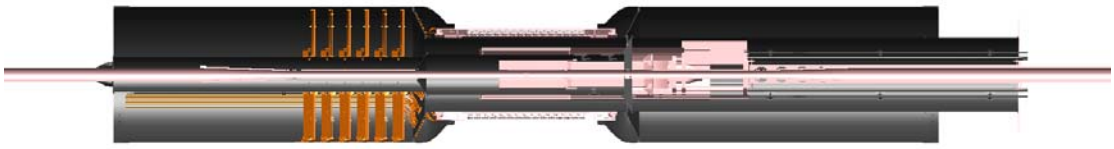
Subsystem			Date Created
Forward GEM Tracker			4-Mar-10
Document Title			Date Revised
Detector Support Interface Specifications			9-Mar-10
STAR Doc. Number	Institute Doc. Number	Author(s)	Revision Level
		J. Bessuille	0.2

Revision Log			
Revision	Date	Page(s)	Description of changes
0.1	4-Mar-10	all	Initial creation
0.2	9-Mar-10	all	Changed format to separate mechanical and services

References				
Reference Number	Document Name	Date	Author	Star Document Number
1	FGT Design Tables	Live	Bessuille	
2	E-mail	3/2/2010	Visser	
3	Inner Detector CAD Model	Live	Bessuille	

Subsystem	Sheet Title	STAR Doc. Number
Forward GEM Tracker	Service Interfaces	0
		Revision Level: 0.2



Servicing

Service Type	Outer Size mm	Number -	Material -	Unit mass kg/m	Length m	Notes -	Ref -	ID mm	Area mm^2	Connector	Min. Bend Radius mm
Signal	7.5946	24	Cu-Al			#28 Wire	2	0	45.30016		
High Voltage	3.05	24	Cu				1		7.306166		
Cooling	205	1	CFRP		1.675	Central Cooling Tube	3	203	640.8849		
Gas	3.175	12	LDPE			1/8" OD LDPE tube	1	1.588	5.936731		

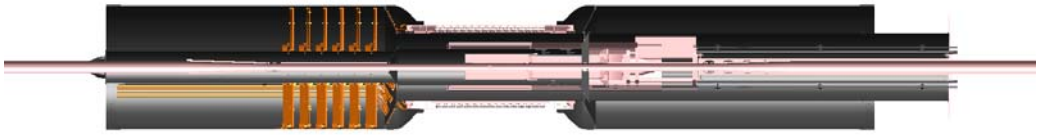
Electrical Requirements

Item	Notes	Ref
RF Shielding	integral to detector	
Grounding	integral to detector	

Thermal Loads

Element	Power/ element W	No. Elements -	Maximum Temp. °C	Notes -	Ref -
APV Chip		240			
HV Board		24			
Interconnect board		16			

Subsystem	Sheet Title	STAR Doc. Number
Forward GEM Tracker	Mechanical Interfaces	0
		Revision Level: 0.2



Build Position

Element to be positioned	Direction -	Mechanical Tolerance mm	Relative to -	Survey Tolerance mm	Relative to -	Notes	Ref
Survey marker on bearing housing	X	0.50	STAR	0.250	IR		
Survey marker on bearing housing	Y	0.50	STAR	0.250	IR		
Support disk back surface	Z	1.00	WSC	0.500	IR		
Support disk back surface	Z	0.50	next support disk	0.500	TPC		
Support disk back surface	Rx	1.00	Beamline	0.500	Beamline	at maximum radius	
Support disk back surface	Ry	1.00	Beamline	0.500	Beamline	at maximum radius	
Readout plane	Rz		WSC		TPC		

The build position table establishes degree to which a given detector m positioned within STAR (Mechanic Tolerance column) as well as the a with which its position must be kno Tolerance column).

Stability

Element to be positioned	Direction -	Short Term mm	Relative to -	Long Term mm	Relative to -	Notes	Ref
Entire Detector	All	0.10	STAR				

Short term stability applies to opera vibratoins. Long term stability desc much a detector is allowed to move deliberate reconfiguration of the In Detector system (i.e. adding / remo another detector)

Load Transferred to IDS

Load Interface	z Position mm	Vertical Force N	Moment about x N-m	Notes	Ref
Rail support #1	683.65			Split evenly between north and south support rails	
Rail support #2	783.65			Split evenly between north and south support rails	
Rail support #3	883.65			Split evenly between north and south support rails	
Rail support #4	983.65			Split evenly between north and south support rails	
Rail support #5	1083.65			Split evenly between north and south support rails	
Rail support #6	1183.65			Split evenly between north and south support rails	

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