

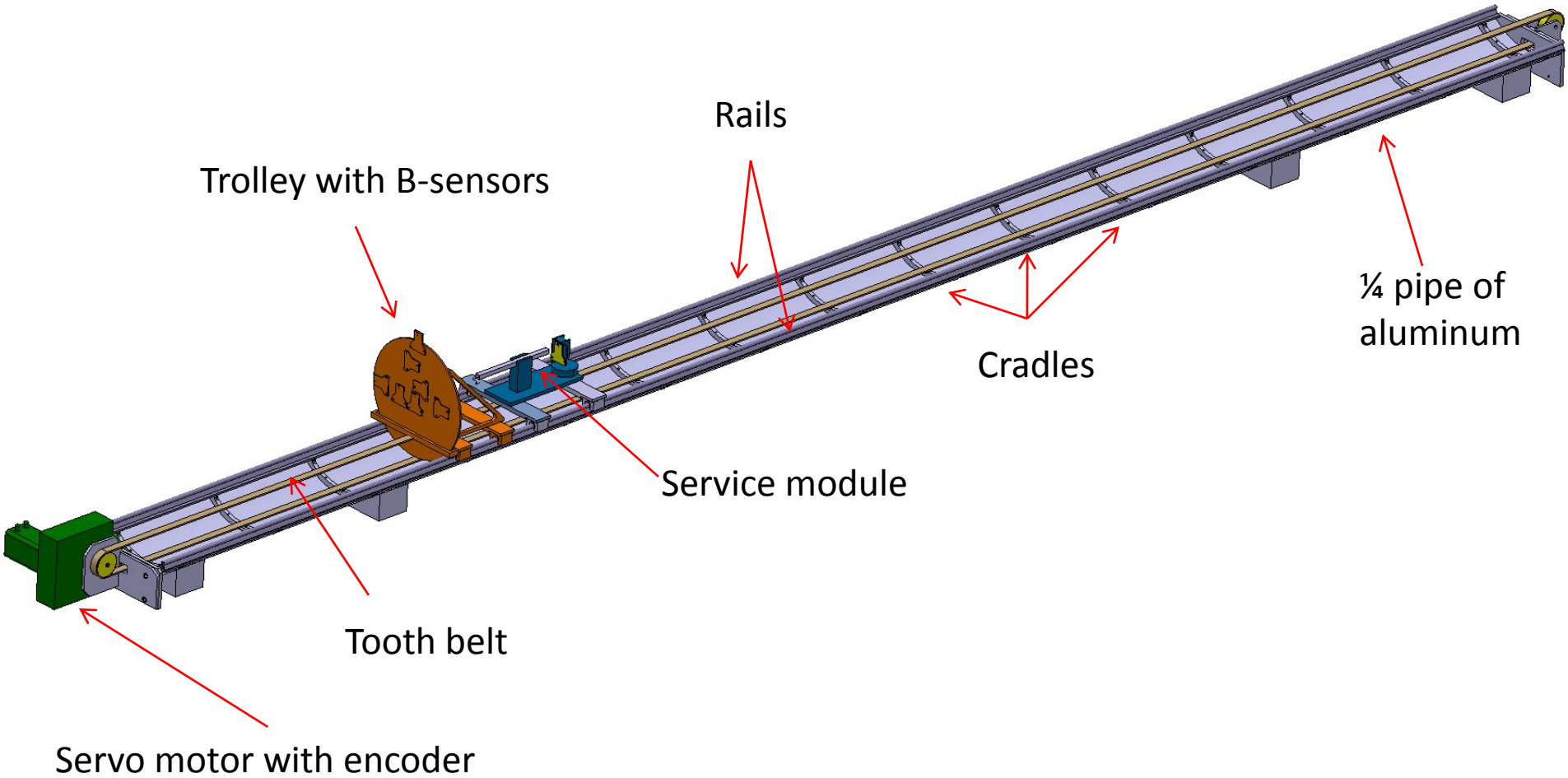
Magnet Measurement Device for MICE

F. Garnier, P-A. Giudici, F.Bergsma
CERN

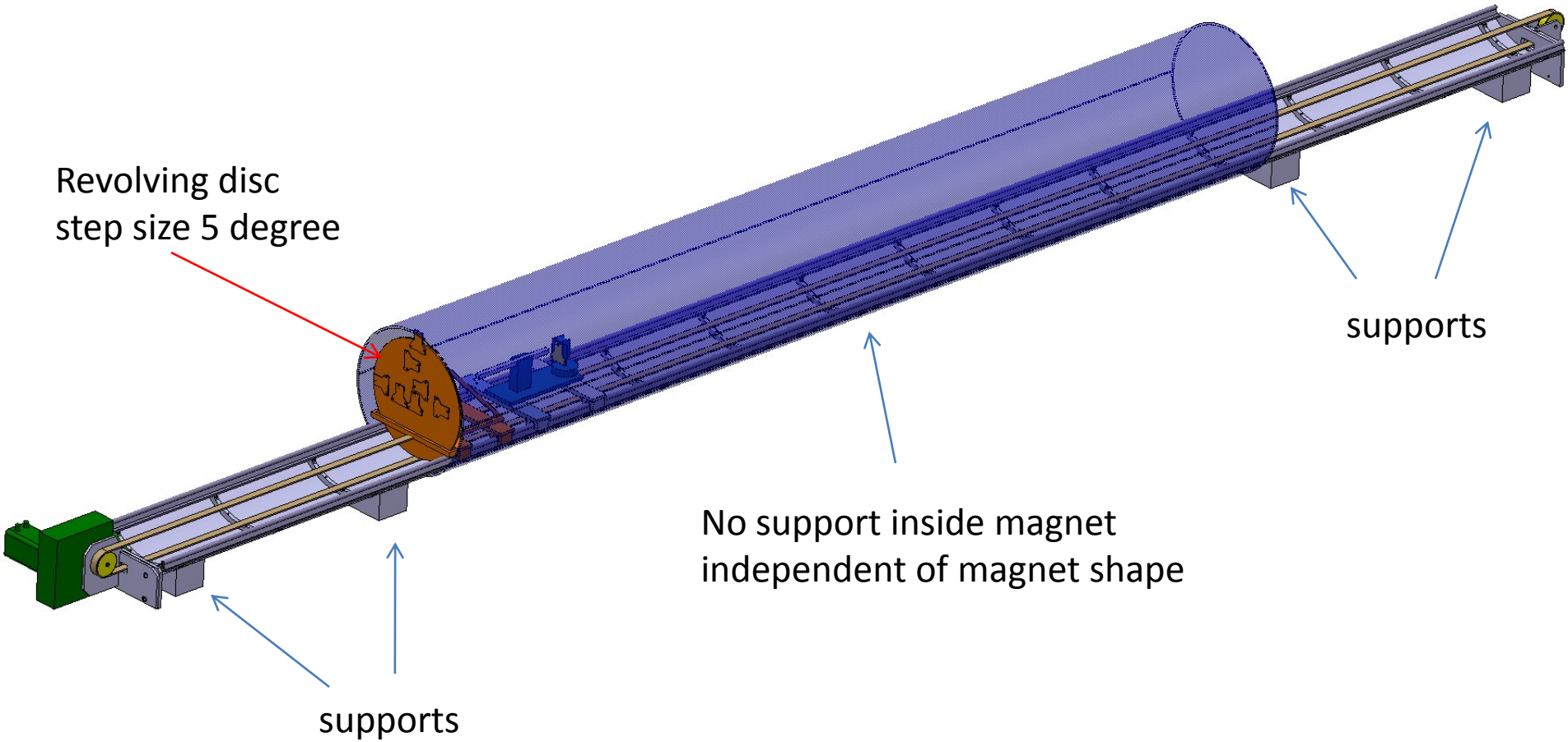
MICE Collaboration Meeting No. 30
6-9 July 2011 Oxford

technical drawings by O.Jamet

Layout CM29



Layout CM29





Cradles need rectification

2 m

5 m

cradles

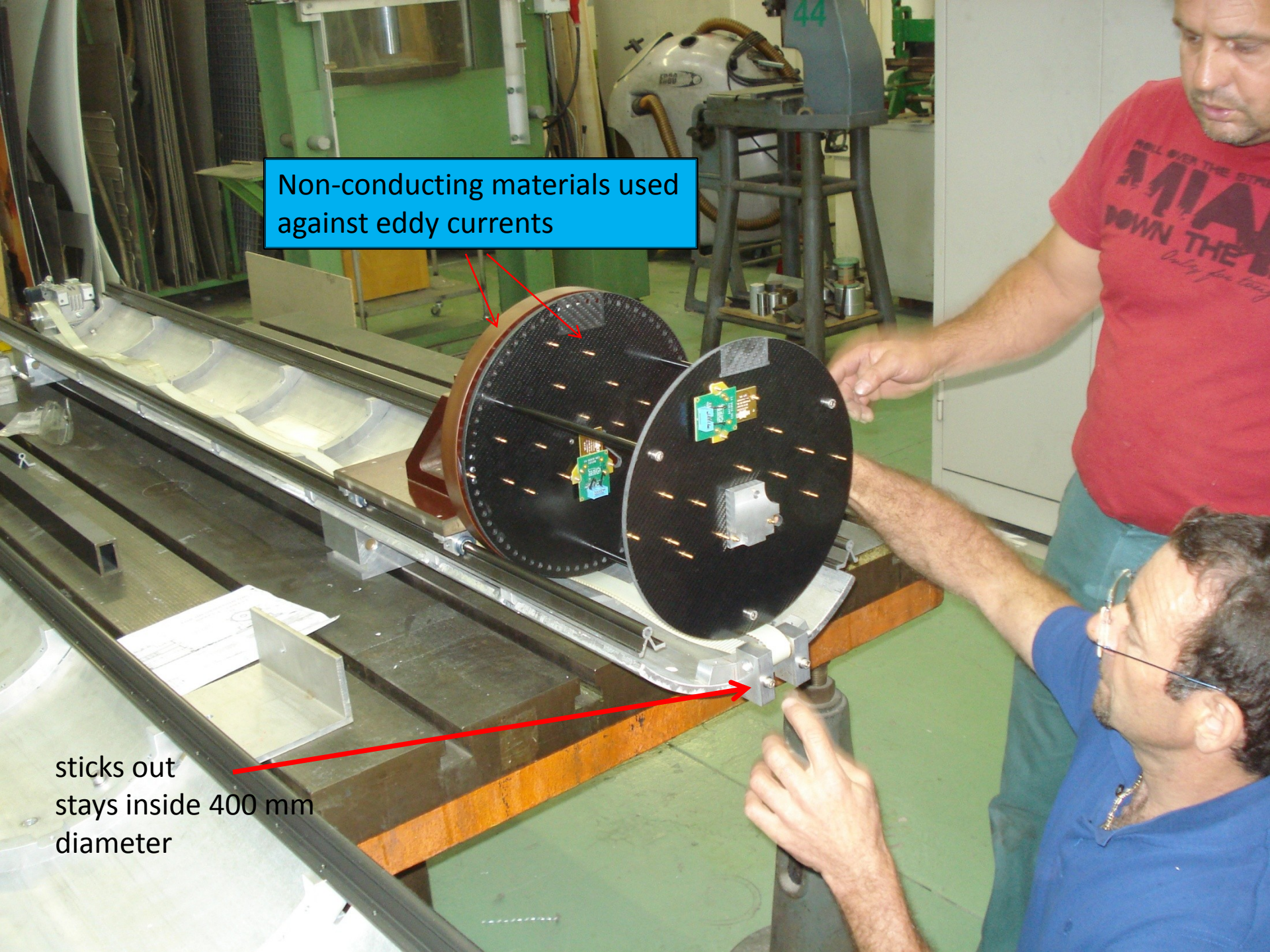
400 mm

21

45

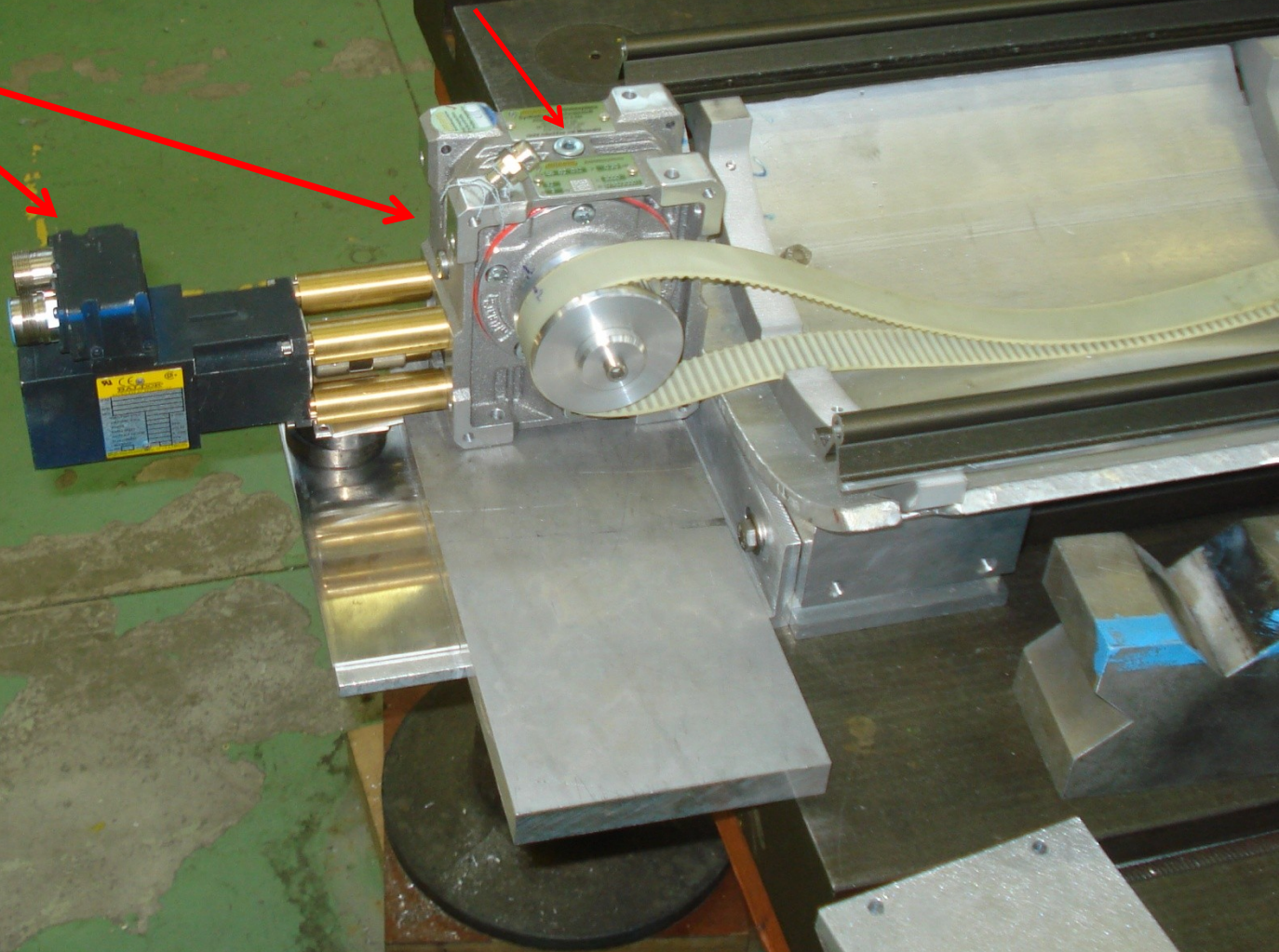
Non-conducting materials used
against eddy currents

sticks out
stays inside 400 mm
diameter



sticks out
not inside
400 mm
diam.

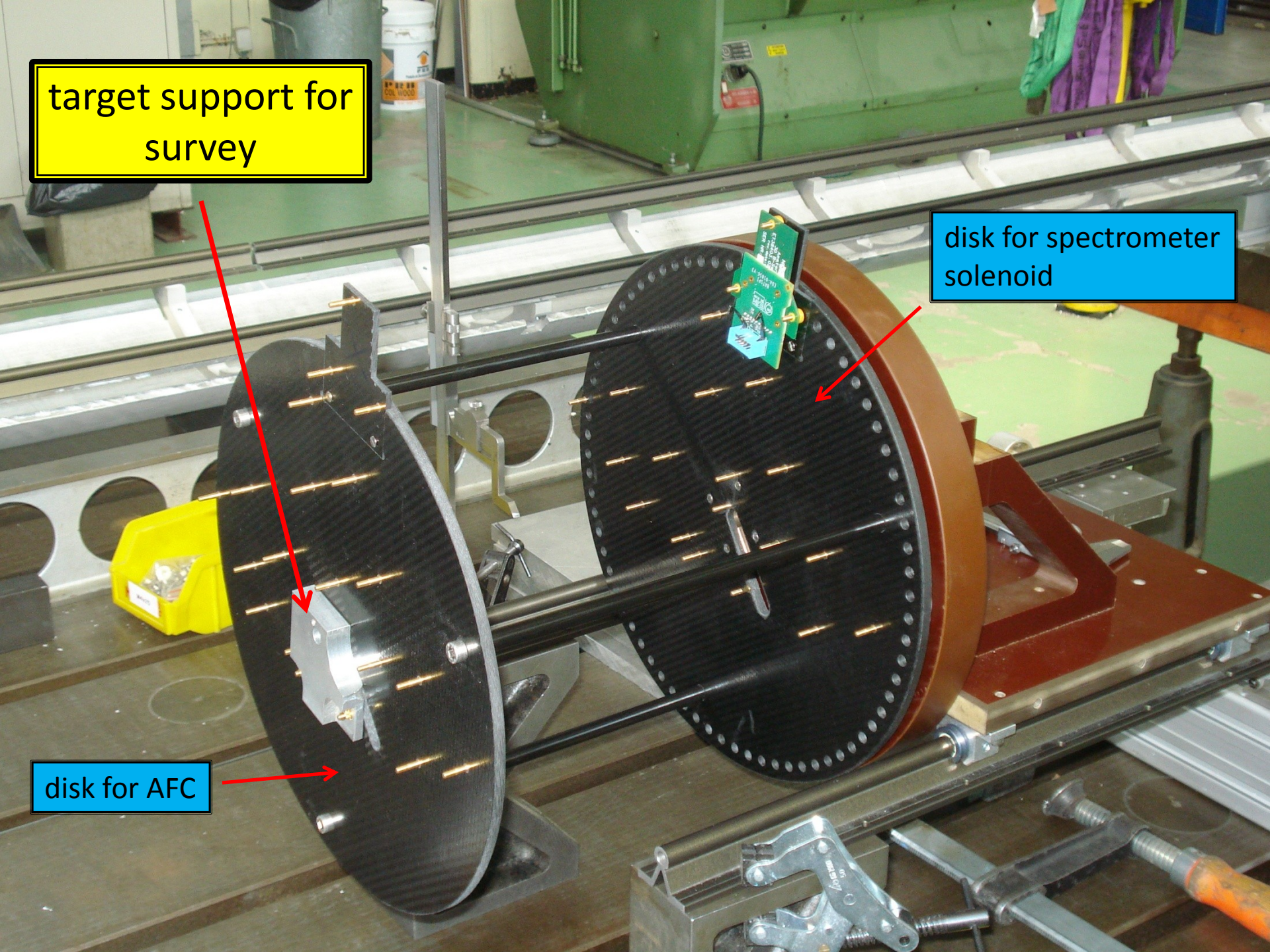
gearbox 1/12
no clearance

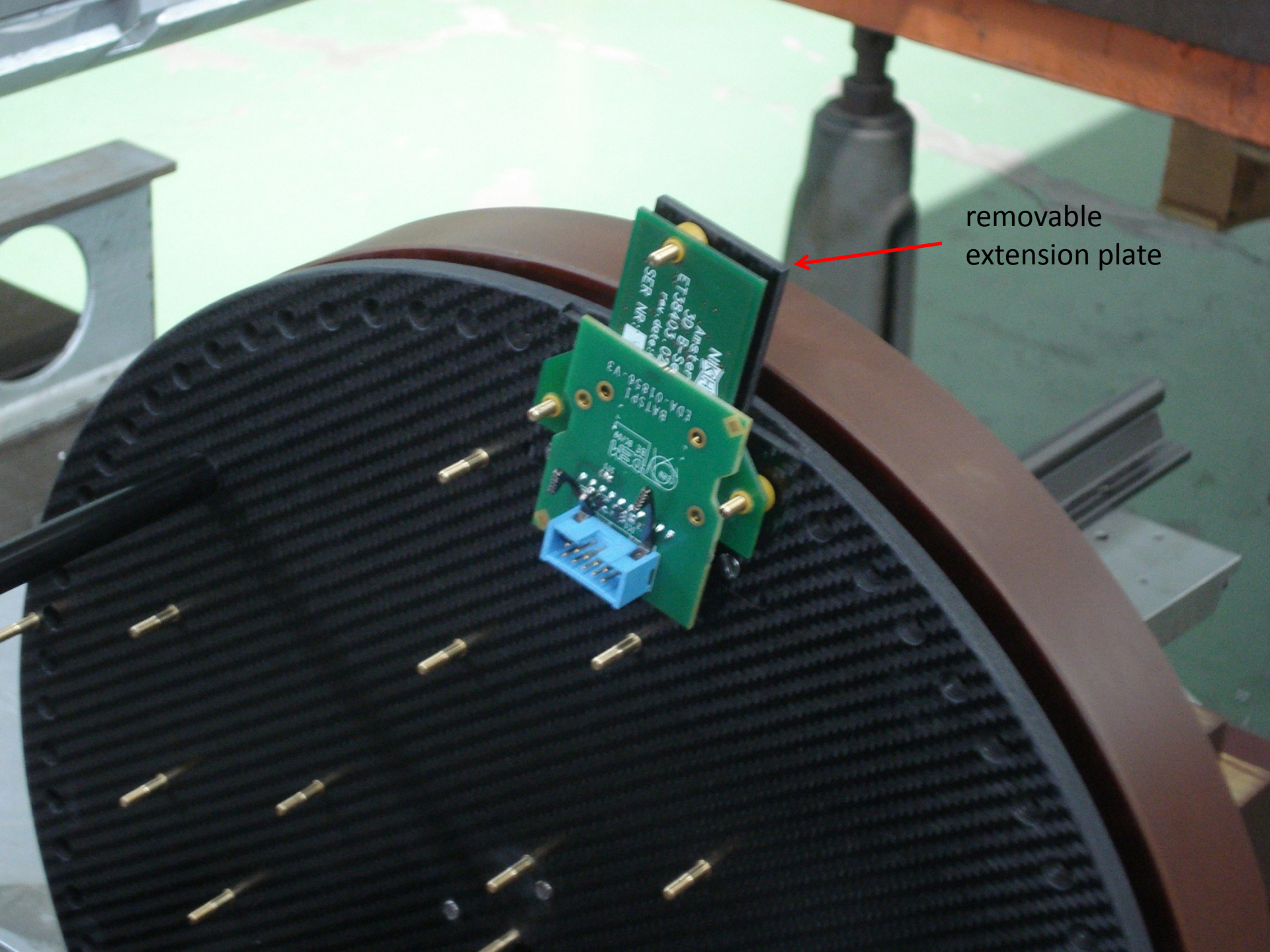


target support for survey

disk for spectrometer solenoid

disk for AFC





removable
extension plate

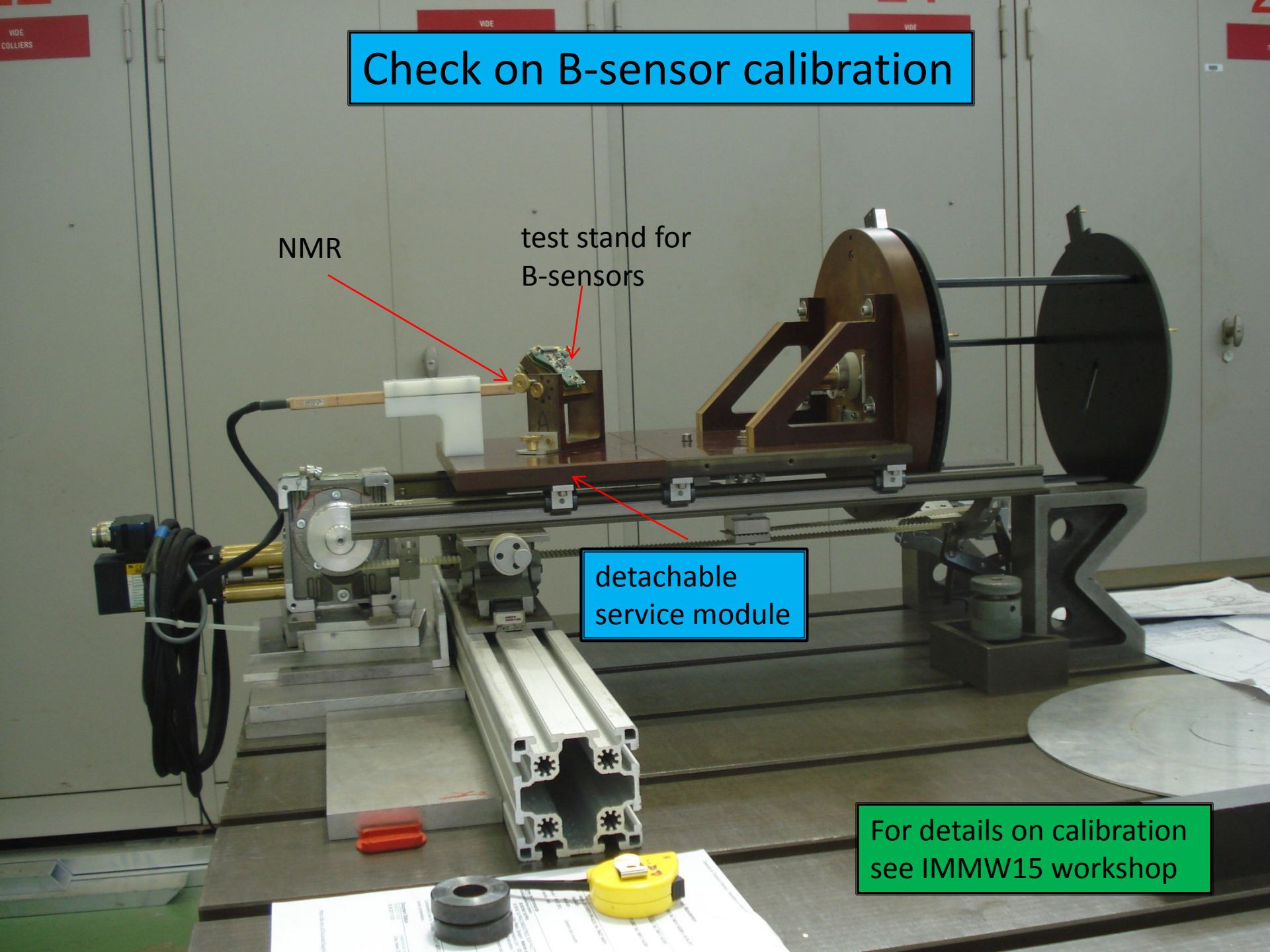
Check on B-sensor calibration

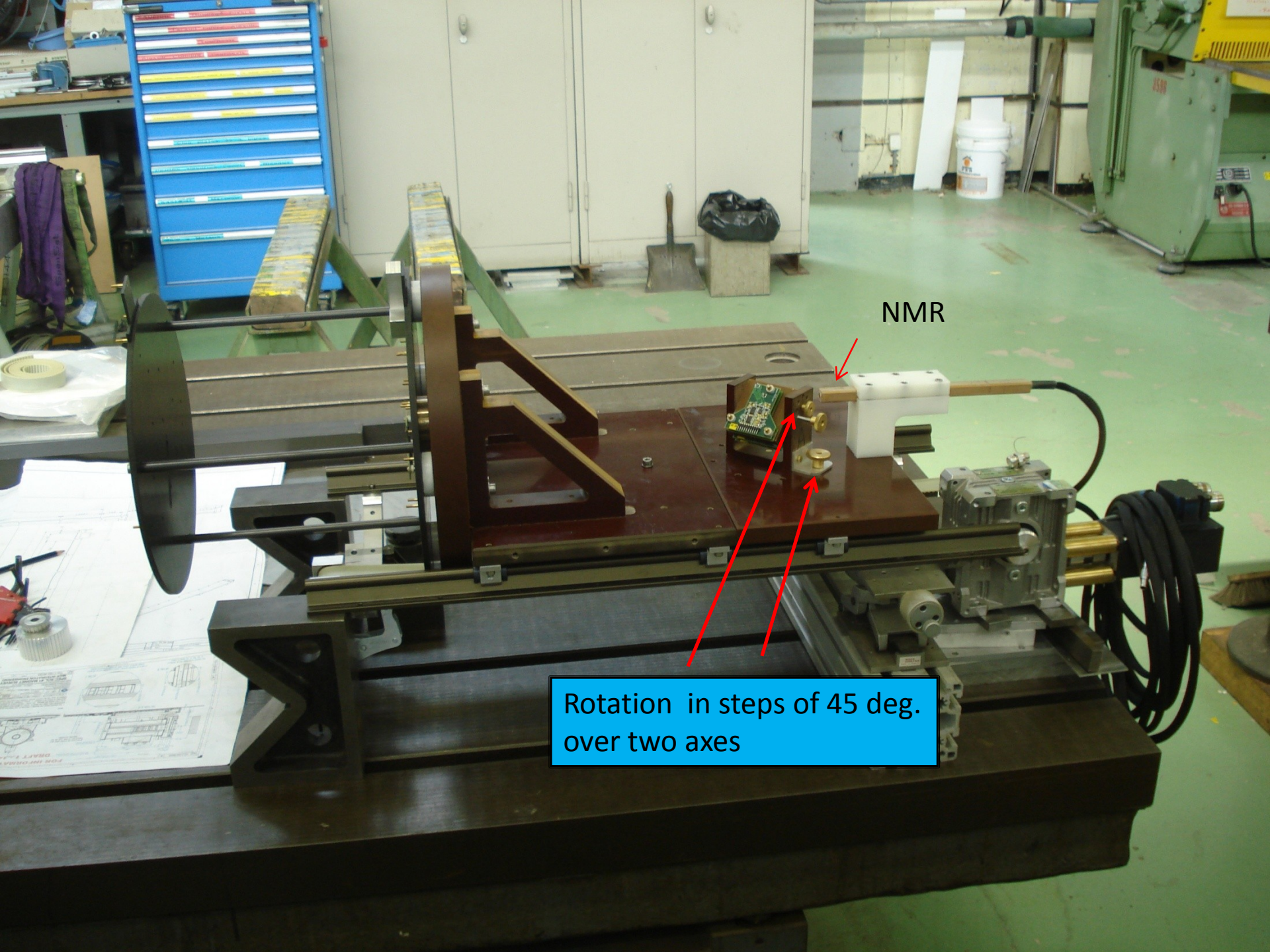
NMR

test stand for B-sensors

detachable service module

For details on calibration see IMMW15 workshop

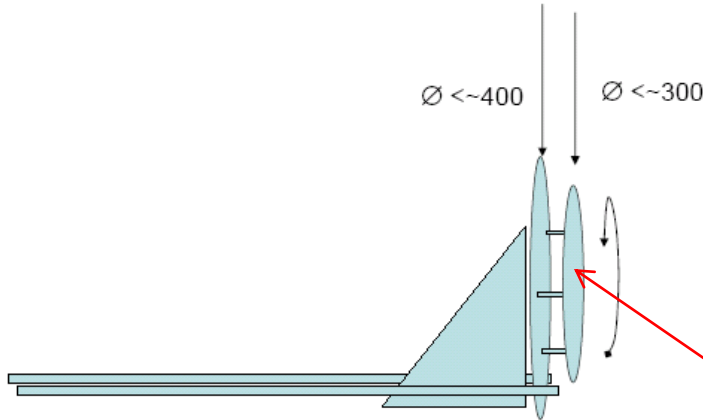




NMR

Rotation in steps of 45 deg.
over two axes

This flange cannot be removed and cannot be surpassed by rail support

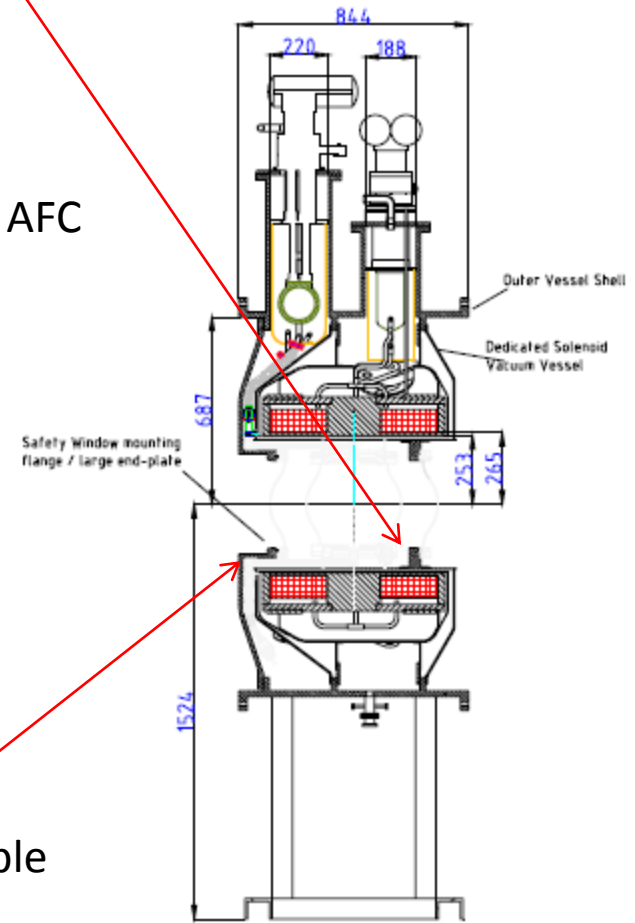


Extension disk for AFC

5m version for spectrometer solenoids
2m version for focus absorber solenoids.

Extension disk to by-pass internal flange AFC
Need to measure from both sides

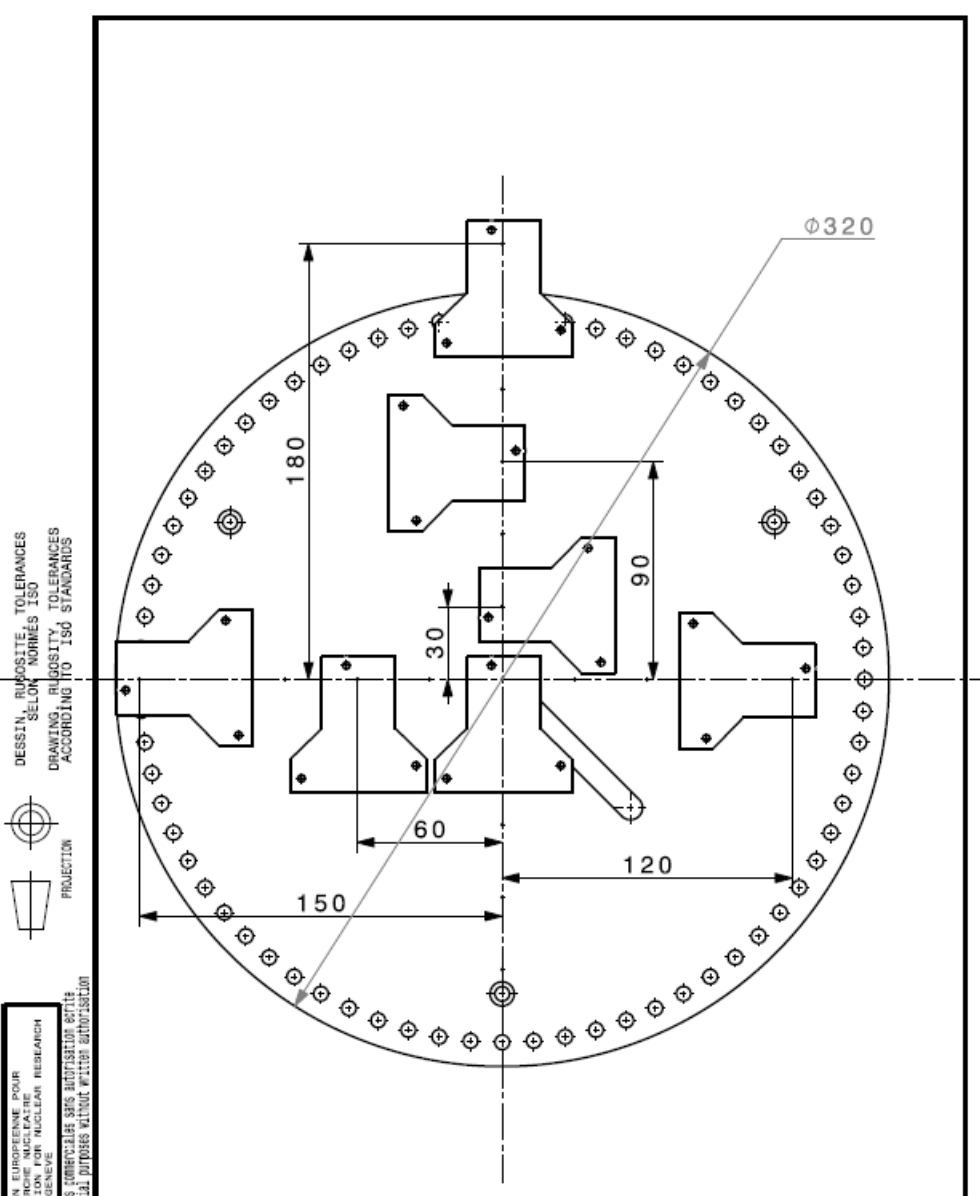
2m version could be used to measure eventually
coupling coils



dismountable

Mounting of B-sensors

main disk



DESSIN D'USINAGE
SELON NORMES ISO
DRAWING
ACCORDING TO ISO STANDARDS

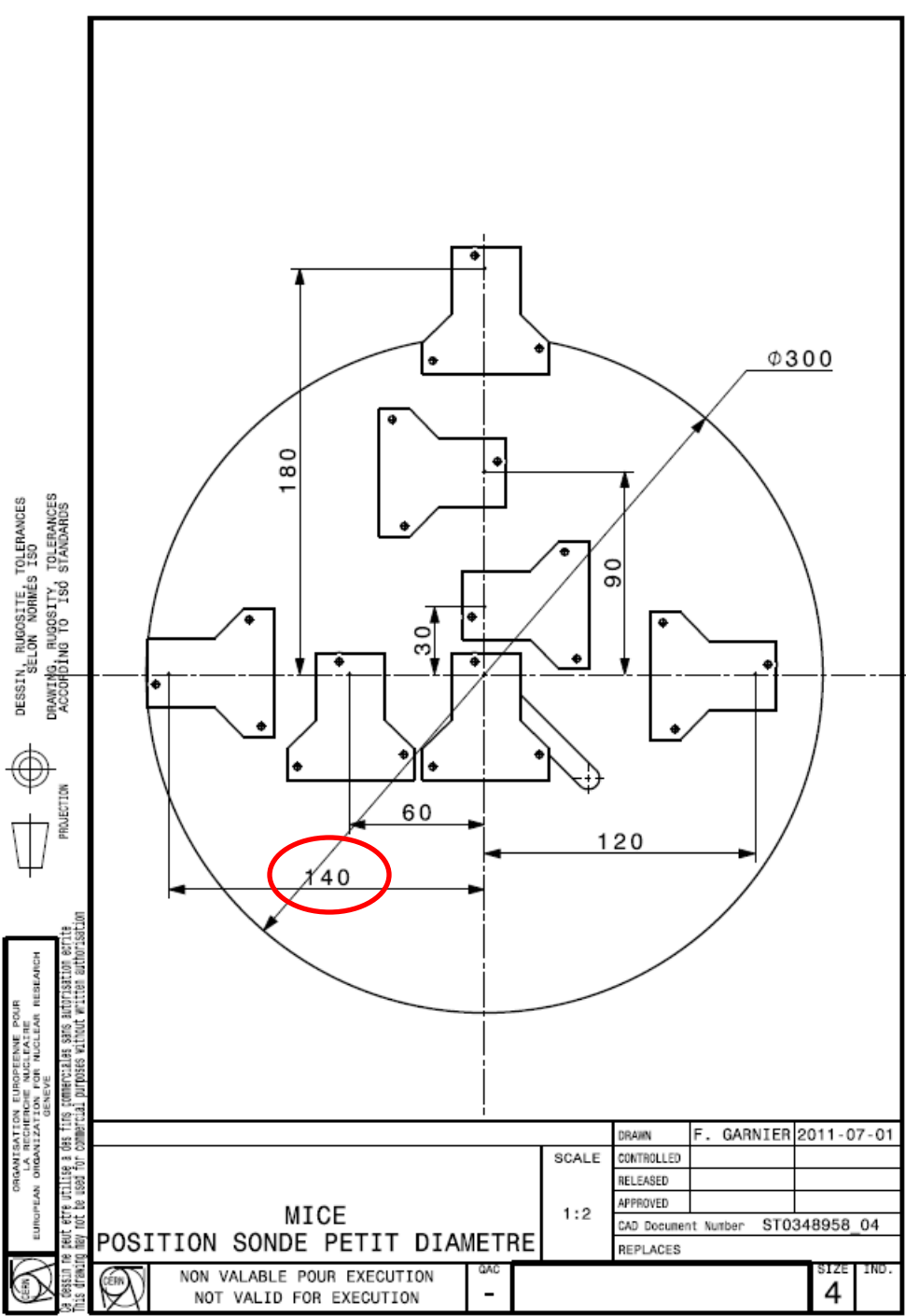


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<p>MICE POSITION SONDE GRAND DIAMETRE</p>		SCALE	1:2
		DRAWN	F. GARNIER 2011-07-01
		CONTROLLED	
		RELEASED	
		APPROVED	
		CAD Document Number: ST0348958_03	
		REPLACES	
<p>NON VALABLE POUR EXECUTION NOT VALID FOR EXECUTION</p>		QAC	-
		SIZE	4
		IND.	

Mounting of B-sensors

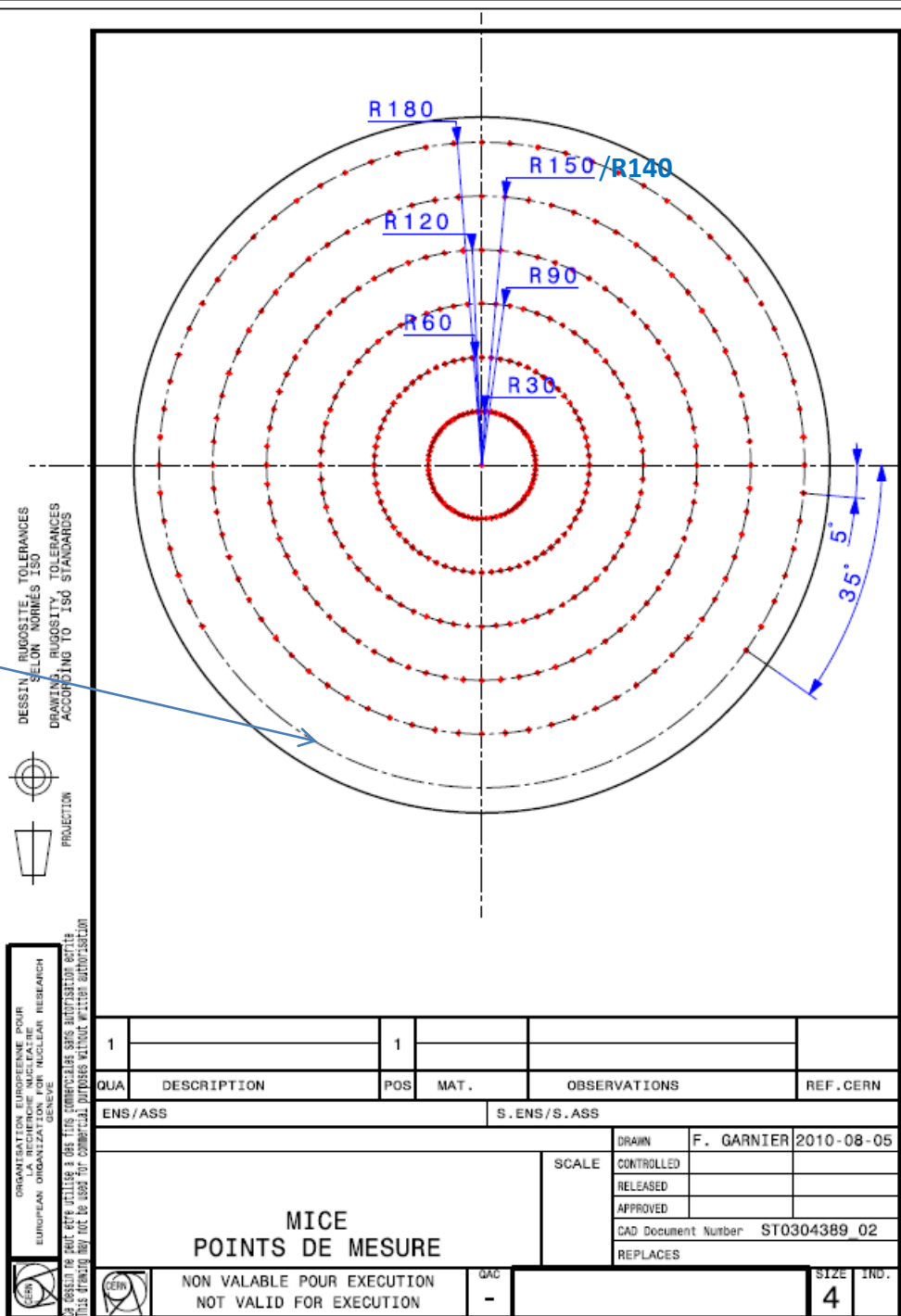
extension disk



Measurement grid

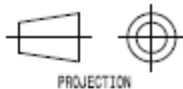
Disk can be rotated in steps of 5 degree

180 mm sensor has to be removed for this region





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NON VALABLE POUR EXECUTION
NOT VALID FOR EXECUTION

MICE ENSEMBLE CHARIOT

DMC

0.4

SCALE

DRAWN F. GARNIER 2011-07-01

CONTROLLED

RELEASED

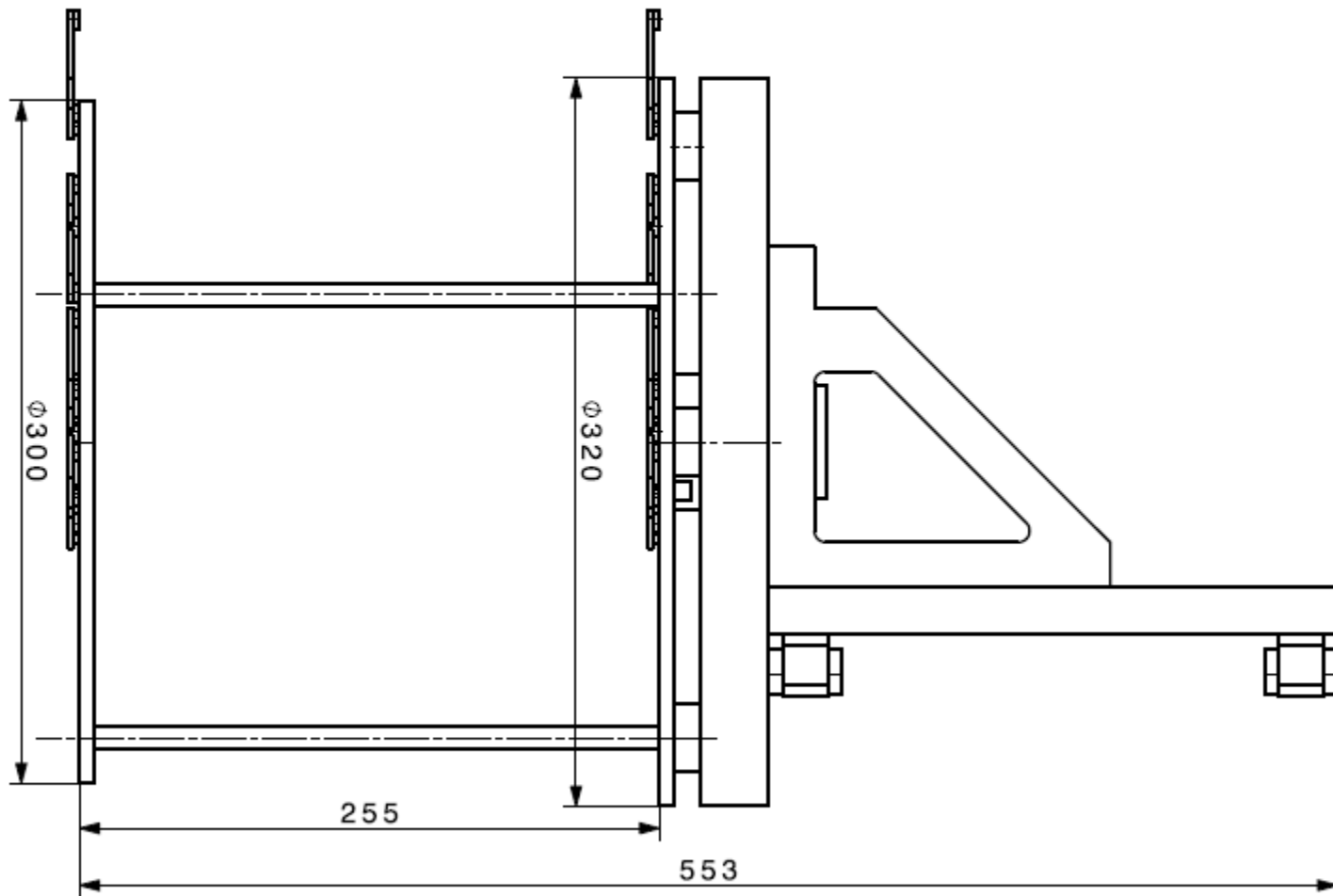
APPROVED

CAD Document Number ST0348958_06

REPLACES

4

SIZE IND.



Strategy mechanics:

- 1 build 5 m version , test precision with laser tracker
 - 2 if precision insufficient add encoder and rack and/or
foresee laser tracker during measurements etc
 - 3 build 2 m version
- } very unlikely

DAQ:

Build simple read-out for 7 B-sensors

Anticipate to have interface outside high field region

Accuracy:

< 0.5 mm longitudinal

+/- 0.5mm radial

Theta +/- 1 mrad

Bx,By,Bz +/- 2 mT Check in situ with NMR on service module

Status

Rail support send to company to rectify
Will come back this week => bench ready for final assembly

Motion: motor with gearbox tested in vertical bench with 2.5 kgf load and 7.5 kg mass. Works fine, clearance within limits

B-sensors ready and calibrated

should be send to CERN !

Read-out: basics exist (used in calibrator with 4 cards), parts exist
duplicate electronics board

Ready at August 2011 for AFC (small version)