Laser adjustment of MegaBace
Adjustment of mirrors: Z is adjusted with the target on the current mirror
XY is adjusted with the target far from the current mirror The

target must be turned so that the small hole under the "window" faces the beam

- Fire all covers, electrophoresis compartment and black partitions at the optics.

1. Turning mirror

- 1st mirror is set without beam combiner and adjust the mirror in

- Set beam combiner back in place and adjust BC in with the green laser
so it hits exactly the same place on both 2nd and 3rd mirror as the blue does .
The Green laser can be adjusted using the two push-pull screws that are located right in front of the laser

- mark how the cap. that. B / S sits with a pencil and removes it.

2. Turning mirror

- Adjust the 2nd mirror according to targets.

- Set cap. that. B / S back in place just roughly adjust it so it hits the diode
roughly. Use the pencil lines

3. Turning mirror

- Adjust 3 mirrors to targets without having the filters (1. B / S) down

. Cap. That. B / S

- When 3 mirrors are ok with both blue and green, put the filters down in the light path and then put the mirror tool that sits with the high target. This
mirror tool must be placed just before the large aluminum roof. The tool is set so
that there is only one beam of 3 and 1 mirror (shoots the beam back the exact same
way)

- Take a business card for help and adjust the cap it B / S so that the most powerful beam
hits the diode.
1 B / S

- When done remove the large angle plate with the PMTs remove 2 B / S (the one at the
PMTs. Also remove the inner ring of 1 arcromat and remove the whole 2 arcromat.

- Adjust 1 B / S to the farthest targets (top at PMT). 1 B / S is adjusted in the same
way as the mirrors with XY Z. It is the clearest beam that should hit. Do
this procedure with both blue and green laser.

Stage

- Loosen the entire stay (3 large bolts) remove ref plate and the angle with the object on so that the candlestick is more or less bare.Remove ref plate motor.Mount the small targets
and X adjust by moving the whole candlestick.-

Y adjust the small targets using push-pull screws on the freely hanging aluminum block on the candlestick (rear push-pull to rear target, etc.)

- remove targets, set ref plate motor, angle object back

- Take an ordinary mirror and hold the object angle (it sits against 3 mirrors) roughly adjust the angle so that the beam hits the original beam on the mirror then tighten the
angle

- mount mirror tool instead of object and adjust so that the beam ra mmer the
original beam (use targets if necessary)

- tighten support arm

- tighten stage motor

- loosen support arm and tighten it again afterwards

- position the screw at the end of the arm at the front wheel of the belt to make sure that the belt is tight enough
Arcromats

(quimin method)

- 1. B / S must be down

put 2 arcromat in place, take an ordinary mirror and put it in front of 2 arcromat and the beam must hit the original on the filter.

- Put inner ring on 1 arcromat and adjust 1 arcromat with handle according to targets (close
and far from) both blue and green

(Nathan method)

2. arcromat

- Red mirror holder with red fluorescent mirror in the cap holder.

- 1. B / S with barrier filter in place

- 1. Arcromat inner lens out

- remove the "locking ring" on the front of 2 arcromat
use the focus lever to get the clearest beam.

- XY adjust 2 archromat (the lens is liquid in the holder) to get a clear centered and round beam.

- put the "locking ring" back in place.

1. arcromat

- Put the lens back on 1 arcromat - do not touch the large outer ring

- Use the focus lever again to bring out the clearest image

- Use the XY handles on 1 arcromat to for a clear centered dot in the middle of the round "blob" light

Concentric rings

- Remove mirror tool and mount object instead and adjust the concentric rings both blue and green.

Reference plate

- Remove the object again.

- Fit the ref plate again

Mount the red holder with mirror on the cap holder check that the beam hits the target (over at PMT) both when the stay is forward and backward

- Remove ref plate again

- Mount the object

- Put the ref plate back in place

- Set the machine to scan (STAGE PCB DIP 8 OFF short circuit test jumper)

- Take a business card in front of the target, adjust the screw inside the large brass metric and adjust the focus button so that there is an outer ring on the beam and it should be stable and not moving.

PMT and 2. B / S

- Fit 2 B / S (the one at the PMTs)

Adjust 2 B / S so that the beam hits the target in the middle, move the target to both places and adjust both filters.

- Mount the PMT angle back in place with the PMTs on.

- Put tape on the PMT filters and draw on the tape where the hole is. Make sure the beam hits the holes.

- All DIP 8 down on OFF and let it all run for 5 min.

BC Beam Combiner sits and collects green and blue beam.
Cap det B / S Cap detector beam splitter is located at the diode which detects caps.
1. B / S primary beam splitter sits just after 3 mirrors.
2. B / S secondary beam splitter is located at the PMTs.
1 arcromat is the one with inner and outer ring and the black handles.
2 arcromat is the second the rear.
Ref plate is the thing on which caps are mounted removed using 4 screws please pay attention to the belt
The object angle The angle piece of the object is screwed on
DIP 8 down runs all the time
Up runs only once,

PCB Checks
BEAM 1 Beam Splitter

shutter
EPHV High Voltage for electrophoresis
SCAN Scanhead,

2 Beam Splitter

Focus Stage
FLTR PMT filters
INTC Blue laser

Displays

Interlocks

Pneumatic
PDIO Photodiode (converts digital signal to PC)
ADAQ converts data from PMT to PC
TMPR temperature control
ECHN Controls echlon network
CMON Current Monitor

Focusing caps

ICS oe
- DAC: 750V on the PMTs

Raw Diode 2 + 4
-DATA 1000 scans

Raw data

Give the file a name such as 'Jessdato'

START

- Focus Stage Home

500 cycles

3 steps

while scanning (stage back)
- START SCAN
RAW to GEL |
- convert data Jessdato.raw '->' Jessdato.gel '
ImageQuant
-Sep 4 or Sep 1 Find pixel position for top position 'X'
ICS a
- Focus Stage Home

moveback Idle 3 * ° X '
- DAC CD RAW DIODE channel] +3
- START SCAN