

Summary of the checking items of the Module-C design

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Design to be approved by KEK

Data: 07/04/2009

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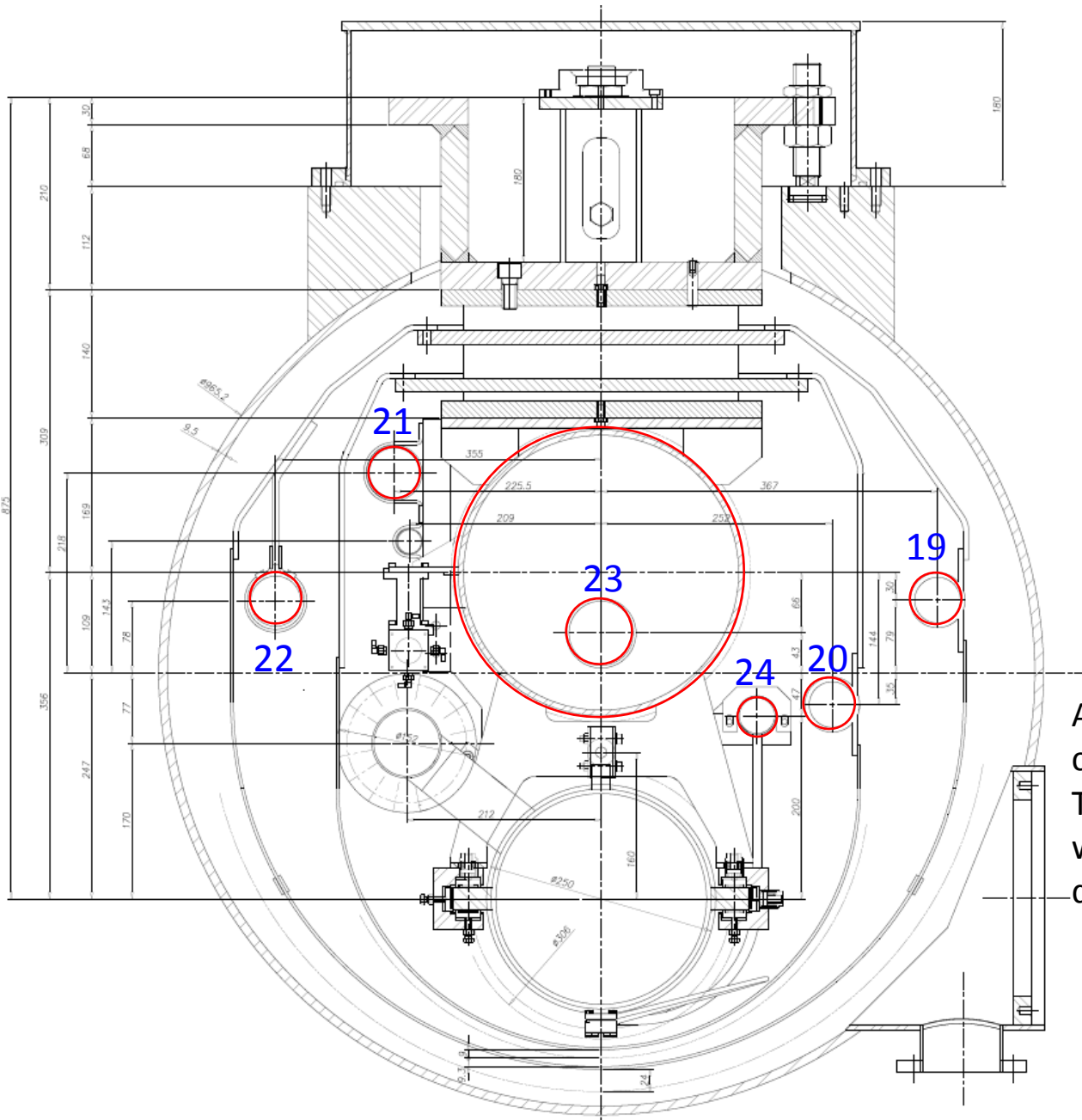
Verifications

The following verifications are required by KEK. The aim of this verification is to avoid interference problems with existing parts and instrumentation at KEK or incompatibility with KEK components. The number in brackets refers to the part number in the drawing part list.

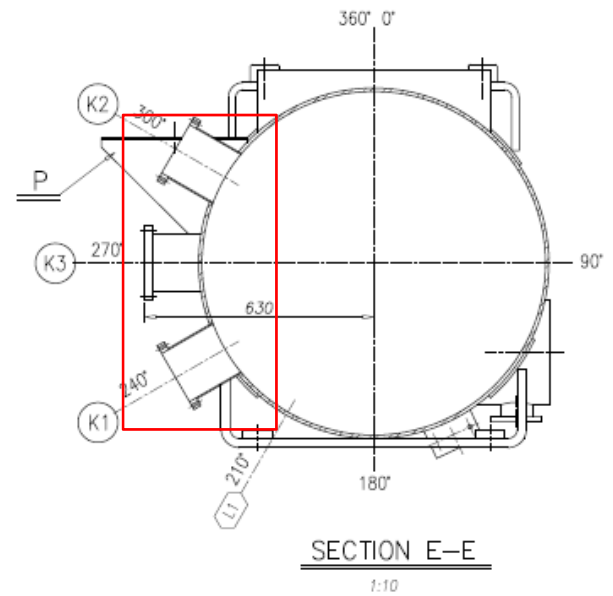
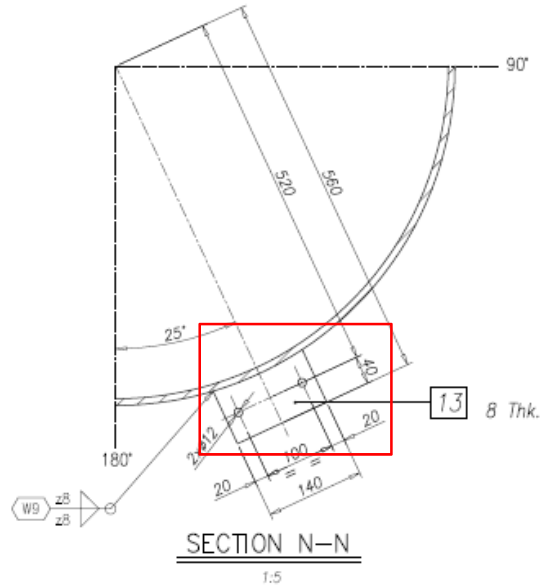
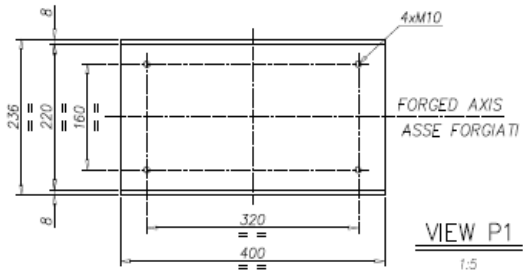
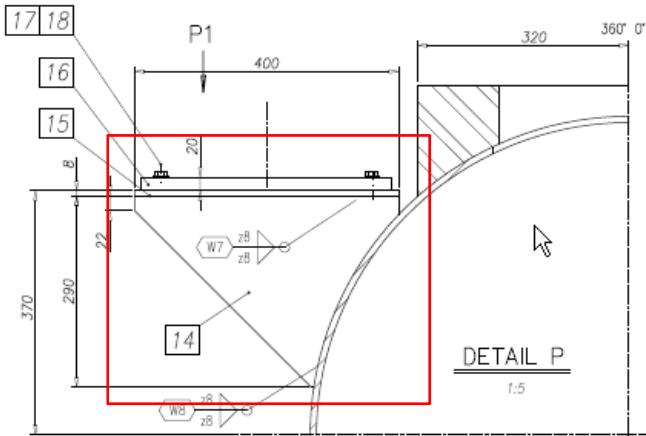
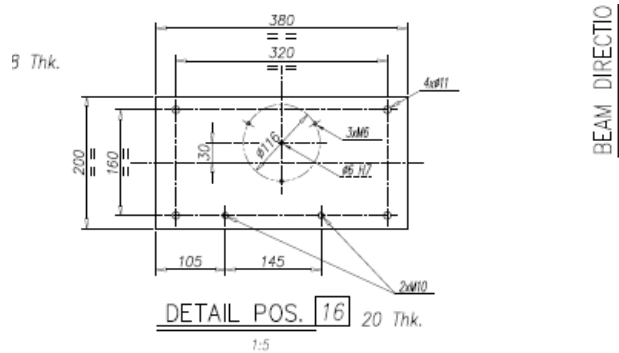
Drawing 3023.0.003: Typical cross section

All the pipe vertical and horizontal positions have to be approved by KEK:

- 19 70K forward line
- 20 5K forward line
- 21 70K return line (finned pipe)
- 22 5K return line (finned pipe)
- 23 GRP and reduced pipe
- 24 Warm up / cool down line

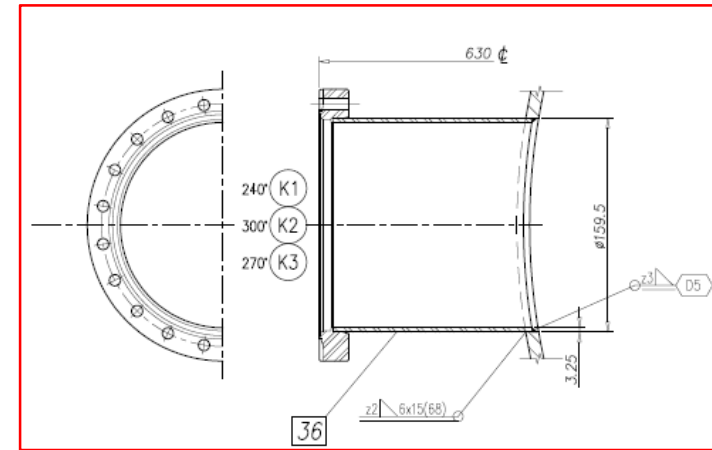
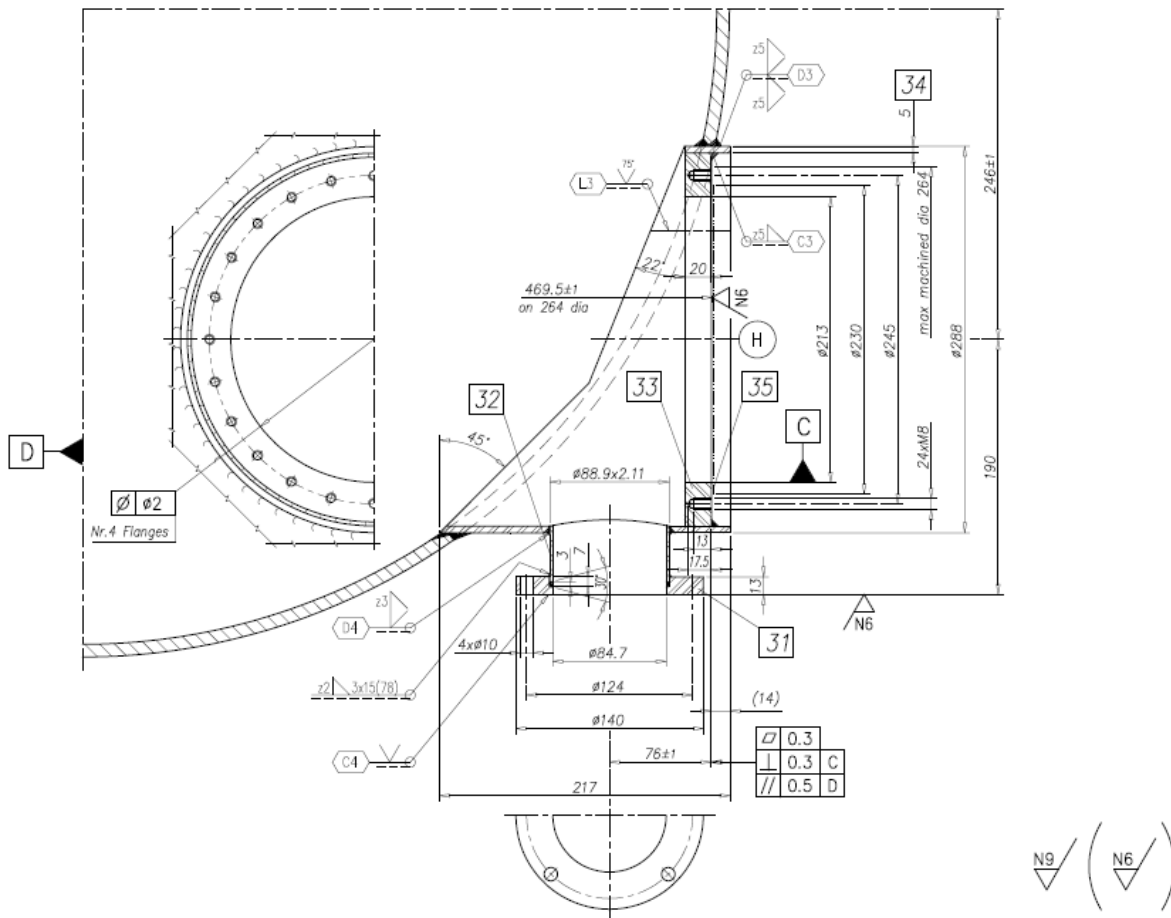


All pipe sizes and locations are confirmed.
The dimensions of these pipes were compared with KEK CAD data.



Drawing 3023.1.002: Vessel details

Diameter and thickness of the pipe in the K1-K2-K3 flange detail (pos. 36): the one in the drawing are the standard values of commercial parts.



○	40						
○	39						
○	38						
○	37						
○	36	Flange with pipe DN 160 CF Flangia con tubo K1-3	3	X2CrNi1911 EN 10028-7 ASTM A240 316L	1		
○	35	O-ring DN 200 ISO-K	4	E'PM + Inox			
○	34	Tubo Pipe	4	X2CrNi1911 EN 10028-7 ASTM A240 304L	1		
○	33	Flange Flangia	4	X2CrNi1911 EN 10028-7 ASTM A240 304L	1		
○	32	Tubo Pipe	4	X2CrNi1911 EN 10218-5 ASTM A312 TP-304L	1		
○	31	Flange Flangia	4	X2CrNi1911 EN 10028-7 ASTM A240 304L	1		
Posizione Position	Descrizione Description	Quantità Quantity		Materiale Material	Call. Tech.	Note Notes	
Tipo di certificato richiesto per i materiali / Type of certificate required for the materials							
<input type="checkbox"/>	3.1 UNI EN 10204	<input type="checkbox"/>	3.2 UNI EN 10204	<input type="checkbox"/>	2.1 UNI EN 10204	<input type="checkbox"/>	2.2 UNI EN 10204
<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>	

ISO 160F

Figure 2 Bolt style

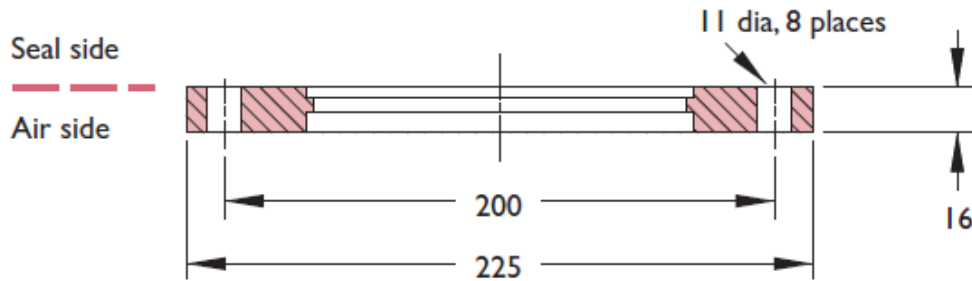
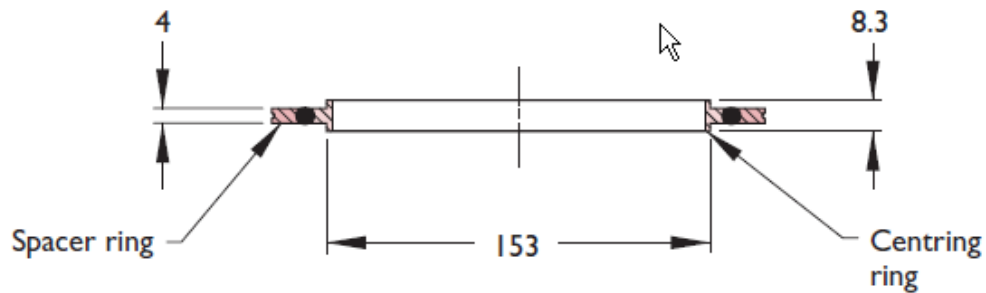


Figure 3 Centring ring assembly



Module A

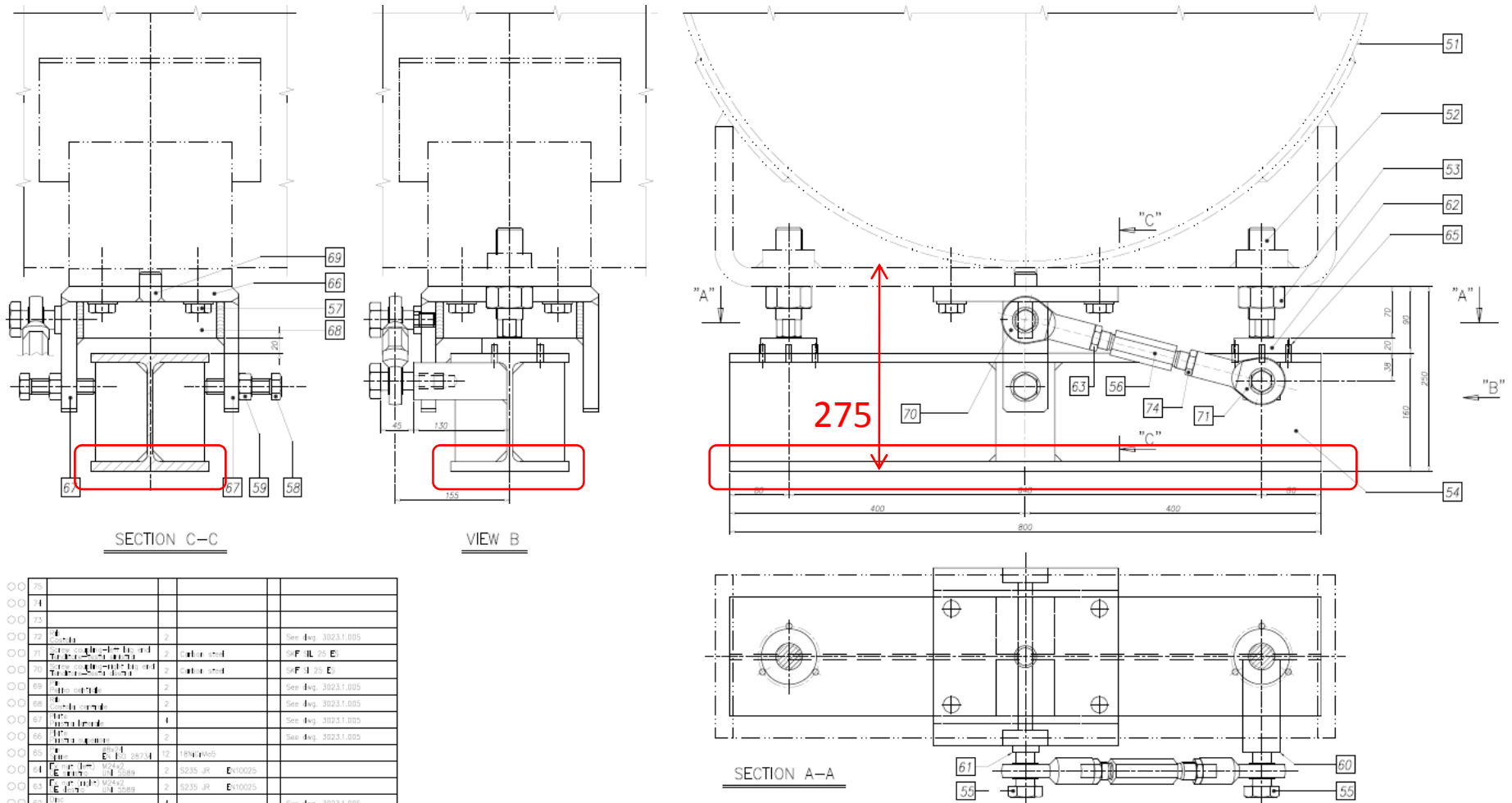
Welded pipe size:

Outer dia. = 139.8mm

Thickness = 5.1 mm

Drawing 3023.1.004: Adjustable support assembly

This drawing represents the cryomodule support system. Please verify that this system is compatible with KEK facility

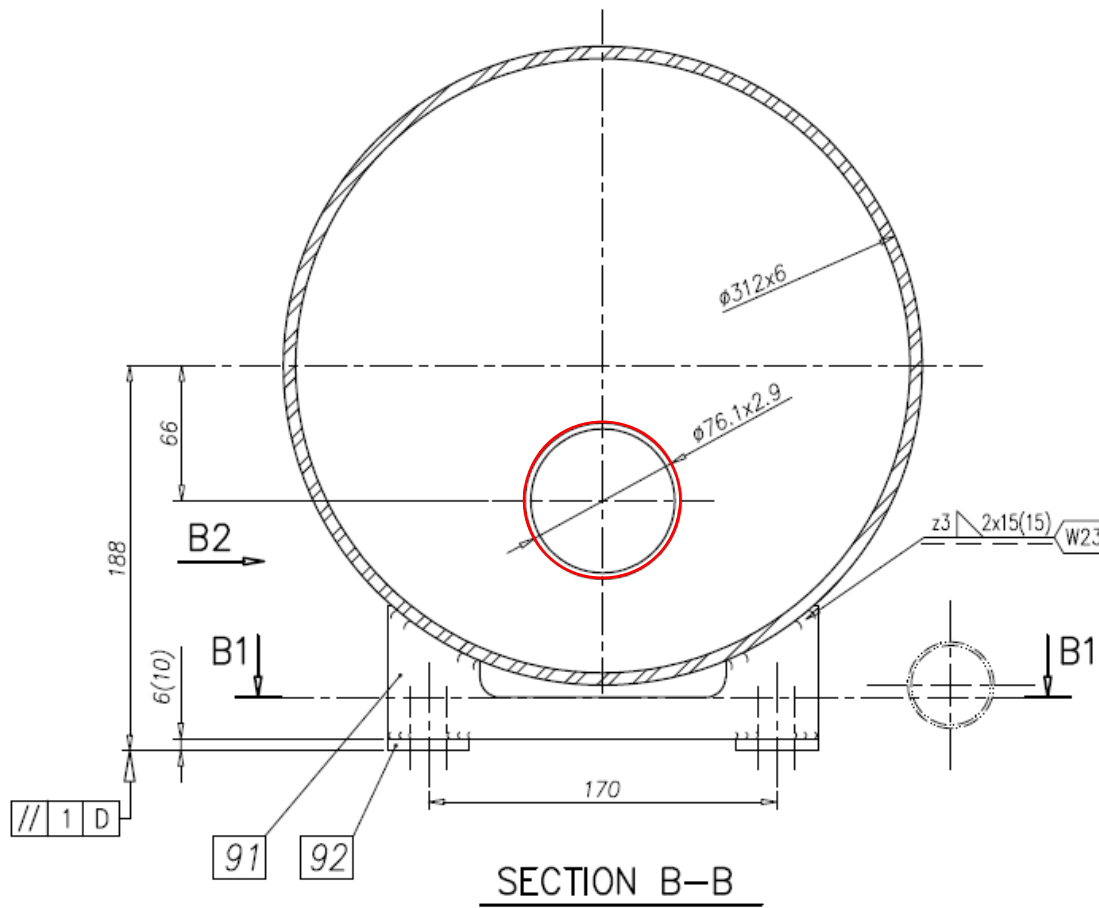




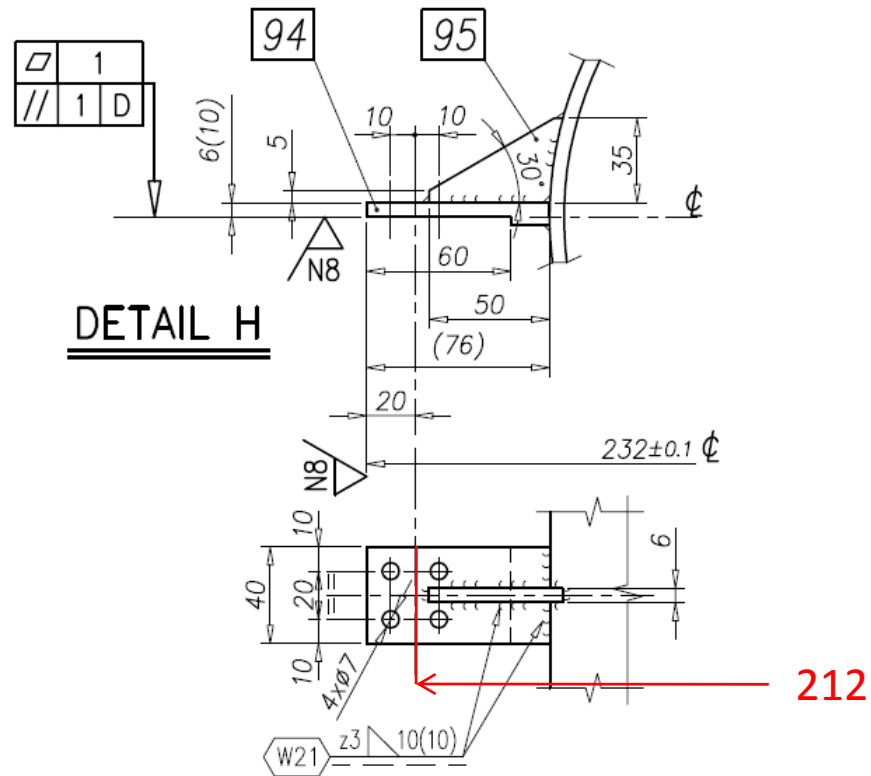
Drawing 3023.2.001: HeGRP assembly

Section B-B: diameter and thickness of the reduced pipe; the values in the drawing are the standard one for commercial pipes (pos. 113).

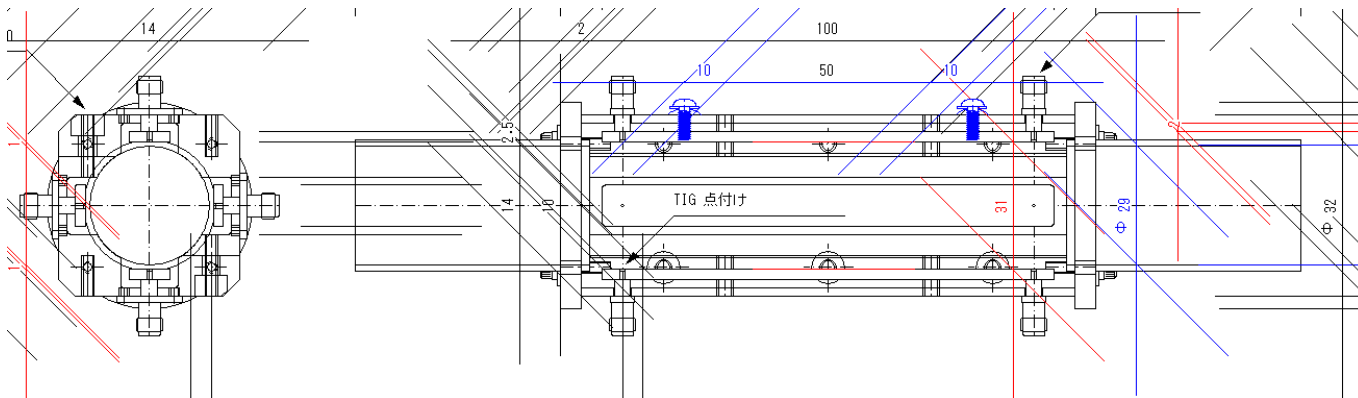
Detail H (WPM support): the center of the holes is at 212 mm from the vessel axis, while the center of the WPM line is at 212 mm from the same axis. I sit correct? Do you want to have the same value?



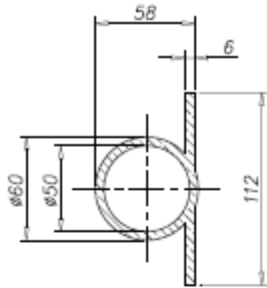
Module A
O.D.=76.3 mm
T=2.1 mm



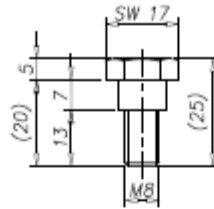
WPM by H. Hayano



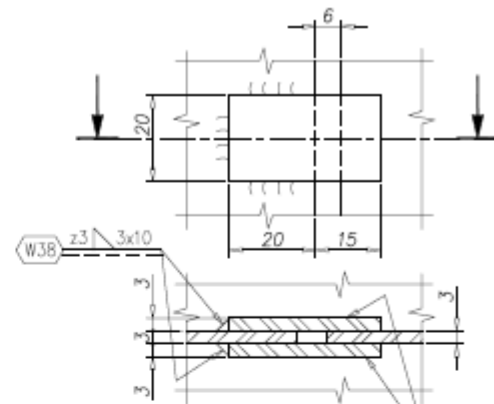
Drawing 3023.3.001 and 3023.4.001: 4.5 K and 70 K shields
 Please verify the design of the Aluminum finned pipes.



DETAIL POS. 157
 scale 1:2.5

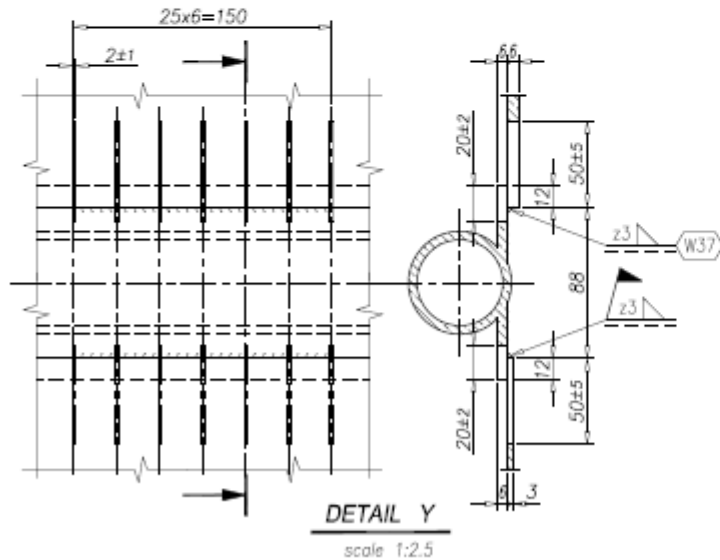


DETAIL POS. 162
 scale 1:1

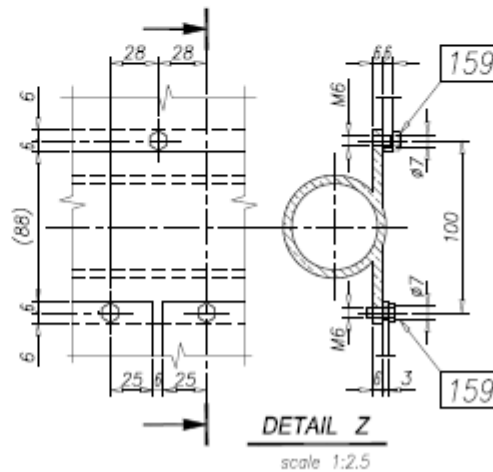


DETAIL X
 scale 1:1

158



DETAIL Y
 scale 1:2.5



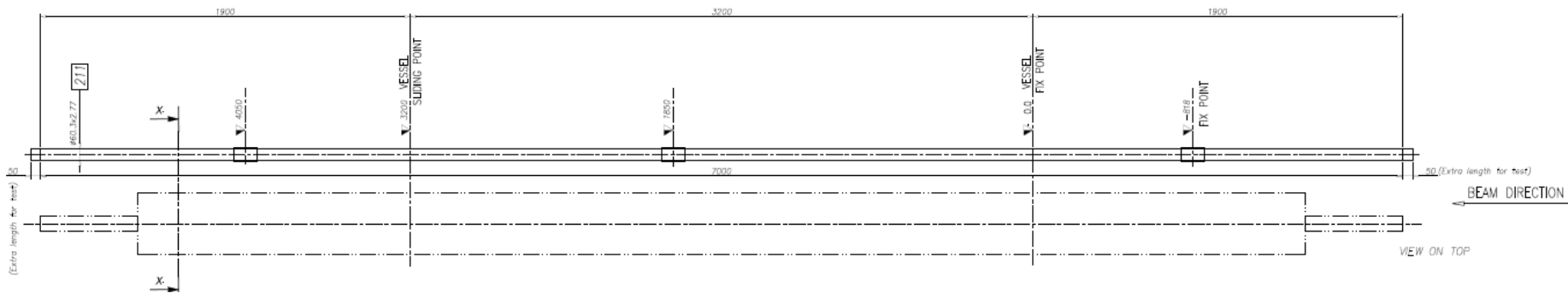
DETAIL Z
 scale 1:2.5

159

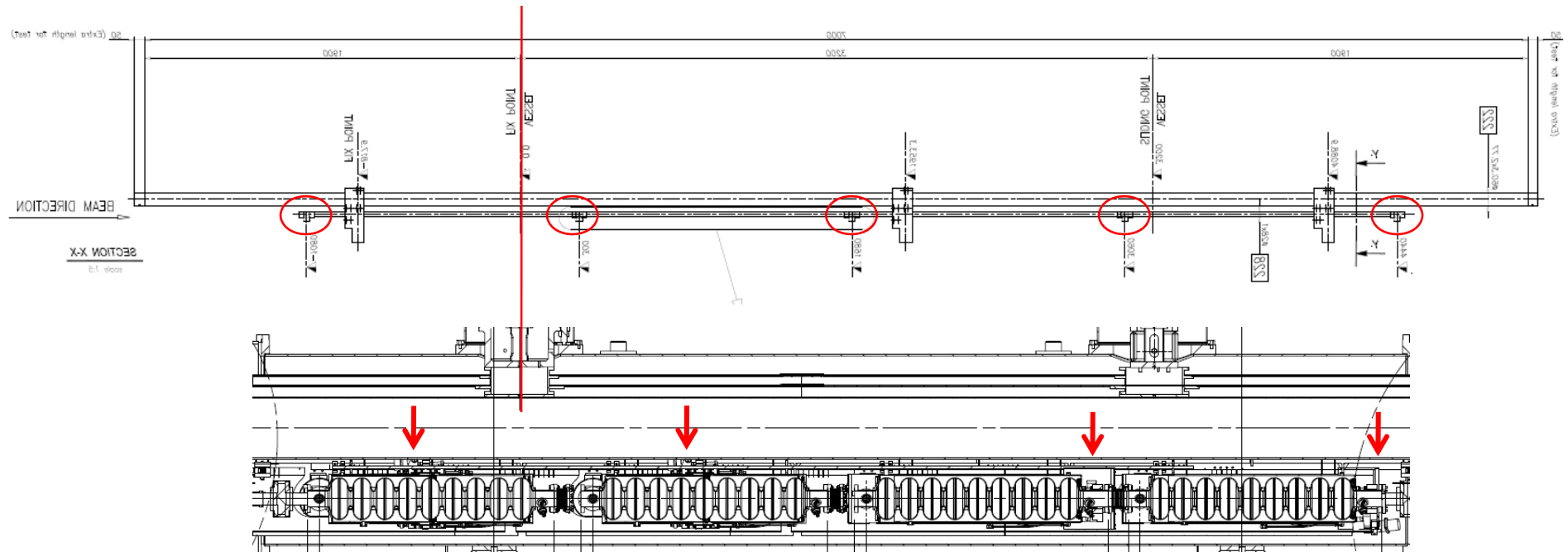
159

Drawing 3023.5.00X: pipes
Please verify the pipe diameters and lengths.

70K pipe : $L = 7000 \text{ mm} + 50 \times 2$



4.5K pipe : L= 7000 mm + 50 × 2
 Stepping motor pipe



Warm-up tube

Main pipe: $\phi 42.1 \times 1.65$

Branch pipe: $\phi 10.2 \times 2.6 + \phi 5 \times 1$

