NOTES:

1. EACH PUMPOUT PORT LOCATION HAS BOTH POWER & CONTROL PLUG-IN CONNECTIONS.
2. ALL VACUUM GAUGES TO BE BAKED OUT AT 250 C DURING PUMPDOWN, USING A REMOVABLE BLANKET TYPE HEATER. ALL VACUUM SECTIONS SHALL ALSO BE BAKED OUT AT 150 C DURING PUMPDOWN USING A REMOVABLE BLANKET TYPE HEATER. SEE DWG. V049-0-043 FOR BAKEOUT SYSTEM.
3. DIMENSIONS IN ( ) ARE IN MILLIMETERS.
4. BEAM MANIFOLD DIMENSIONS INDICATE INSIDE DIAMETERS.
5. BEAM MANIFOLD FLANGE ANNULUS ION PUMP DETAILS LATER.
6. ALSO ON 10" BLIND, PROVIDE 3" LONG 2 1/2" NOZZLE WITH 1 1/2" x 2 1/2" REDUCING FLANGE AND BLIND FOR RGA CONNECTION.

TO VERTEX SECTION (V049-0-013)
TO DIAGONAL SECTION (V049-0-014)
TO DIAGONAL SECTION (V049-0-014)
48" (1220)
60" x 48" (1525 x 1220)
BSC CHAMBER WBSC7 (SEE DWG. V049-0-002)
72" x 60" (1829 x 1525)
2 1/2"-PV- -T3
1 1/2"-PV- -T3
(38 x 19) 1 1/2" x 3/4"
B-8
B-1
BE-5
B-9
6" (152)
10" (254)
HV 176
HV 177
PUMPOUT PORT
5/8" VSDV
72" x 44" (1829 x 1118)
WGV7
DWG. V049-0-005 DETAIL A TYP. 2 PLCS
DWG. V049-0-001 DETAIL C TYP. 3 PLCS
HV 178
80K CRYOPUMP (LONG) WCP2 (SEE DWG. V049-0-006)
NOTE 6
PI 134A
PT 134A
PE 134A
PI 134B
PT 134B
PE 134B
T4
I/G
1 1/2"(38)
RIGHT BEAM MANIFOLD BY PSI BY OTHERS
PI 144A
PT 144A
PE 144A
PI 144B
PT 144B
PE 144B
XV 189
44" (1118)
24"(610) MIN. REMOVABLE SECTION
WGVR
TO RIGHT MID STATION (V049-0-016)
GVHV 14"
(356) 14"
DWG. V049-0-001 DETAIL E
166
2500 L/S
WIP6
AVUV 1 1/2"
AVHV 1 1/2"
AVHV 2 1/2"
XV 179
75 L/S ION
PORTABLE BACK TO AIR CONTROL BOX 1 PER STATION
M
AVUV 2 1/2"
PCV

ROUGHING HEADER #1 TO VERTEX SECTION (V049-0-013) — 6"-PV-101-T3
TURBO HEADER #1 TO VERTEX SECTION (V049-0-013) — 4"-PV-103-T3
CLASS 100 AIR FROM DIAGONAL TION (V049-0-014)
INSTRUMENT AIR FROM VERTEX SECTION (V049-0-013)
COOLING WATER SUPPLY FROM VERTEX SECTION (V049-0-013)
COOLING WATER RETURN TO VERTEX SECTION (V049-0-013)

BSC AIR SHOWER CONN. — 2 1/2" — 1/2"-CA- -T5 — 2 1/2"-CA-172-T5
INSTRUMENT AIR SUPPLY — 1/2" BVU — 1/2"-IA-173-C2
ROUGHING HEADER — 6"-PV-174-T3
TURBO HEADER — 2 1/2"-PV-175-T3
COOLING WATER SUPPLY — 1/2" BVU — 1/2"-CWS-176-C2
COOLING WATER RETURN — 1/2" BVU — 1/2"-CWR-177-C2
INSTRUMENT AIR SUPPLY — 1/2" BVU — 1/2"-IA-178-C2
COOLING WATER SUPPLY — 1/2" BVU — 1/2"-CWS-181-C2
COOLING WATER RETURN — 1/2" BVU — 1/2"-CWR-182-C2
INSTRUMENT AIR SUPPLY — 1/2" BVU — 1/2"-IA-183-C2
TURBO HEADER — 2 1/2"-PV-185-T3
COOLING WATER SUPPLY — 1/2" BVU — 1/2"-CWS-186-C2
COOLING WATER RETURN — 1/2" BVU — 1/2"-CWR-187-C2
1 1/2"-CA-184-T5
TO LEVEL CONTROL VALVE LV-150 — 1/2" BVU — 1/2"-IA- -C2

6"-PV-101-T3 — MAIN ROUGHING HEADER #1
4"-PV-103-T3 — TURBO HEADER #1
4"-CA-153-T5 — CLASS 100 AIR
1"-IA-120-C2 — INSTRUMENT AIR
1"-CWS-121-C2 — COOLING WATER SUPPLY
1"-CWR-122-C2 — COOLING WATER RETURN

LIGO D961080-D1-V

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REFERENCE DRAWINGS

DWG. NO.	DESCRIPTION
V049-0-016	P & ID RIGHT MID STATION
V049-0-014	P & ID DIAGONAL SECTION
V049-0-013	P & ID VERTEX SECTION
V049-0-006	P & ID 80K CRYOPUMP PUMP
V049-0-002	P & ID BEAM SPLITTER CHAMBER
V049-0-001	P & ID LEGEND

DWG. NO.	DESCRIPTION

EQUIP. THIS DWG.
VBSC7 VGV7
VIP6 VGV8
VCP2

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES:
FRACTIONAL ±
ANGULAR: MACH ± BEND ±
TWO PLACE DECIMAL ± .01
THREE PLACE DECIMAL ± .005
FINISHED SURFACE RMS
BREAK CORNERS ON EDGES
REMOVE ALL BURRS

DO NOT SCALE THIS DRAWING
USED ON
NEXT ASS'Y

REV	DESCRIPTION					CHKD	DRVN	DATE	DEO#
1	ISSUED FOR FDR	REB	TS	RT	SM	DMW	RV	04.26.96	0134
0	ISSUE FOR DESIGN	REB	TMS	RT	SM	DMW	RV	01.03.96	0031
P1	PRELIMINARY DESIGN UPDATE	REB					AFG	09.26.95	0003

ISSUE DESCRIPTION

PROCESS SYSTEMS INTERNATIONAL INC.
20 WALKUP DR. WESTBOROUGH, MASSACHUSETTS 01581 USA

PIPING & INSTRUMENTATION DIAGRAM
LIGO VACUUM EQUIPMENT
WASHINGTON SITE
RIGHT BEAM MANIFOLD

CAD FILE	SIZE	DWG. NO.	REV.
V0490015	D	V049-0-015	1
SCALE: NONE		SHEET 1 OF 1	

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