

# INSTALLATION DRAWING LIST

REV.	DWG. NUMBER	TITLE	REV.	DWG. NUMBER	TITLE	REV.	DWG. NUMBER	TITLE	REV.	DWG. NUMBER	TITLE
		P&ID'S			ELECTRICAL DRAWINGS			MECHANICAL DRAWINGS			PSI ADAPTER & SPOOL DETAIL DRAWINGS
2	V049-0-001	LEGEND/STATION DIAGRAMS (3 SHTS.)	1	V049-2-110	PORTABLE SOFT WALL CLEANROOMS	0	V049-4-091	80K PUMP RESERVOIR-SHORT LEFT (3 SHTS.)	4	V049-5-012	PIPING ARR'T, PLAN CORNER STA. WA (4 SHTS.)
2	V049-0-002	BEAM SPLITTER CHAMBER ALL BUT CORNER VERTEX ARMS	0	V049-2-111	SMALL VALVES	1	V049-4-092	80K PUMP RESERVOIR-LONG LEFT (3 SHTS.)	3	V049-5-013	PIPING ARR'T, ELEVATION, CORNER STA, WA
3	V049-0-003	BEAM SPLITTER CHAMBER CORNER VERTEX ARMS	0	V049-2-112	BAKEDOUT SYSTEM BLANKETS AND CARTS	0	V049-4-093	80K PUMP RESERVOIR-LONG RIGHT (3 SHTS.)	4	V049-5-014	PIPING ARR'T, SECTIONS, CORNER STA, WA
3	V049-0-004	HORIZONTAL ACCESS MODULE	SYSTEM ACCEPTANCE TEST PROCEDURES			2	V049-4-094	80K PUMP RESERVOIR SUPPT, ASSY, SHORT (2 SHTS.)	3	V049-5-017	PIPING ARR'T, PLAN, RIGHT MID STA, WA (4 SHTS.)
2	V049-0-005	112cm & 122cm GATE VALVES	2	V049-2-113	CORNER STATIONS	2	V049-4-095	80K PUMP RESERVOIR SUPPT, ASSY, LONG (2 SHTS.)	3	V049-5-018	PIPING ARR'T, ELEVATION, RIGHT MID STA, WA (2 SHTS.)
6	V049-0-006	80K CRYOPUMP	2	V049-2-114	MID STATIONS	1	V049-4-096	72 1/4" ID FLANGE DETAIL (GROOVED)	3	V049-5-019	PIPING ARR'T, SECTIONS, RIGHT MID STA, WA
2	V049-0-007	CHAMBER PRESSURIZATION SYSTEM CARTS	2	V049-2-115	END STATIONS	1	V049-4-097	60 1/2" ID FLANGE DETAIL (FLAT FACED)	3	V049-5-021	PIPING ARR'T, RIGHT END STA, WA (2 SHTS.)
5	V049-0-010	WA LEFT END STATION	ELECTRICAL DRAWINGS			2	V049-4-098	60 1/2" ID FLANGE DETAIL (FLAT/SLOTTED)	3	V049-5-022	PIPING ARR'T, ELEVATION, RIGHT END STA, WA
5	V049-0-011	WA LEFT MID STATION	ELECTRICAL DRAWINGS			0	V049-4-099	72 1/4" ID FLANGE DETAIL (FLAT/SLOTTED)	3	V049-5-023	PIPING ARR'T, SECTIONS, RIGHT END STA, WA
5	V049-0-012	WA LEFT BEAM MANIFOLD	4	V049-3-001	ELECTRICAL DRAWING LIST (2 SHTS.)	1	V049-4-101	BSC OVERALL ASSY.	3	V049-5-026	PIPING ARR'T, PLAN, LEFT MID STA, WA (4 SHTS.)
5	V049-0-013	WA VERTEX SECTION	MECHANICAL DRAWINGS			1	V049-4-106	25 L/S ANNULUS TUBING-44" G.V. TYPE III	3	V049-5-027	PIPING ARR'T, ELEVATION, LEFT MID STA, WA (2 SHTS.)
5	V049-0-014	WA DIAGONAL SECTION	4	V049-4-002	HORIZONTAL ACCESS MODULE (HAM)	2	V049-4-107	25 L/S ION PUMP VALVE SUPPORT (2 SHTS.)	3	V049-5-028	PIPING ARR'T, SECTIONS, LEFT MID STA, WA
5	V049-0-015	WA RIGHT BEAM MANIFOLD	3	V049-4-003	BSC SHELL WELDMENT/MACHINING (4 SHEETS)	1	V049-4-108	25 L/S ANNULUS TUBING 48" G.V. TYPE I	3	V049-5-030	PIPING ARR'T, PLAN, LEFT END STA, WA (2 SHTS.)
5	V049-0-016	WA RIGHT MID STATION	3	V049-4-004	80K CRYOPUMP, LONG LEFT HAND (2 SHEETS)	1	V049-4-109	ANNULUS TUBING & ION PUMP ASSY. 44" G.V.	3	V049-5-031	PIPING ARR'T, ELEVATION, LEFT END STA, WA
5	V049-0-017	WA RIGHT END STATION	3	V049-4-005	80K CRYOPUMP, SHORT RIGHT (2 SHEETS)	1	V049-4-110	25 L/S ANNULUS TUBING 48" G.V. TYPE II	3	V049-5-032	PIPING ARR'T, SECTIONS, LEFT END STA, WA
3	V049-0-018	WA CORNER STATION MECHANICAL ROOM	3	V049-4-006	80K CRYOPUMP, LONG RIGHT HAND (2 SHEETS)	4	V049-4-114	80K LONG-SHIELD ASSY. RH/LH (3 SHTS.)	0	V049-5-033	OVERALL FLANGE ARR'T, CORNER STA. WA
			3	V049-4-007	80K CRYOPUMP, SHORT LEFT HAND (2 SHEETS)	3	V049-4-117	80K SHORT-SHIELD ASSY. RH/LH (3 SHTS.)	0	V049-5-035	OVERALL FLANGE ARR'T, MID STA, WA
			3	V049-4-010	ROUGHING PUMP CART ARRANGEMENTS	3	V049-4-118	80K LONG-VERTICAL WELDMENT LH (2 SHTS.)	0	V049-5-036	OVERALL FLANGE ARR'T, TYPICAL END STA, WA & LA
			3	V049-4-011	TURBO PUMP CART ARRANGEMENTS	2	V049-4-119	80K LONG-VESSEL WELDMENT RH (2 SHTS.)	0	V049-5-037	CLEAN ROOM WITH BSC ASSY.
			3	V049-4-012	BASE EXTENSION-TURBO PUMP CART	2	V049-4-120	80K SHORT-VESSEL WELDMENT LH (2 SHTS.)	0	V049-5-050	SURVEY-BENCHMARKS-CORNER STA, WA
			1	V049-4-014	COVER, BSC TYPE I	3	V049-4-121	80K SHORT VESSEL WELDMENT RH (2 SHTS.)	0	V049-5-051	SURVEY-BENCHMARKS-MID STA, WA & LA
			4	V049-4-014	COVER, BSC TYPE I	1	V049-4-122	75L ION PUMP SUPPORT	0	V049-5-052	SURVEY-BENCHMARKS-END STA, WA & LA
1	V049-0-100	GENERAL PROJECT (SHT. 1 OF 3)	3	V049-4-017	44 1/4" I.D. FLANGE DETAIL (GROOVED)	1	V049-4-123	HAM 75L ION PUMP SUPPORT	PSI ADAPTER & SPOOL DETAIL DRAWINGS		
1	V049-0-100	WASHINGTON SITE (SHT. 2 OF 3)	2	V049-4-018	48 1/4" I.D. FLANGE DETAIL (GROOVED)	0	V049-4-124	BELLOWS 1" DIA. TIE-ROD ASSY.	3	V049-4-A1	ADAPTER
1	V049-0-100	LOUISIANA SITE (SHT. 3 OF 3)	2	V049-4-019	60 1/2" I.D. BSC FLANGE DETAIL (GROOVED)	4	V049-4-127	84 1/4" ID ACCESS COVER-HAM	3	V049-4-A3	ADAPTER
			2	V049-4-020	72 1/4" I.D. FLANGE DETAIL (GROOVED)	3	V049-4-128	HAM SHELL WELDMENT ASSY. "D" (3 SHTS.)	7	V049-4-A4	60" HAM END COVER, GROOVED, TYPE A4
			2	V049-4-021	84 1/4" I.D. FLANGE DETAIL (GROOVED)	0	V049-4-129	HAM ANNULUS FLEX HOSE	3	V049-4-A6	ADAPTER
			3	V049-4-022	104 1/2" I.D. FLANGE DETAIL (GROOVED)	1	V049-4-132	44 5/8" ID FLANGE DETAIL (GROOVED)	3	V049-4-A7A	ADAPTER
2	V049-1-101	ANCHOR BOLT INSTALLATION PROCEDURE	5	V049-4-023	BSC CLEAN ROOM ASSY.	4	V049-4-133	BSC CLEAN ROOM ASSY-STYLE 1 & 3	3	V049-4-A7B	ADAPTER
2	V049-2-014	LEAK CHECK PROCEDURE	4	V049-4-025	BSC ANNULUS PIPING	4	V049-4-134	BSC CLEAN ROOM WELDMENT STYLE 1 & 3	2	V049-4-A7C	ADAPTER
2	V049-2-015	CLEANING PROCEDURE	4	V049-4-028	72 1/4" I.D. FLANGE DETAIL (FLAT FACED)	3	V049-4-135	BSC CLEAN ROOM ASSY. STYLE 2	5	V049-4-A11	BSC END COVER, 60", TYPE A11
4	V049-2-021	INSTALLATION/COMMISSIONING SPEC.	1	V049-4-029	48 1/4" I.D. FLANGE DETAIL (FLAT FACED)	2	V049-4-136	CLEAN ROOM ASSY.- HAM	3	V049-4-A12	ADAPTER
2	V049-2-022	ELECTRICAL AND INSTRUMENT CONSTRUCTION SPEC.	1	V049-4-031	60 1/2" I.D. HAM FLANGE DETAIL (GROOVED/SLOTTED)	2	V049-4-137	CLEAN ROOM STRUCTURE WELDMENT - HAM	3	V049-4-A13	ADAPTER
1	V049-2-023	PROJECT SAFETY PLAN	5	V049-4-032	60 1/2" I.D. HAM FLANGE DETAIL (FLAT FACED)	3	V049-4-138	BSC CLEAN ROOM WELDMENT	3	V049-4-A14	ADAPTER
1	V049-2-029	PROJECT Q.A. PLAN	3	V049-4-033	44" GATE VALVE SUPPORT FRAME	0	V049-4-140	80K LONG-LEG ASSY.	4	V049-4-A15	ADAPTER
5	V049-2-037	PIPING DESIGN AND MATERIAL SPECIFICATION	1	V049-4-034	48" GATE VALVE SUPPORT FRAME	0	V049-4-141	80K SHORT-LEG ASSY.	3	V049-4-BE2	SPOOL
1	V049-2-059	SPEC FOR SMALL VACUUM VALVES	1	V049-4-036	BSC INTERNAL PLATFORM DETAILS	2	V049-4-142	16 1/2" OD CONFLAT REDUCING FLANGES	4	V049-4-BE3	SPOOL
2	V049-2-060	SPEC FOR CLEAN QUATER TURN VALVES	1	V049-4-040	HAM TIE ROD ASSY.	0	V049-4-144	60 1/2" ID FLANGE DETAIL BE-3A (FLAT FACED)	5	V049-4-BE3A	SPOOL
0	V049-2-070	WELDING PROCEDURES	5	V049-4-041	104 1/2" I.D. FLANGE DETAIL (FLAT FACED)	0	V049-4-145	LN2 TANK BASE TEMPLATE	4	V049-4-BE4	SPOOL
2	V049-2-071	WELDING PROCEDURES	2	V049-4-042	44 5/8" I.D. FLANGE DETAIL (FLAT FACED)	1	V049-4-146	80K HEAD/NOZZLE ASSY.	5	V049-4-BE5	SPOOL
2	V049-2-072	WELDING PROCEDURES	1	V049-4-043	PIPE BRIDGE-CORNER STATION	1	V049-4-147	80K HEAD/NOZZLE ASSY.	5	V049-4-BE6	SPOOL
0	V049-2-073	WELDING PROCEDURES	1	V049-4-044	BSC RGA/AUX. TURBO CONN. ASSY.	1	V049-4-148	80K SHIELD SUPPORT LUG	4	V049-4-B1	SPOOL
0	V049-2-074	MATERIAL/WELDING REPAIR SCHEDULE	1	V049-4-046	BSC RGA/AUX TURBO/GAUGE PAIR ASSY.	0	V049-4-158	BELLOWS 1 1/4" DIA. TIE-ROD ASSY.	4	V049-4-B2A	SPOOL
0	V049-2-116	ISOLATABLE SECTION BAKEDOUT PROCEDURE	2	V049-4-047	44 5/8" ID x 80" OD FLANGE DETAIL (FLAT FACED)	0	V049-4-159	LIFTING LUG	5	V049-4-B2B	SPOOL
0	V049-2-018	CLEAN ROOM ACTIVITIES	1	V049-4-052	VESSEL SUPPORT (HAM)	0	V049-4-161	80K PUMP 2" JACKETED LINE	4	V049-4-B3A	SPOOL
1	V049-2-119	CONTAMINATION CONTROL PLAN	3	V049-4-053	EXPANSION JOINT (HAM)	0	V049-4-163	GATE VALVE FIN CLAMP	4	V049-4-B4	SPOOL
0	V049-2-120	RAW MATERIAL HANDLING PROCEDURE	1	V049-4-054	HAM ANNULUS PIPING	1	V049-4-164	25 L/S ANNULUS TUBING-44" G.V. TYPE I	5	V049-4-B5A	SPOOL
1	V049-2-123	SPEC. COMPONENT PACKING, HANDLING, & SHIPPING	5	V049-4-055	60 1/2" ID RING DETAIL REDUCING UNION	1	V049-4-165	ANNULUS TUBING & ION PUMP ASSY. 48" G.V.	6	V049-4-B6	SPOOL
0	V049-2-124	CONTROL OF NON-CONFORMANCE	2	V049-4-056	30 1/2" ID x 68 1/4" OD FLANGE DETAIL (FLAT FACED)	1	V049-4-166	25 L/S ANNULUS TUBING-44" G.V. TYPE II	5	V049-4-B7	SPOOL
1	V049-2-128	VISUAL INSPECTION PROCEDURE	1	V049-4-057	30 1/2" ID x 68 1/4" OD FLANGE DETAIL (GROOVED)	1	V049-4-168	ASSEMBLY BACK TO AIR CART, 50 CFM	2	V049-4-B8	SPOOL
0	V049-2-130	BLACK LIGHT TEST PROCEDURE	3	V049-4-058	44 5/8" ID x 60 1/2" ID FLANGE DETAIL	1	V049-4-175	ASSEMBLY BACK TO AIR CART, 200 CFM	4	V049-4-B9	SPOOL
1	V049-2-131	SITE PIPING CLEANING PROCEDURE	1	V049-4-059	SHIPPING COVER WITH FILTER UNITS	1	V049-4-176	14KW REGEN HEATER ASS'Y.			
0	V049-2-132	SITE VACUUM SURFACE RE-CLEANING PROCEDURE	4	V049-4-060	44 1/4" ID FLANGE DETAIL (GROOVED/SLOTTED)	1	V049-4-177	28KW REGEN HEATER ASS'Y.			
0	V049-2-137	RGA CALIBRATION	4	V049-4-061	3/4" OD ELBOW x 2 3/4" C.F. FLG. ANNULUS CONN.	0	V049-4-194	12" OD CONFLAT BLANK x 2 3/4" OD CONFLAT			
2	V049-2-139	STRUCTURAL CARBON STEEL FABRICATION AND PAINTING	0	V049-4-062	60 1/2" ID x 68 1/2" OD BE-3A FLANGE (FLAT)	0	V049-4-195	12" OD CONFLAT BLANK x 25 KF			
3	V049-2-144	SOFTWALL CLEAN ROOM PANELS - HAM	1	V049-4-066	60 1/2" ID x 72 1/4" OD OFFSET FLANGE (BE3A)	0	V049-4-196	8" OD CONFLAT BLANK x 25 KF			
3	V049-2-145	SOFTWALL CLEAN ROOM PANELS - BSC	2	V049-4-067	61.31" ID x 72 1/4" OD BE-3A FLANGE (GROOVED)	0	V049-4-197	10" OD TUBE BELLOWS-TURBO PUMP			
1	V049-2-157	PORTABLE SOFTWALL CLEAN ROOMS	3	V049-4-068	48 1/4" ID x 60 1/2" ID OFFSET FLANGE	2	V049-4-199	BSC SHIPPING SKID			
1	V049-2-163	THERMAL INSULATION-PIPING	2	V049-4-070	48.81 ID x 68 1/4" OD FLANGE DETAIL (FLAT FACED)	0	V049-4-203	BSC-ANNULUS TUBE SUPPORT			
1	V049-2-164	80K PUMP RELIEF VALVE SPEC.	1	V049-4-071	48.81 ID x 80 OD FLANGE DETAIL (FLAT FACED)	0	V049-4-204	BSC AIR FILTER ASSY.			
0	V049-2-168	CONFLAT FLANGE ASSEMBLY PROCEDURE	0	V049-4-072	PS-1 PIPE SUPPORT TEE POST (LN2 PIPING)	0	V049-4-206	HAM ANNULUS TUBING SHIPPING SUPPORT			
0	V049-2-169	O-RING INSTALLATION AND FLANGE ASSEMBLY PROCEDURE	1	V049-4-073	PS-2 PIPE SUPPORT	0	V049-4-302	BSC TEST/SHIP ASSY (TWO DOORS)			
1	V049-2-174	COMPONENT ALIGNMENT PROCEDURE	2	V049-4-074	PS-3 PIPE SUPPORT TEE POST	0	V049-4-303	BSC TEST/SHIP ASSY (THREE DOORS)			
0	V049-2-175	VACUUM PUMP FIELD INSTALLATION PROCEDURE	1	V049-4-075	PS-4 PIPE/ELECTRICAL SUPPORT	0	V049-4-304	BSC TEST/SHIP ASSY (NO DOORS)			
1	V049-2-178	SPEC. PREFABRICATED VACUUM AND CL 100 AIR PIPING	2	V049-4-076	PS-5 PIPE SUPPORT @ 80K LONG PUMP	0	V049-4-305	BSC TEST/SHIP ASSY (ONE DOOR)			
			0	V049-4-077	75 L/S ION PUMP/MANIFOLDS	4	V049-5-001	EQUIPMENT ARR'T. PLAN, CORNER STA. WA (SHT 1 OF 2)			
			3	V049-4-078	25 L/S ION PUMP/MANIFOLDS	4	V049-5-002	EQUIPMENT ARR'T. ELEVATION, (SHT. 2 OF 2)			
0	V049-2-102	80K PUMPS	2	V049-4-079	48 1/4" ID x 68 1/4" OD FLANGE DETAIL	1	V049-5-004	EQUIPMENT ARR'T. ISO, CORNER STA, WA			
0	V049-2-104	ROUGHING PUMPS	1	V049-4-080	SHIPPING COVER ASSY.- WITHOUT FILTER ASSY.	4	V049-5-005	EQUIPMENT ARR'T. RIGHT MID STA, WA			
0	V049-2-105	TURBOMOLECULAR PUMPS	1	V049-4-081	48 1/4" ID FLANGE DETAIL (GROOVED/SLOTTED)	4	V049-5-006	EQUIPMENT ARR'T. RIGHT END STA, WA			
0	V049-2-106	ION PUMPS	0	V049-4-082	PS-6 PIPE SUPPORTS @ BACKING PUMPS	4	V049-5-007	EQUIPMENT ARR'T. LEFT MID STA, WA			
0	V049-2-107	LARGE GATE VALVES	0	V049-4-087	60 1/2" ID x 80" OD FLANGE DETAIL (FLAT FACED)	4	V049-5-007	EQUIPMENT ARR'T. LEFT END STA, WA			
0	V049-2-108	6", 10", 14" GATE VALVES	0	V049-4-090	80K PUMP RESERVOIR-SHORT RIGHT (3 SHTS.)	1	V049-5-010	EQUIPMENT ARR'T. ISO, RIGHT MID STA, WA			
1	V049-2-109	CLEAN AIR SUPPLIES	2			1	V049-5-011	EQUIPMENT ARR'T. ISO, RIGHT END STA, WA			

\* = DRAWINGS ADDED/REVISED SINCE MARCH 1997

<p><b>PROPRIETARY AND CONFIDENTIAL</b></p> <p>THIS DOCUMENT CONTAINS PROPRIETARY INFORMATION BELONGING TO PROCESS SYSTEMS INTERNATIONAL, INC. OR ITS AFFILIATED COMPANIES AND SHALL BE USED ONLY FOR THE PURPOSE FOR WHICH IT WAS SUPPLIED. IT SHALL NOT BE COPIED, REPRODUCED OR OTHERWISE USED, NOR SHALL SUCH INFORMATION BE FURNISHED IN WHOLE OR IN PART TO OTHERS EXCEPT IN ACCORDANCE WITH THE TERMS OF ANY AGREEMENT UNDER WHICH IT WAS SUPPLIED OR WITH THE WRITTEN CONSENT OF PROCESS SYSTEMS INTERNATIONAL, INC. AND SHALL BE RETURNED UPON REQUEST.</p>	<p>UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES</p> <p>FRACTIONAL &amp; ANGLE DIMENSIONS 16"-30" BOTH ±.02 THREE PLACE DECIMAL &amp; .005 FINISHED SURFACE RNS BREAK CORNERS BY REMOVE ALL BURRS</p> <p>DO NOT SCALE THIS DRAWING</p> <p>USED ON</p> <p>NEXT ASS'Y:</p>	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th>REV</th> <th>DESCRIPTION</th> <th>ISSUE DESCRIPTION</th> </tr> <tr> <td>3</td> <td>REISSUED FOR FDR UPDATE/ CONSTRUCTION</td> <td></td> </tr> <tr> <td>2</td> <td>REISSUED FOR FDR UPDATE/ CONSTRUCTION</td> <td></td> </tr> <tr> <td>1</td> <td>REISSUED FOR FDR UPDATE/ CONSTRUCTION</td> <td></td> </tr> <tr> <td>0</td> <td>ISSUED FOR FDR UPDATE/ CONSTRUCTION</td> <td></td> </tr> </table>	REV	DESCRIPTION	ISSUE DESCRIPTION	3	REISSUED FOR FDR UPDATE/ CONSTRUCTION		2	REISSUED FOR FDR UPDATE/ CONSTRUCTION		1	REISSUED FOR FDR UPDATE/ CONSTRUCTION		0	ISSUED FOR FDR UPDATE/ CONSTRUCTION		<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th>REV</th> <th>DATE</th> <th>BY</th> <th>CHKD</th> <th>DRWN</th> <th>DATE</th> <th>DESB</th> </tr> <tr> <td>3</td> <td>09/02/97</td> <td>DMV</td> <td>REC</td> <td>REC</td> <td>07/17/97</td> <td>0324</td> </tr> <tr> <td>2</td> <td>07/07/97</td> <td>DMV</td> <td>REC</td> <td>REC</td> <td>07/07/97</td> <td>0312</td> </tr> <tr> <td>1</td> <td>6/27/97</td> <td>DMV</td> <td>REC</td> <td>DA</td> </tr></table>	REV	DATE	BY	CHKD	DRWN	DATE	DESB	3	09/02/97	DMV	REC	REC	07/17/97	0324	2	07/07/97	DMV	REC	REC	07/07/97	0312	1	6/27/97	DMV	REC	DA
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