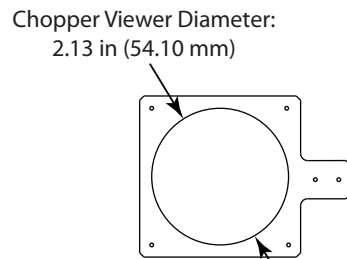
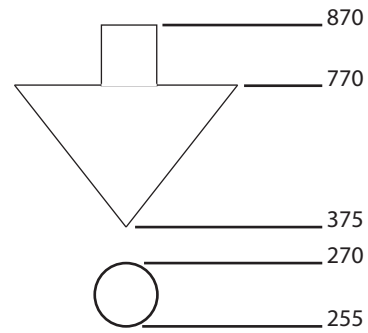
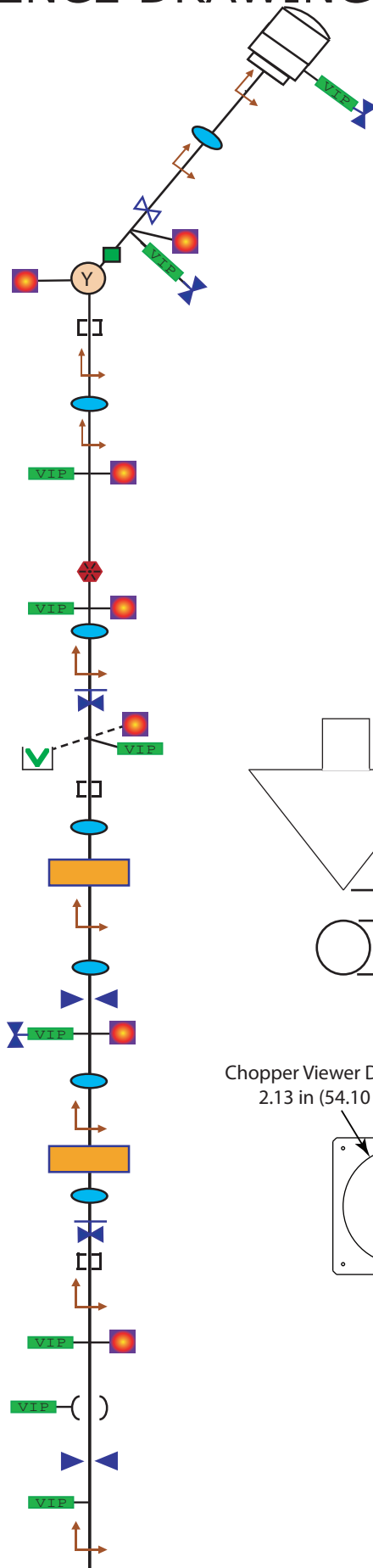


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Revision 14: 4 NOV 2021

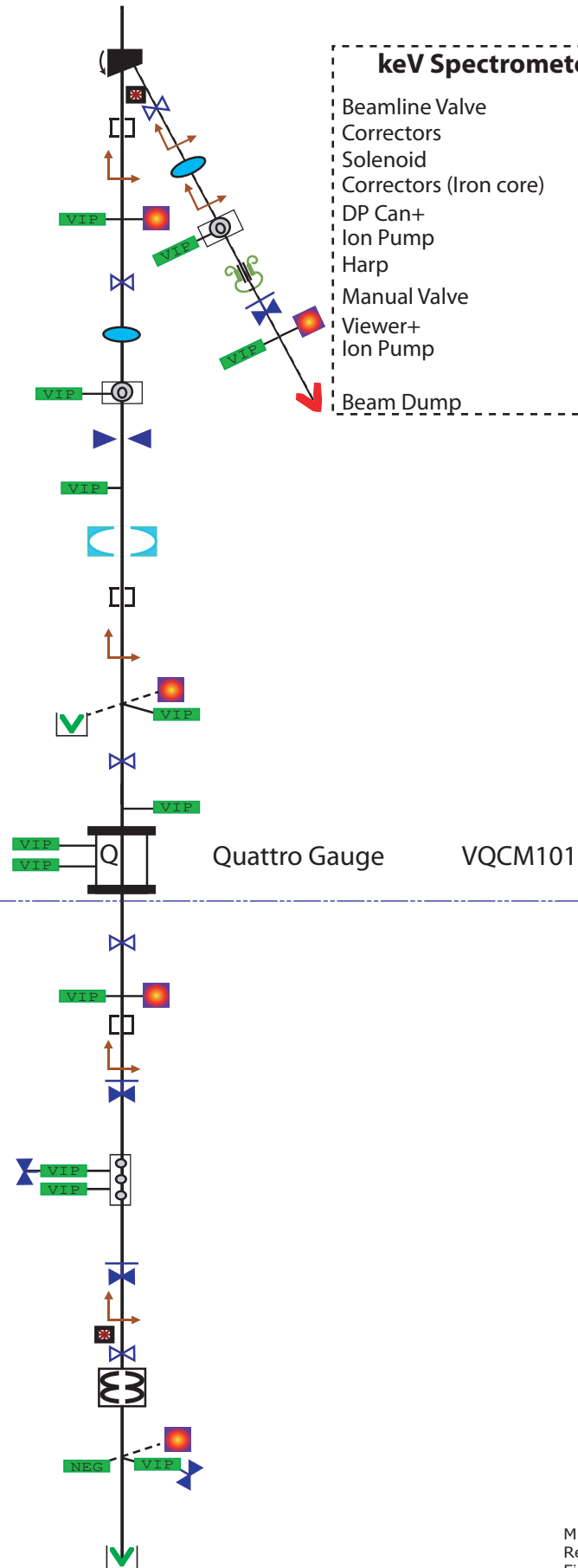
Ion Pump	VIPK101
Correctors	MBHK101 H&V
Solenoid	MFHK101
Correctors	MBHK102 H&V
Beamline Valve	VBVK201
Viewer+Ion Pump+	ITVK201+VIPK201+
Roughing Valve	VRVK201*
Dipole	MDSK201
Viewer	ITVK201A
BPM	IPMK201
Correctors	MLHK201 H&V
Solenoid	MFBK202
Correctors	MBHK202 H&V
Viewer +	ITVK202 +
Ion Pump+	VIPK202+
Quad	MQZK203
Viewer +	ITVK203+
Ion Pump+	VIPK203+
Solenoid	MFQK203
Correctors	MBHK203 H&V
Manual Valve	VMVK203
Viewer +	ITVK203A+
Faraday Cup 1 +	IFYK203+
Ion Pump+	VIPK203A+
BPM	IPMK203
Solenoid	MFAK301
Chopper Cavity	RIHK301
Correctors	MLHK301 H&V
Solenoid	MFDK302A
Chopping Aperture	ISLK302
Chopper Viewer+Ion	ITVK302+VIPK302
Pump+ Rough. Valve	VRVK302*
Solenoid	MFDK302B
Correctors	MLHK302 H&V
Chopper Cavity	RIHK302
Solenoid	MFAK303
Manual Valve	VMVK401
BPM	IPMK401
Correctors	MLHK401 H&V
Viewer+	ITVK401+
Ion Pump	VIPK401
Buncher Cavity+	RIBK401+
Ion Pump	VIPK401A
Aperture A3	ISLK401
Ion Pump	VIPK401B
Correctors	MBHK401A H&V



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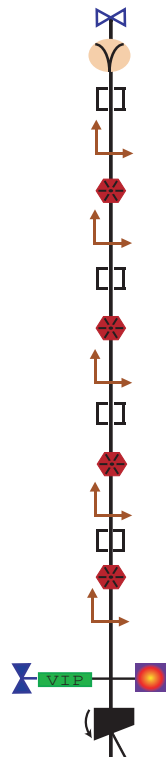
Spectrometer Dipole	MDIK402
BLM	ILMK402
BPM	IPMK402
Correctors	MLHK402 H&V
Viewer+ Ion Pump	ITVK402 VIPK402
Beamline Valve	VBVK403
Solenoid	MFQK403
DP Can+ Ion Pump	VDPK403+ VIPK403
Aperture A4	ISLK403
Ion Pump	VIPK403A
Brock Cavity	ICBK403
BPM	IPMK403
Correctors	MLHK403 H&V
Viewer + Faraday Cup 2+ Ion Pump+	ITVK403A+ IFYK403+ VIPK403B+
Beamline Valve	VBVM101
Ion Pump	VIPM101B
Cryomodule [M1]	RM11 + RM12
WG Ion Pumps	VIPM1101/2

keV Spectrometer Beam Line	
Beamline Valve	VBVK501
Correctors	MBHK501 H&V
Solenoid	MFQK501
Correctors (Iron core)	MCR501AH/V
DP Can+ Ion Pump	VDPK501+ VIPK501
Harp	IHAK501
Manual Valve	VMVK501A
Viewer+ Ion Pump	ITVK501 VIPK501A
Beam Dump	IDLK501



MeV Beam Line	
Beamline Valve	VBVM201
Viewer+ Ion Pump	ITVM201 VIPM201
BPM	IPMM201
Correctors	MLHM201 H&V
Manual Valve	VMVM301
Diff Pump	VDPM301A
Ion Pump	VIPM301A
Roughing Valve	VRVM301A*
Diff Pump	VDPM301B
Ion Pumps	VIPM301B
Diff Pump	VDPM301C
Manual Valve	VMVM401
Correctors	MLHM401 H&V
BLM	ILMM401
Fast Valve	VFVM401
PSS BCM Cavity	SBCM401
Viewer (YAG)+ Getter Pump (NEG)+ Ion Pump+ Roughing Valve	IYGM401+ VGPM401*+ VIPM401+ VRVM401*
Faraday Cup (FC3)	IFYM401

Beamline Valve	VBVM501
Yao Cavity	ICVM501
BPM	IPMM501
Correctors	MLHM501 H&V
Quad	MQJM501
Correctors	MLHM502 H&V
BPM	IPMM502
Quad	MQJM502
Correctors	MLHM503 H&V
BPM	IPMM503
Quad	MQJM503
Correctors	MLHM504 H&V
BPM	IPMM504
Quad	MQJM504
Correctors	MLHM504A H&V
Viewer+	ITVM504
Ion Pump	VIPM504
Roughing Valve	VRVM504*
MDLM504	MDLM504

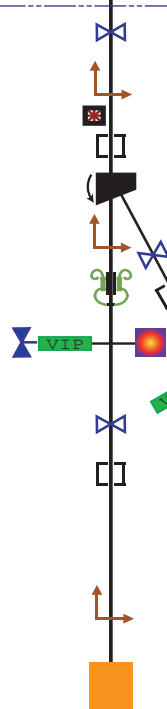


25° vertical chicane continues page 4.

(BdL = 1412 * P)

Wastewater (600-) Beam Line

Beamline Valve	VBVM601
Correctors	MLHM601A H&V
BLM	ILMM601
BPM	IPMM601
Dipole	MDLM601
Correctors	MBHM601B H&V
Harp	IHAM601
Viewer+	ITVM601+
Ion Pump+	VIPM601+
Roughing Valve	VRVM601*
Beamline Valve	VBVM602
BPM	IPMM602
BLM	ILMM602
Correctors	MBHM602A H&V
Solenoid	MPTM602



Level (42" elevation) beam line section continues this page.

MeV Spectrometer Beam Line

30° bend angle
BdL = -1673 * P

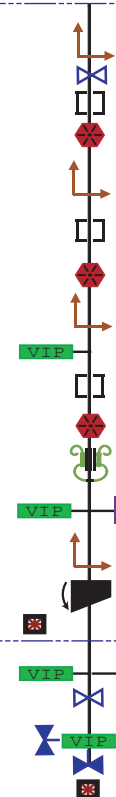
Beamline Valve	VBVM701
BPM	IPMM701
Correctors	MLHM701 H&V
Ion Pump	VIPM701
BLM	ILMM701
Quad	MQJM701
Correctors	MLHM702 H&V
BPM	IPMM702
Quad	MQJM702
Harp	IHAM703
Getter Pump (NEG)	VGPM703*
Ion Pump+	VIPM703 +
Viewer	ITVM703
Roughing Valve	VRVM703*
Beam Dump	IDLM703

25° vertical chicane continued from page 3

HDice Beam Line

Correctors	MLHM801 H&V
Beamline Valve	VBVM801
BPM	IPMM801
Quad	MQDM801
Correctors	MBHM802 H&V
BPM	IPMM802
Quad	MQJM802
Correctors	MBHM803 H&V
Ion Pump	VIPM803A
BPM	IPMM803
Quad	MQDM803
Harp	IHAM803
Viewer+	ITVM803
Ion Pump	VIPM803B
Correctors	MBHM803A H&V
Dipole	MDLM803
BLM	ILMM803

Viewer+	ITVM804
Ion Pump	VIPM804
Ion Pump+	VIPM902+
Roughing Valve	VRVM901*
Roughing Valve	VRVM902*



90" elevation beam line starts here.

Beamline Valve VBVM901
BLM ILMM901

Wastewater (600-) Beam Line (Cont. from p. 3)

Correctors	MBHM602B H&V
Vertical Raster	MRAM602V
Horizontal Raster	MRAM602H

BPM	IPMM603
Viewer (YAG)+	IYGM603+
Ion Pump+	VIPM603+
Roughing Valve	VRVM603*
Getter Pump (NEG)	VGPM603*

Correctors	MBHM603 H&V
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BLM ILMM603

BPM	IPMM604
Viewer (YAG)+	IYGM604+
Ion Pump+	VIPM604A+
Roughing Valve	VRVM604*

Faraday Cup (FC4)+	IFYM604+
Ion Pump+	VIPM604B+
Cathode Gauge+	VCGM604+
Getter Pump (NEG)	VGPM604*

Vacuum Thin Window	VTWM604
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BLM ILMM604

Target Ladder	ITGM604
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Video Camera	ITVM604A
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BLM ILMM605

