

TECHNOLOGY FOR SCIENCE

added value solutions **QVS**

LORCA Positioner

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QVS
added value solutions

INDEX



FIBER POSITIONER CONCEPT

ROTATION 1

ROTATION 2

MAIN CHARACTERISTICS/DIMENSION

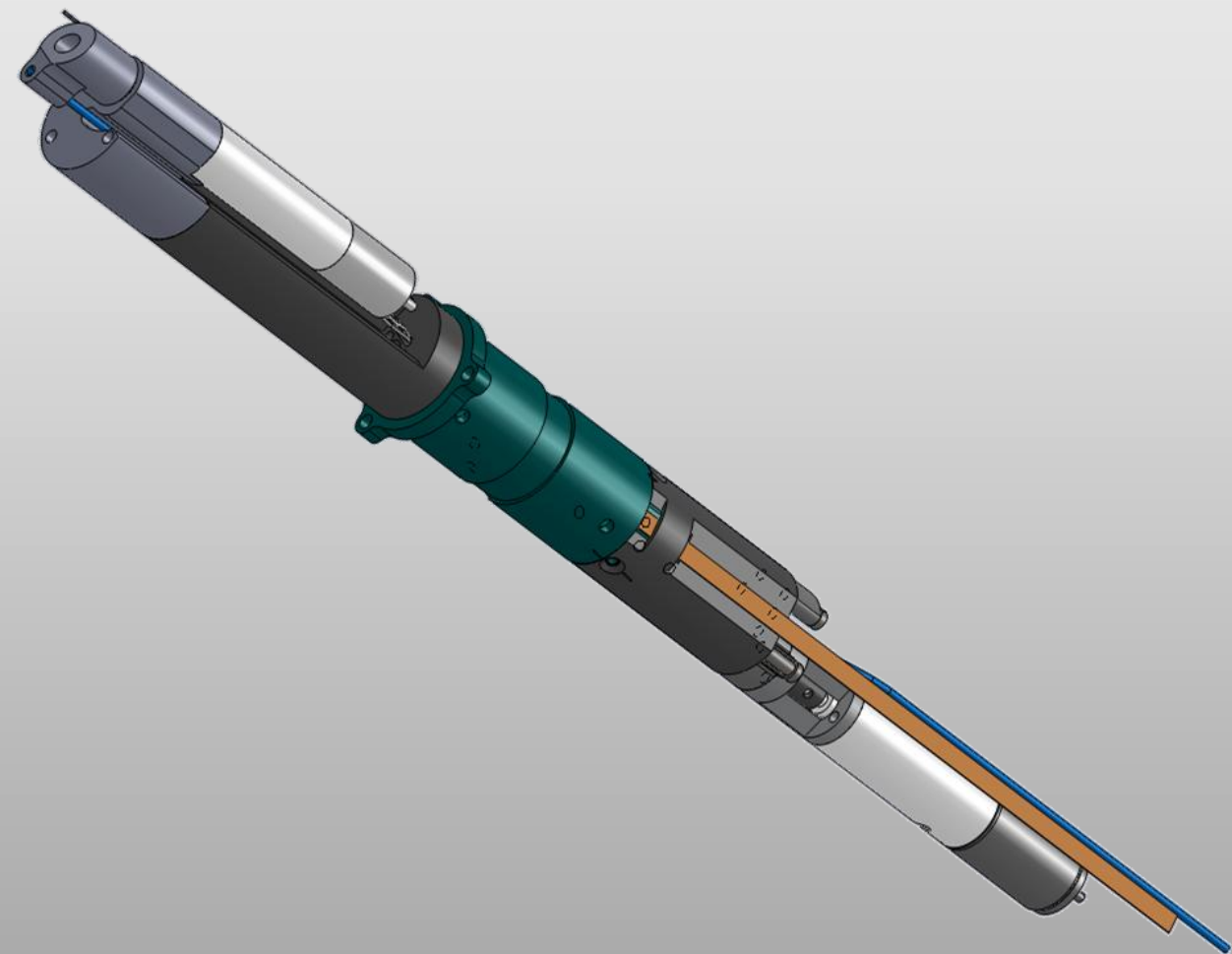
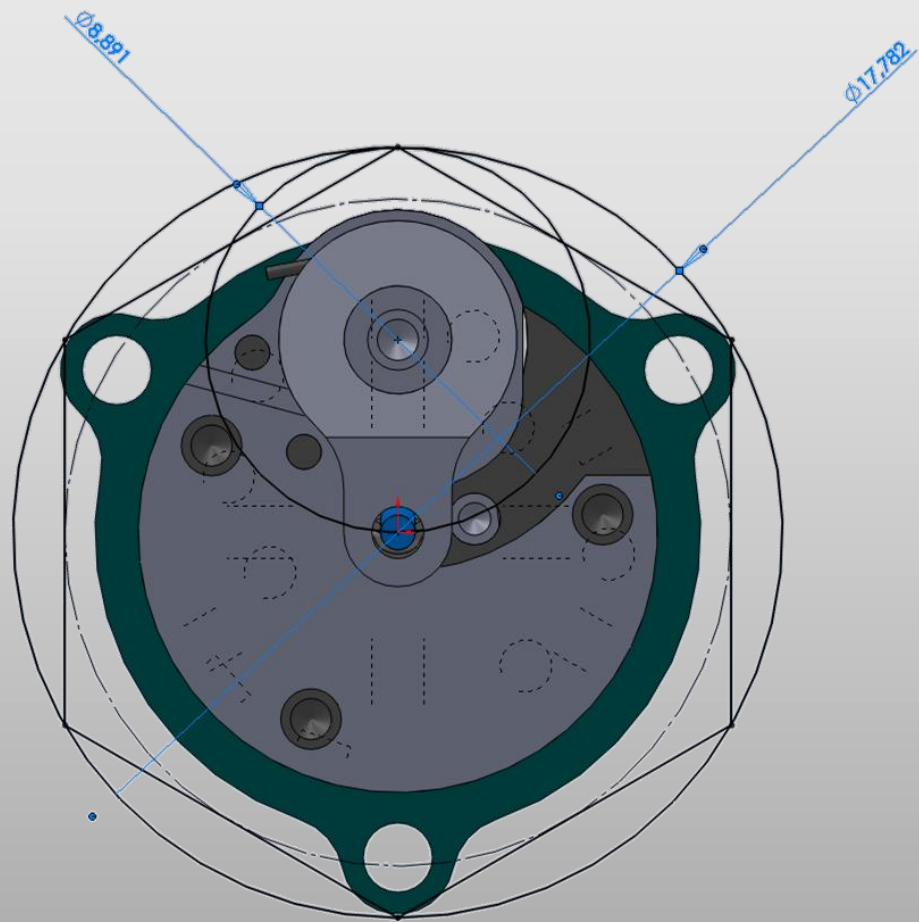
OPTICAL FIBER/INNER CAVITY(HOUSING)

ACTUATOR INTERFACE/COLLISION

PARAMETERS/ INPUTS

FIBER POSITINER CONCEPT

- Θ - Θ Concept required for LORCA instrument
- All targets of the focal plane are reached by almost one positioner
- Interpolation of 2 rotations allow reach any target in the patrol area of the robot



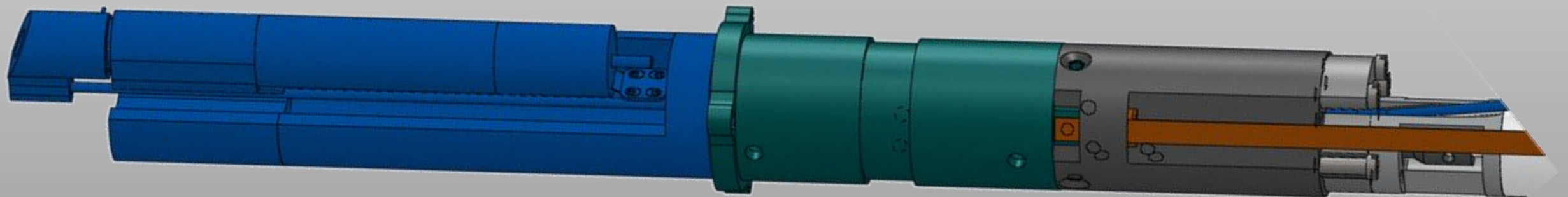
R1 Rotation

- Range 0-365°
- Mechanical power-driving(open loop/NO ENCODER)
 - Motor: Ø 8 Stepper
 - Gear head: Series 08/3 Zero backlash 15mNm ratio :120/1
- ACCURACY + STANDARD +KNOWN solution
- Gear Transmission ratio 2.6:1
- Preloaded solution
- Mechanical limit /Not precise solutions



R2 Rotation

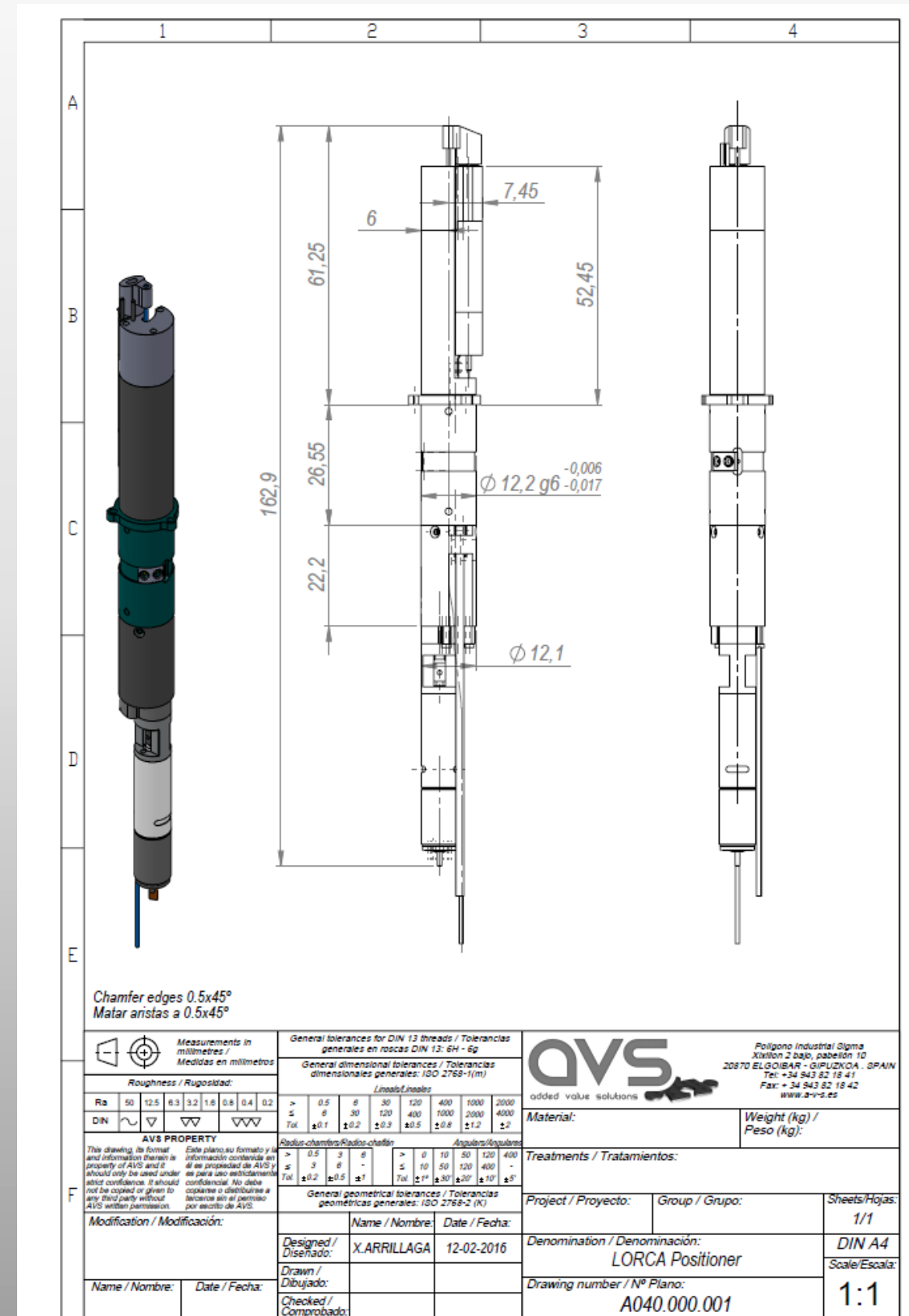
- Range 0-185 °
- Mechanical power-driving(open loop/**NO ENCODER**)
 - Motor: Ø 6 Stepper
 - Gear head: Series 06/1 15mNm ratio :1024/1 (**TBD Ratio**)
 - Remove backlash 0°-3° Preloaded solution
- Mechanical limit /Not precise solutions
- Optimization of components
- Specific inner flex connection is required(**TBD with PRECISTEP/MPS/AVS 2nd phase**) Define wiring mechanical interfaces define input, Wiring, connections (connectors, welding points...)



Main characteristics/Dimensions

MAIN CHARACTERISTICS

- Distance between actuators: 15.4mm
- Hexagonal distribution
- Cover AREA: 17.782mm
- 2 Rotation interpolation
- Rotation 1: 365°
- Rotation 2: 185°
- Positioning accuracy: ±5 microns (TBD)
- MAX Torque: 15mNm.
- Reconfiguration time: TBD
- Weight: TBD
- Voltage: 3V TBD



Optical fiber / inner cavity

Inputs needed:

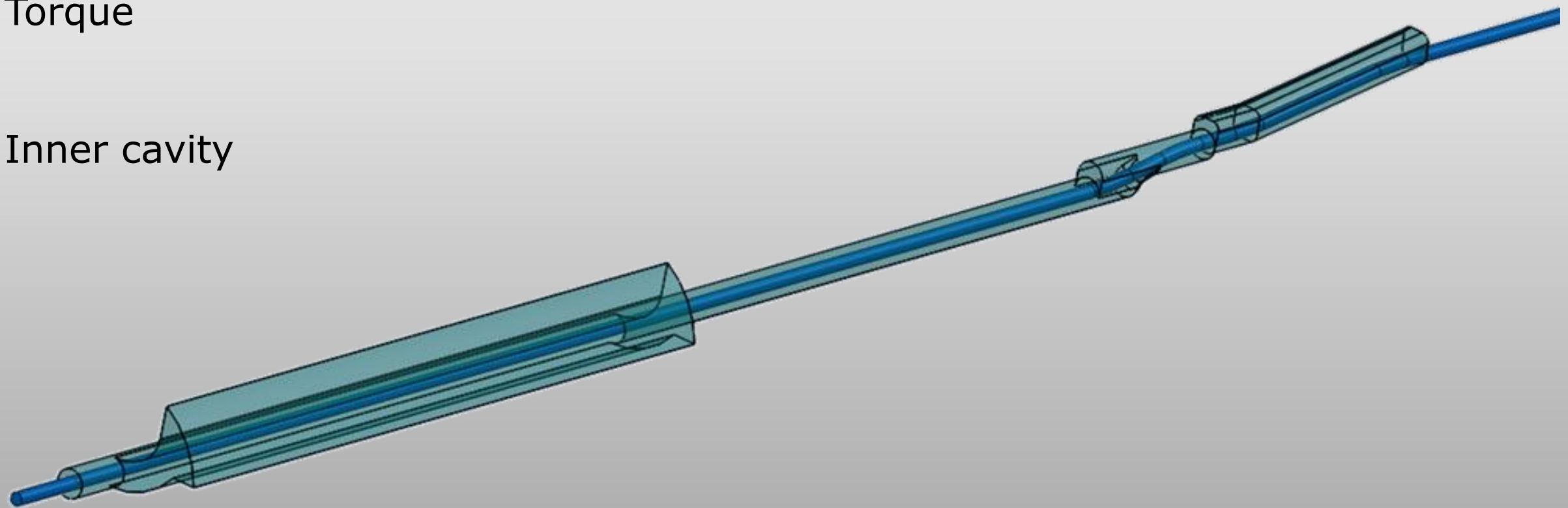
Geometry

Dimension

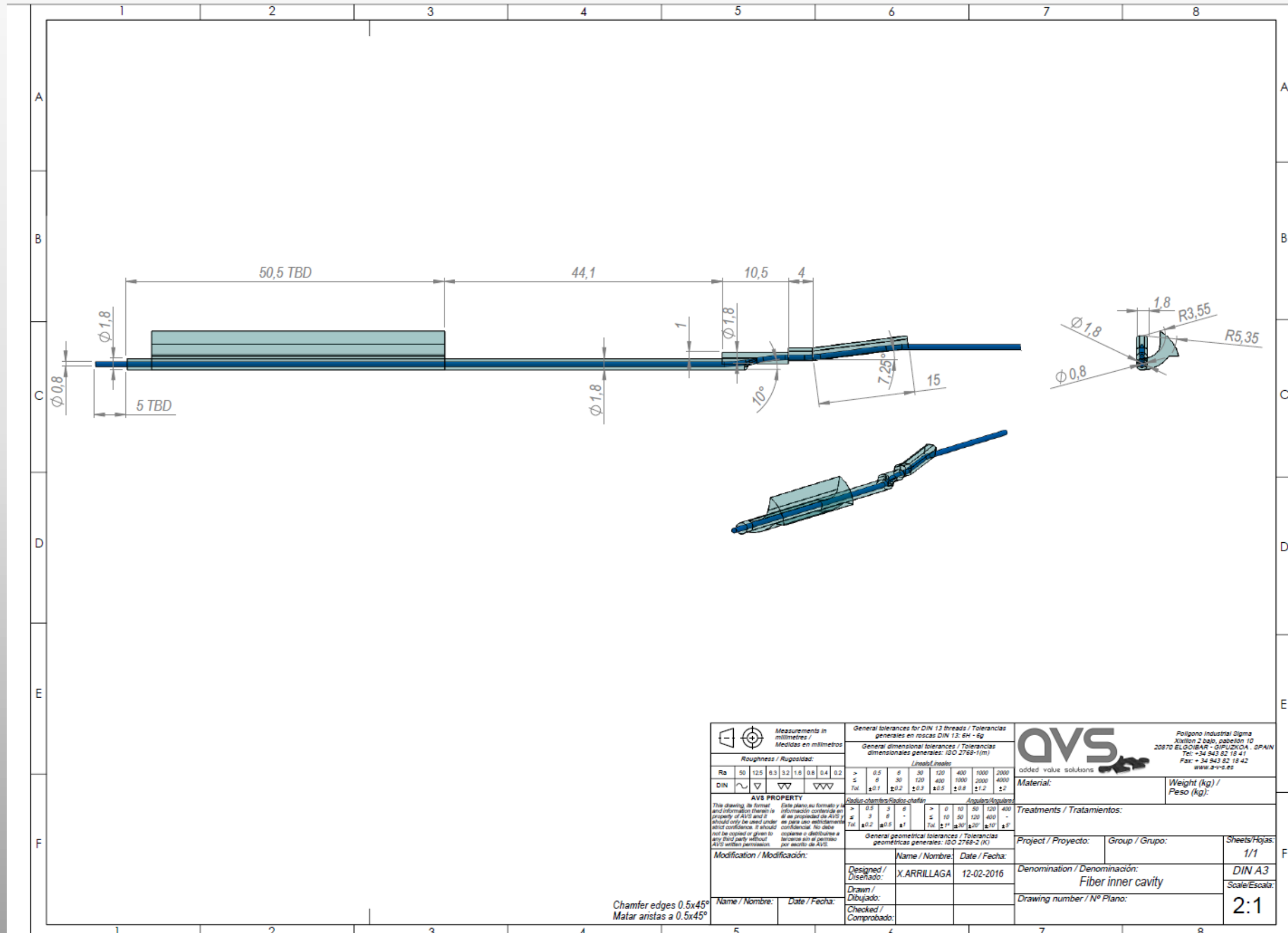
Interface/geometrical tolerance

Torque

Inner cavity



Optical fiber / inner cavity



Chamfer edges 0.5x45°
Matar anistas a 0.5x45°

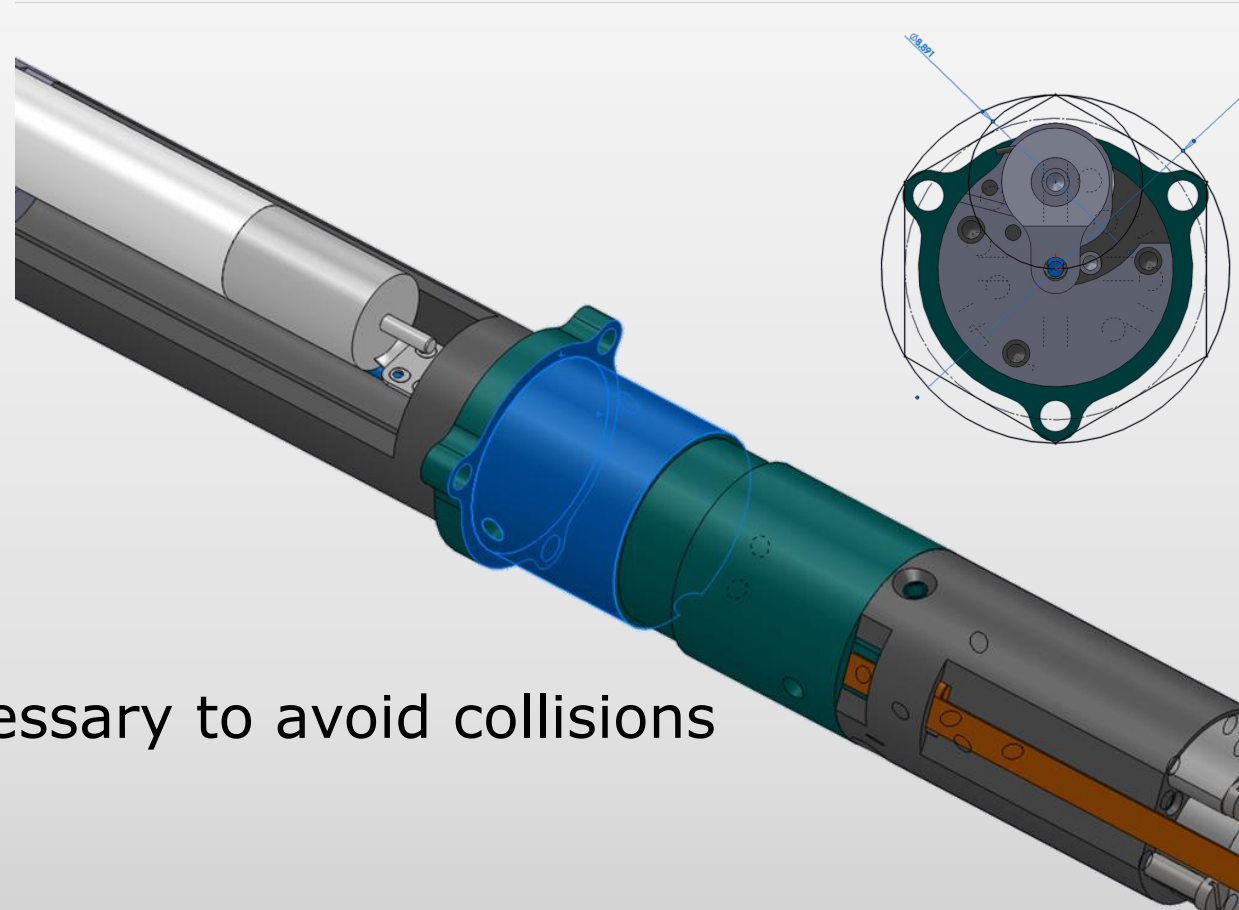
	Measurements in millimetres / Medidas en milímetros	General tolerances for DIN 13 threads / Tolerancias generales en roscas DIN 13: 6H - 6g		Polígono Industrial Sigma Xitxion 2 bajo, pabellón 10 20870 EL GOIBAR - GIPUZKOA - SPAIN Tel: +34 943 82 18 41 Fax: +34 943 82 18 42 www.qvs.es																																																							
	Roughness / Rugosidad:	General dimensional tolerances / Tolerancias dimensionales generales: ISO 2768-1(m)		Material:	Weight (kg) / Peso (kg):																																																						
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Interface with focal plane/collision

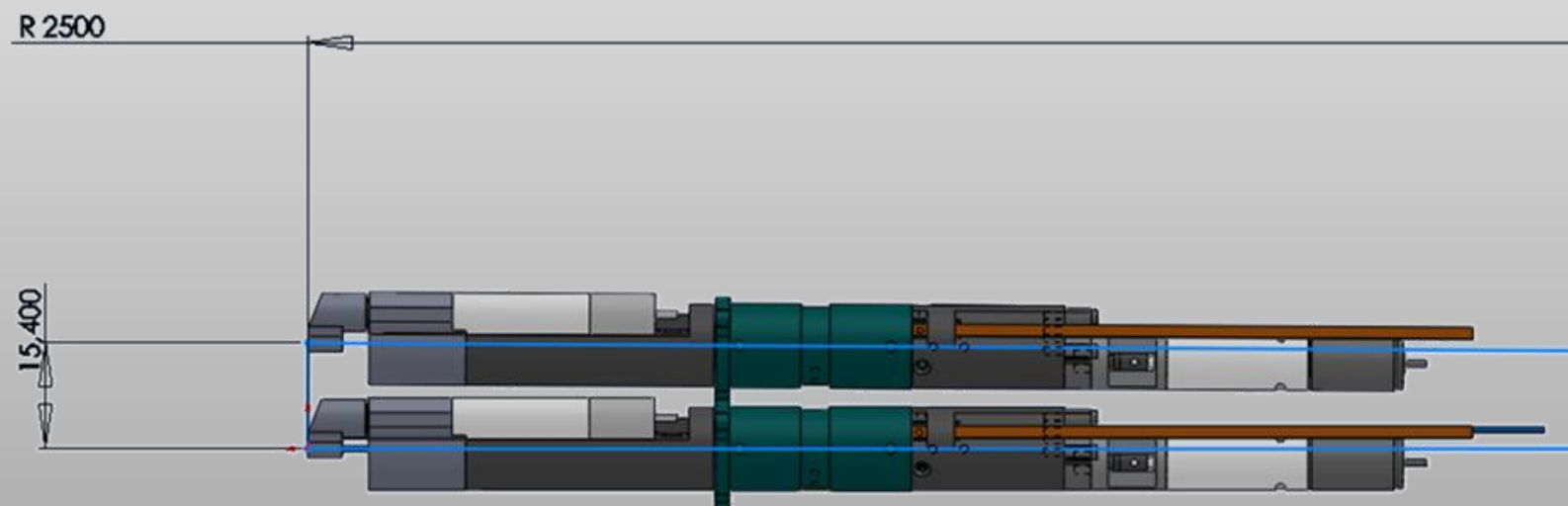
Preliminary design

Ø12.2 g6

3x M1.4 screws



FOCAL PLANE RADIUS necessary to avoid collisions



Inputs



- Holder 1 interface
- Electronics pending to be define with IAA
- Fiber paths it is not defined. It is very dependant of the fiber of the application
- Focal plane radius
- Flexi print possibilities with PRECISTEP
- Confirmation of hard stops concept
- R2 Gear head: Series 06/1 15mNm ratio :1024/1 (**TBD Ratio**)
- Confirmation of specification

Thank You

