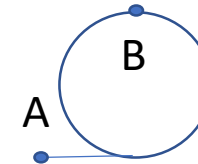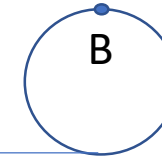# Spooling Tests 927 – Paul, Marc, Marcin, Erik (24/03/2022)

Test config:
62 m Demo cryostat
Demo cable Ø92 mm
Sc link on trolleys
Spool Ø3m
Cable free at A & B
Spooling: pulled by spool
Unspooling: pulled at cryostat flange
'+' cable movement out wrt flange (mm)
'-' cable movement in wrt flange (mm)

A

B

A

B

Spooling Tests 927 (24/03/2022)

Test config:
62 m Demo cryostat,
Demo cable Ø92 mm,
Sc link on trolleys,
Spool Ø3m,
Cable free at A & B,
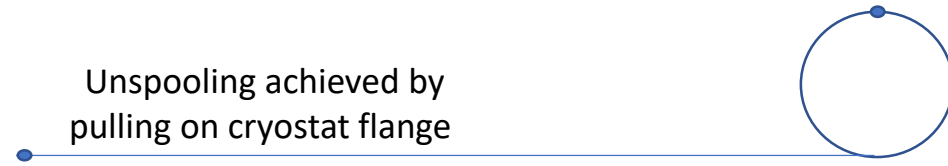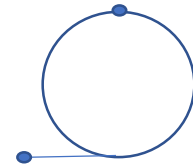Spooling: pulled by spool on spooler,
Unspooling: pulled at cryostat flange,
'+' cable movement out wrt flange (mm)
'-' cable movement in wrt flange (mm)

A   B
60 m   0 m

B
A

Unspooling achieved by
pulling on cryostat flange

Unspooling achieved by
pulling on cryostat flange

State	rel.disp A (mm)	rel.disp B (mm)	
Initial	0	0	
1	+66	-173	
2	-124	+23	
3	-69 (wrt state 2, +55)	not measured	
4	-199	+103	

Spooling Tests 927 (24/03/2022)

state (m)	Position A Spooling 1	rel.disp	Position B Spooling 1	rel.disp	Position A Unspooling 1	rel.disp		Position B Unspooling 1		Position A Spooling 2	rel.disp	rel.disp	Position A Unspooling 2	rel.disp	Position B Unspooling 2	
Configuration: 62 m DEMO cryostat, NgB2 cable, Cable free, Metal trolley without link bars,																
60	2011	0	168	0	2135	124	-190	145	23	2135	124	0	2210	199	65	103
55	2011	0			2130	119	-185						2205	194		
50	2011	0	179	-11	2115	104	-170	123	56	2135	124	0	2185	174		
45	2011	0			2115	104	-170						2185	174		
40	2011	0	229	-61	2085	74	-140	160	69	2130	119	-5	2165	154		
35	2011	0			2060	49	-115						2165	154		
30	2011	0	268	-100	2050	39	-105	210	58	2130	119	-5	2150	139		
25	2011	0			2020	9	-75						2140	129		
20	2011	0	296	-128	2016	5	-71	265	31	2125	114	-10	2115	104		
15	2010	-1			2016	5	-71						2010	-1		
10	2009	-2	320	-152	1980	-31	-35	324	-4	2125	114	-10	2080	69		
7	1996	-15			1970	-41	-25			2115	104	-20				
5	1991	-20			1960	-51	-15			2105	94	-30	2080	69		
3	1960	-51			1950	-61	-5			2090	79	-45				
0	1945	-66	341	-173	1945	-66	0	343	-2	2080	69	-55	2070	59		

Note: due to orientation of the attached measurng tape at A, the outward movement of the cable wrt flange creates a negative value in the tabulated values.

Spooling Tests 927 (Marc & Marcin) (??/03/2022)

Test config:
62 m Demo cryostat,
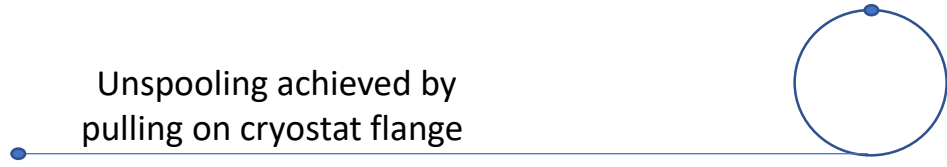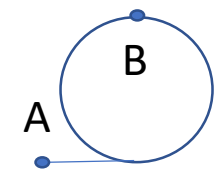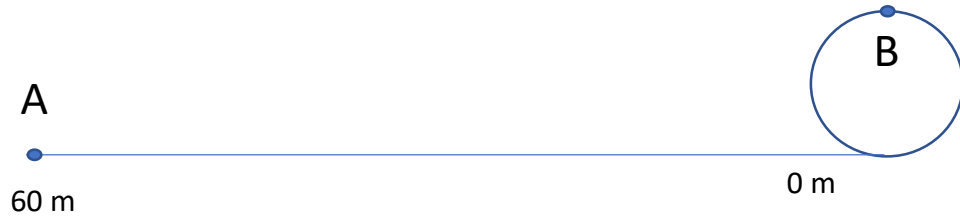Demo cable Ø92 mm,
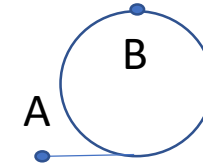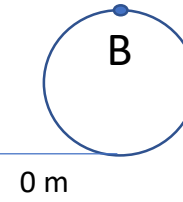Sc link on trolleys,
Spool Ø3m,
Cable held at A & free at B,
Spooling: pulled by spool on spooler,
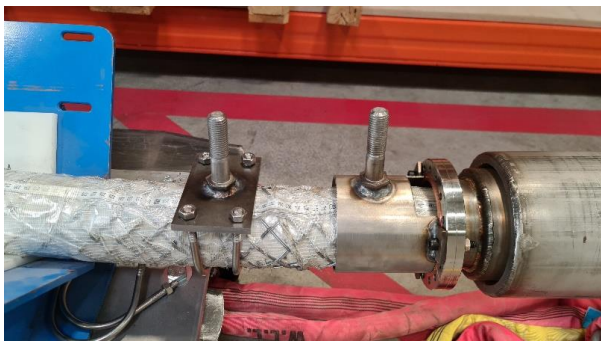Unspooling: pulled at cryostat flange,
'+' cable movement out wrt flange (mm)
'-' cable movement in wrt flange (mm)

State	rel.disp A (mm)	rel.disp B (mm)	
Initial	0	0	
1	0	+10	

D: distance Cryostat déployé (m)	F: force de traction (N).	M1: Cable position mm	M2: Cable position mm
60	40N	1888	240
50	80N	1888	240
40	100N	1888	240
30	120N	1888	240
20	160N	1888	250
10	660N	1888	250

Next steps spooling trials….

- Further spooling test with restraint at A (& force measurement)
- Spool/unspool/spool/unspool to check force observation

……..next week in 927

- Check forces during unspooling using 'gerbeur'
  - What are the forces
  - Where/how to pull - do we need to link the chariots and pull at the chariot instead of cryostat flange.

  - Other ?