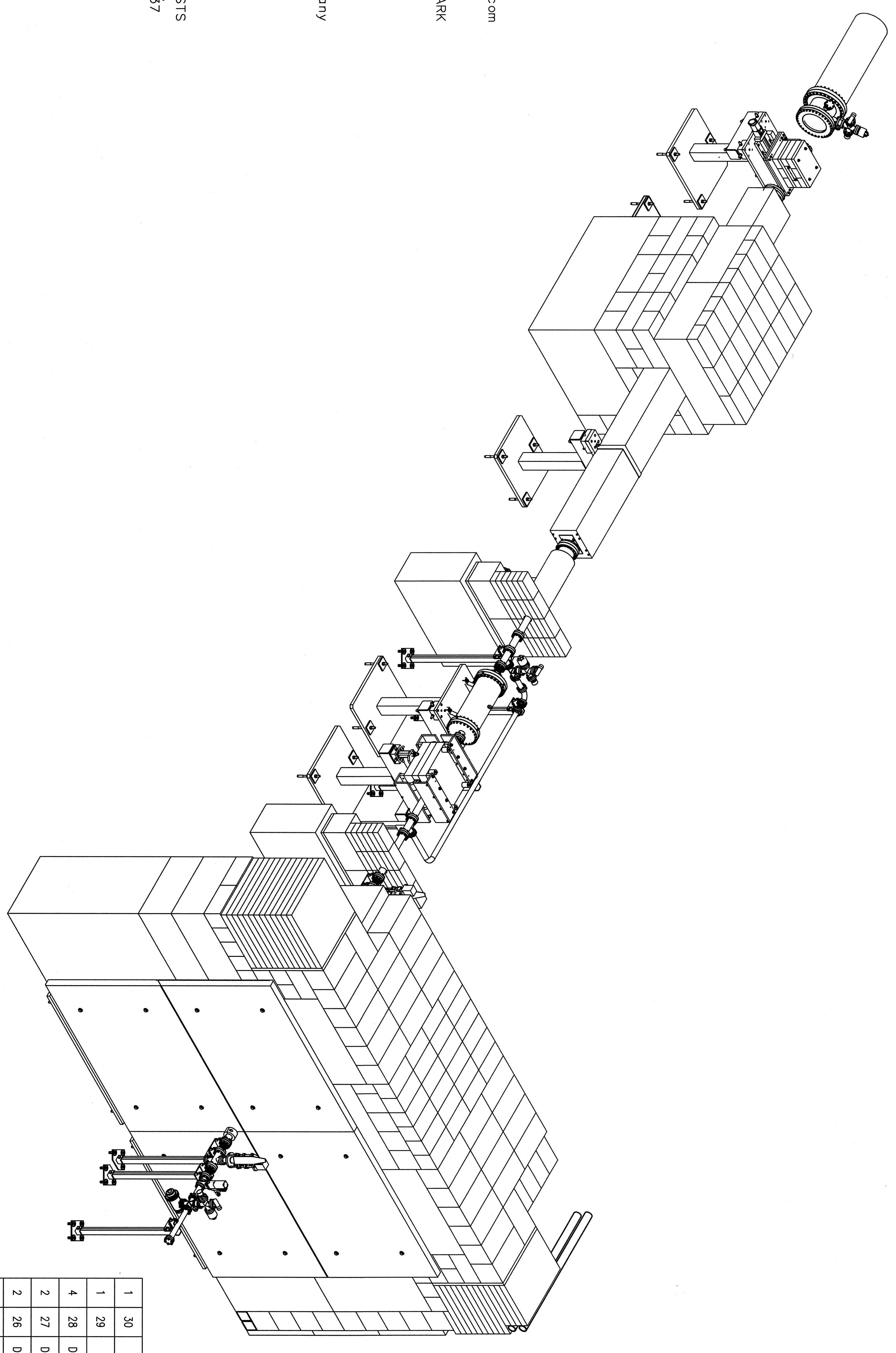


REVISION HISTORY		DATE	APPROVED
1	EXTENSIVE CHANGES - VGR 5/28/2012	5/28/12	[Signature]
2	REVIEW ENTIRE DRAWING	7/24/12	[Signature]



- NOTES:
- CLEAN & HANDLE PER JLAB SPECIFICATION NO. 22631-S-001 & 22632-S-001.
 - REFERENCE INFORMATION:
BEAM ELEVATION IS 104.700 M.
 - SUGGESTED SOURCE OR JLAB APPROVED ALTERNATE:

- d) PARKER
500 WEST CUMMINGS PARK
WOBURN, MA 01801
(617)935-1446
- e) MDC VACUUM PRODUCTS
23842 CABOT BOULEVARD
HAYWARD, CA 94545-1651
(800)443-8817
www.mdcvacuum.com
- f) MKS
6 SHATTUCK ROAD
ANDOVER, MA 01810
(800)227-8766
www.mks.com
- g) MCMASTER-CARR
(404)346-7000
www.mcmaster.com
- h) VAT INC.
500 WEST CUMMINGS PARK
WOBURN, MA 01801
(800)935-1446
www.vatvalve.com
- i) ACME CRYOGENICS
(800)422-2790
www.acmecryo.com
- j) SINX Group
(800)894-0412
www.cirwtr.com
- k) KURT J. LESKER Company
(800)245-1656
www.lesker.com
- l) ALM
(800)982-3991
www.americanlineat.com
- m) LEP ENGINEERING
STEP MOTOR SPECIALISTS
1645 HILLCREST BLVD
MORGAN HILL, CA 95037
(408)919-0200

QTY	ITEM NO.	DESCRIPTION	UNIT	REVISION	NOTES
1	91	SHIELDING ASSEMBLY - CONCRETE & LEAD WALL			
2	90	SHIELDING ASSEMBLY - 2ND COLLIMATOR			
1	89	SHIELDING ASSEMBLY - 1ST SNEEP MAGNET			
1	88	DO0000-02-01-1023 TUBE ASSY 3.38 CF X 2.0 OD X 38.0 LG			
2	87	MKS #151-0040C RIGHT ANGLE MANUAL VALVE			
1	86	VAT INC. PNEUMATIC ACTUATOR DOUBLE ACT. MINI HWY GATE VALVE CF DN=1.5"			
1	85	MDC #191007 GASKET FOR 3.38 CF			
2	84	MDC #402012 REDUCER 3.38 CF - 2.75 CF X 1.5 TUBE			
8	83	MDC #190058 12-PT FLANGE HEAD SCREW .313-24 UNF X 1.25 LG			
32	82	HILLI #0339426 HDI .375-16 DRPG-IN ANCHOR			
4	81	MCMAS-TER-CARR #2146A031 LOOK WASHER .375			
36	80	MCMAS-TER-CARR #2146A030 LOOK WASHER .312			
26	79	MCMAS-TER-CARR #2146A029 LOOK WASHER .250			
4	78	MCMAS-TER-CARR #2146A028 LOOK WASHER #10			
32	77	MCMAS-TER-CARR #2140A118 LARGE DIA. PLAIN STEEL WASHER FOR SCREW SIZE .375			
4	76	MCMAS-TER-CARR #2141A031 FLAT WASHER .375			
26	75	MCMAS-TER-CARR #96659A106 FLAT WASHER .250			

QTY	ITEM NO.	DESCRIPTION	UNIT	REVISION	NOTES
1	74	MCMAS-TER-CARR #80145623 STANDARD DOWEL PIN .375 OD X .875 LG			
32	73	MCMAS-TER-CARR #1309A624 HEX HEAD CAP SCREW .375-16 UNC X 1.0 LG			
2	72	MCMAS-TER-CARR #92240A721 HEX HEAD CAP SCREW .50-13 UNC X 2.25 LG			
4	71	MCMAS-TER-CARR #92196A628 SHCS .375-16 UNC X 1.5 LG			
36	70	MCMAS-TER-CARR #92196A583 SHCS .312-18 UNC X 1.0 LG			
12	69	MCMAS-TER-CARR #92196A544 SHCS .250-20 UNC X 1.25 LG			
10	68	MCMAS-TER-CARR #92196A541 SHCS .250-20 UNC X .875 LG			
4	67	MCMAS-TER-CARR #92196A540 SHCS .250-20 UNC X .75 LG			
4	66	MCMAS-TER-CARR #92196A289 SHCS 10-32 UNF X .50 LG			
6	65	MDC #191147 GASKET-2.75 CF			
2	64	MDC #190116 HEX HEAD BOLT .312-24 X 2.75 LG SET			
4	63	MDC #190114 HEX HEAD BOLT .312-24 X 2.25 LG SET			
5	62	VAC3000133-0002-03 2.75 CF TAPPED BOLT CONNECTION			
1	61	VAC3000133-0001-12 13.25 CF THRU BOLT CONNECTION			
2	60	VAC3000133-0001-10 10.00 CF THRU BOLT CONNECTION			
1	59	VAC3000133-0001-08 6.75 CF THRU BOLT CONNECTION			
1	58	VAC3000133-0001-06 4.62 CF THRU BOLT CONNECTION			
18	57	VAC3000133-0001-04 3.38 CF THRU BOLT CONNECTION			
18	56	VAC3000133-0001-03 2.75 CF THRU BOLT CONNECTION			
18	55	MCMAS-TER-CARR #2439A615 HEX NUT .250-28			
18	54	MCMAS-TER-CARR #9242A611 12-PT FLANGE HEAD SCREW .250-28 UNF X 2.5 LG			
1	53	MDC #150013 ZERO LENGTH REDUCER 4.62 CF - 3.38 CF			

QTY	ITEM NO.	DESCRIPTION	UNIT	REVISION	NOTES
2	52	MDC #110008 DEL-SEAL CF FLANGE 2.75 OD BLANK			
3	51	ACME CRYOGENIC GROUP CV VALVE V-1046-1 VACUUM SEAL-OFF VALVE 2.75 CF BUTTERFLY VALVE BW-150			
3	50	MDC #360001 Tee 2.75 CF X 1.00 THK			
1	49	MDC #404002 Tee 2.75 CF X 1.50 OD TUBE			
1	48	MDC #191015 GASKET FOR 6.75 CF			
1	47	PARKER #2-273 O-RING 9.75 ID X 10.0 OD X .125			
1	46	PARKER #2-269 O-RING 8.75 ID X 9.0 OD X .125			
1	45	PARKER #2-235 O-RING 3.125 ID X 3.38 OD X .125			
1	44	PARKER #2-228 O-RING 2.25 ID X 2.5 OD X .125			
1	43	MDC #403042 FLEXIBLE COUPLING 2.75 CF 1.25 BELOW ID X 3.44 LG			
6	41	MDC #400004 FLEXIBLE COUPLING 4.0 LG 1.62 BELOW ID X 4.0 LG			
4	40	MDC #405002 FOUR WAY CROSS 2.75 CF			
2	39	MDC #404047 REDUCING TEE 3.38 CF - 2.75 CF			
1	38	MDC #402003 NIPPLE 3.38 CF - 2.0 OD TUBE X 6.45 LG			
2	37	MDC #402002 NIPPLE 2.75 - 1.5 OD TUBE X 4.83 LG			
3	36	KURT J. LESKER MINI-CONNECTION SERIES 275 MODEL KJL275238 2.75 OD CF			
3	35	MKS INSTRUMENTS 423-1 MAG GOLD CATHODE SENSOR 2.75 OD CF			
1	34	PNV SERIES SENSORS PM-144 LIMIT SWITCH			
1	33	ALM ENGINEERING ENCODER FOR STEPPER MOTOR E3-1000-250-1E-D-D-B			
1	32	LIN ENGINEERING NEMA 23 1.8 DEGREE 57BL-09PD-01R0 STEPPER MOTOR			
1	31	ALM MLEP-14-10/0100 MLEP SERIES LINEAR SCREW 15MM OD -100"			

QTY	ITEM NO.	DESCRIPTION	UNIT	REVISION	NOTES
1	30	TBD HARP 45° ASSY			
1	29	TBD HARP HORIZONTAL ASSY			
4	28	DO0000-05-01-1018 SPT STD-LN1STRUT 39.0 HT 2.75 FL			
2	27	DO0000-05-01-1017 SPT STD-LN1STRUT 39.0 HT 3.38 FL			
2	26	DO0000-05-01-1016 SPT STD-LN1STRUT 39.0 HT 3.38 FL			
1	25	DO0000-05-01-1015 SPT STD-LN1STRUT 39.0 HT 3.38 FL			
1	24	DO0000-04-00-1000 2ND SNEEP MAGNET ASSY			
1	23	DO0000-04-03-1000 1ST SNEEP MAGNET ASSY			
1	22	DO0000-02-01-2068 1ST COLLIMATOR BOTTOM PLATE			
1	21	DO0000-02-01-2067 1ST COLLIMATOR MIDDLE PLATE			
1	20	DO0000-02-01-2064 2ND WINDOW MIDDLE FLANGE			
1	19	DO0000-02-01-2063 WINDOW 6.75 OD X .005 THK			
1	18	DO0000-02-01-2062 2ND WINDOW OUTER FLANGE			
1	17	DO0000-02-01-2061 1ST WINDOW OUTER FLANGE			
2	16	DO0000-02-01-2060 WINDOW 12.0 OD X .005 THK			
1	15	DO0000-02-01-2025 SUPPORT PLATE FOR COLLIMATOR-2			
2	14	DO0000-02-01-2020 SUPPORT STRAP-MAGNET			
1	13	DO0000-02-01-2019 SUPPORT PLATE-DOUBLE CARTRIDGE			
1	12	DO0000-02-01-2018 SUPPORT PLATE-SINGLE CARTRIDGE			
1	11	DO0000-02-01-1022 COLLIMATOR-2 KIT OF INERTS ASSY			
1	10	DO0000-02-01-1014 TUBE ASSY 2.75 CF X 1.5 OD L-SHAPE			
1	9	DO0000-02-01-1013 TUBE ASSY 3.38 CF X 2.0 OD X 99.5 LG			
1	8	DO0000-02-01-1012 TUBE ASSY 2.75 CF X 1.5 OD X 12.8 LG			
1	7	DO0000-02-01-1011 TUBE ASSY 3.38 CF X 2.0 OD X 18.5 LG			
1	6	DO0000-02-01-1009 VACUUM ENCLOSURE ASSY COLLIMATOR-2			
2	5	DO0000-02-01-1008 NIPPLE REDUCER CF10-CF3.38 ASSY			
1	4	DO0000-02-01-1007 VACUUM CHAMBER ASSY			
1	3	DO0000-02-01-1001 1ST COLLIMATOR ASSY			
1	2	DO0000-02-01-1000 FOUR WAY CROSS ASSY			
1	1	DO0000-00-01-1000 FESTIVAL & CARTRIDGE ORIENT/INSTALL			

DOCUMENT CONTROL

FINISH: UNLESS OTHERWISE SPECIFIED, ALL DIMENSIONS ARE IN INCHES

DO NOT SCALE DRAWING

APPROVALS:

DATE: 3/1/12

DESIGNED BY: JLR

CHECKED BY: JLR

APPROVED BY: JLR

DATE: 3/1/12

SIZE: 11x17

SCALE: 1:1

SHEET 1 OF 2

HALLOID GLUE-X INSTALLATION

COLLIMATOR ALCOVE INSTALLATION

COLLIMATOR COMP INSTALLATION