

Collider Run II Shot Setup Documentation

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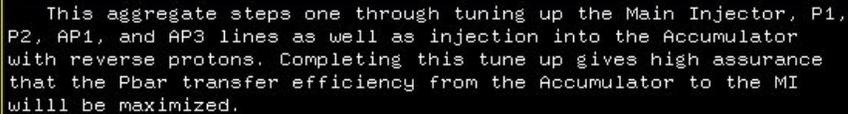
Sequencer: Pbar

Collider Aggregate: Run II Start Reverse Protons

Previous Aggregate: [Run II Start Shot Setup](#)

Purpose of this Aggregate:

::: INSTRUCT 210 .



This aggregate steps one through tuning up the Main Injector, P1, P2, AP1, and AP3 lines as well as injection into the Accumulator with reverse protons. Completing this tune up gives high assurance that the Pbar transfer efficiency from the Accumulator to the MI will be maximized.

Interrupt anywhere in this box to continue.

::: SHOT_LOG COMMENT .

Enters the following comment into the Pbar portion of the shot scapbook at <http://www-bd.fnal.gov/cgi-mach/machlog.pl?nb=scrap03>.

Time--_Beginning Reverse Proton Tune Up in Pbar and MI. The Stack size is ###.#####. - Sequencer

::: INSTRUCT 213 D

Proton Torpedo SA instruct is bypassed.

::: START_PGM P194 D

Starts Proton Torpedo SA (Budlong). Command is bypassed.

::: CTLIT_DEVICE D:BSC925 OFF .

Close AP3 Beam Stop

::: ABORT_MASK AP1_120_PS ENABLED .

::: ABORT_MASK AP1_8_PS DISABLED .

::: ABORT_MASK PBAR_SOFT ENABLED .

::: EVENT 88 TRIGGER .

::: BOOST_INTENSITY EVT16 2 .

Booster event \$16 set to 2 turns 35 bunches.

::: SETIT_DEVICE V:PSHOOT =4 .

V:PSHOOT state of 4 means "Ready for Main Injector Tune up."

::: BEAM_SWITCH PBAR_SOURCE ON .

Turns the Pbar beam switch on

::: ACKNOWLEDGE .



Beam cooled into Core?

OK

Cancel

::: CTLIT_DEVICE A:SPPS01 OFF .

Turn off accumulator stacktail pin switch.

::: SET_SEQ FILE 28 .

File #28 turns off stacktail high level amps

A:SPAH11 TURN DEVICE OFF ok

A:SPAH12 TURN DEVICE OFF ok

A:SPAHD1 TURN DEVICE OFF ok

A:SPAHD2 TURN DEVICE OFF ok

A:SPAHD3 TURN DEVICE OFF ok

A:SPAHD4 TURN DEVICE OFF ok

TV Window 'Run II Start Shot set up' from CNS52 - PA Slot

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::: SET_SEQ FILE 94 .
File #94 enables core power leveling. Power Leveling (no relation to Pbar
Expert Tony Leveling) automatically adjusts the cooling attenuation to obtain a
target power setting. After power leveling has been enabled, attempts to
adjust the cooling power by moving the pin attenuator from a parameter page or
P34 will fail, because the power leveling will readjust the pin attenuators to
reach its target power. The power levels are determined by the diode settings
for each cooling band. The more negative the diode voltage, the higher the
power. The diode settings are not obvious to the casual observer and what diode
settings correspond to what power settings are determined by Pbar experts. File
#94 first sets the diode values for the three horizontal and vertical cooling
bands.
A:CH1D1 SET DEVICE -2.1 ok
A:CH2D1 SET DEVICE -2.5 ok
A:CH3D1 SET DEVICE -2.4 ok
A:CV1D1 SET DEVICE -2.4 ok
A:CV2D1 SET DEVICE -3.0 ok
A:CV3D1 SET DEVICE -2.7 ok
File #94 also sets the diode settings for both the 2-4GHz and 4-8GHz core
momentum systems.
A:COMPAD1 SET DEVICE -3.0 ok
A:CPPAD1 SET DEVICE -3.34 ok
File #94 then enables power leveling on the core horizontal and vertical systems
by issuing on commands to the diodes.
A:CH1D1 TURN DEVICE ON ok
A:CH2D1 TURN DEVICE ON ok
A:CH3D1 TURN DEVICE ON ok
A:CV1D1 TURN DEVICE ON ok
A:CV2D1 TURN DEVICE ON ok
A:CV3D1 TURN DEVICE ON ok
File #94 then enables power leveling on the core 2-4GHz and 4-8GHz momentum
systems by setting the diode parameter polarity positive.
A:COMPAD1 SET POSITIVE ok
A:CPPAD1 SET POSITIVE ok
::: CHECK_DEVICE A:CH1D1 ON .
::: CHECK_DEVICE A:CH2D1 ON .
::: CHECK_DEVICE A:CH3D1 ON .
::: CHECK_DEVICE A:CV1D1 ON .
::: CHECK_DEVICE A:CV2D1 ON .
::: CHECK_DEVICE A:CV3D1 ON .
::: CHECK_DEVICE A:COMPAD1 POSITIVE .
::: CHECK_DEVICE A:CPPAD1 POSITIVE .
::: SET_SEQ FILE 30 .
::: CTLIT_DEVICE A:CMTW01 ON .
Turns on core 4-8 momentum TWT.
::: CTLIT_DEVICE A:CMTW02 ON .
Turns on core 4-8 momentum TWT.
::: CHECK_DEVICE A:ISHTST READING .
Verifies that the accumulator injection shutter is in the closed position (value
=2) and displays the results in the message window at the bottom of the
sequencer.
::: CHECK_DEVICE A:ESHTST READING .
Verifies that the accumulator extraction shutter is in the closed position (value
=2) and displays the results in the message window at the bottom of the
sequencer.
::: CHECK_DEVICE A:R2HLSC ON .
::: CHECK_DEVICE A:R3HLGS ON .
::: ALARM_LIST PBAR 38 .
Bypasses the "DEB FLTR" alarm list.
ok ACKNOWLEDGE .

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TV Window 'Run II Start Shot set up' from CNS52 - PA Slot



Collider Aggregate: **Run II Start Reverse Protons** has been completed.

Next Aggregate: Run II Switch to Shot Lattice