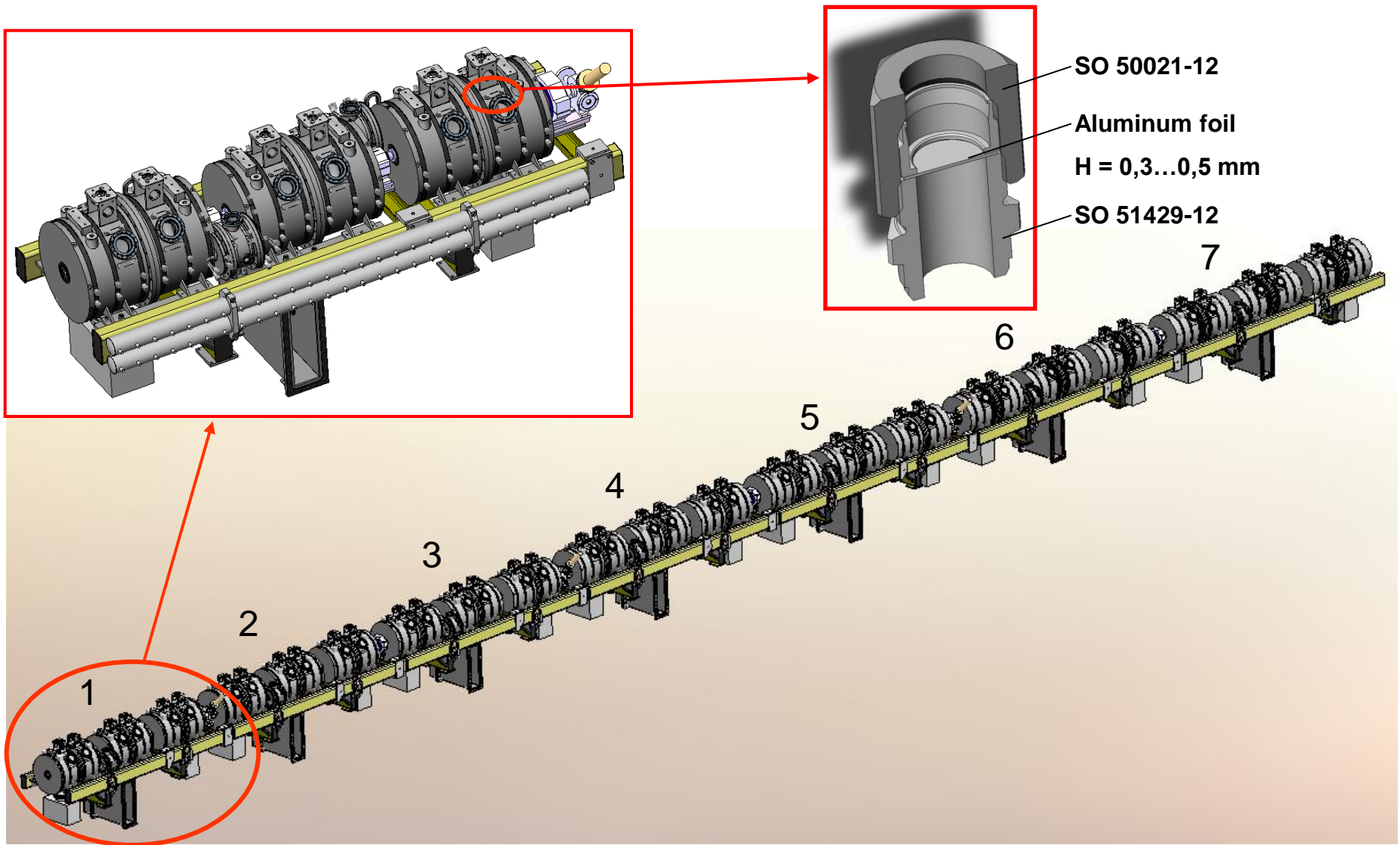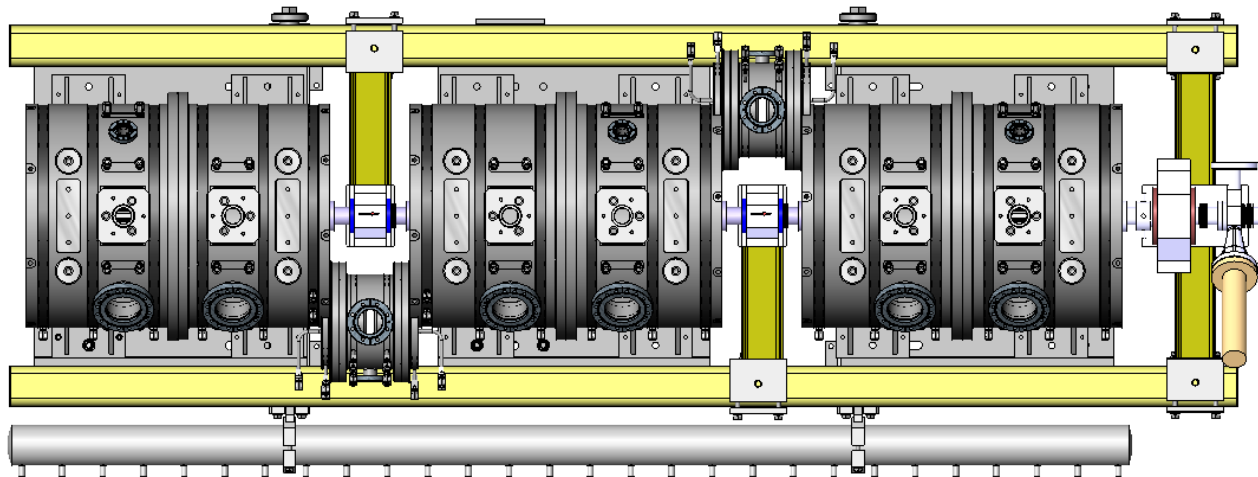# CCDTL Accelerating Structure

Module of CCDTL Accelerating Structure

SO 50021-12

Aluminum foil

H = 0,3…0,5 mm

SO 51429-12

1

2

3

4

5

6

7

# General view of CCDTL module
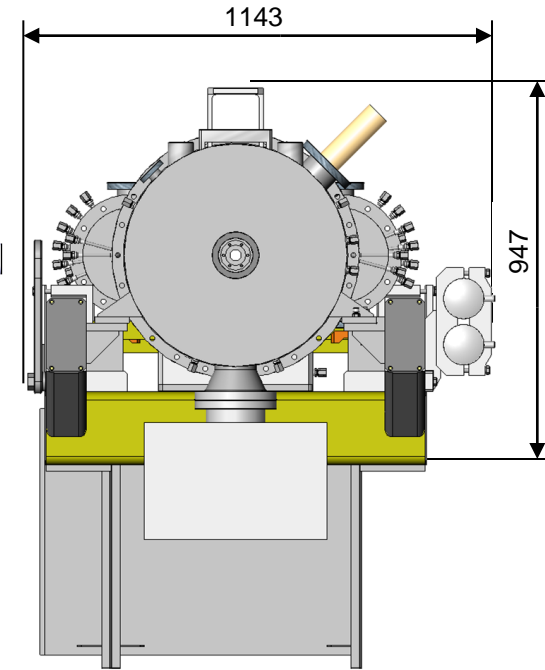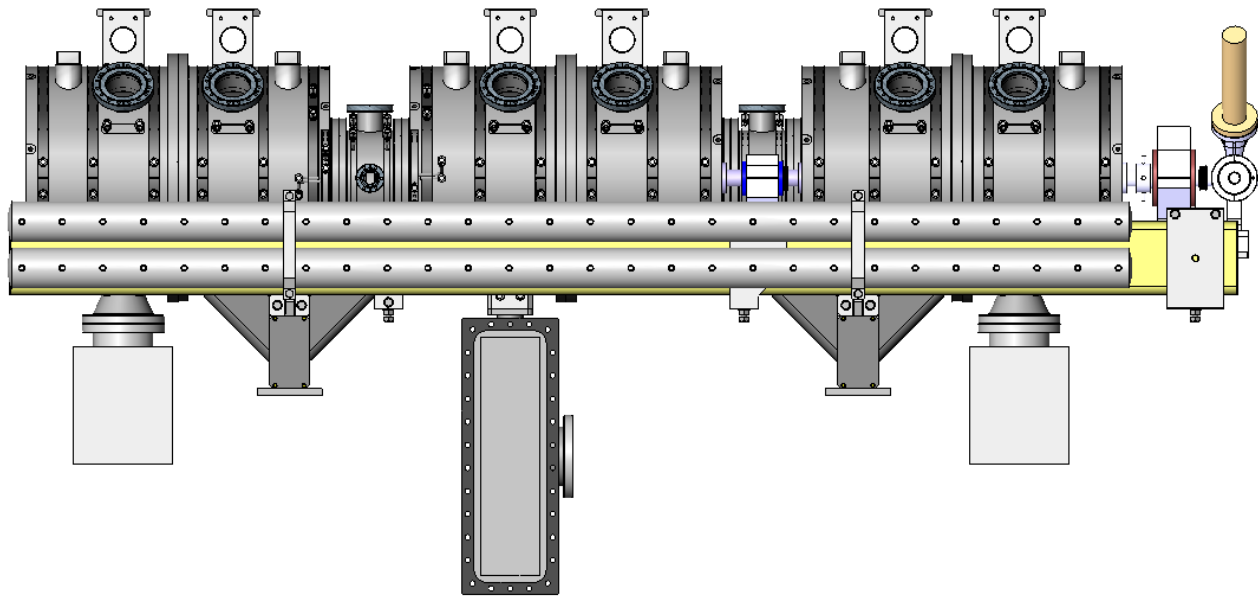
Module Structure
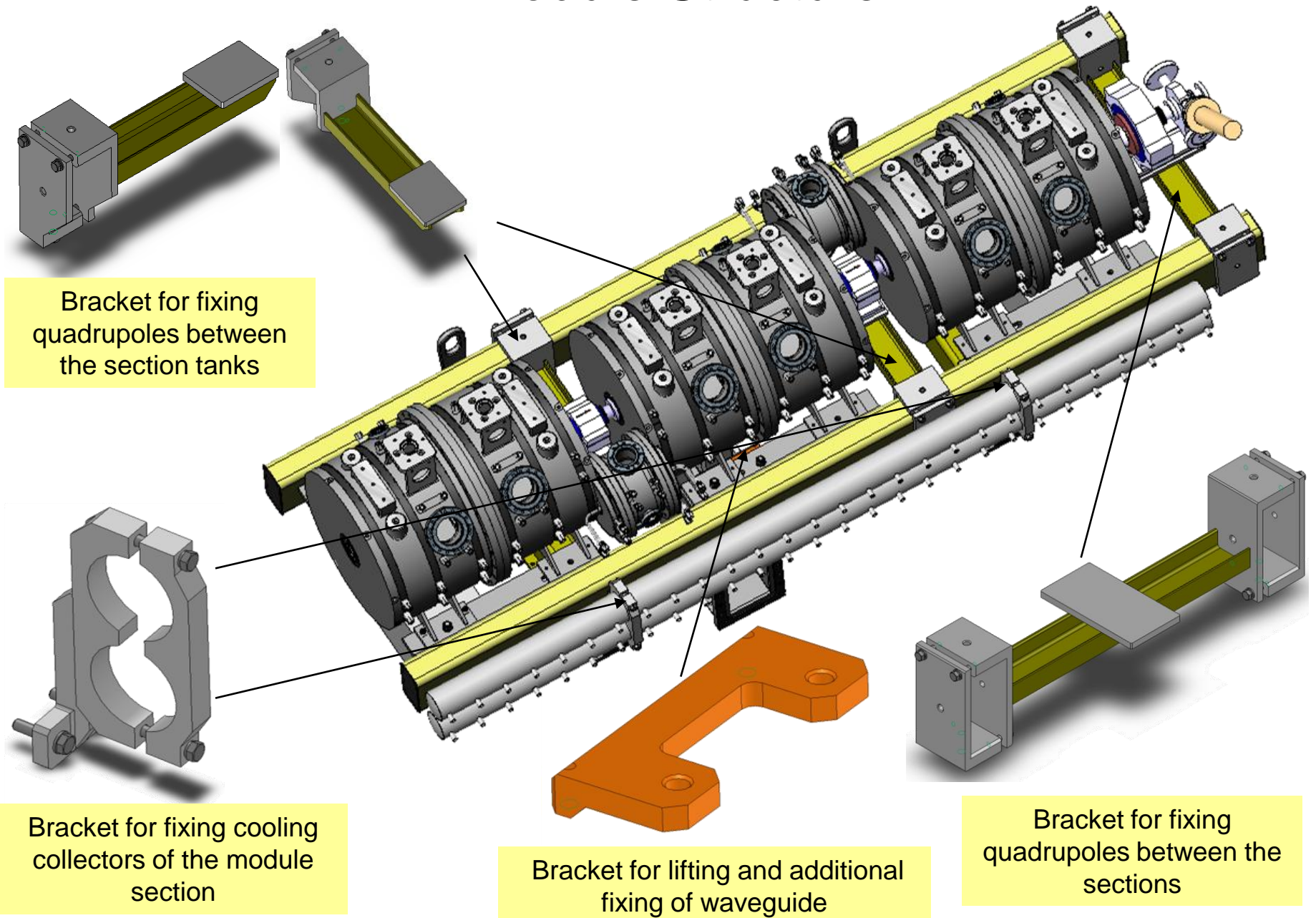
Bracket for fixing quadrupoles between the section tanks

Bracket for fixing cooling collectors of the module section

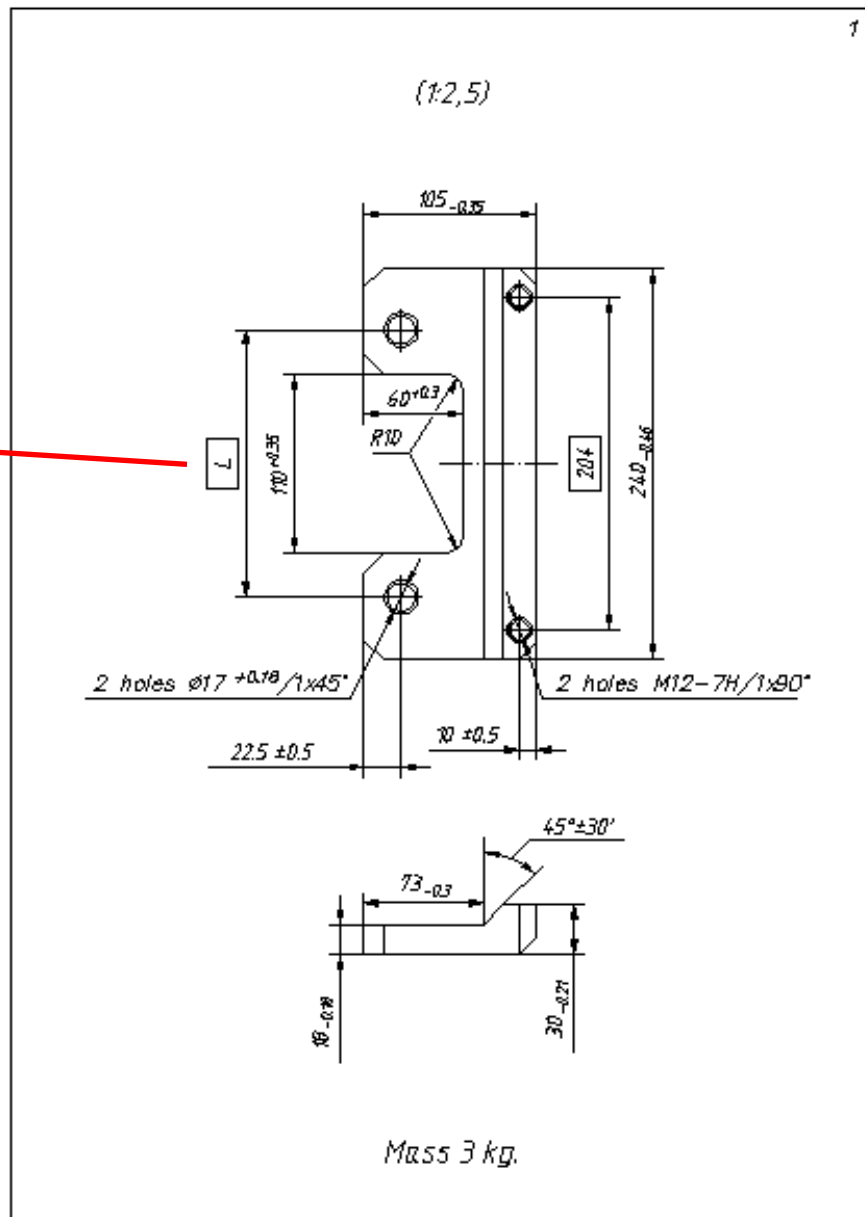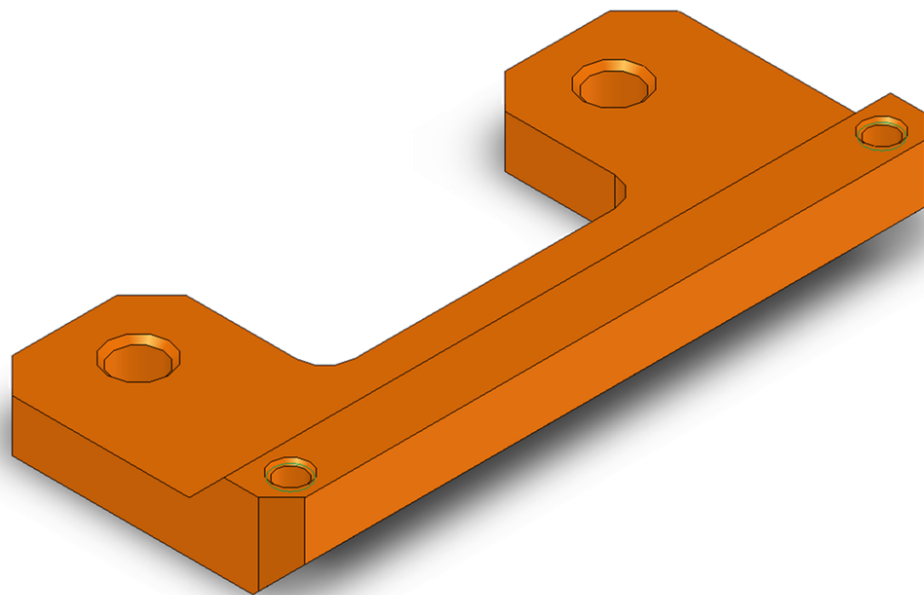Bracket for lifting and additional fixing of waveguide

Bracket for fixing quadrupoles between the sections

Mass 16 kg.

Dimensions of bracket for fixing cooling collectors of the module section

Mass 4,2 kg.
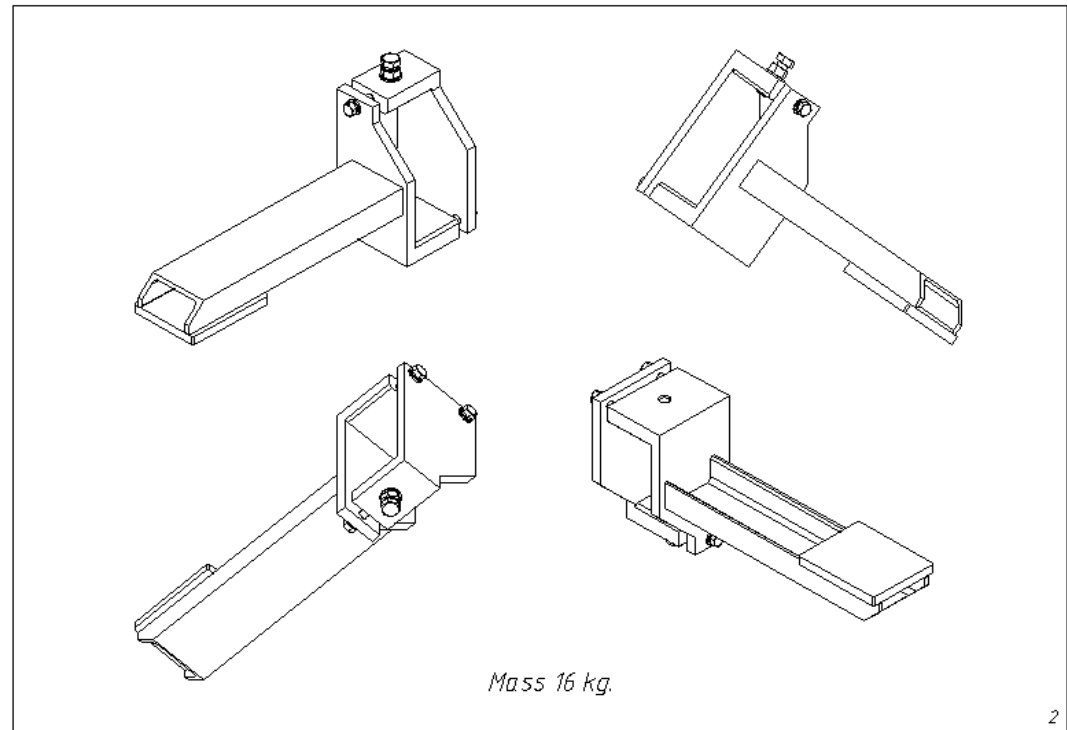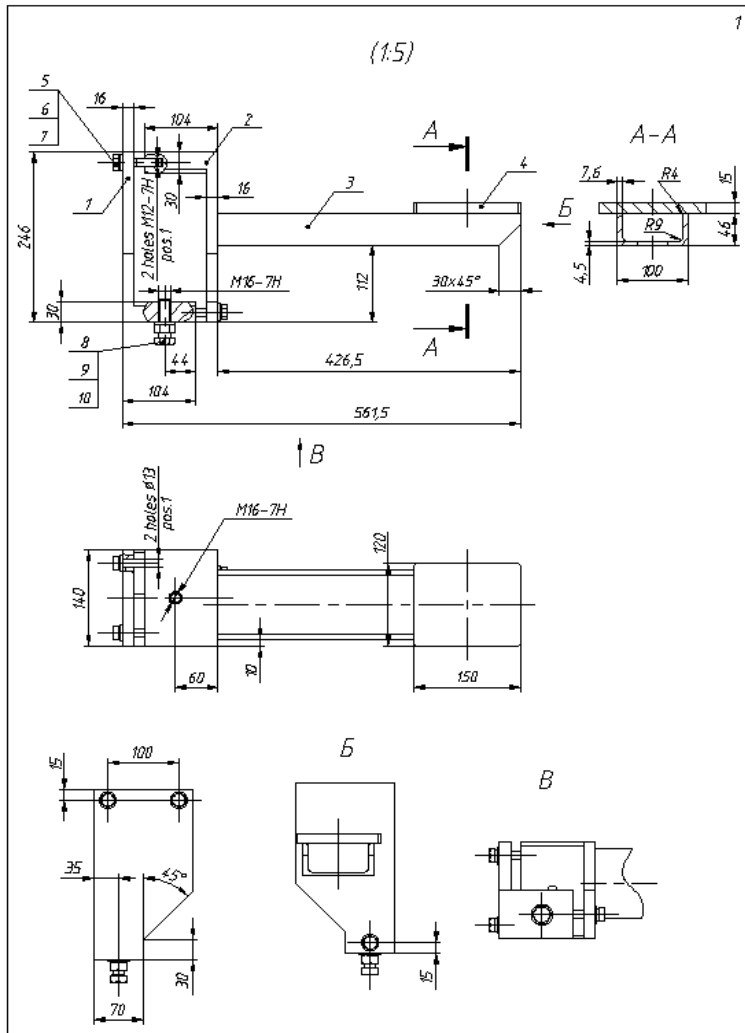
Dimensions of bracket for lifting and additional fixing of waveguide

L, mm
164
168
172
176
182
189
196

(1:2,5)

105 −0.35

60 +0.3

R10

100 +0.35

20 +

240 −0.46

2 holes ø17 +0.18 / 1x45°

2 holes M12−7H / 1x90°

22.5 ±0.5

10 ±0.5

45°±30'

73 −0.3

30 −0.21

Mass 3 kg.

Mass 39 kg.
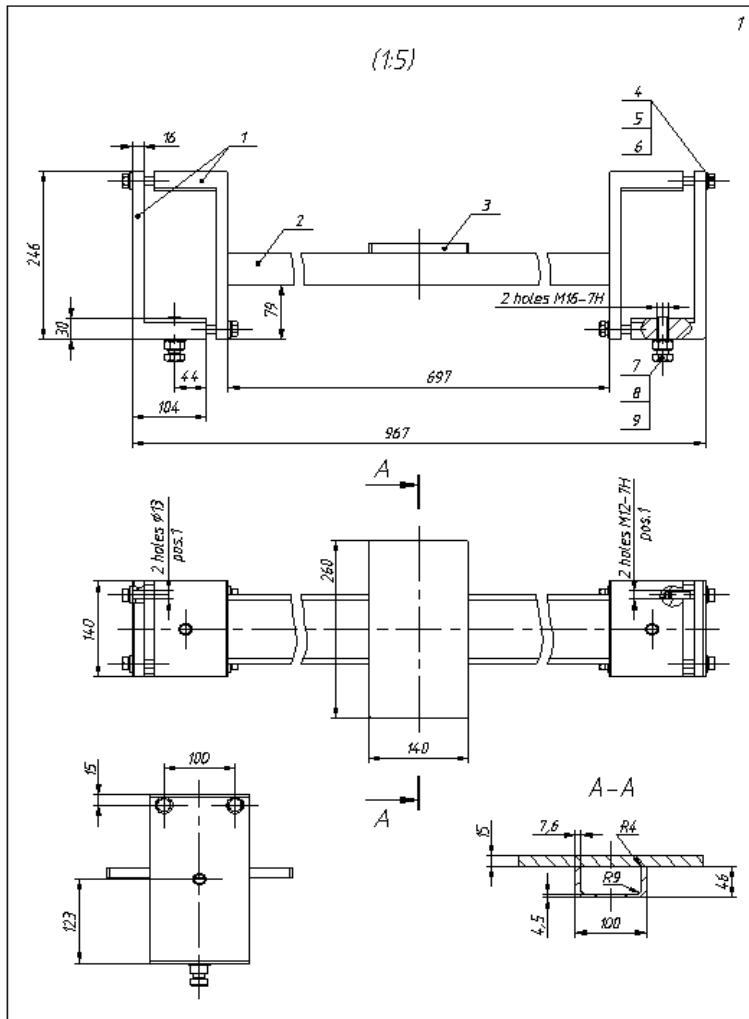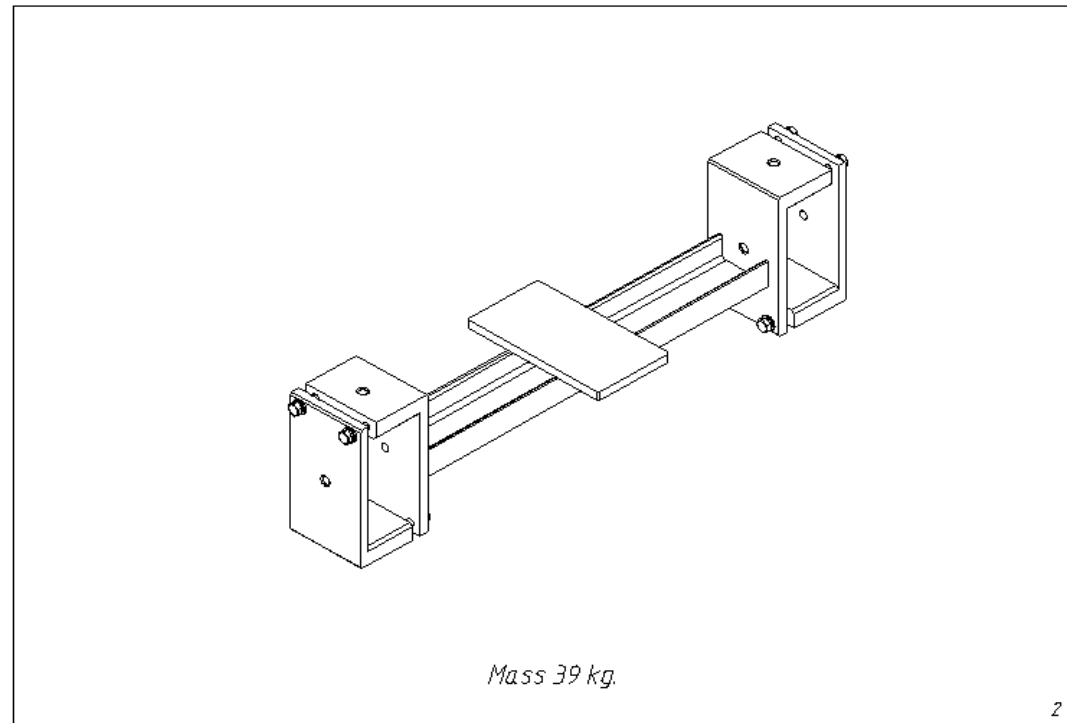
Universal fastener

Inter-mod2

or

Inter-mod1
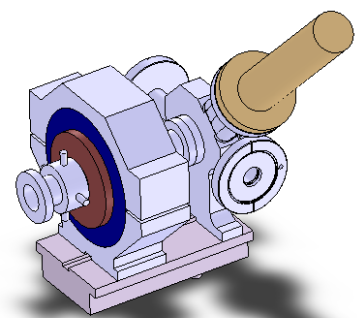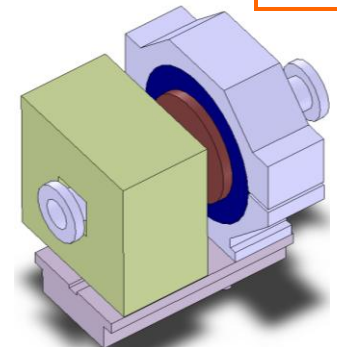
Adjustment Areas
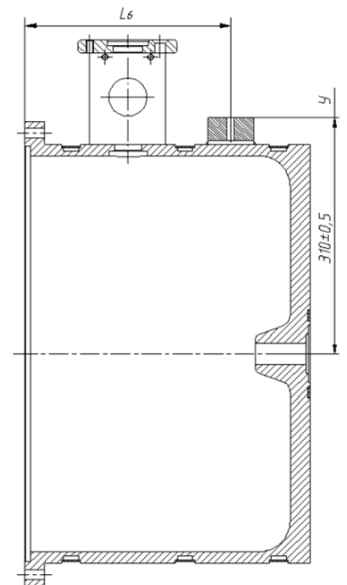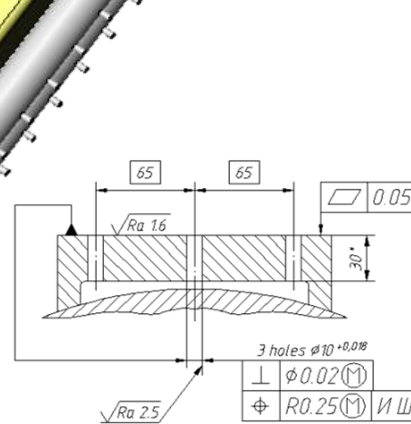
Alignment of Cavities in the Module

Cam and
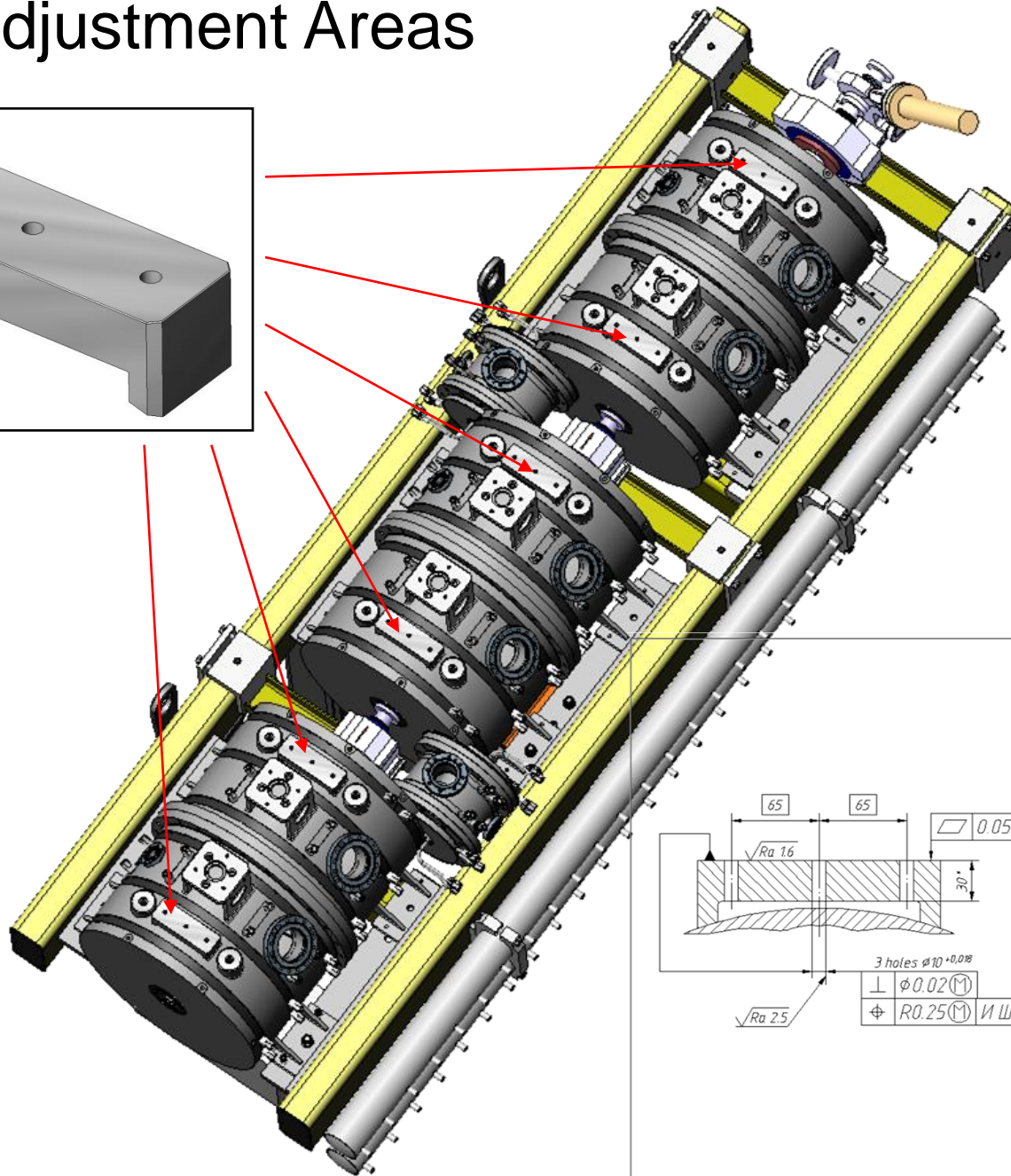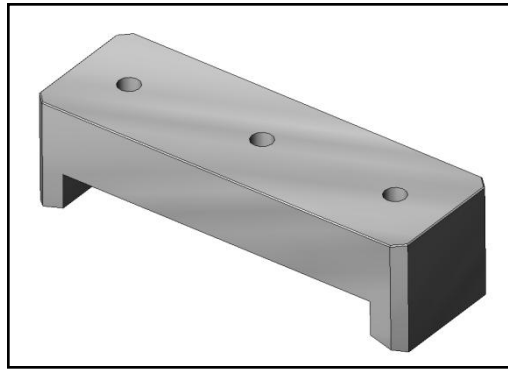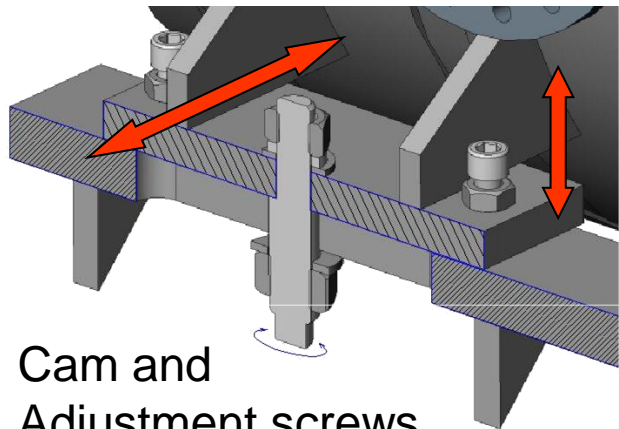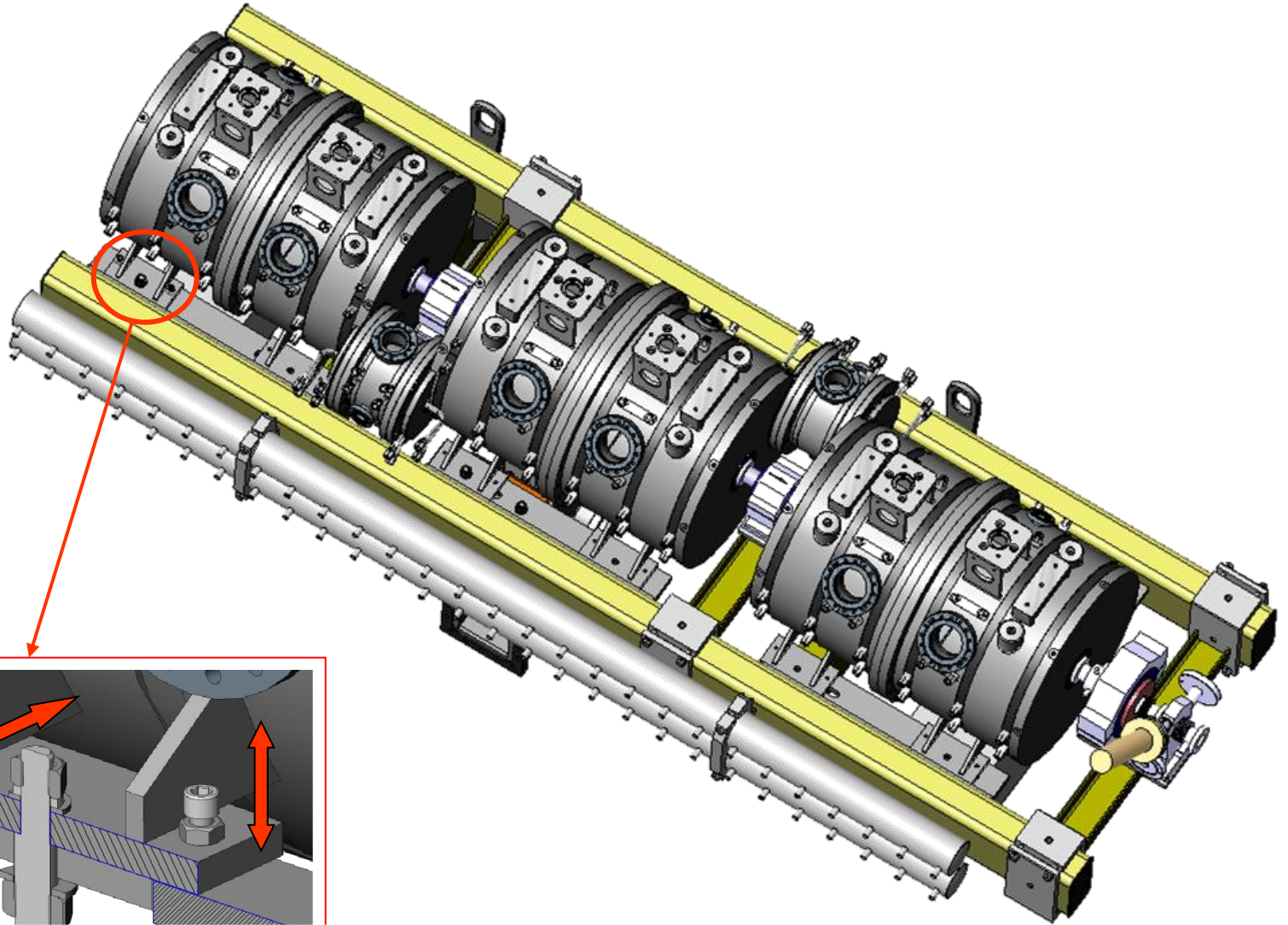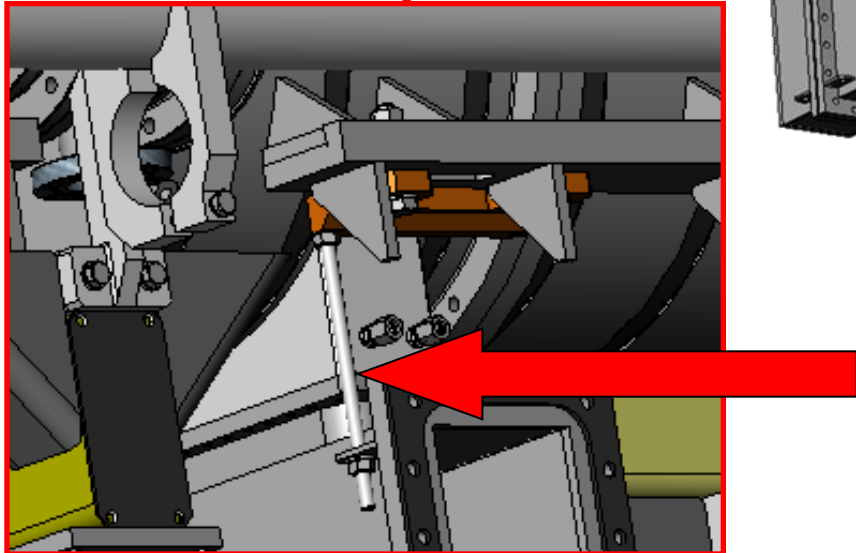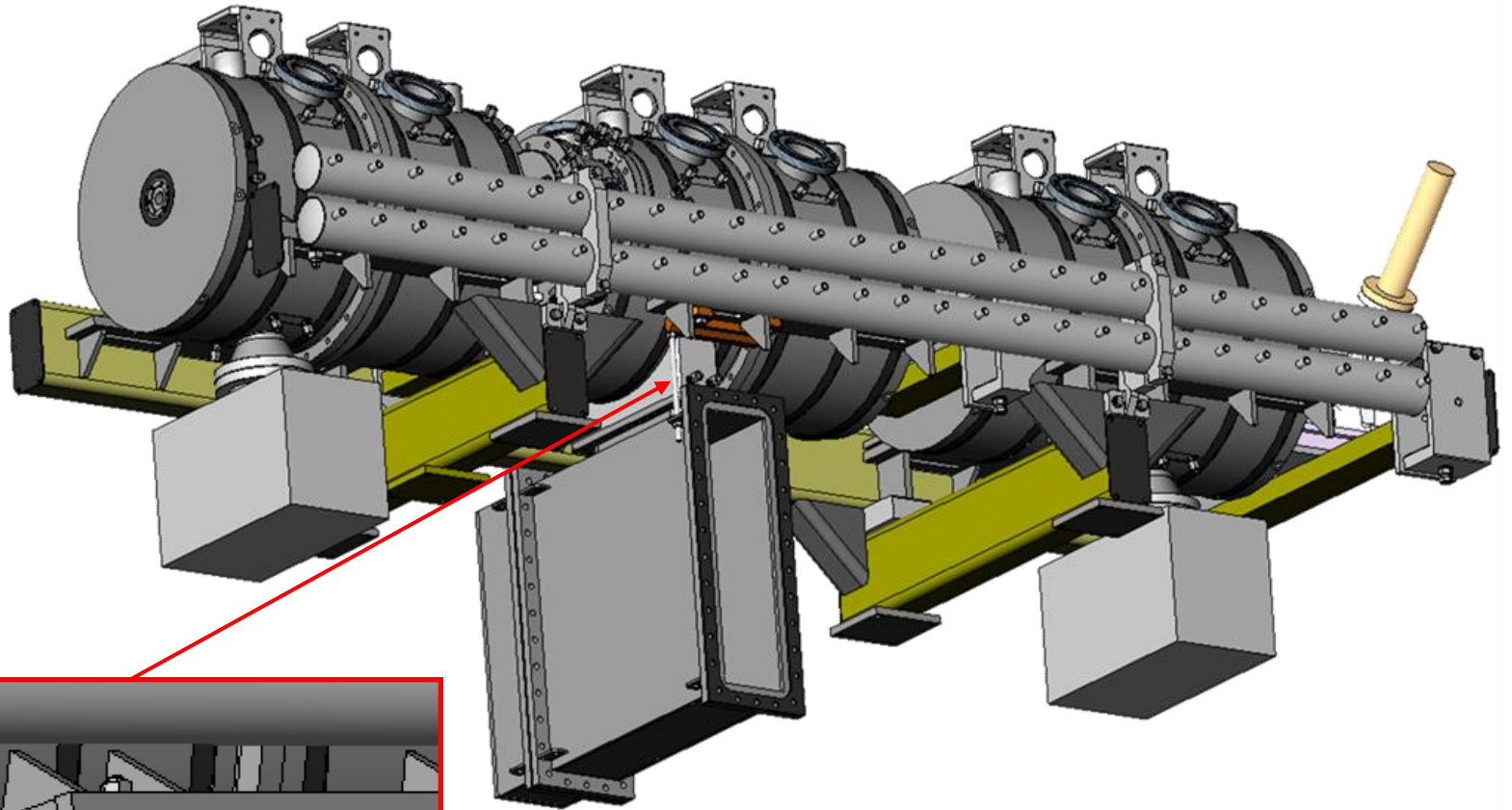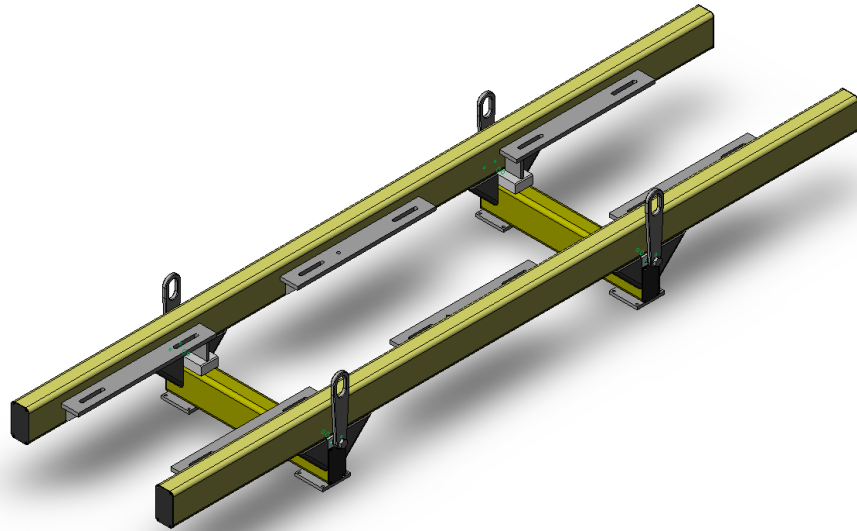Adjustment screws

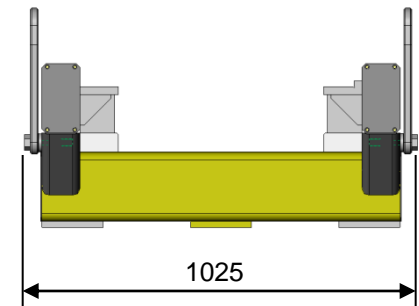# Lift and additional fixation of waveguide section

Mounting pins

Module Support Frame

Dimensions

Designation	L, mm	Mass, kg
CCDTL.M1.700	3026,3	423
-01	3200,3	440
-02	3365,9	457
-03	3522,7	472
-04	3675,1	486
-05	3814,9	499
-06	3705	492

L

1025
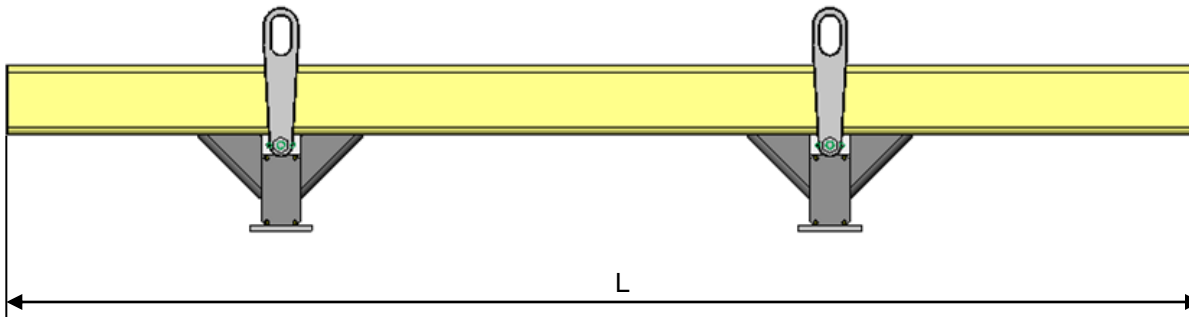
Calculation of Frame Deformation

Finite-element model of the frame with installed cavities
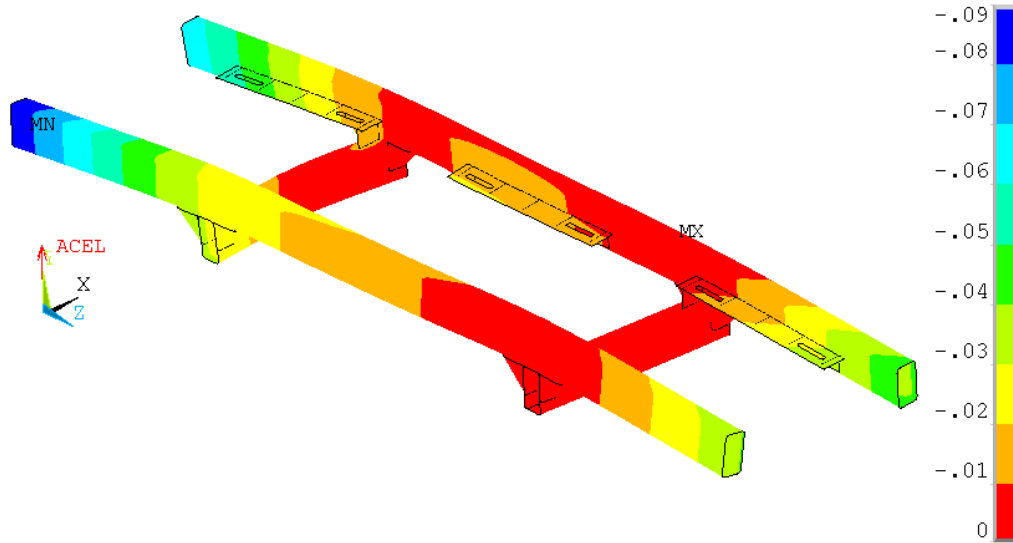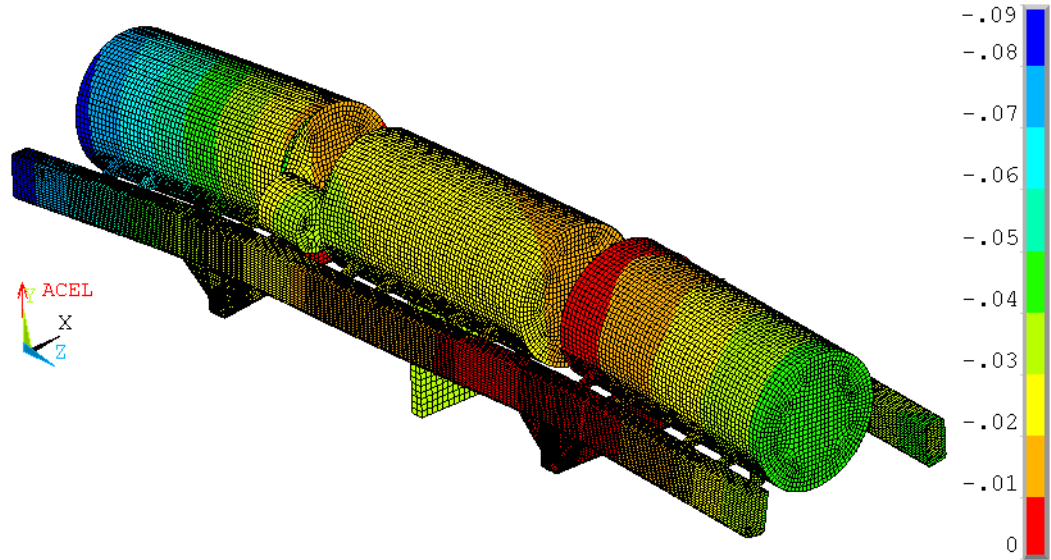
Frame displacements (mm) along Y axis

Frame Sizes

Dimensions

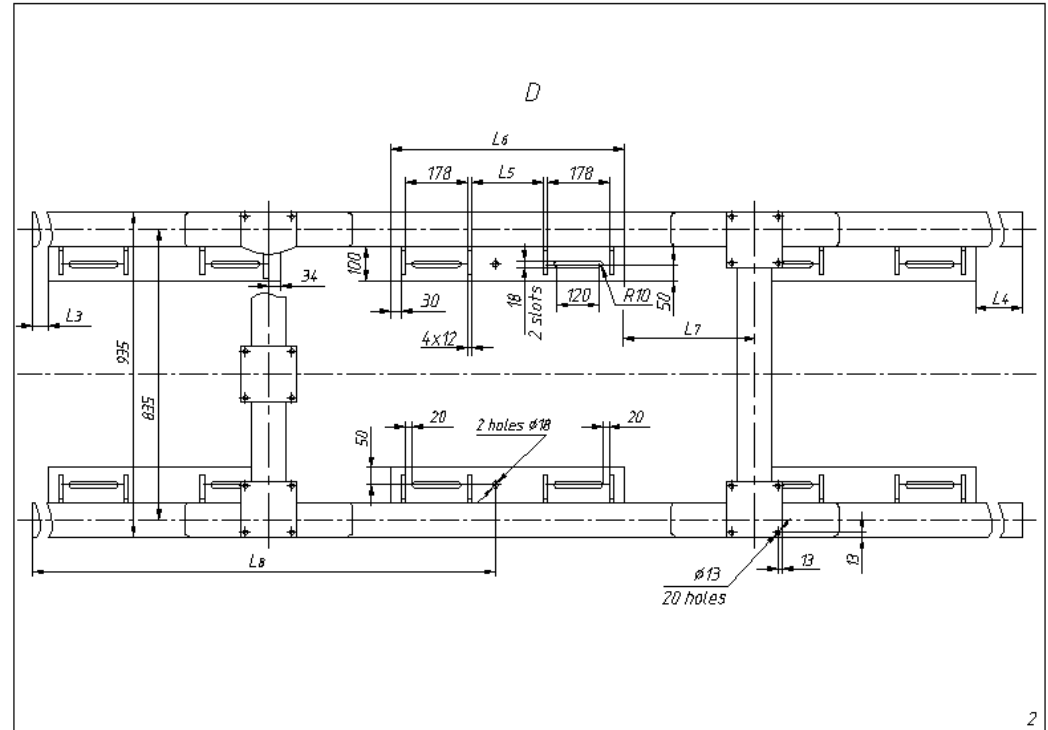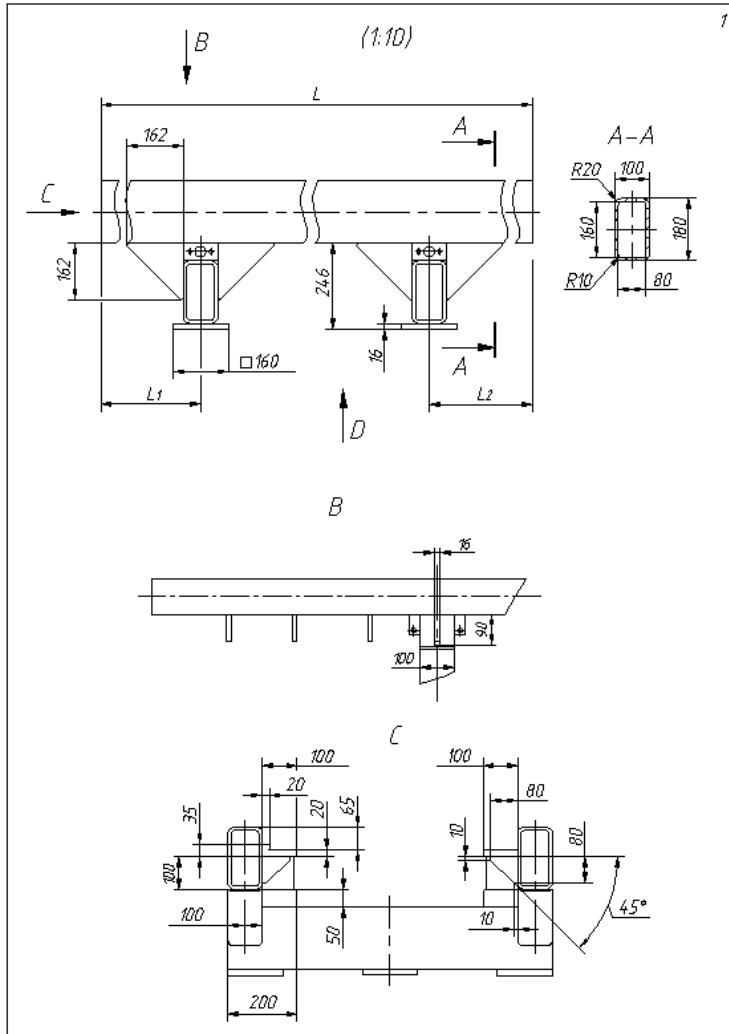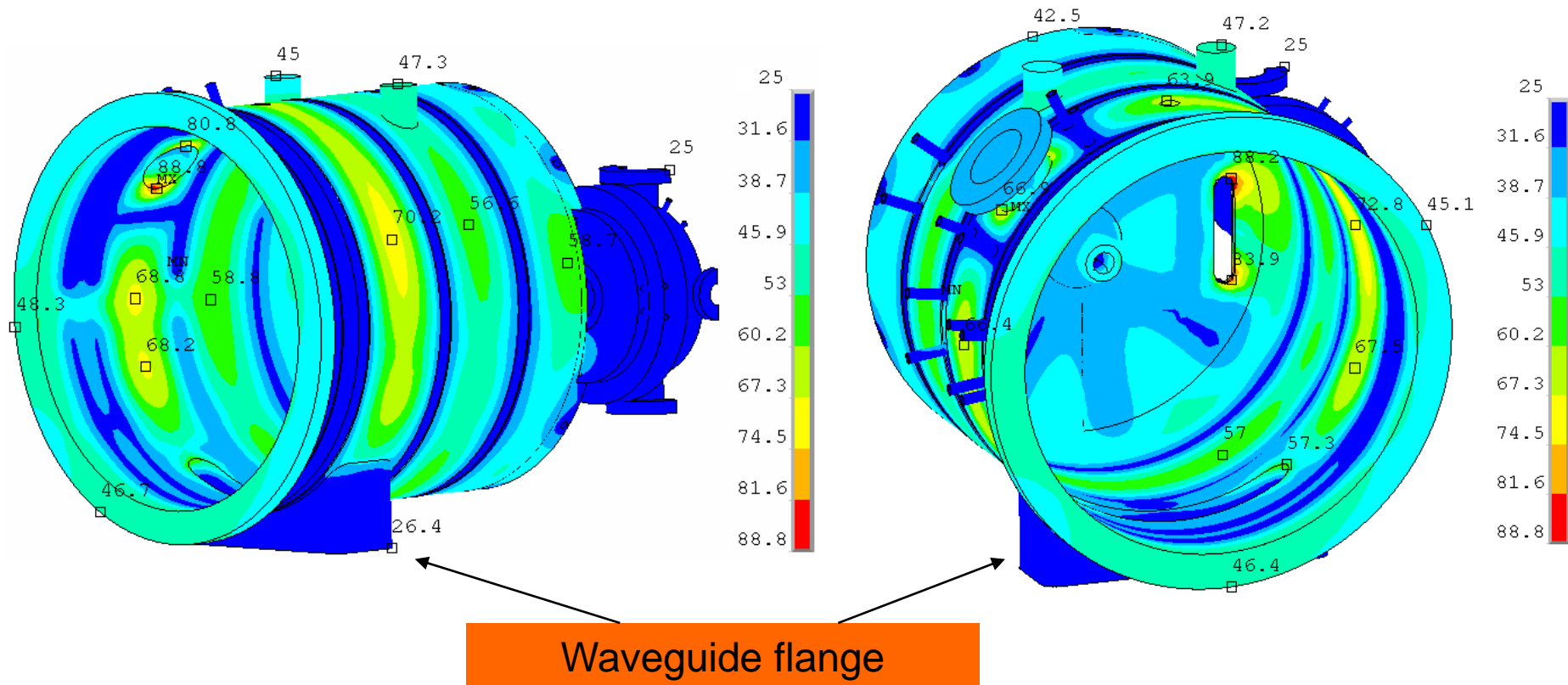| Designation	L, mm	L₁, mm	L₂, mm	L₃, mm	L₄, mm	L₅, mm	L₆, mm	L₇, mm	L₈, mm
CCDTL.M1.700	3020,3	687,6	932,7	59,7	304,6	206	670	365	1312,7
–01	3194,3	734,6	989,7	84,6	339,7	228	692	389	1394,1
–02	3359,9	781,5	1038,4	109,5	366,4	250	714	413	1472,5
–03	3516,7	824,7	1082	130,7	388	272	736	437	1545,7
–04	3669,1	867,6	1121,5	151,6	405,5	294	758	461	1618,6
–05	3808,9	902	1156,9	164	418,9	316	780	485	1687
–06	3699	945,3	933,7	185,3	173,7	338	802	509	1752,3

Thermal calculations of the cavities

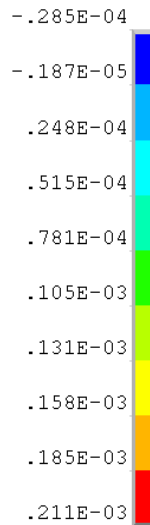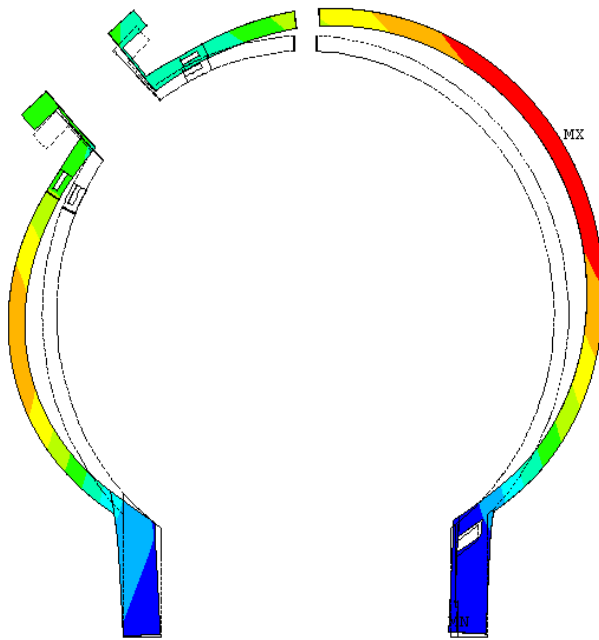## Tank 20 with waveguide flange , duty cycle 5%

Temperature fields (°C)

Waveguide flange

Tank 20, duty cycle 5%

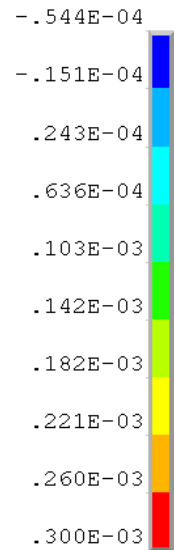Temperature fields (°C)

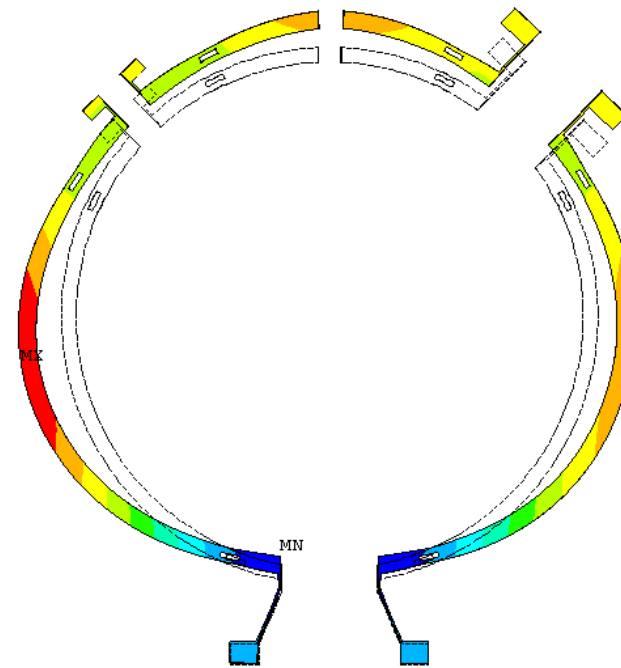

PIMS coupling flange

Tank 20, duty cycle 5%

Temperature drifts (m)

Waveguide flange

PIMS coupling flange

Tank 20, duty cycle 10%

Temperature fields (°C)

Waveguide flange

Tank 20, duty cycle 10%

Temperature fields (°C)

PIMS coupling flange

Tank 20, duty cycle 10%

Temperature drifts (m)

Waveguide flange

PIMS coupling flange