Status of the works in the MPD Hall, MPD Pit and the assembly of the MPD Magnet

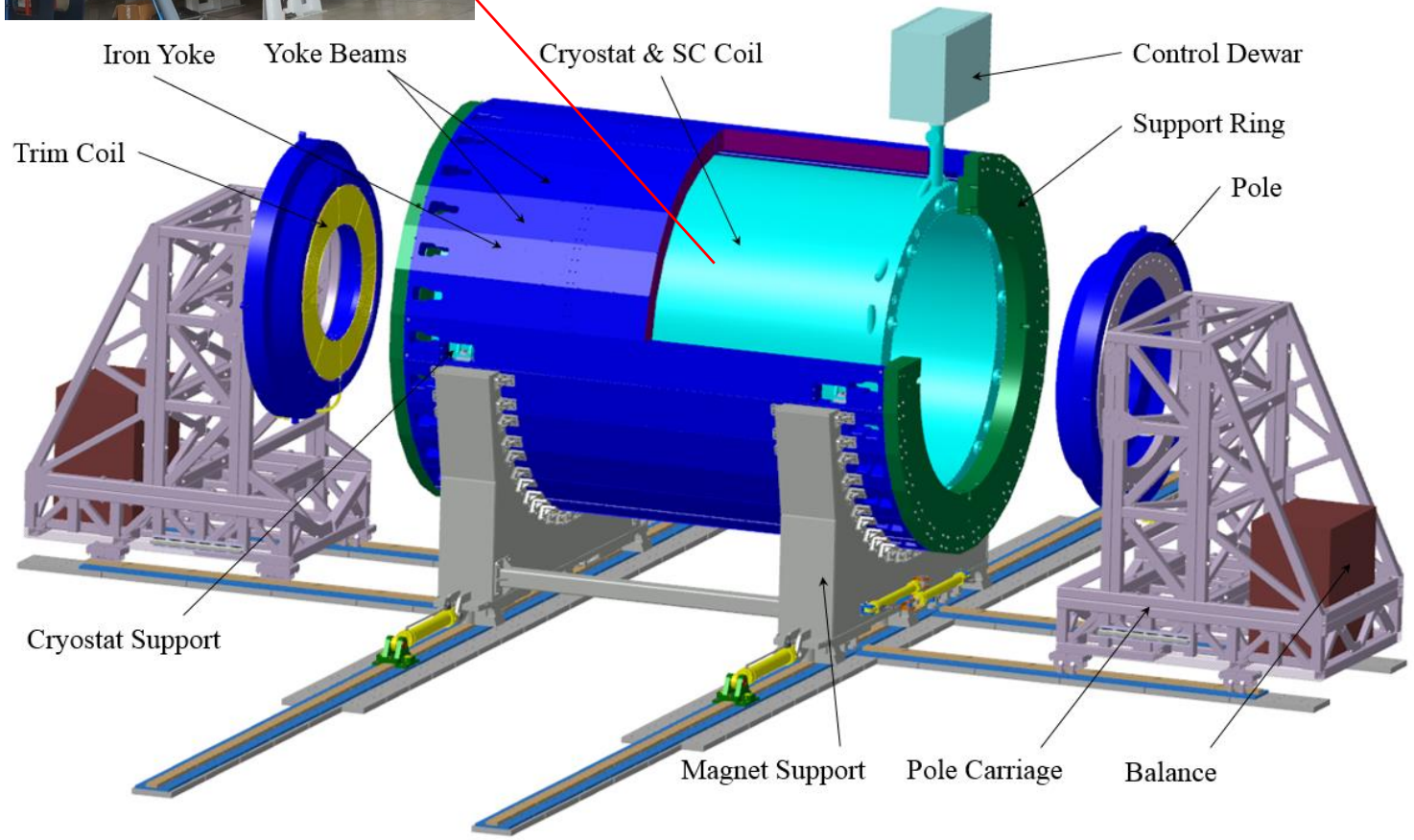
Dr. N.Topilin

Professor of the Russian Academy of Natural Sciences

JINR, Dubna

Nearest Goal: MPD Yoke assembly with Movement System (MS) and Cryostat

MPD Yoke (L=8970 mm, Ø6625 mm)



28 plates
16 t each

2 support rings
42.5 t each

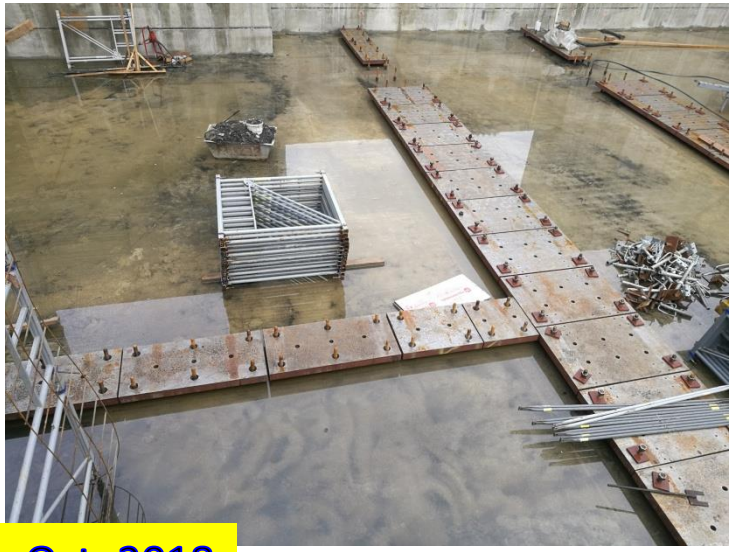
2 poles
44 t each

Total: 621 t

Material:
Steel 10
(AISI 1010)
forging

Lodgement (Yoke support) – 74 tons, ordinary steel St.3 (Fe 360)
2 Pole transport support – 15 tons each, ordinary steel St.3 (Fe 360)

MPD Pit:



08_Oct_2018

Plate top surface non flatness 0.4 mm/30 м

12_11_2018

20_08_2019

09_Sept_2020

Two bright months from “MPD life” (22 June -19 August, 2020)

22 June

MPD Hall Level ”0”

Alexei Konstantinov

14 July

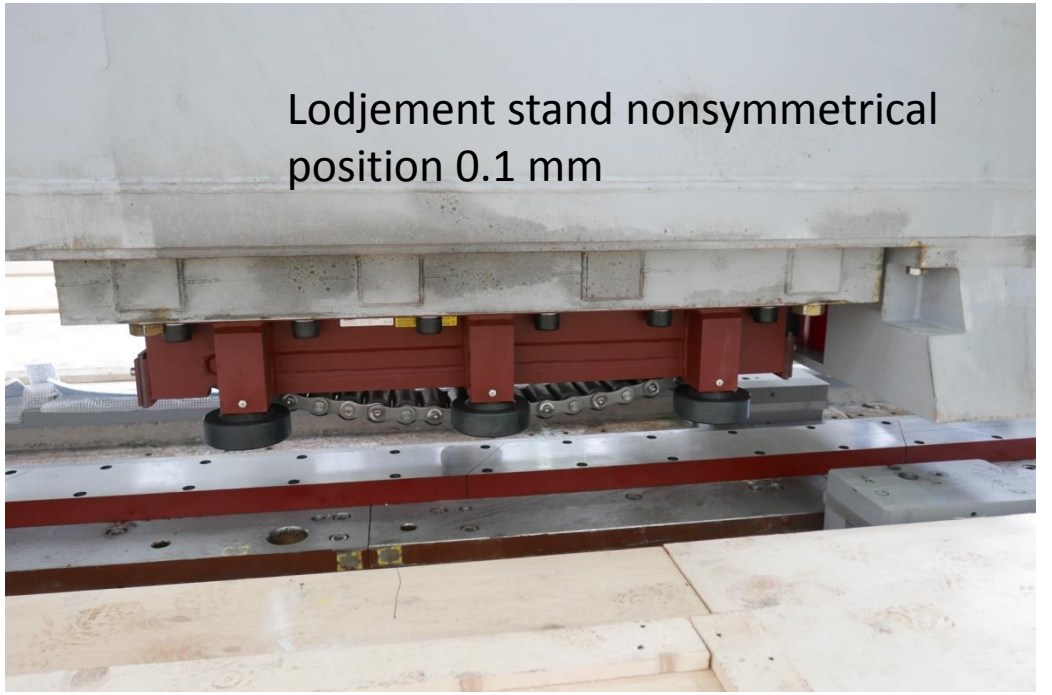
MPD Pit Level “-3.19”

24 June

Roller scates 500 t capacity mounting

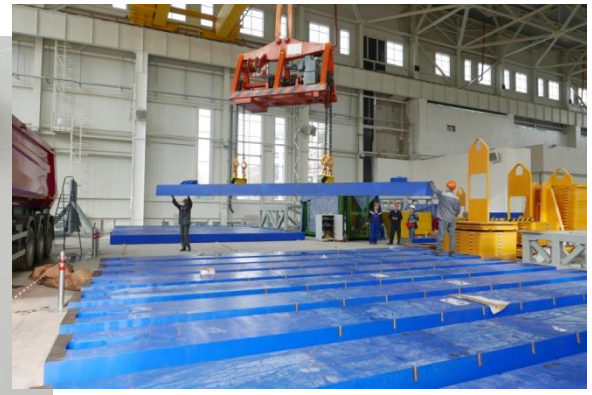
15 July

17 July



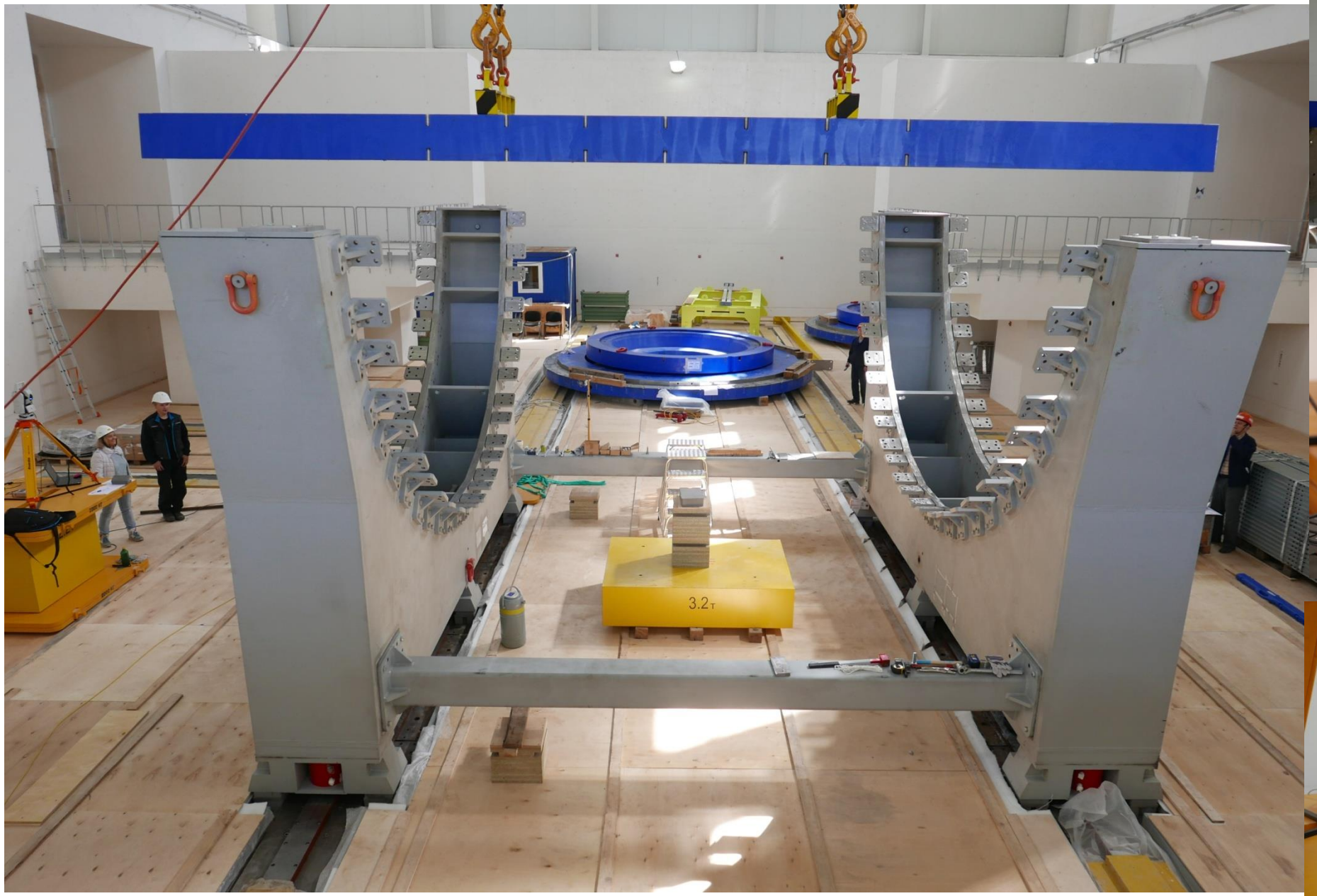
Lodjement stand nonsymmetrical position 0.1 mm

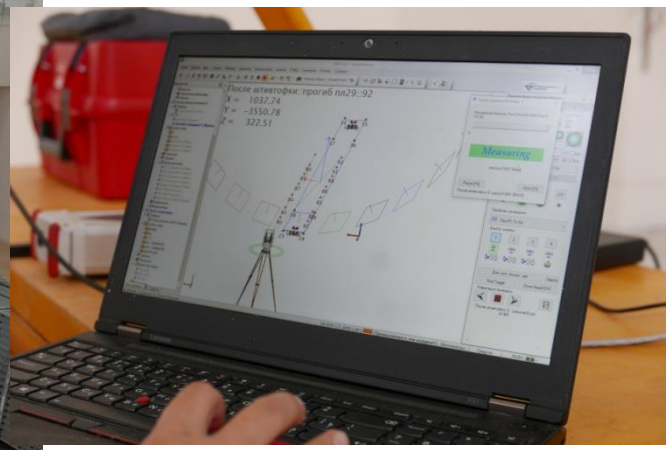
19 July



21-22 July

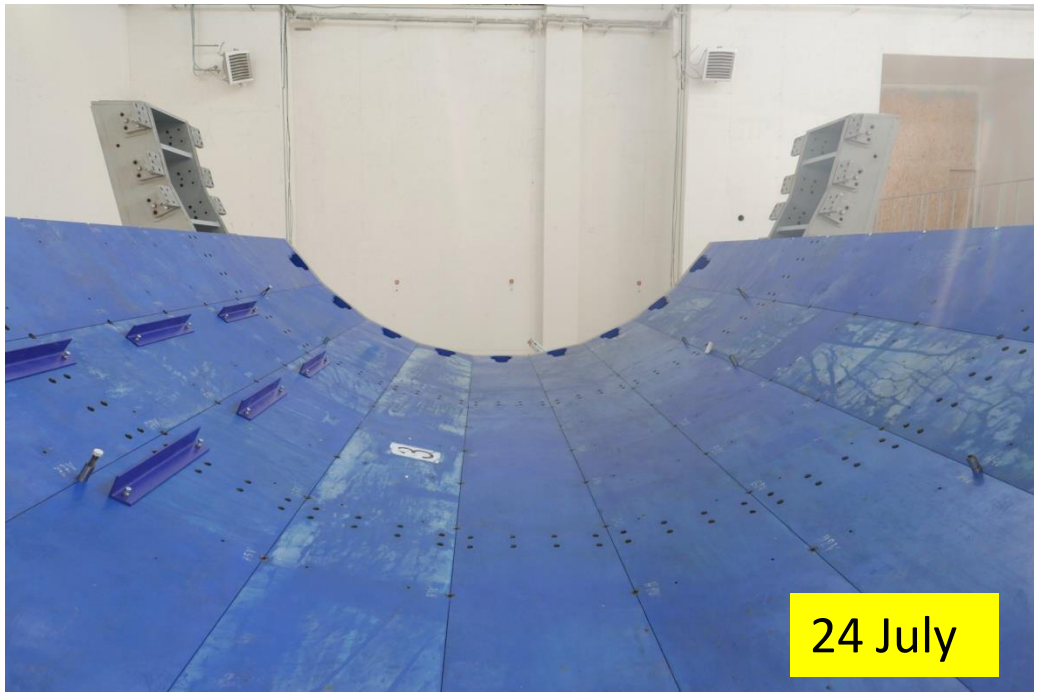
23 July: 1-st 16 t plate (from 28) installation





24 July: 2-nd plate installation

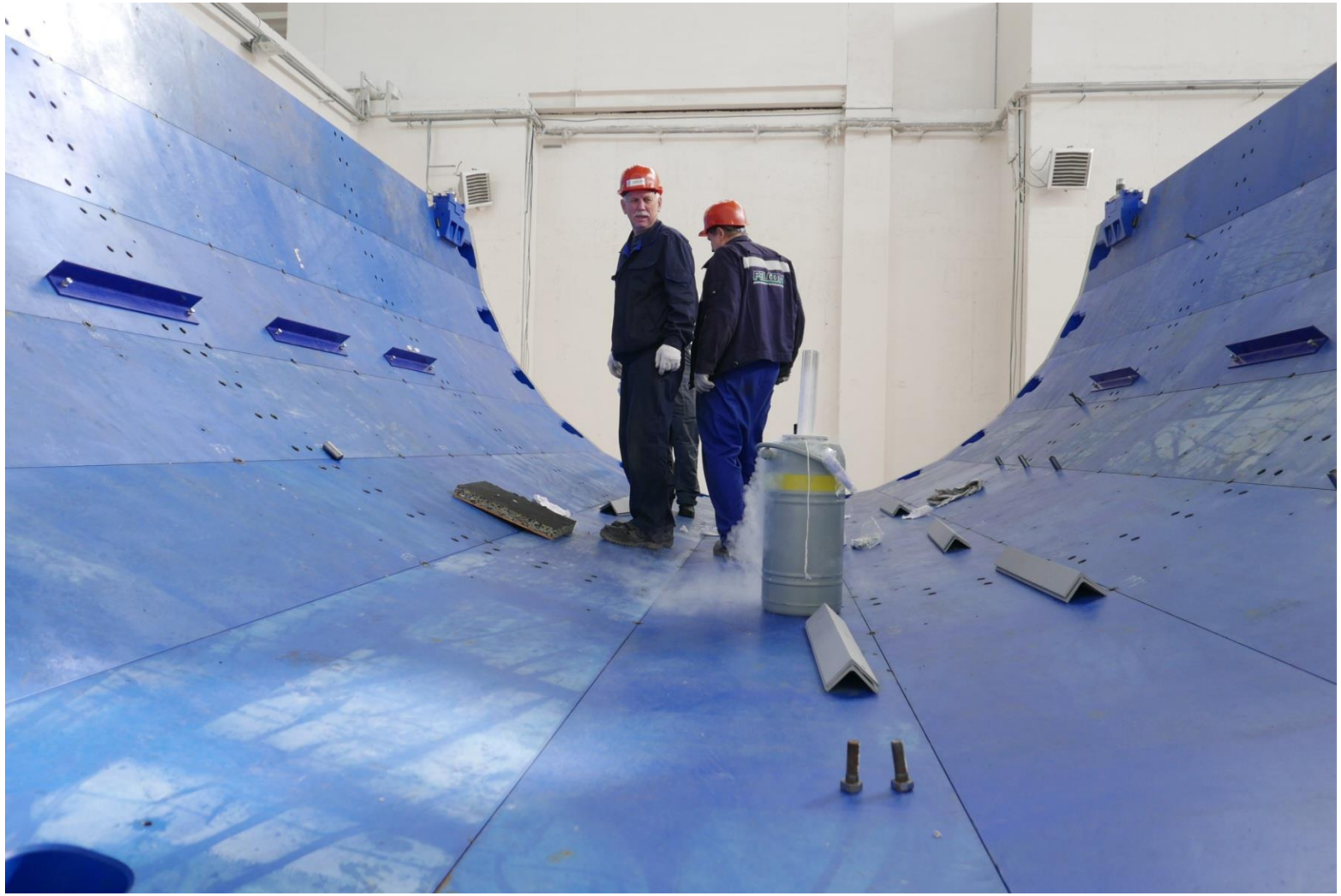
24 July: 5-th plate installation


24 July

27 July

29 July: 13 plates are in assembly

30 July: Pins (33H7/p6) installation with nitrogen (fit 1-26 mcm)



31 July: Pole transport support assembly

04 August

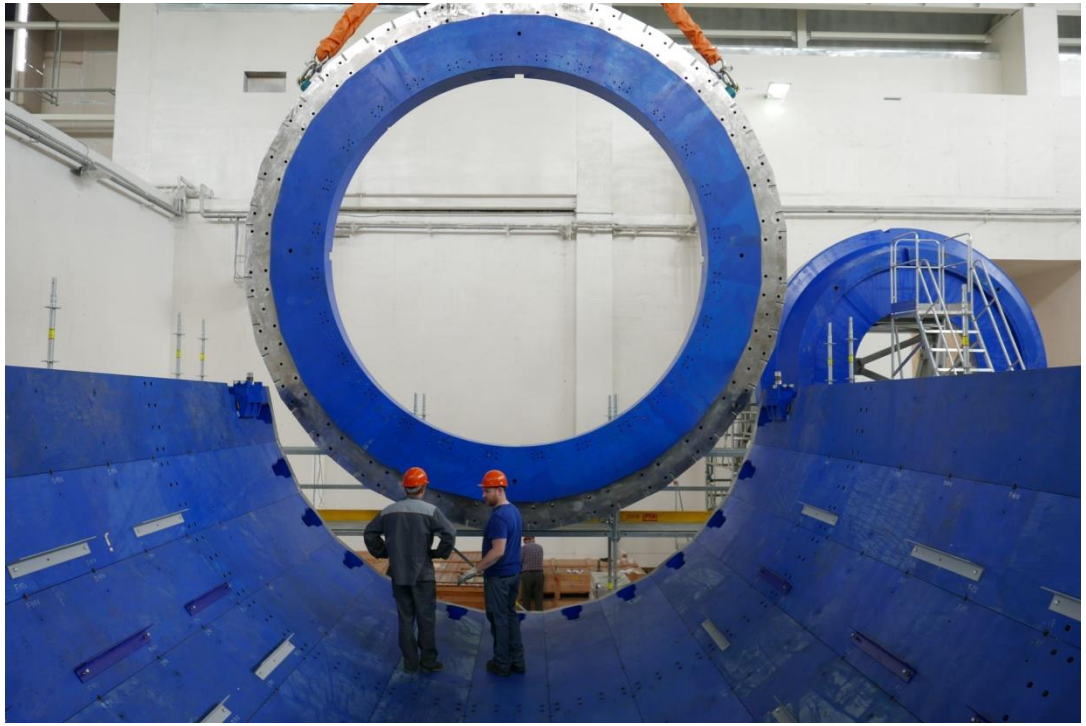
2.2т
2.2т
07 August

06 August

50т
10 August

10 August: 44 t Pole installation on transport support

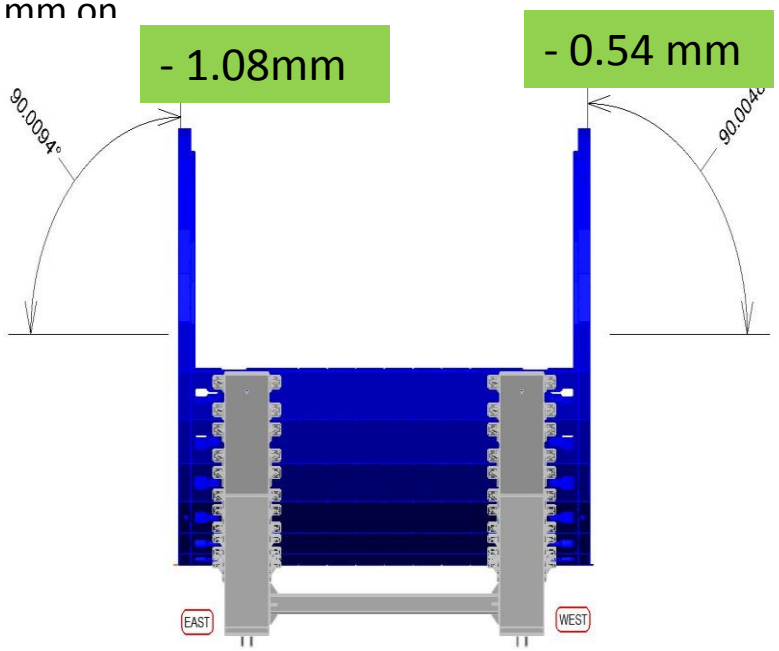
11 August: Support ring #1 (6.7 m, 42 tons) installation

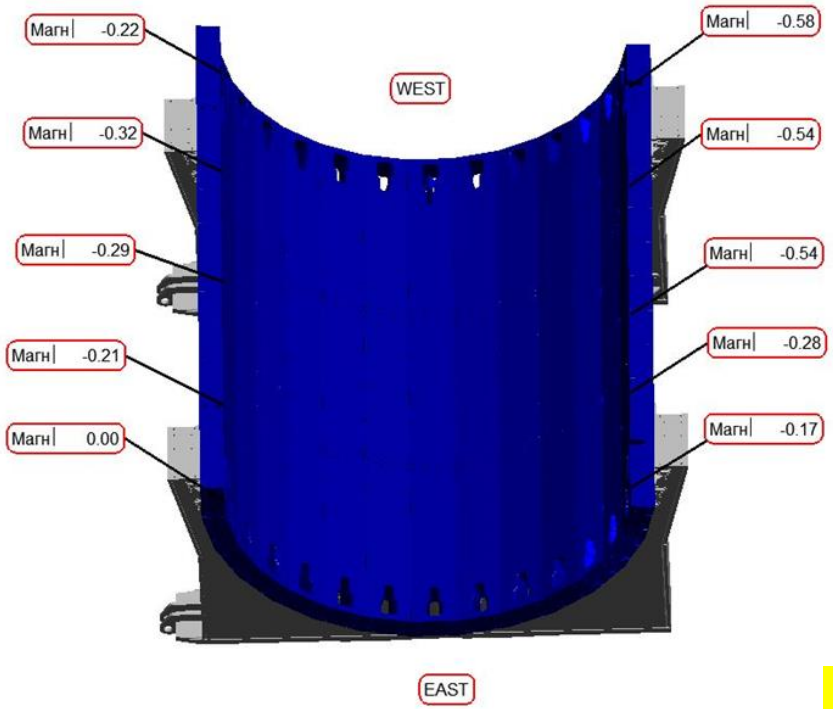


12 August: 13 plates and 2 support rings are assembled

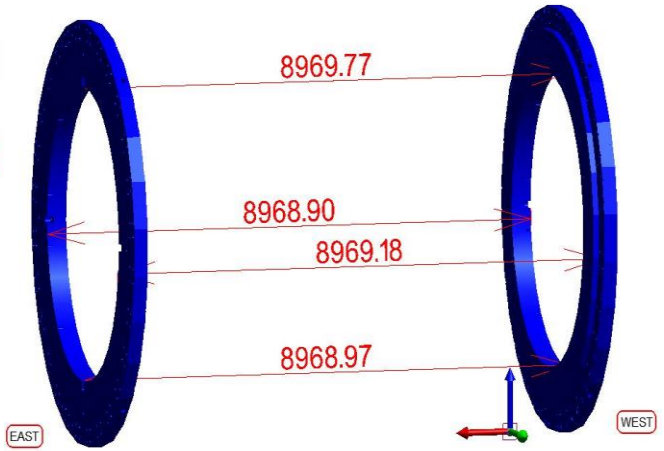
Measurements by «Промышленные измерения» , S.Peterburg

- Rails non planarity: top surface – 0.4 mm and side surfaces – 0.2 mm on length 30 m
- 12 stands height deviations – 0.1 mm max
- Stands shape deviation – 0.2 mm max
- 7 plates in assembly – non planarity 0.5 mm
- 13 plates in assembly – non planarity 0.58 mm max
- Support ring W non symmetrical position – 0.02mm
- Support ring E non symmetrical position – 0.03 mm

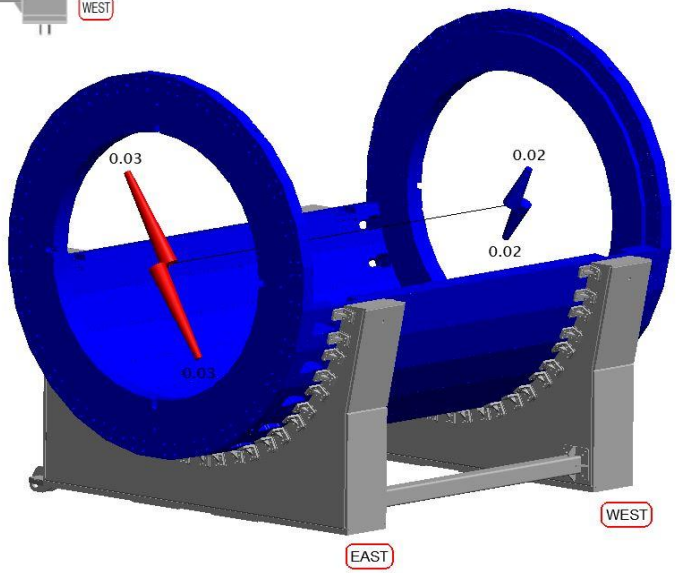


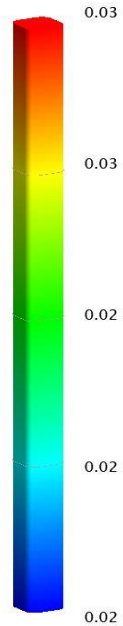


The highest point is taken as zero. All values in mm.

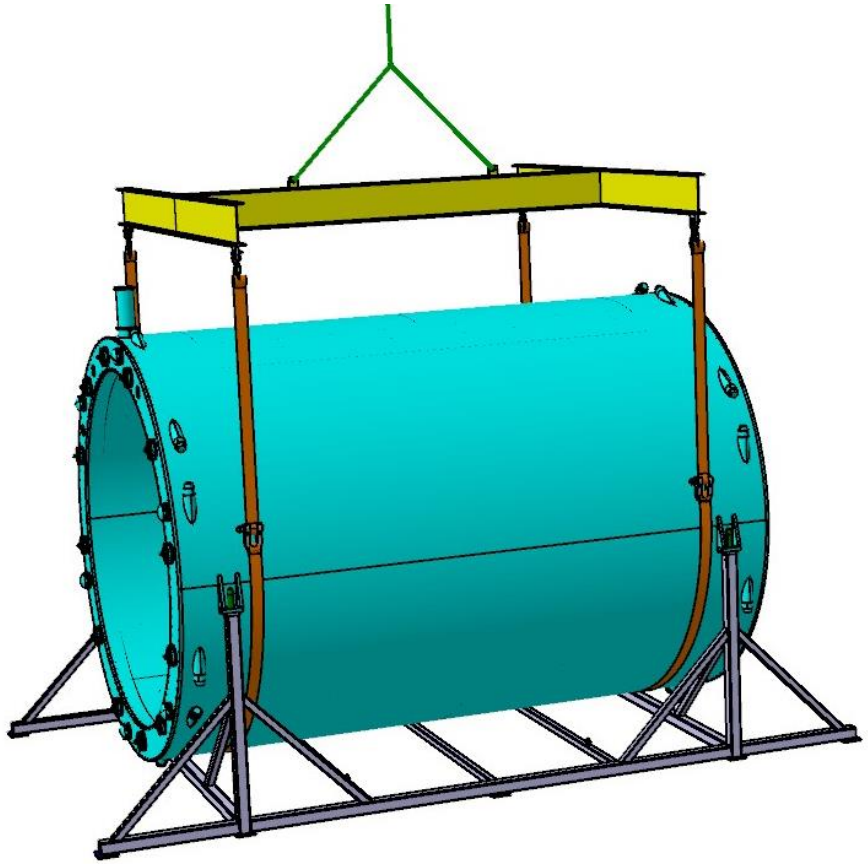


8970 mm is nominal dimension





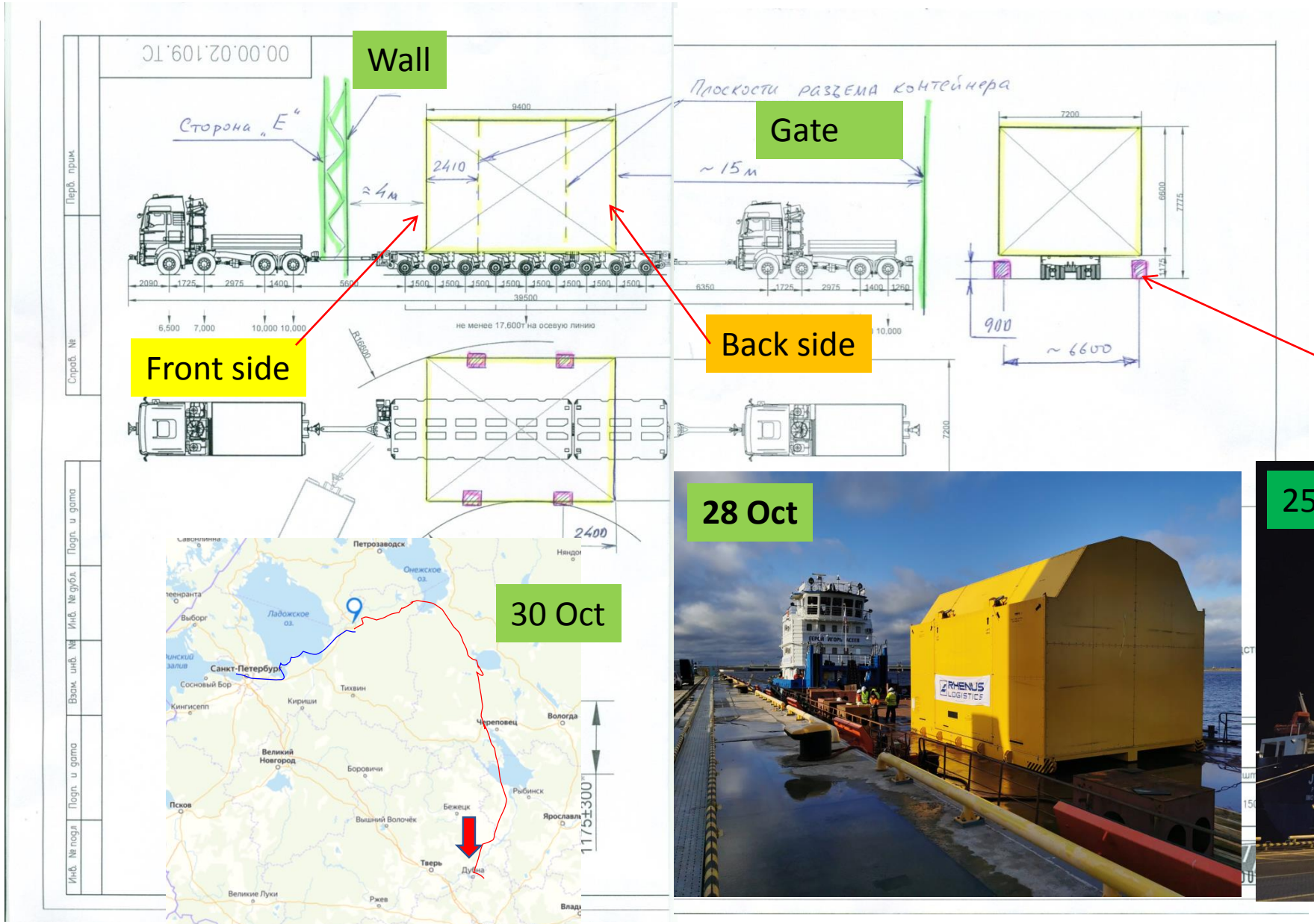
19 August: Lifting beam of 75 t capacity for Cryostat test



Light support for
Cryostat unloading
from transport structure

MPD magnet in the transport container

Total way: ASG Genova-Venezia-Antwerpen-Sankt-Peterburg-Dubna (river port)--VBLHEP



Control weight
41.5 tons

Conclusions

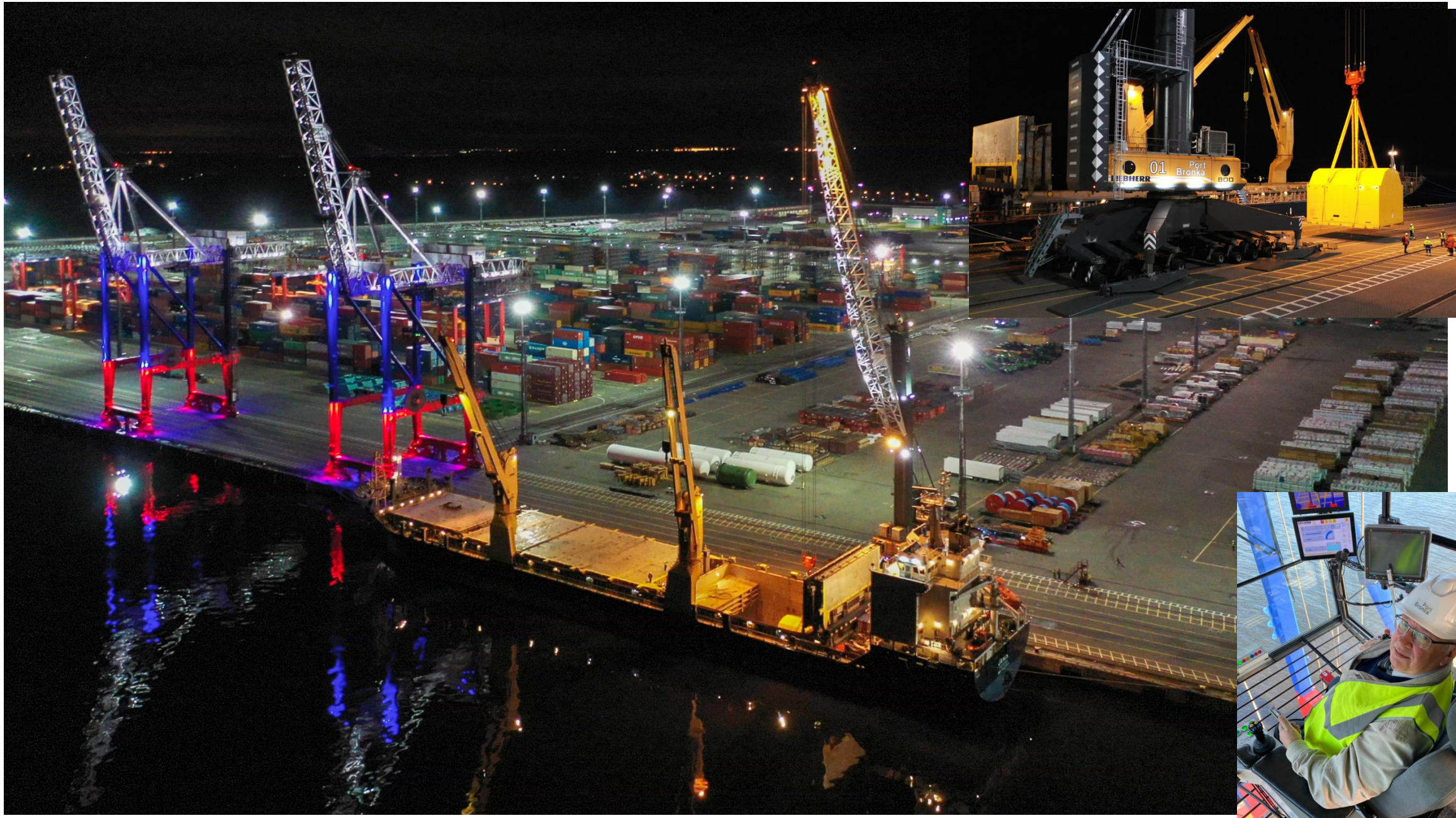
The geometry of MPD yoke half assembly is extremely excellent.
The real dimensions tolerances and deviations from shapes
in 2-3 and more times less than requirements.

But ASG Grand Superviser tell to us:

STOP assembly, wait us…

We wait …

Thanks for your attention!


01
Port
Bronka
LIEBHERR
800