Budker INP NOVOSIBIRSK

The Budker Institute of Nuclear Physics of the Siberian Branch of the Russian Academy of Science was founded in 1958. Academician G.Budker was the founder and first director of the Institute.

There are around 3000 members of the Institute's staff including 600 researchers, 400 engineers, 900 technicians and workers, and 900 machinery shop personnel.

BINP EoI to Super FRS and CR :

2.4.7	**Super FRS**	Qantety	**100%**
	Magnets		
2.4.2.1.1	Dipole 1	3	
2.4.2.2.1	Quadrupole 1	2	
2.4.2.2.2	Quadrupole 2	1	
2.4.2.3.1	Sextupole1	2	
	Vacuum		
2.4.7.1.1	Dipole chamber (Dipole 1)	3	
2.4.7.1.4	Quadrupole chamber (Quadrupole 1)	2	
2.4.7.1.5	Quadrupole chamber (Quadrupole 2)	1	
2.4.7.1.10	Beam pipe (various length)	13	
2.4.7.1.11	Diagnostic chamber (different sizes)	21	
2.4.7.4.2	Bellow (L=150, D=400)	73	

BINP EoI to CR :

2.5.2	CR	Qantety	
	Magnets		
2.5.2.1	Dipole Magnets	24	100%
2.5.2.2.1	*wide Quadrupole Magnets*	30	
2.5.2.2.2	*narrow Quadrupole Magnets*	14	
2.5.2.2.3	*ESR Type Magnets*	8	
2.5.2.3.1	*wide Sextupoles*	24	
2.5.2.3.2	*narrow Sextupoles*	4	
2.5.2.4.1	*wide octupole magnets*	8	
2.5.2.4.2	*narrow octupole magnets*	4	
2.5.2.5.1	*Septum ext.*	4	?
2.5.2.5.2	*Septum inj.*	6	
	Vacuum		
2.5.7.1.2.1.1	*Pumping Chambers*	**40**	
2.5.7.1.2.1.2	*Roughing Chambers*	**6**	
2.5.7.1.2.1.5	*UHV bellows*	**250**	
2.5.7.1.2.1.8	*Support frames & adjustment equipment*	**212**	
2.5.7.1.2.2	Dipole Chambers	**24**	
2.5.7.1.2.3.1	*Wide Quad. chambers*	**30**	
2.5.7.1.2.3.2	*Narrow Quad. Chambers*	**14**	
2.5.7.1.2.4.1	*Sextupole Chambers*	**32**	
2.5.7.1.2.4.2	*Wide Octupole Chambers*	**4**	
2.5.7.1.2.4.3	*Narrow Octupole chambers*	**4**	
2.5.7.1.2.4.4	*Horiz. Correctors*	**4**	
2.5.7.1.2.4.5	*Vertical Correctors*	**18**	

BINP EoI to FAIR vacuum components :

1. Warm vacuum chambers of:

Super-FRS (1/3 ÷1/2)

CR (total)

NESR (total)

ER (total)

+ HEBT (total)

+RESR (total)

***The complicate chambers with inserted beam diagnostics could be included**

**** The standard vacuum components (gages, valves,…) are out of the EoI**

***** Manufacturing of total amount of Ion getter and Ti sublimation pumps for FAIR could be under consideration (quality and price profit shall be checked)**

2. SIS100 and SIS300: Cold vacuum chambers???

Let's wait the experiments with prototype, new decisions, proposals….

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Time estimation for complicate elements and serial production

1. **Conceptual / general amount materials ordering/receiving:** **up to 2 years**
2. **Production / installation:** **up to 2 years**
3. **Prototype (complicate elements):** **up to 2 years**

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SIS18 chambers of quadruples

SIS100 prototype chambers for dipole

GSI - BINP COLLABORATION
of vacuum components

The SIS100 dipole chamber prototype under assembly

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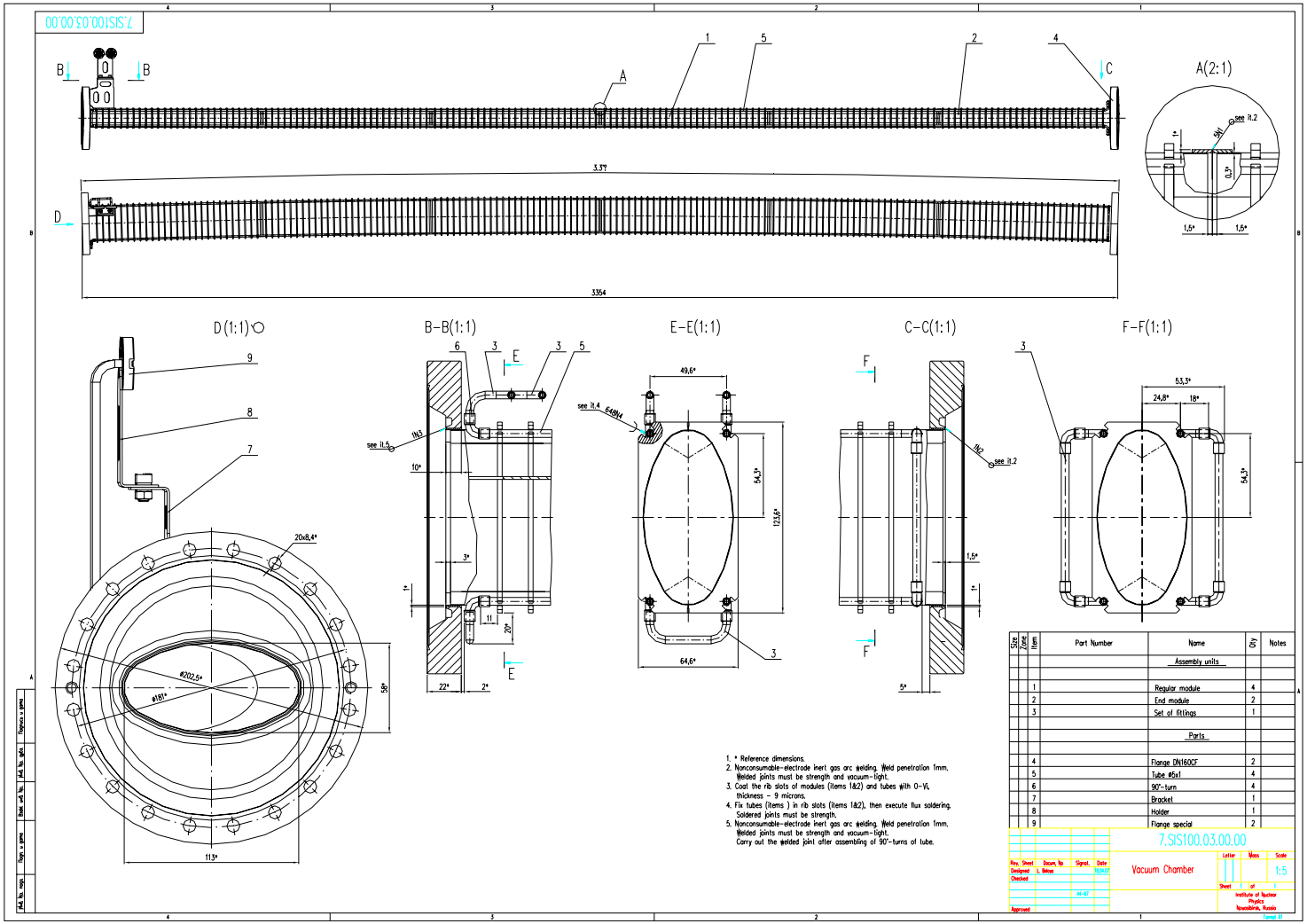
GSI - BINP COLLABORATION
of vacuum components



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