

Experience from Module Assembly

Cu plates

- Tolerances OK
- Not free of burrs $\Rightarrow$ deburring required from plate supplier
- surface of drill holes $\Rightarrow$ polishing required from plate supplier

- packing: so far paper $\Rightarrow$ plastic cover required from plate supplier
- transportation box: $\Rightarrow$ not clean
  $\Rightarrow$ bottom support beam 10 cm instead of 5 cm
  (fork lift handling!!!)

Stainless Steel Parts

- tierods:
  $\Rightarrow$ threads too short
  $\Rightarrow$ surface: polishing required from plate supplier
  (were milled from parts with larger diameter)
  buy right dimension from industry!
  $\Rightarrow$ deburring (at threads) required from plate supplier

- slit-washer: $\Rightarrow$ tolerances of slit off by 0.2-0.4 mm
- connecting bar: $\Rightarrow$ deburring of drill holes required

Boards

- EST boards:
  first load (fully tested)
  $\Rightarrow$ 2 rejected due to large current
  second load (not tested)
  $\Rightarrow$ 3 rejected due to large current

- PAD boards: so far OK

- hexcel mats: rejection rate small, but:
  one problem in long term HV test:
  $\Rightarrow$ 1 EST and 1 PAD board destroyed
  hexcel in first test OK but after “discharge” !!
  failed (presumably) in long term test!
  $\Rightarrow$ In future any hexcel with discharge will be rejected!

General Warning
Brass Nuts: danger of burrs when tightening!

Stacking Tolerances

Excellent!

- stack height (7 positions): within 0.2-0.5 mm

- alignment at 2nd connecting bar (not aligned from stacking procedure): within 0.1 mm
  $\Rightarrow$ no shimming required for wheel assembly