

## Treball final de grau

**Estudi:** Grau en Enginyeria Mecànica

**Títol:** Disseny i fabricació del prototip d'una pròtesis biònica de mà

**Document:** Plànols

**Alumne:** Pau Quintana Casanovas

**Tutor:** Jordi Bayer Resplandis

**Departament:** Enginyeria Química, agrària i tecnologia agroalimentària

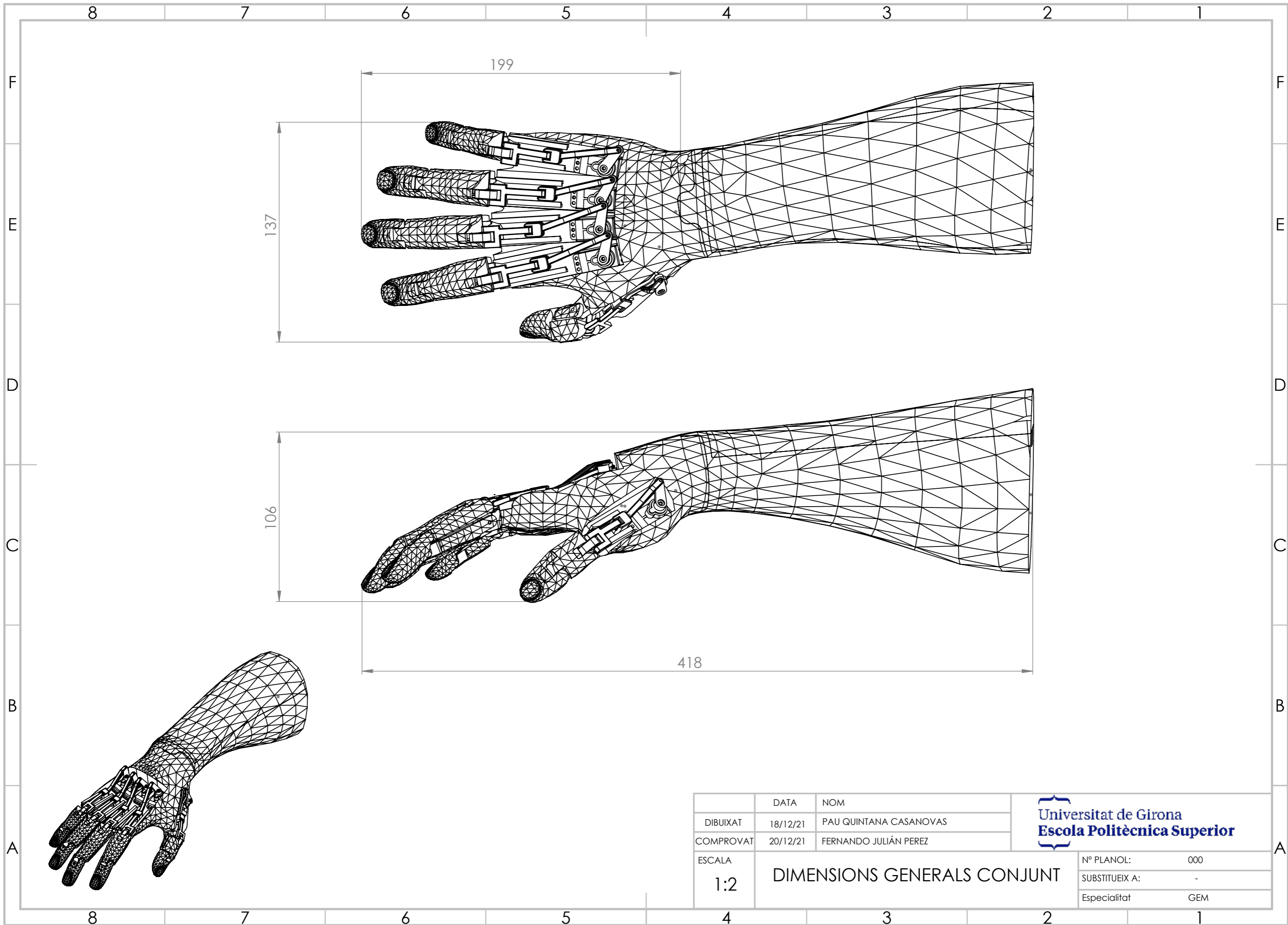
**Àrea:** Enginyeria Química

**Convocatòria (mes/any)** FEBRER 2022

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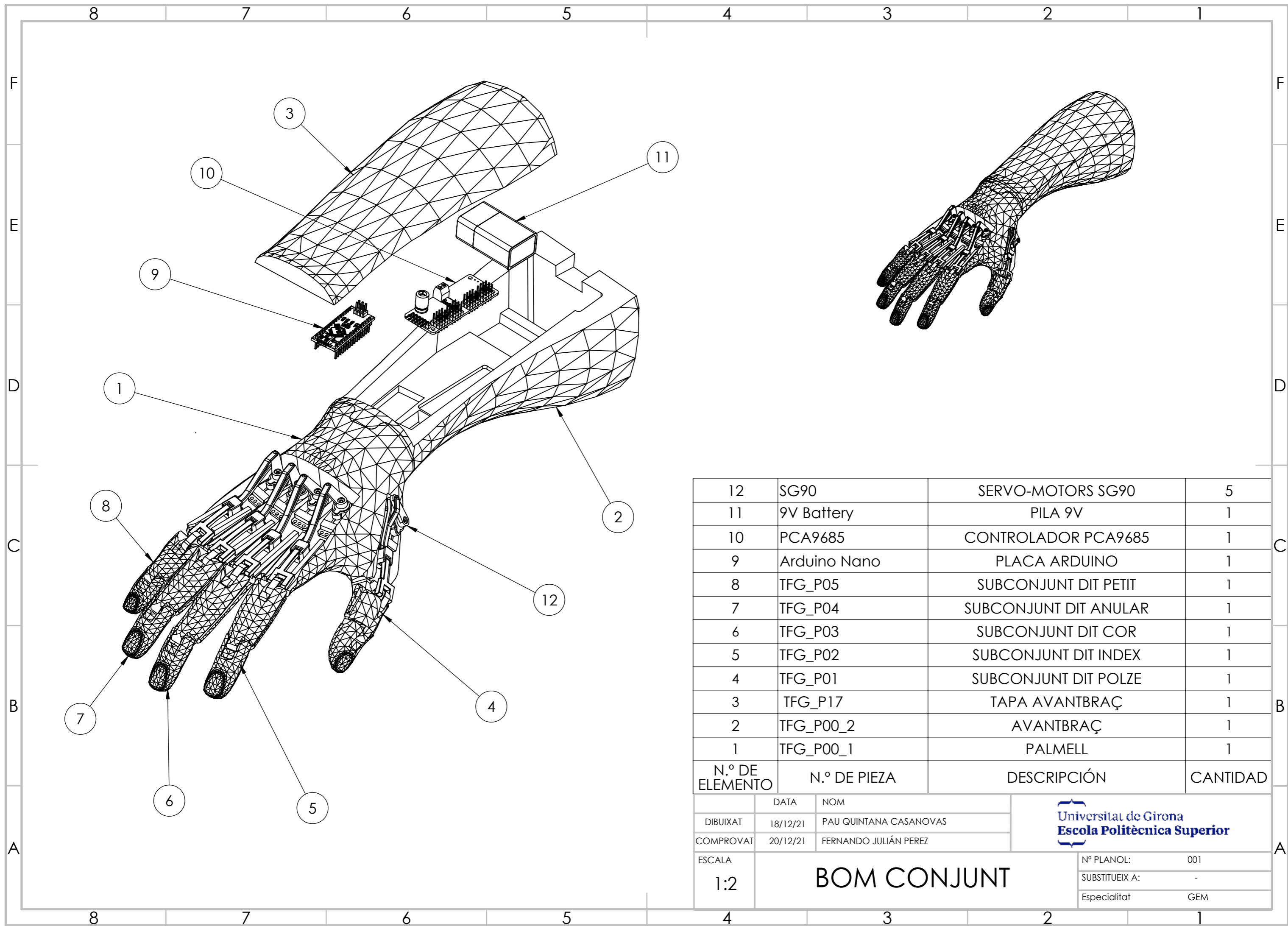


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DIBUIXAT	18/12/21	PAU QUINTANA CASANOVAS
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ESCALA	1:2	


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Nº PLANOL:	000
SUBSTITUEIX A:	-
Especialitat	GEM

**DIMENSIONS GENERALS CONJUNT**



12	SG90	SERVO-MOTORS SG90	5
11	9V Battery	PILA 9V	1
10	PCA9685	CONTROLADOR PCA9685	1
9	Arduino Nano	PLACA ARDUINO	1
8	TFG_P05	SUBCONJUNT DIT PETIT	1
7	TFG_P04	SUBCONJUNT DIT ANULAR	1
6	TFG_P03	SUBCONJUNT DIT COR	1
5	TFG_P02	SUBCONJUNT DIT INDEX	1
4	TFG_P01	SUBCONJUNT DIT POLZE	1
3	TFG_P17	TAPA AVANTBRAÇ	1
2	TFG_P00_2	AVANTBRAÇ	1
1	TFG_P00_1	PALMELL	1
N.º DE ELEMENTO	N.º DE PIEZA	DESCRIPCIÓN	CANTIDAD

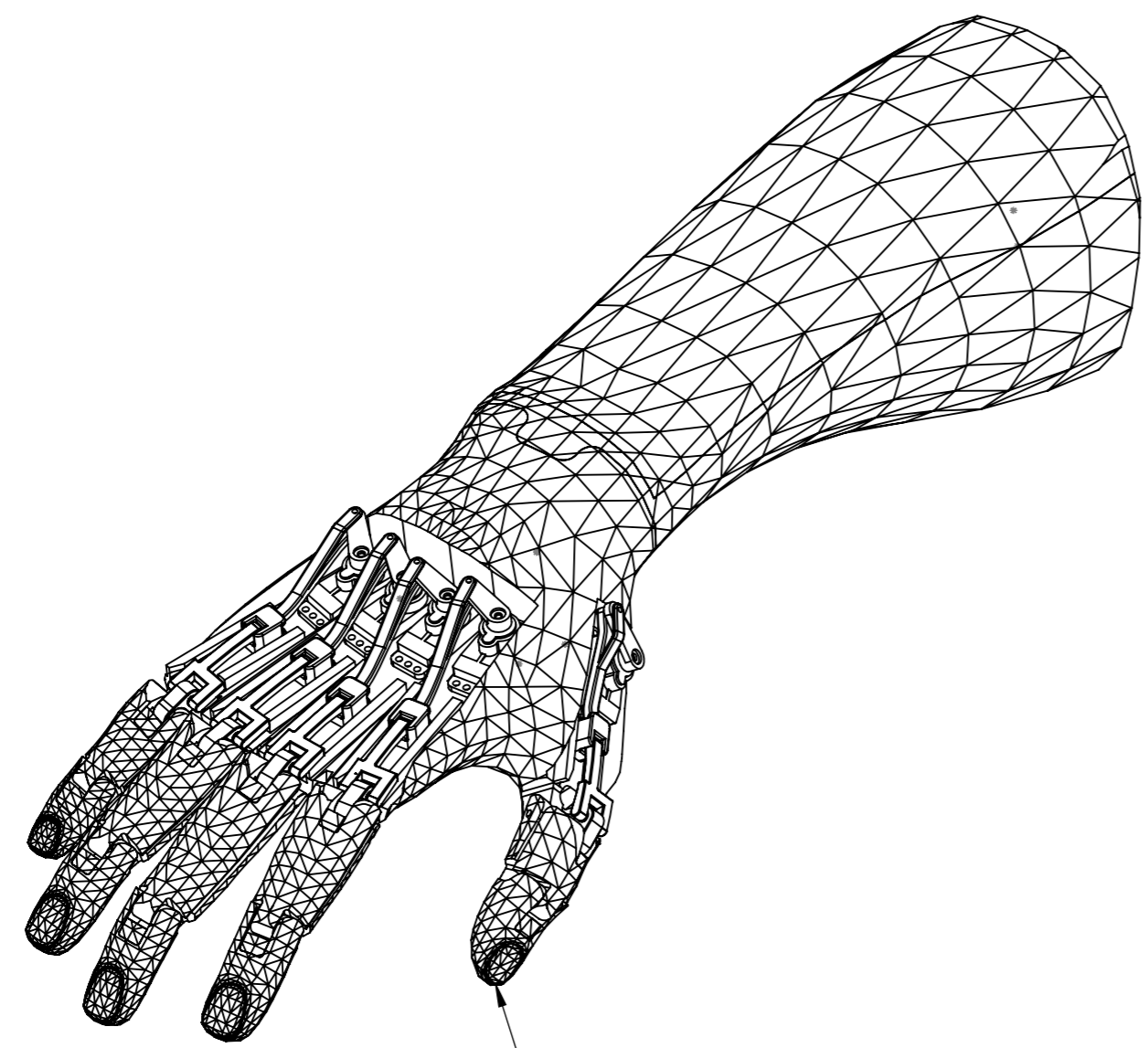
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COMPROVAT	20/12/21	FERNANDO JULIÁN PEREZ
ESCALA	1:2	

# BOM CONJUNT

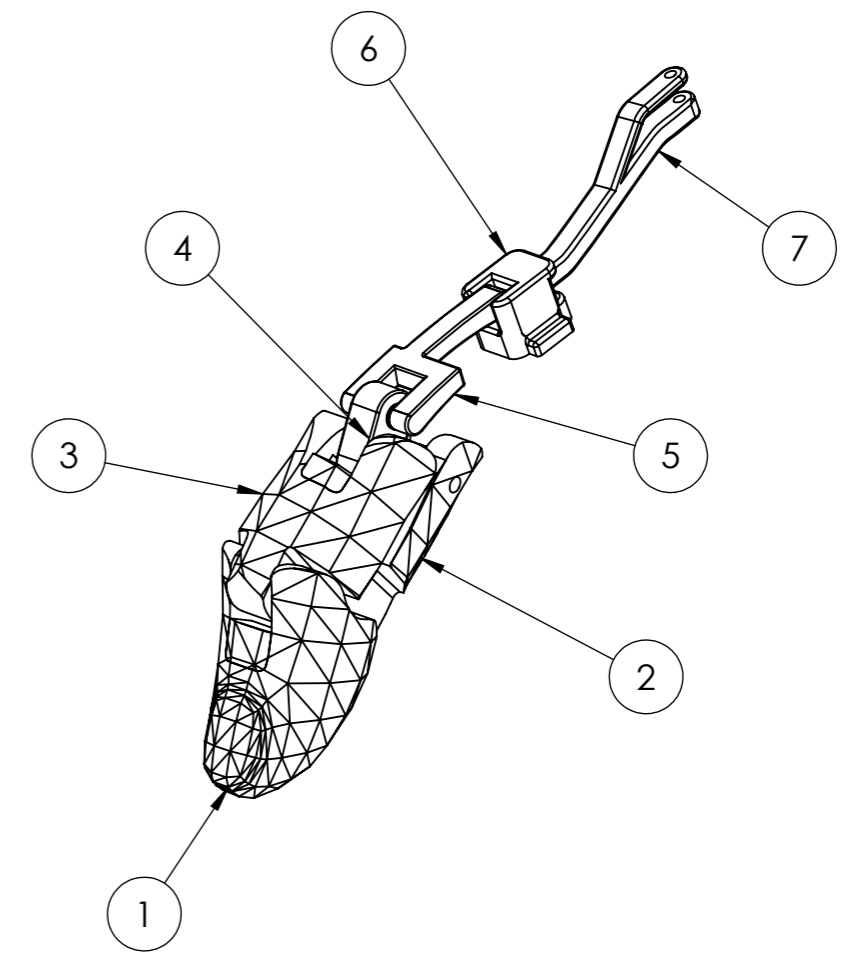



Nº PLANOL:	001
SUBSTITUEIX A:	-
Especialitat	GEM

N.º DE ELEMENTO	N.º DE PIEZA	DESCRIPCIÓN	CANTIDAD
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2	TFG_P01_1_inf	Falange mitjana inferior	1
3	TFG_P01_1_sup	Falange mitjana superior	1
4	TFG_P15	Peça unió	1
5	TFG_P07	Braç guia - peça unió	1
6	TFG_P08	Guia	1
7	TFG_P10	Braç guia - servo	1



Conjunt P01: Dit polze



	DATA	NOM	
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COMPROVAT	20/12/21	FERNANDO JULIÁN PEREZ	
ESCALA	1:1		Nº PLANOL: 100
Subconjunt TFG_P01			SUBSTITUEIX A: -
			Especialitat GEM

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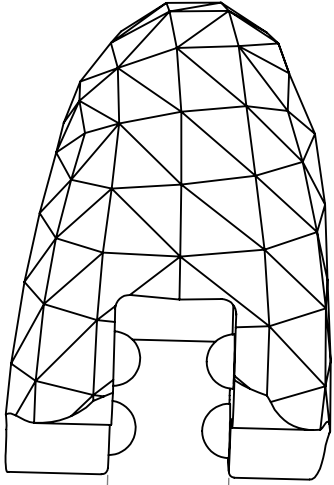
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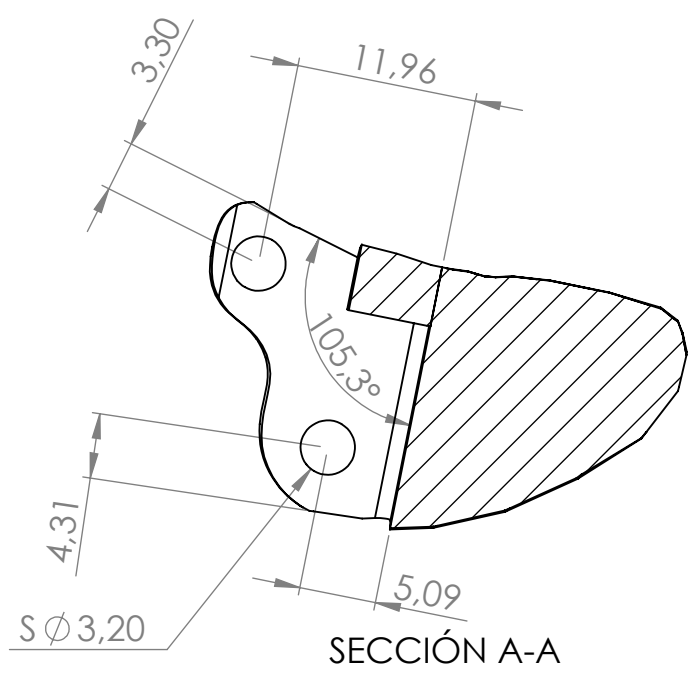
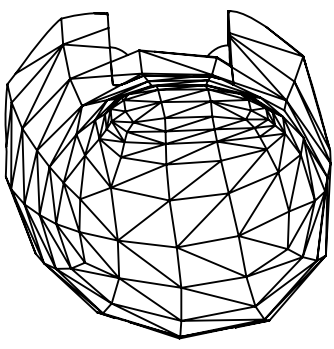
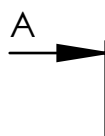
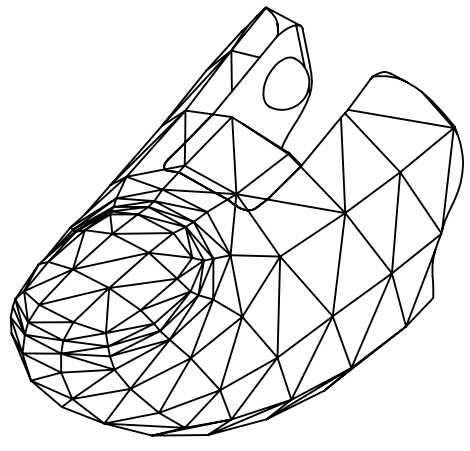
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COMPROVAT	20/12/21	FERNANDO JULIÁN PEREZ

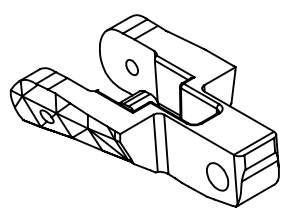
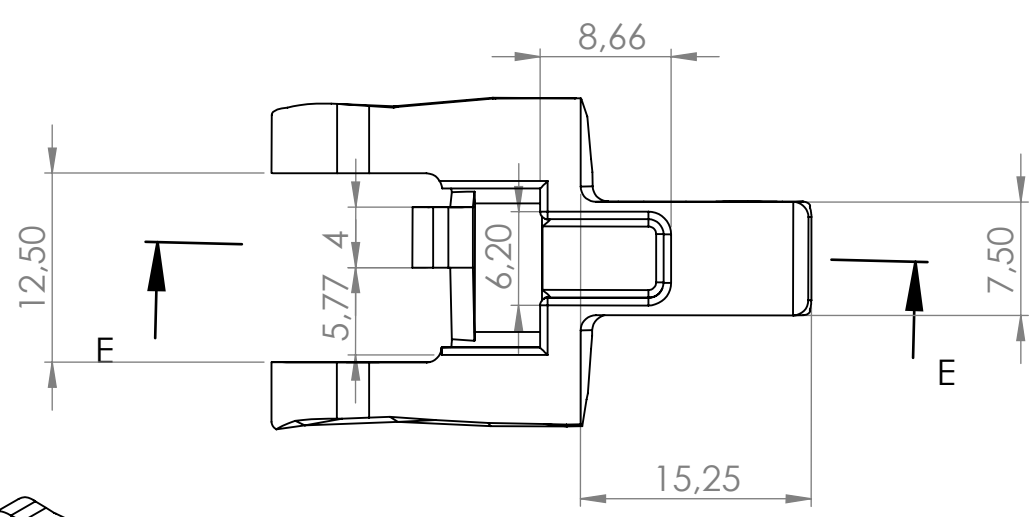
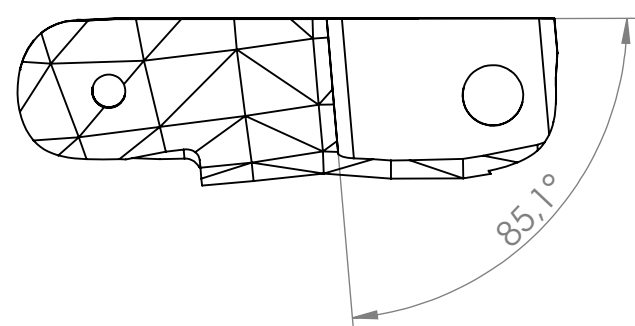
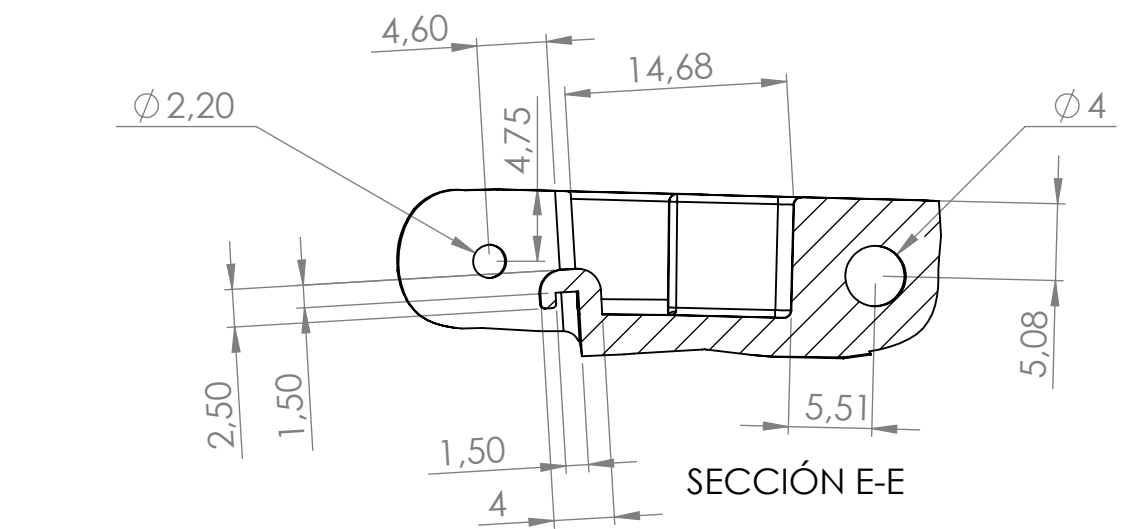
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**TFG\_P01\_2**

Nº PLANOL:	101
SUBSTITUEIX A:	-
Especialitat	GEM

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Nº PLANOL:	102
SUBSTITUEIX A:	-
Especialitat	GEM



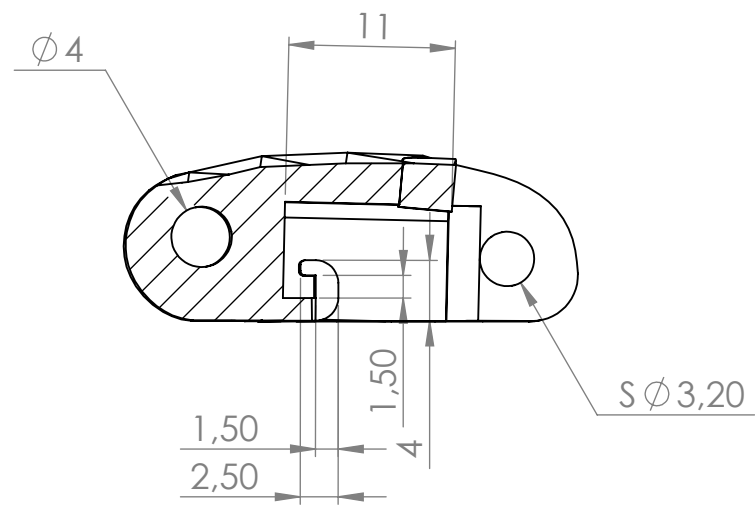
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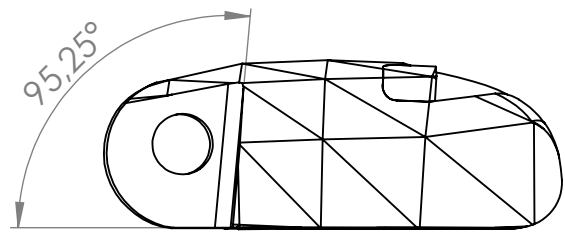
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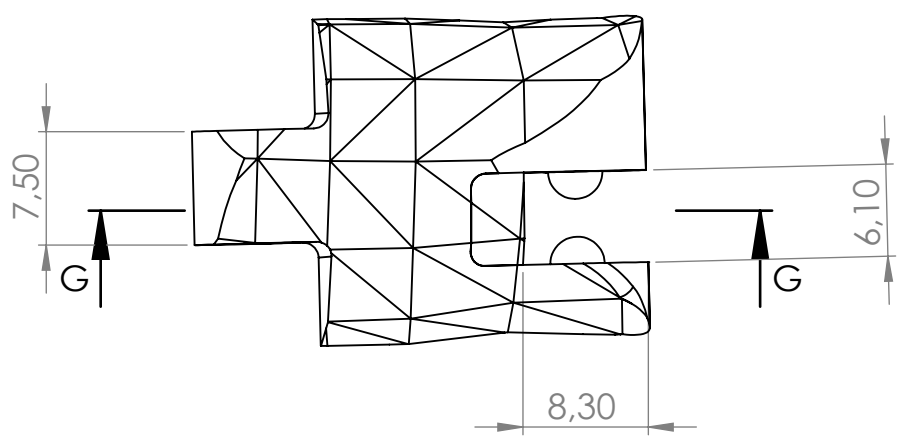
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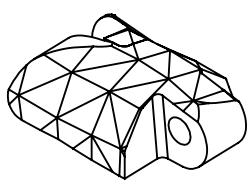
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	DATA	NOM
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COMPROVAT	20/12/21	FERNANDO JULIÁN PEREZ


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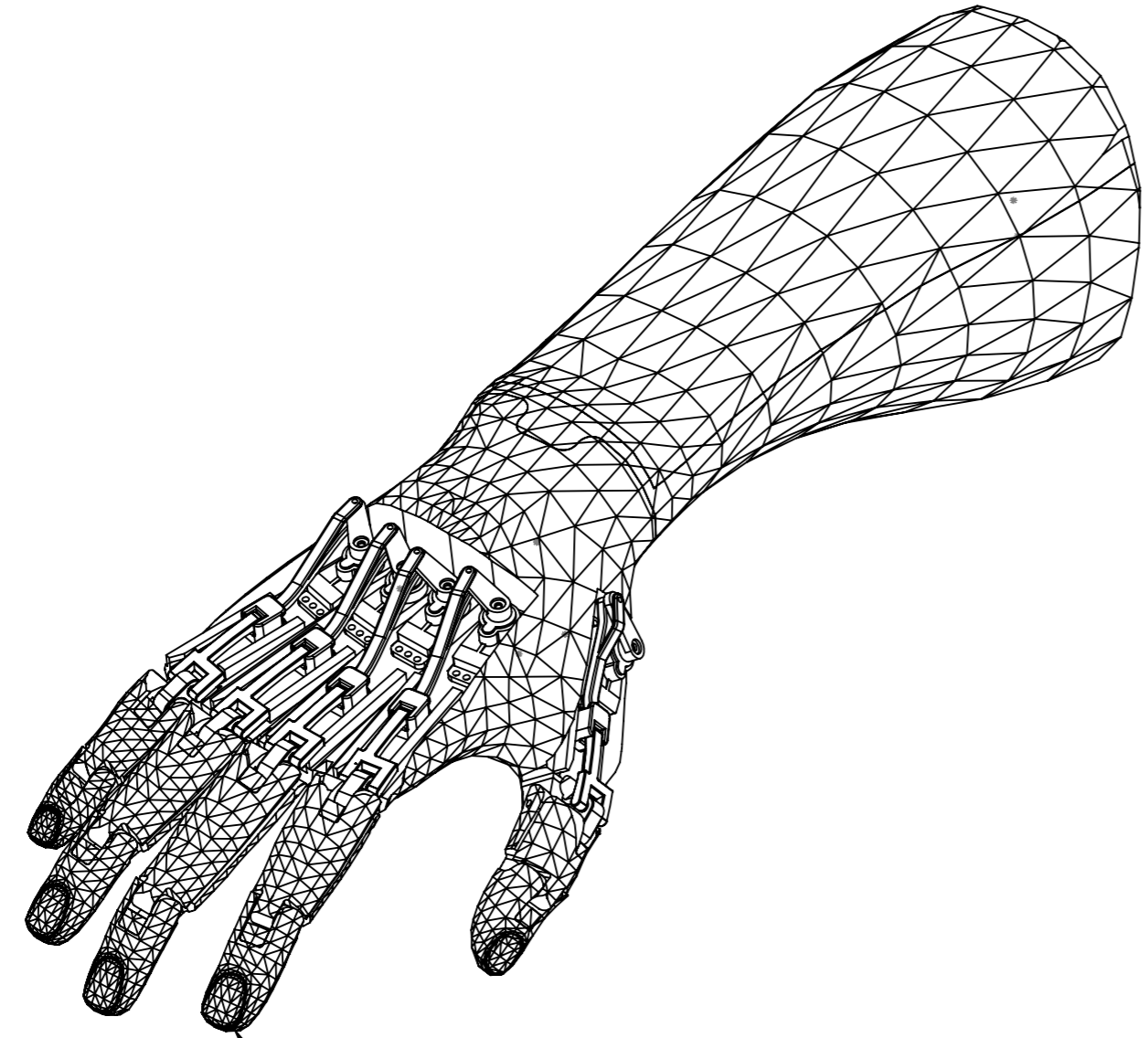
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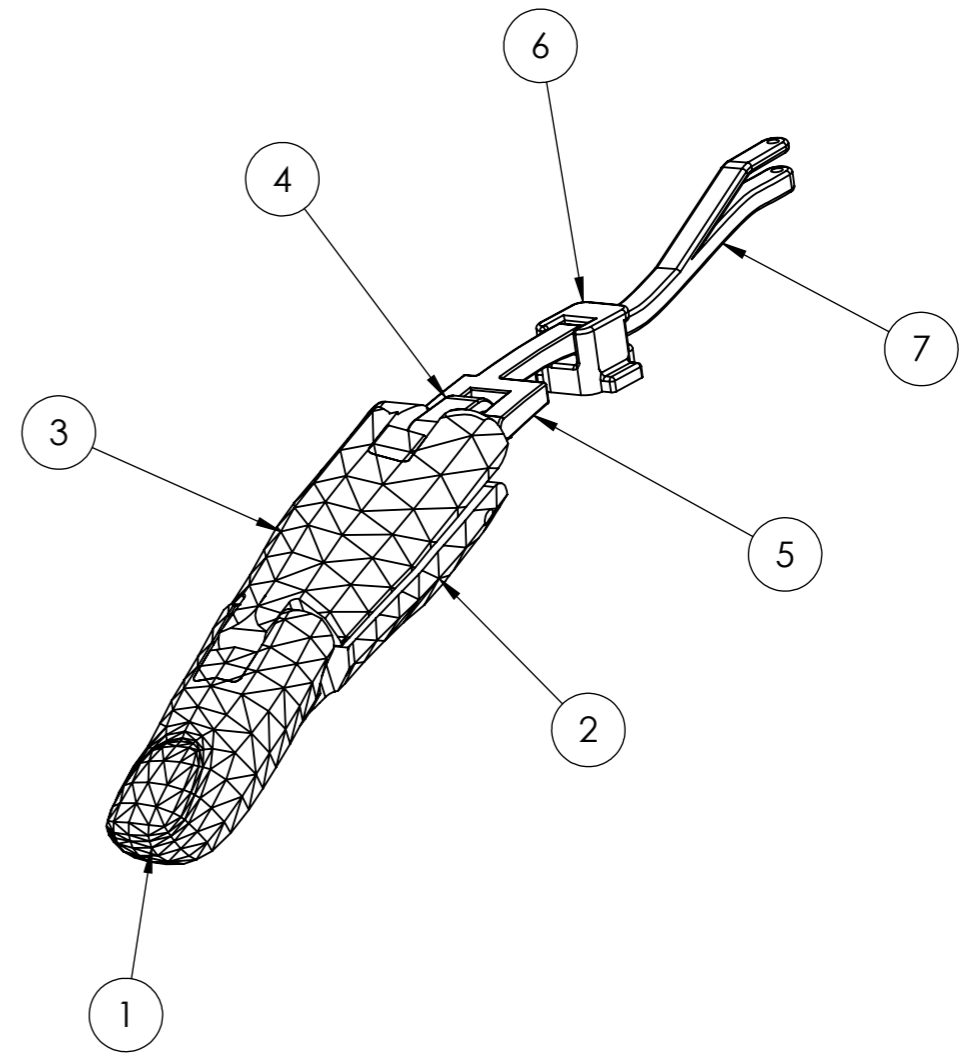
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SUBSTITUEIX A:	-
Especialitat	GEM


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N.º DE ELEMENTO	N.º DE PIEZA	DESCRIPCIÓN	CANTIDAD
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2	TFG_P02_1_inf	Falange mitjana inferior	1
3	TFG_P02_1_sup	Falange mitjana superior	1
4	TFG_P15	Peça unió	1
5	TFG_P09	Braç guia - peça unió	1
6	TFG_P08	Guia	1
7	TFG_P06	Braç guia - servo	1



Conjunt P02: Dit index

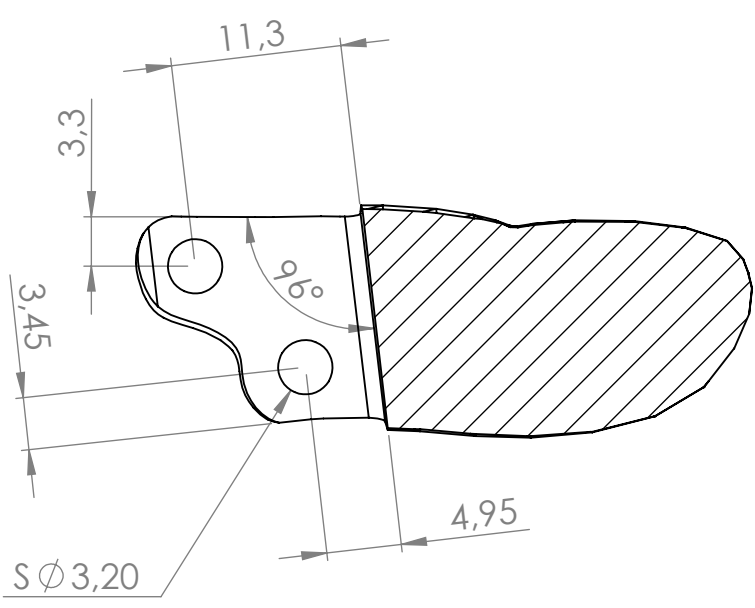
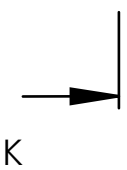
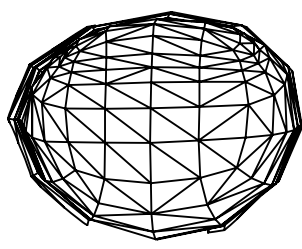
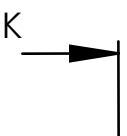


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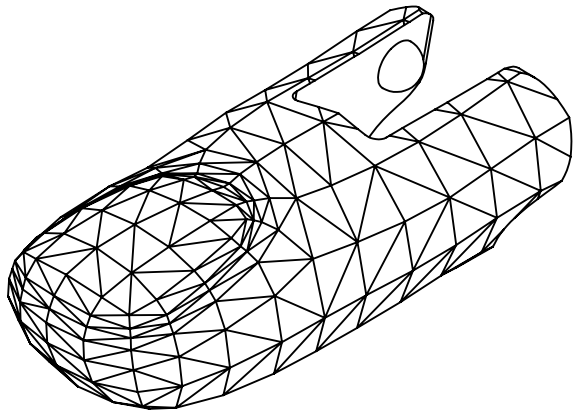
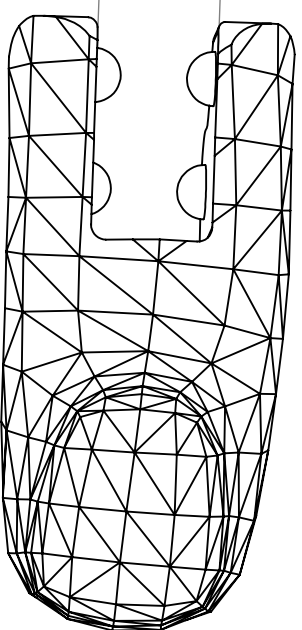
SECCIÓN K-K

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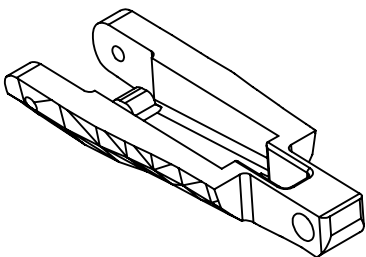
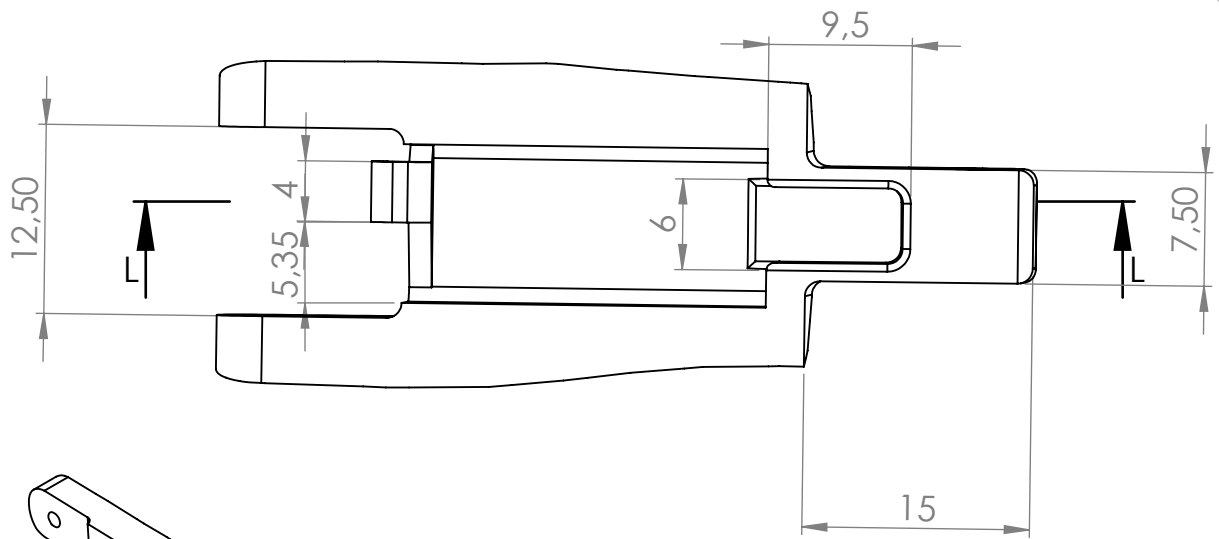
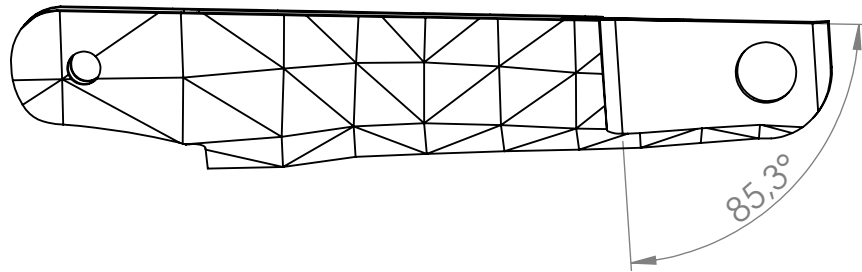
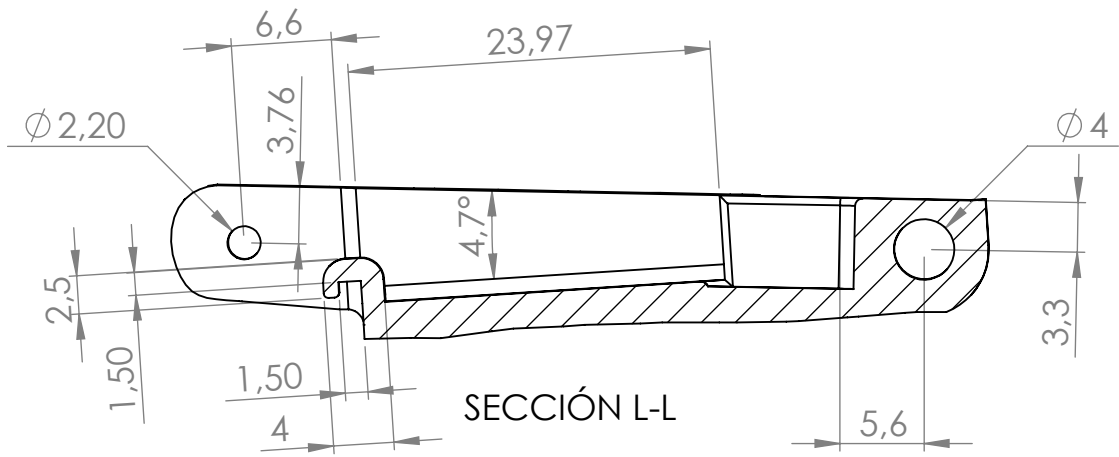
  
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**TFG\_P02\_2**

Nº PLANOL:	201
SUBSTITUEIX A:	-
Especialitat	GEM

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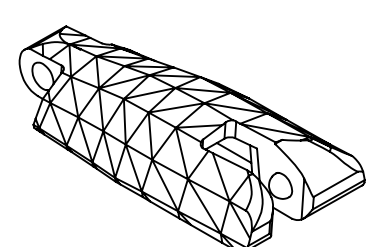
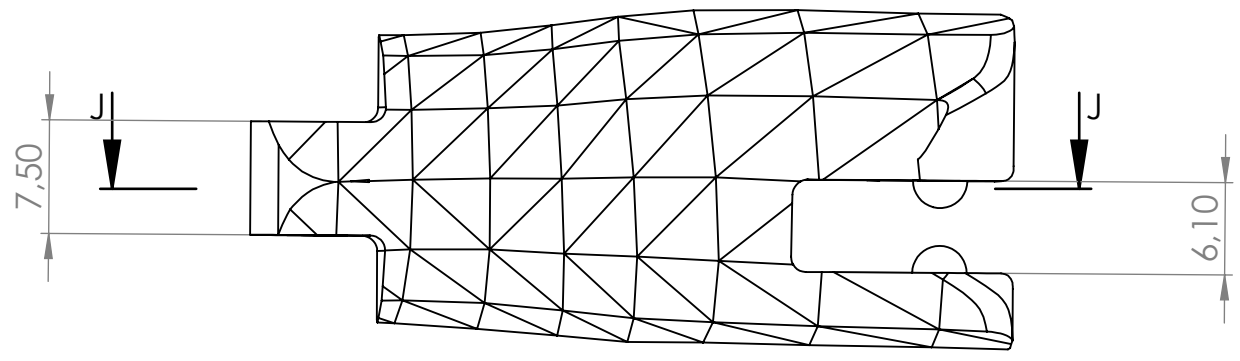
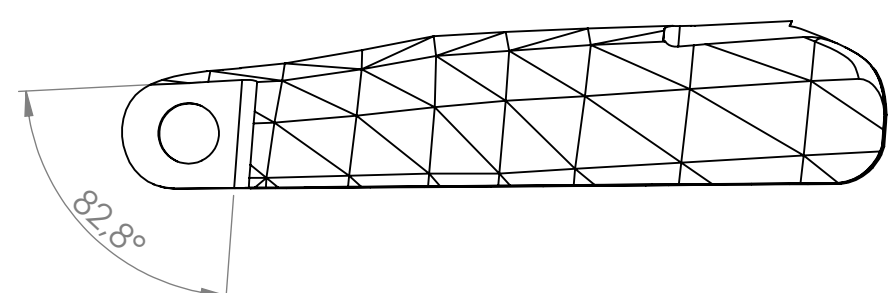
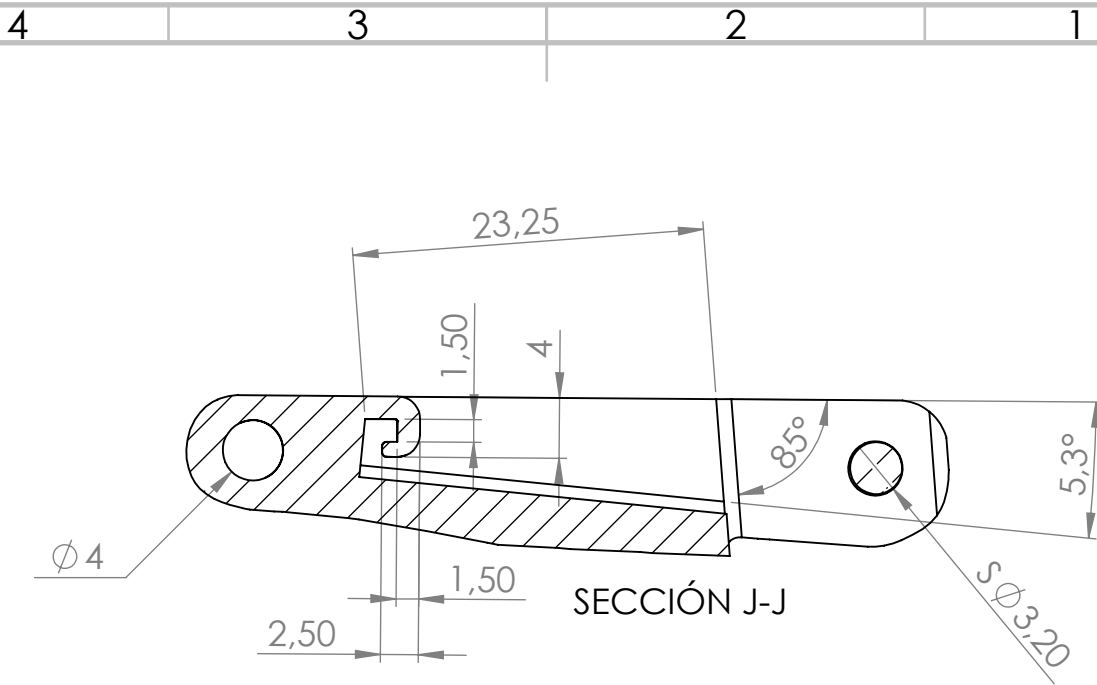


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DIBUIXAT	18/12/21	PAU QUINTANA CASANOVAS
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		Especialitat	GEM

Nº PLANOL:	202
SUBSTITUEIX A:	-
Especialitat	GEM

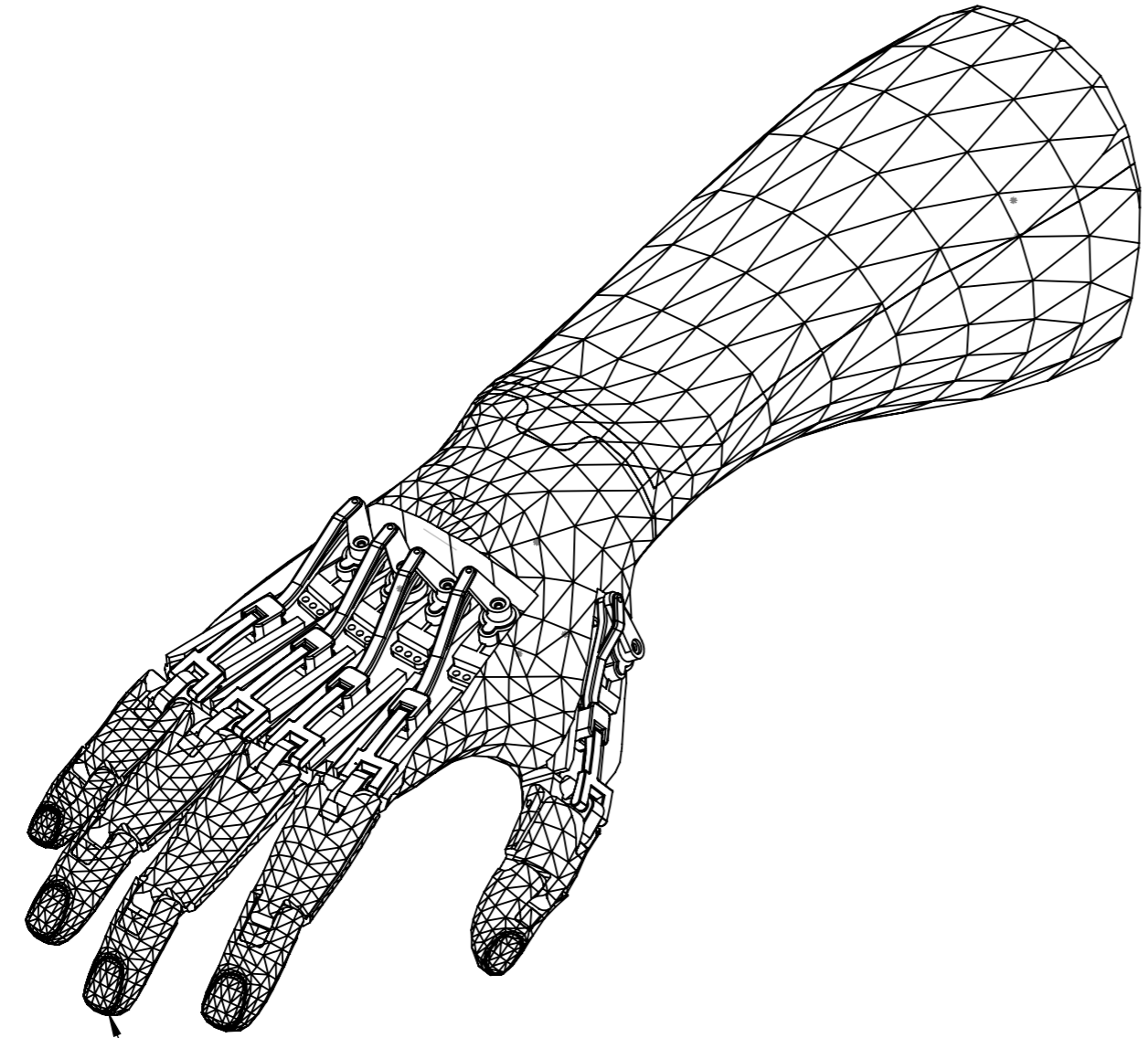


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COMPROVAT	20/12/21	FERNANDO JULIÁN PEREZ
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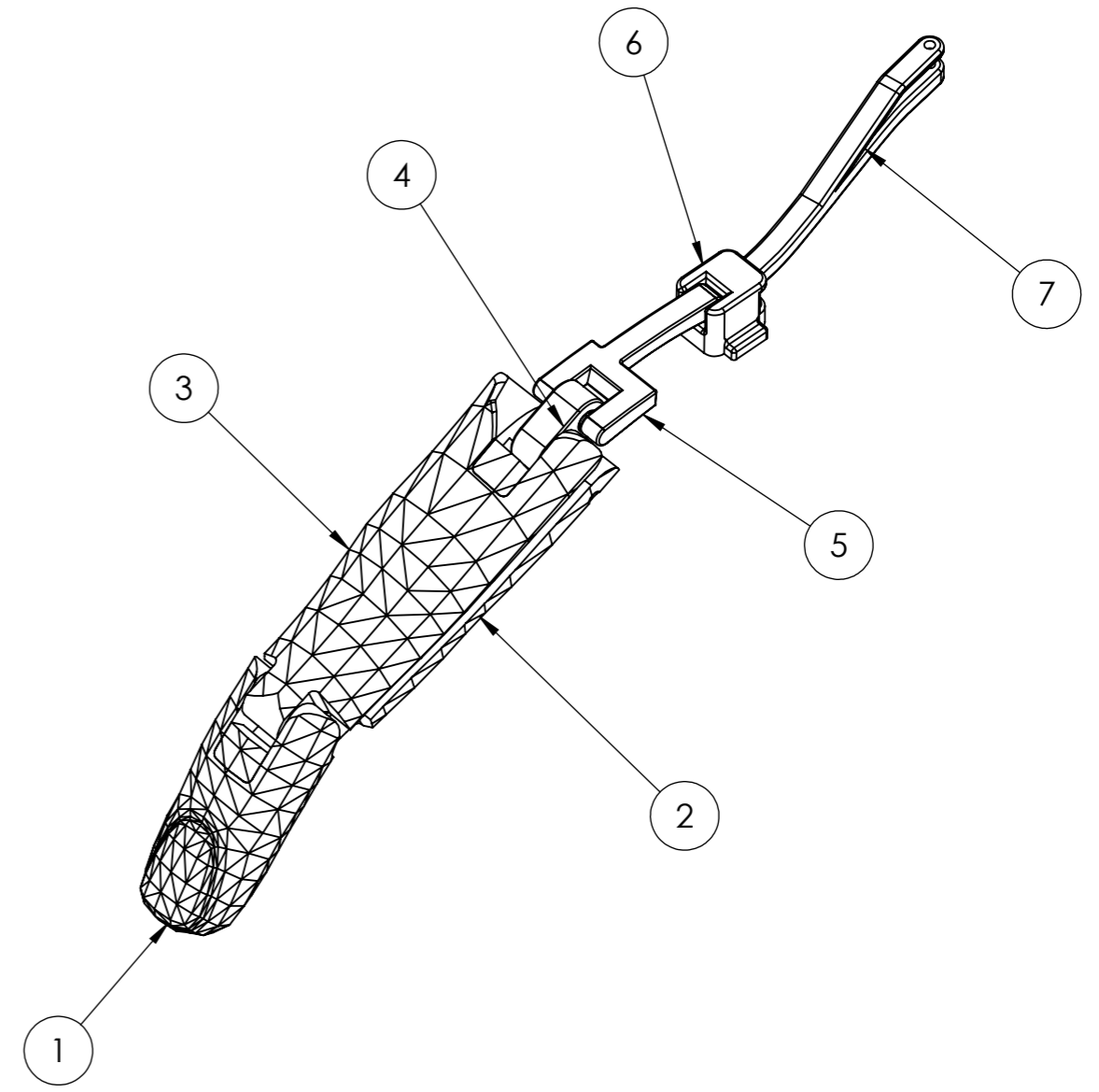
  
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Especialitat	GEM

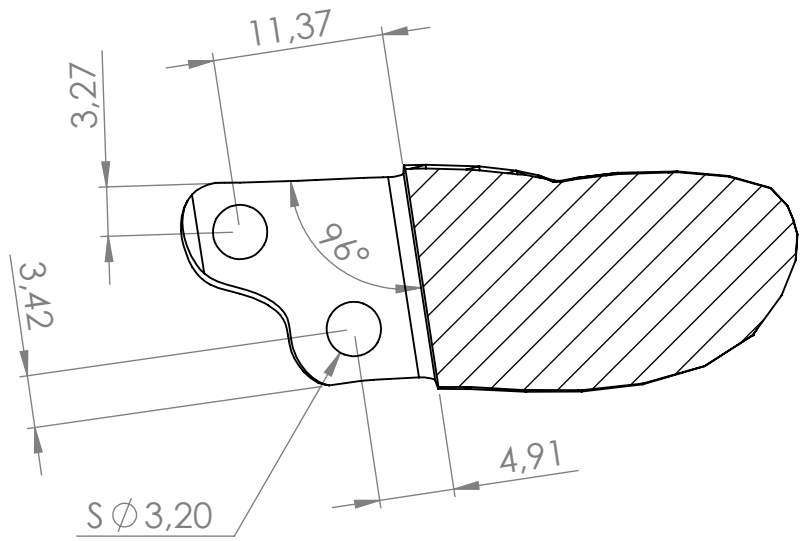
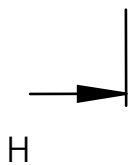
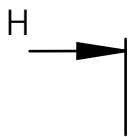
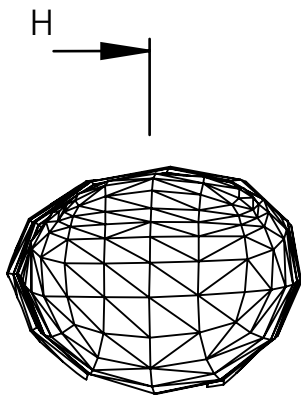
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2	TFG_P03_1_inf	Falange mitjana inferior	1
3	TFG_P03_1_sup	Falange mitjana superior	1
4	TFG_P15	Peça unió	1
5	TFG_P09	Braç guia - peça unió	1
6	TFG_P08	Guia	1
7	TFG_P06	Braç guia - servo	1



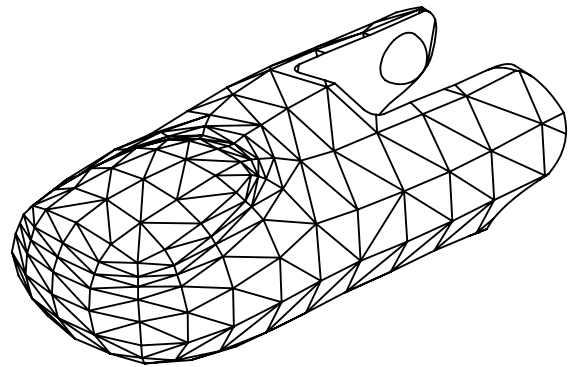
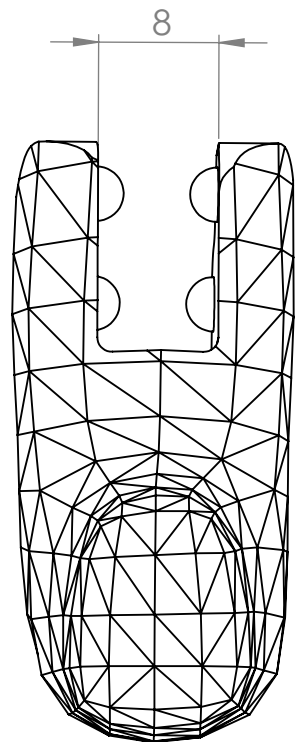
Conjunt P03: Dit cor



	DATA	NOM	
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COMPROVAT	20/12/21	FERNANDO JULIÁN PEREZ	
ESCALA	1:1		Nº PLANOL: 300
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			Especialitat: GEM



SECCIÓN H-H



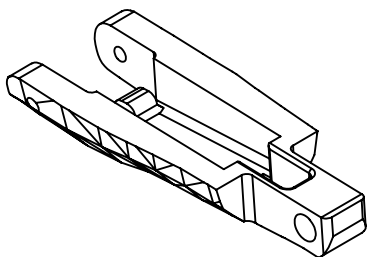
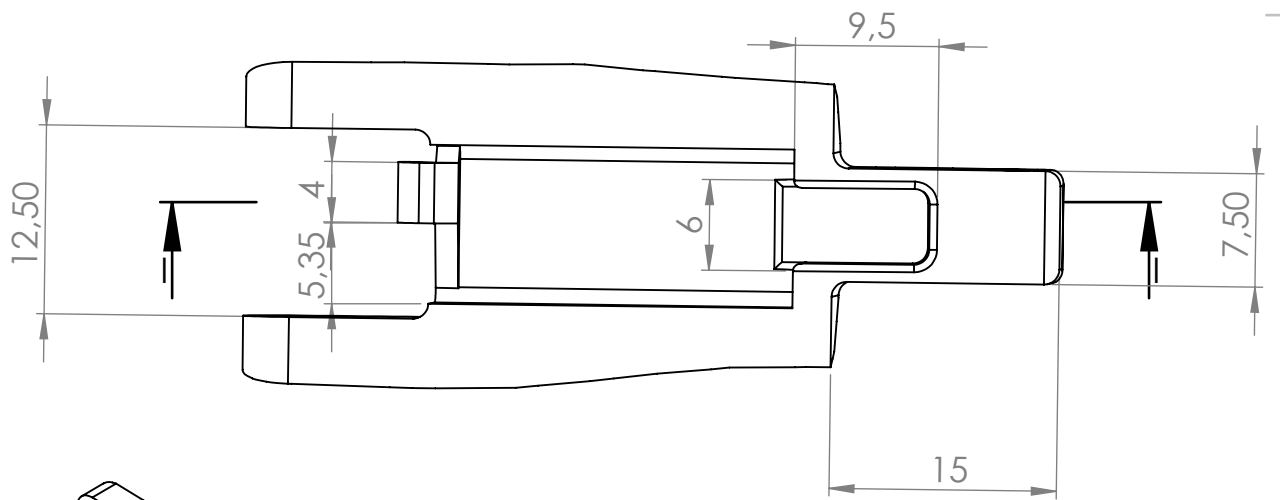
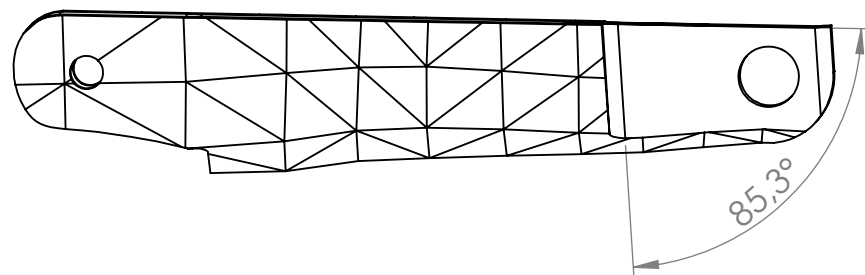
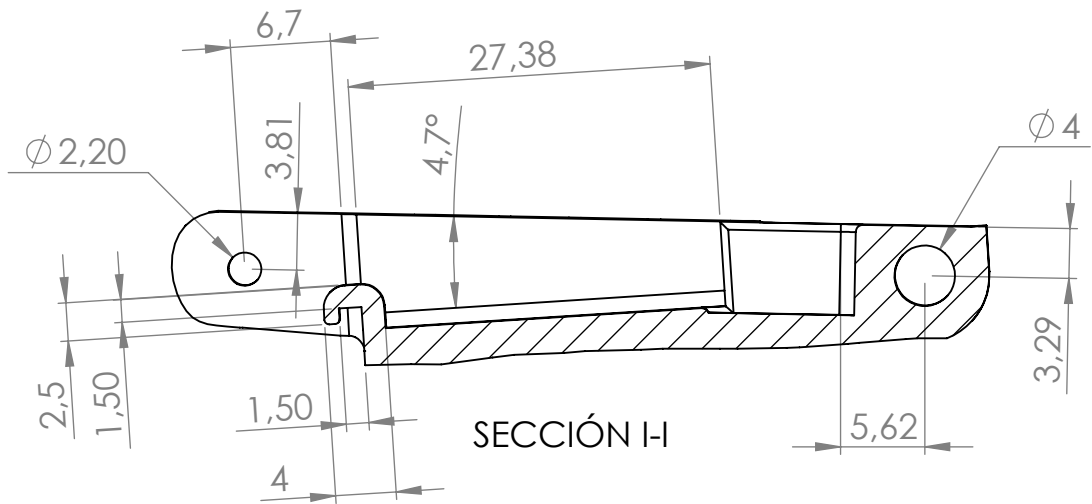
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COMPROVAT	20/12/21	FERNANDO JULIÁN PEREZ



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2:1

TFG\_P03\_2

Nº PLANOL:	301
SUBSTITUEIX A:	-
Especialitat	GEM



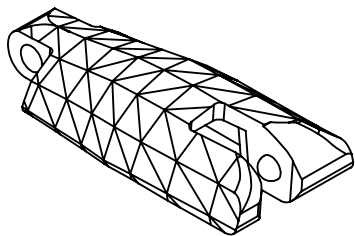
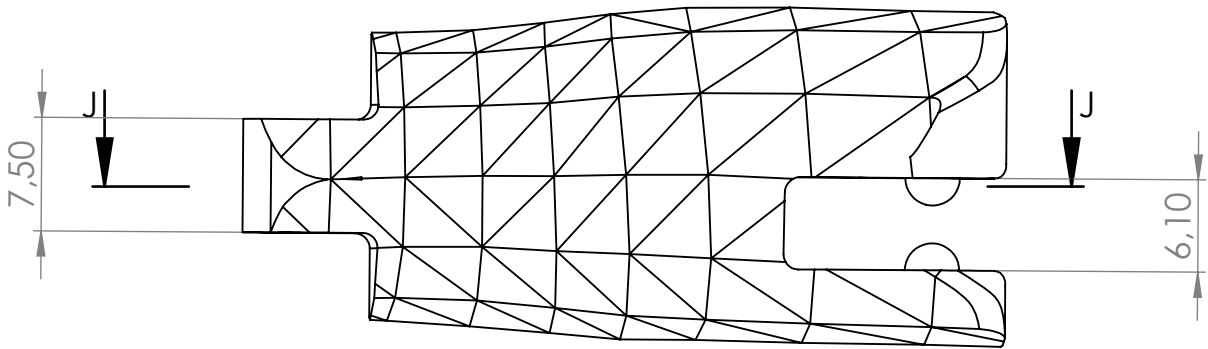
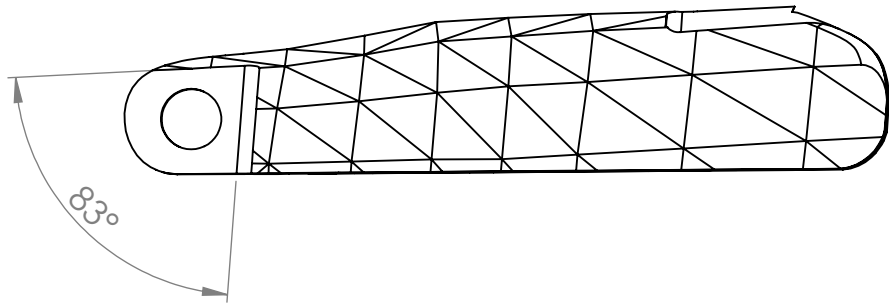
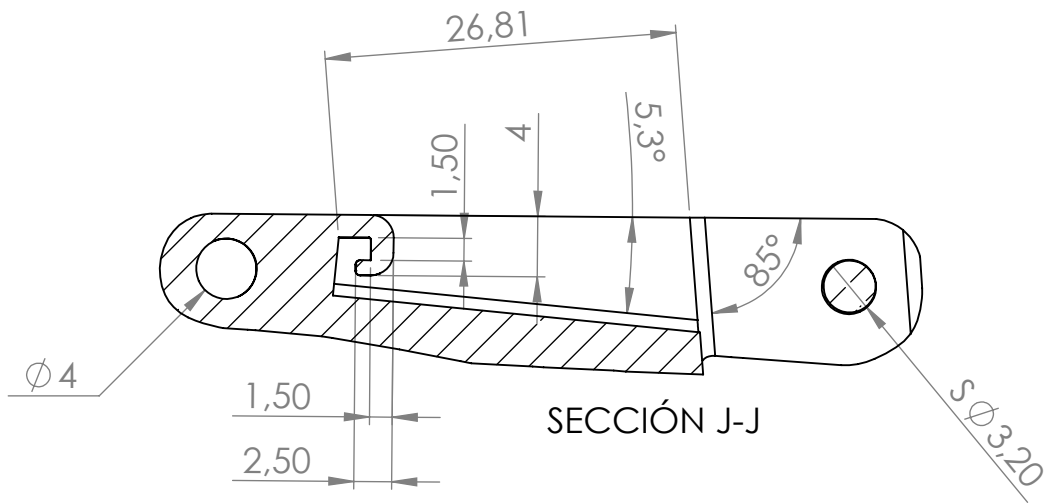
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ESCALA	<h1>TFG_P03_1_inf</h1>	
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Nº PLANOL:	302
SUBSTITUEIX A:	-
Especialitat	GEM





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COMPROVAT	20/12/21	FERNANDO JULIÁN PEREZ

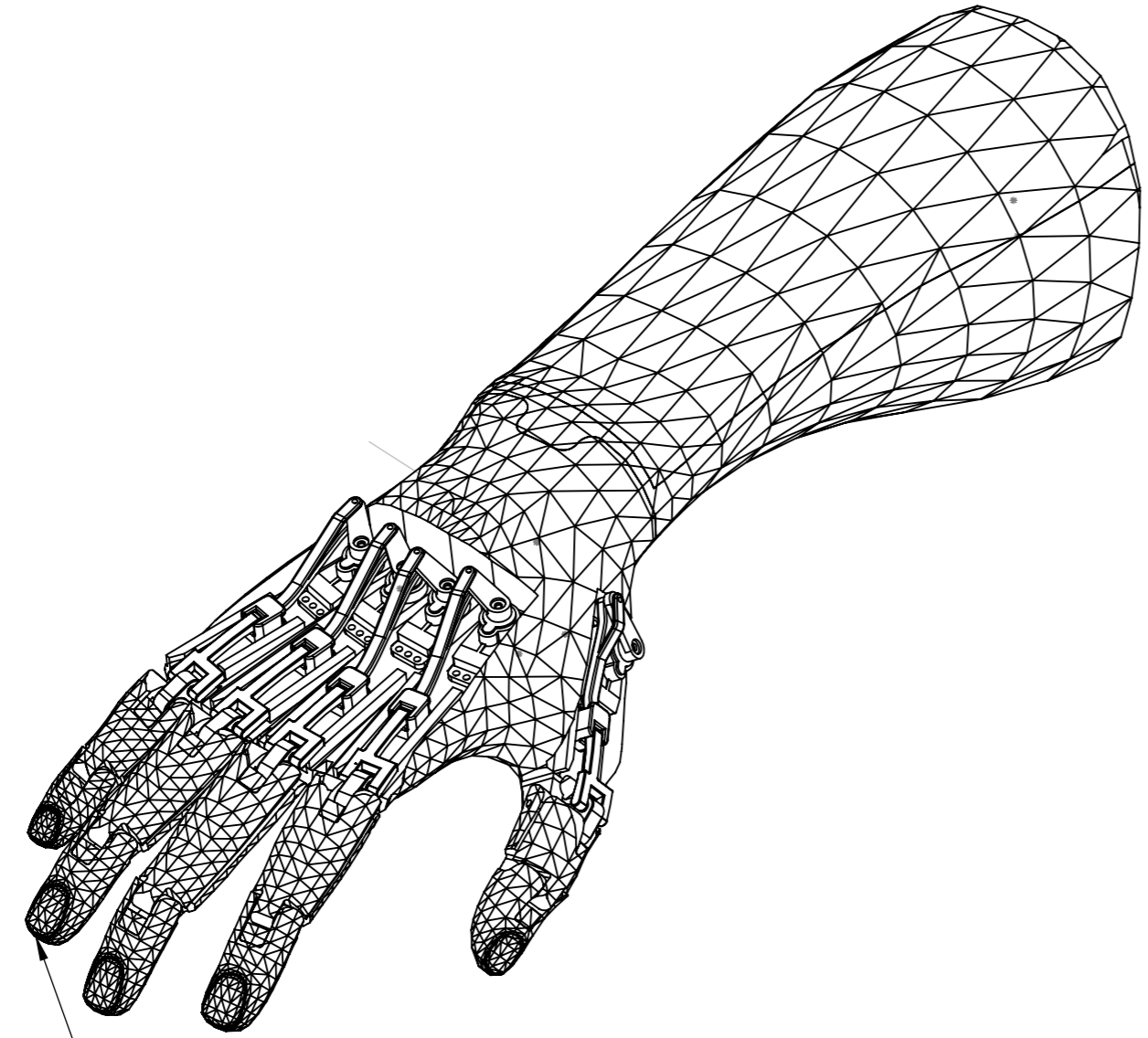
  
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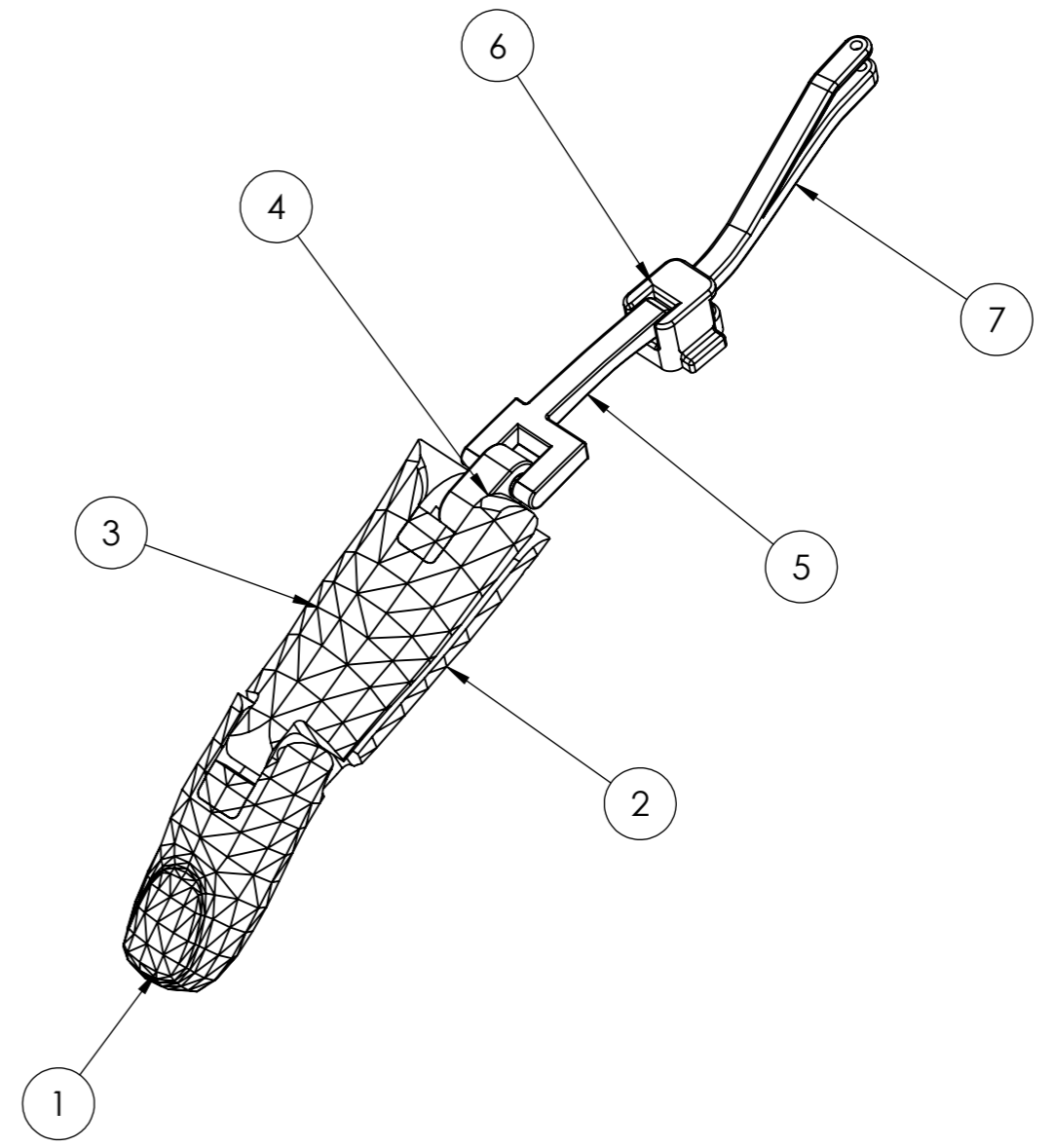
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Nº PLANOL:	303
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Especialitat	GEM

N.º DE ELEMENTO	N.º DE PIEZA	DESCRIPCIÓN	CANTIDAD
1	TFG_P04_2	Punta dit anular	1
2	TFG_P04_1_inf	Falange mitjana inferior	1
3	TFG_P04_1_sup	Falange mitjana superior	1
4	TFG_P15	Peça unió	1
5	TFG_P14	Braç guia - peça unió	1
6	TFG_P08	Guia	1
7	TFG_P13	Braç guia - servo	1



Conjunt P04: Dit anular



	DATA	NOM		
DIBUIXAT	18/12/21	PAU QUINTANA CASANOVAS		
COMPROVAT	20/12/21	FERNANDO JULIÁN PEREZ		
ESCALA	1:1		Nº PLANOL: 400 SUBSTITUEIX A: - Especialitat: GEM	
<h2>Subconjunt TFG_P04</h2>				

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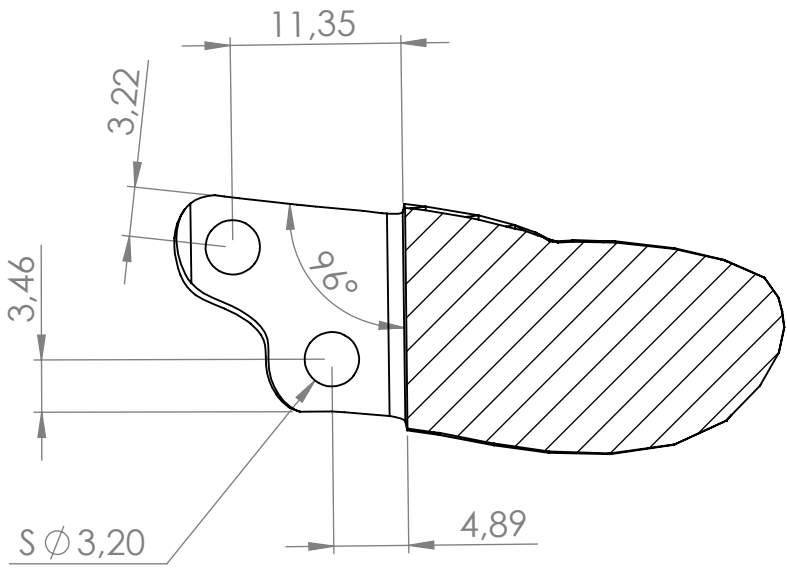
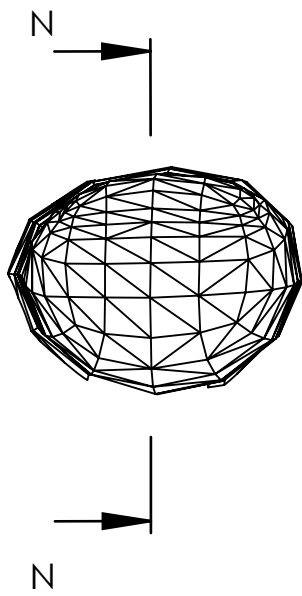
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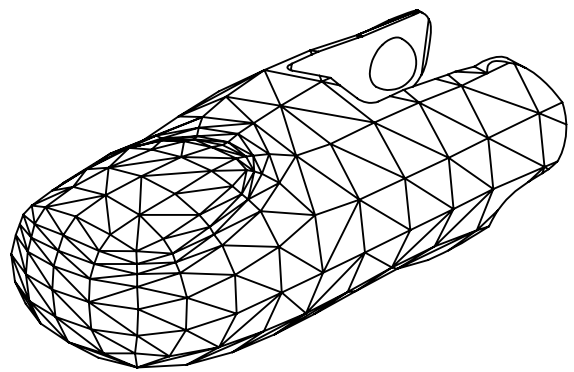
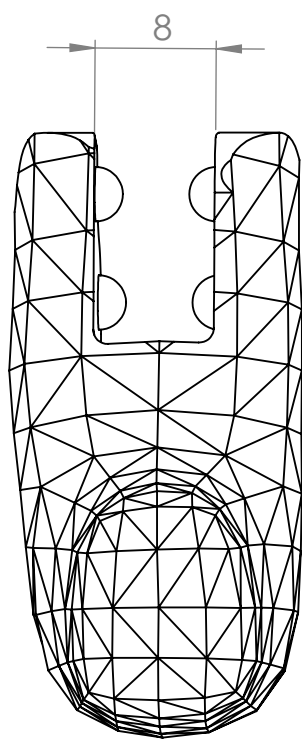
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SECCIÓN N-N



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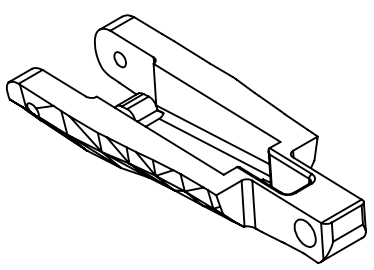
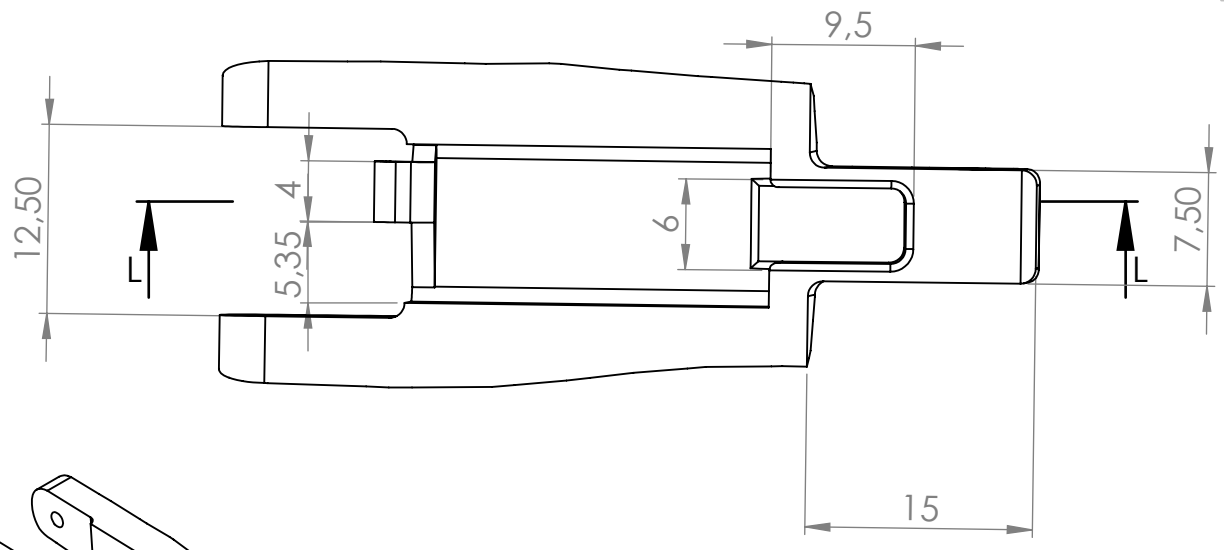
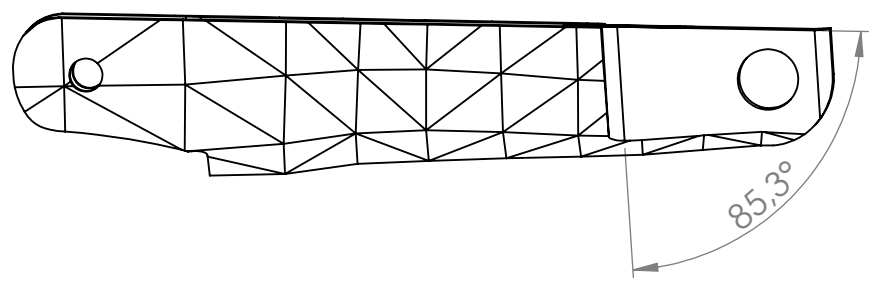
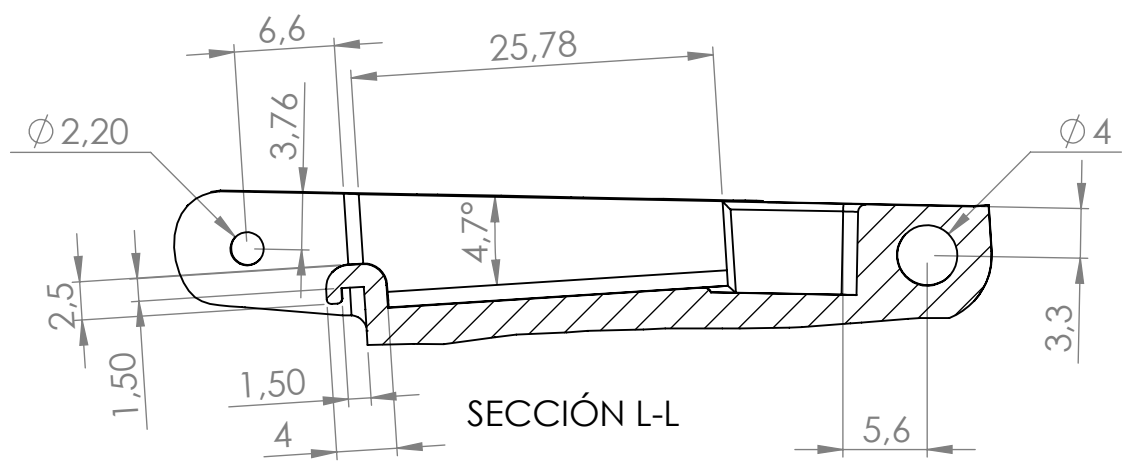
	DATA	NOM
DIBUIXAT	18/12/21	PAU QUINTANA CASANOVAS
COMPROVAT	20/12/21	FERNANDO JULIÁN PEREZ



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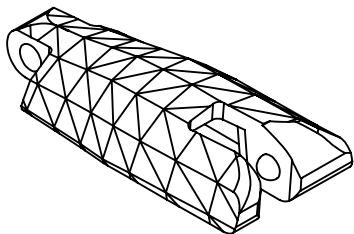
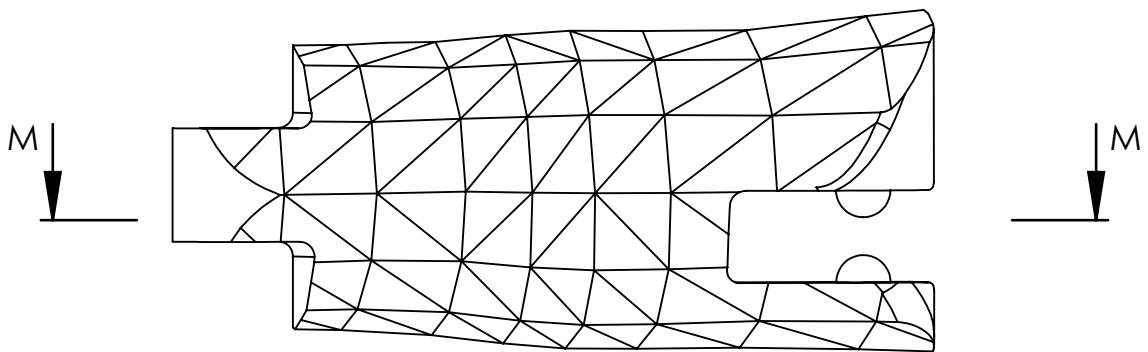
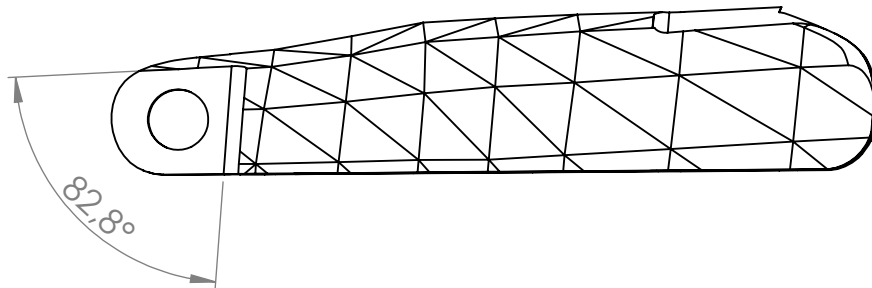
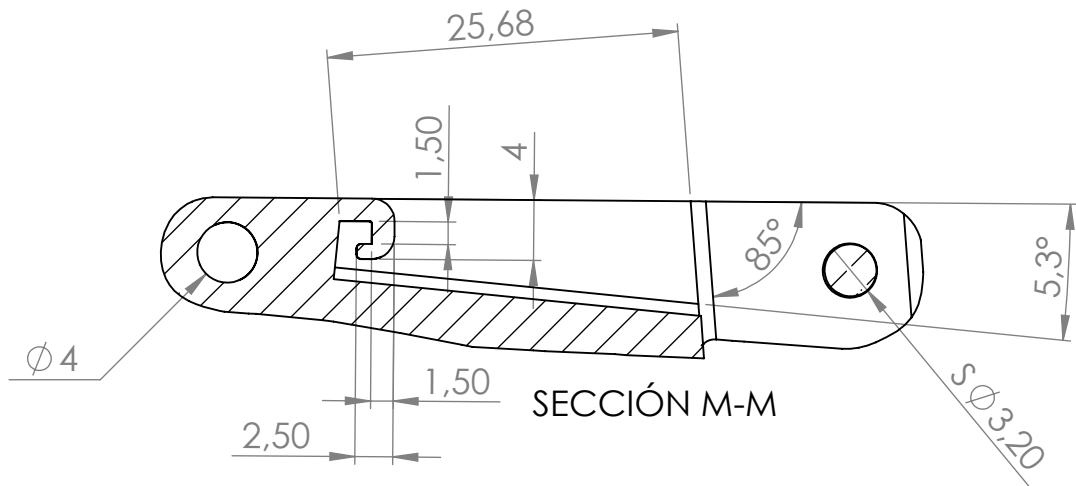
ESCALA	<h1>TFG_P04_2</h1>	Nº PLANOL:	401
2:1		SUBSTITUEIX A:	-
		Especialitat	GEM

Nº PLANOL:	401
SUBSTITUEIX A:	-
Especialitat	GEM

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	DATA	NOM		
DIBUIXAT	18/12/21	PAU QUINTANA CASANOVAS		
COMPROVAT	20/12/21	FERNANDO JULIÁN PEREZ		
ESCALA	<h1>TFG_P04_1_inf</h1>		Nº PLANOL:	402
2:1			SUBSTITUEIX A:	-
			Especialitat	GEM



	DATA	NOM
DIBUIXAT	18/12/21	PAU QUINTANA CASANOVAS
COMPROVAT	20/12/21	FERNANDO JULIÁN PEREZ

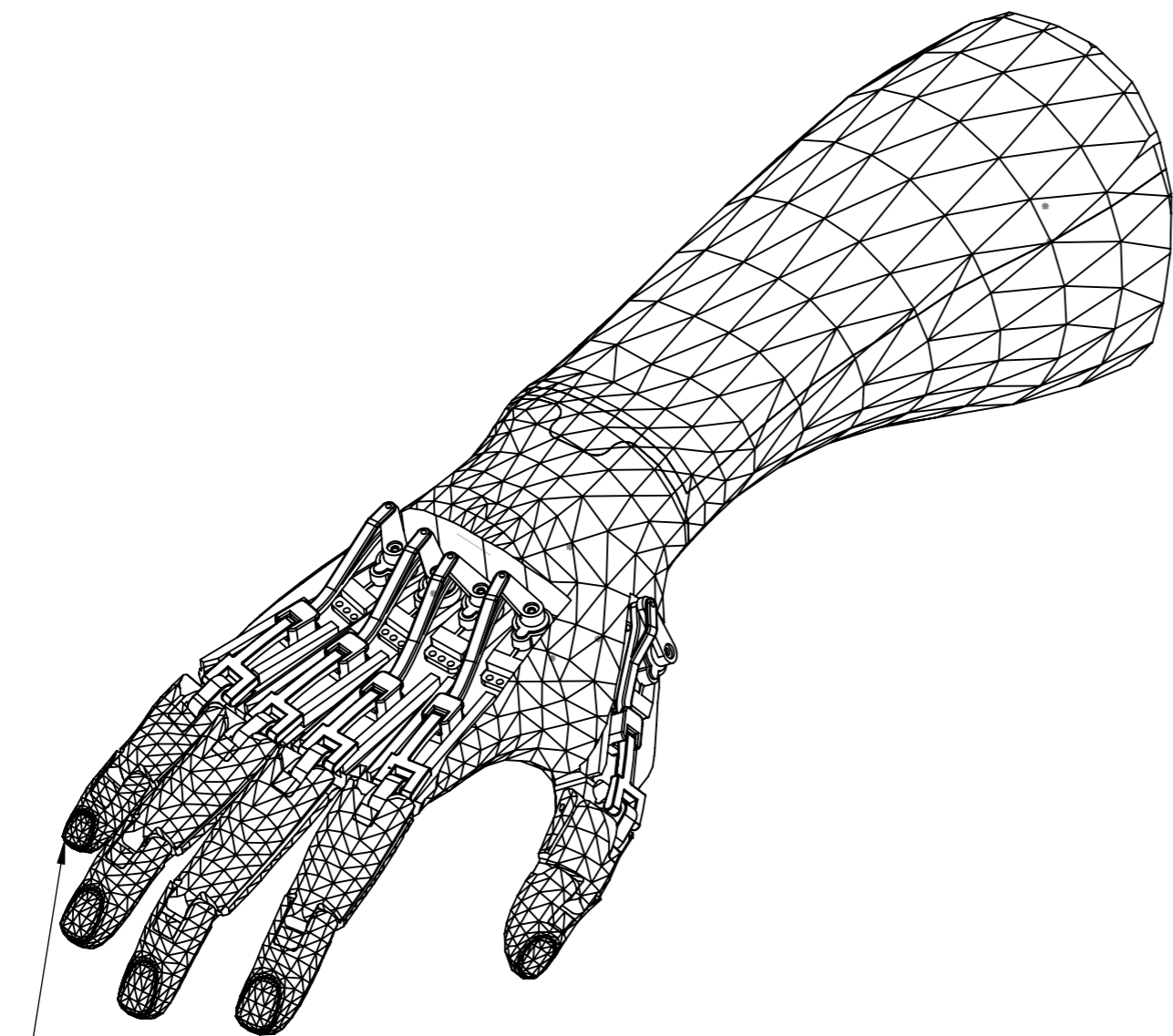

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Nº PLANOL:	403
SUBSTITUEIX A:	-
Especialitat	GEM

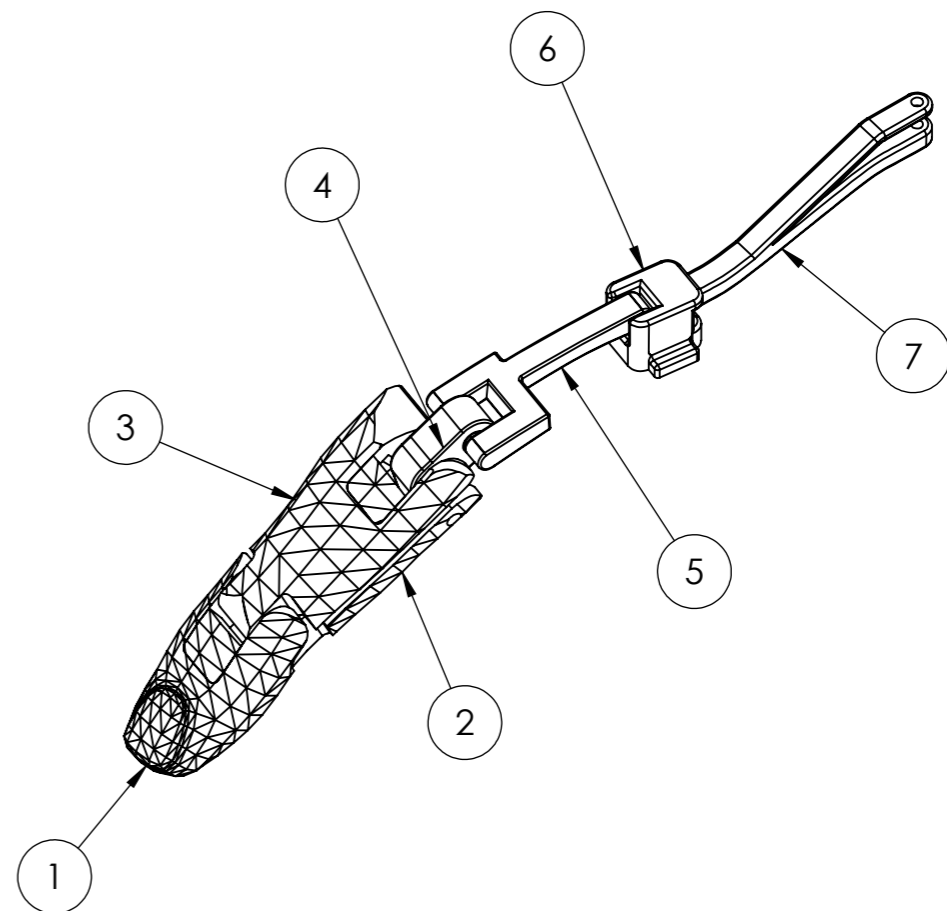
ESCALA  
2:1


TFG\_P04\_1\_sup

N.º DE ELEMENTO	N.º DE PIEZA	DESCRIPCIÓN	CANTIDAD
1	TFG_P05_2	Punta dit petit	1
2	TFG_P05_1_inf	Falange mitjana inferior	1
3	TFG_P05_1_sup	Falange mitjana superior	1
4	TFG_P16	Peça unió	1
5	TFG_P12	Braç guia - peça unió	1
6	TFG_P08	Guia	1
7	TFG_P13	Braç guia - servo	1



Conjunt P05: Dit petit

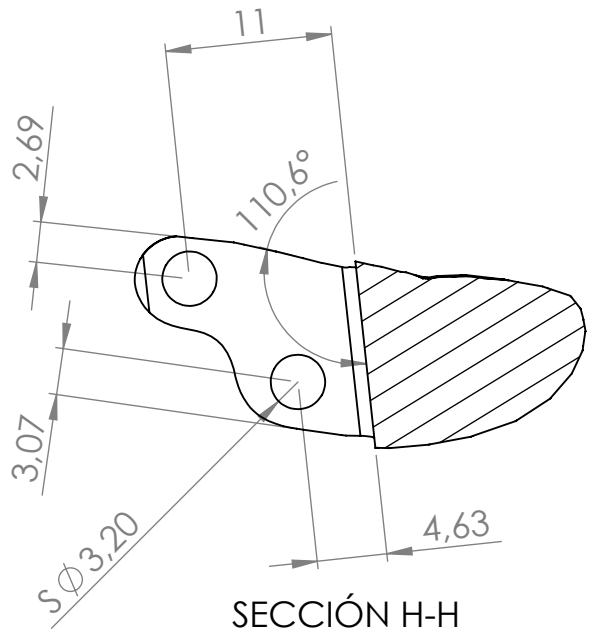
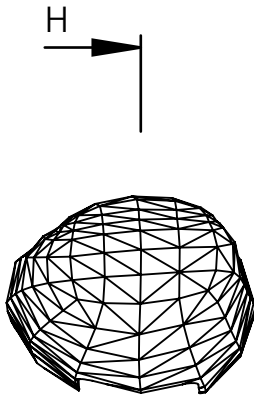


	DATA	NOM		
DIBUIXAT	18/12/21	PAU QUINTANA CASANOVAS		
COMPROVAT	20/12/21	FERNANDO JULIÁN PEREZ		
ESCALA	1:1		Nº PLANOL:	500
<h2 style="text-align: center;">Subconjunt TFG_P05</h2>			SUBSTITUEIX A:	-
			Especialitat	GEM

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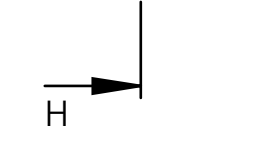
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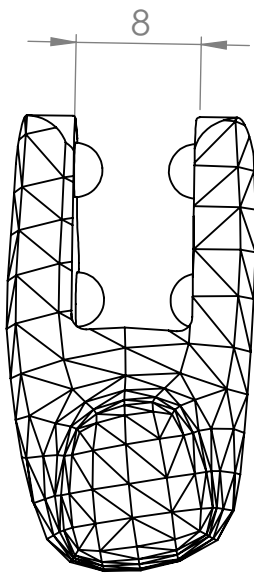
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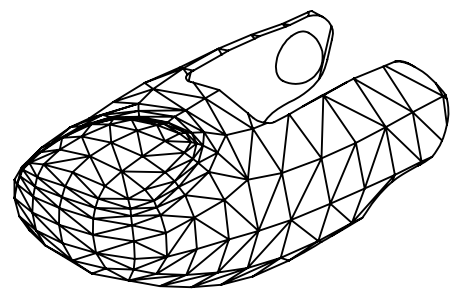
D

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	DATA	NOM
DIBUIXAT	18/12/21	PAU QUINTANA CASANOVAS
COMPROVAT	20/12/21	FERNANDO JULIÁN PEREZ

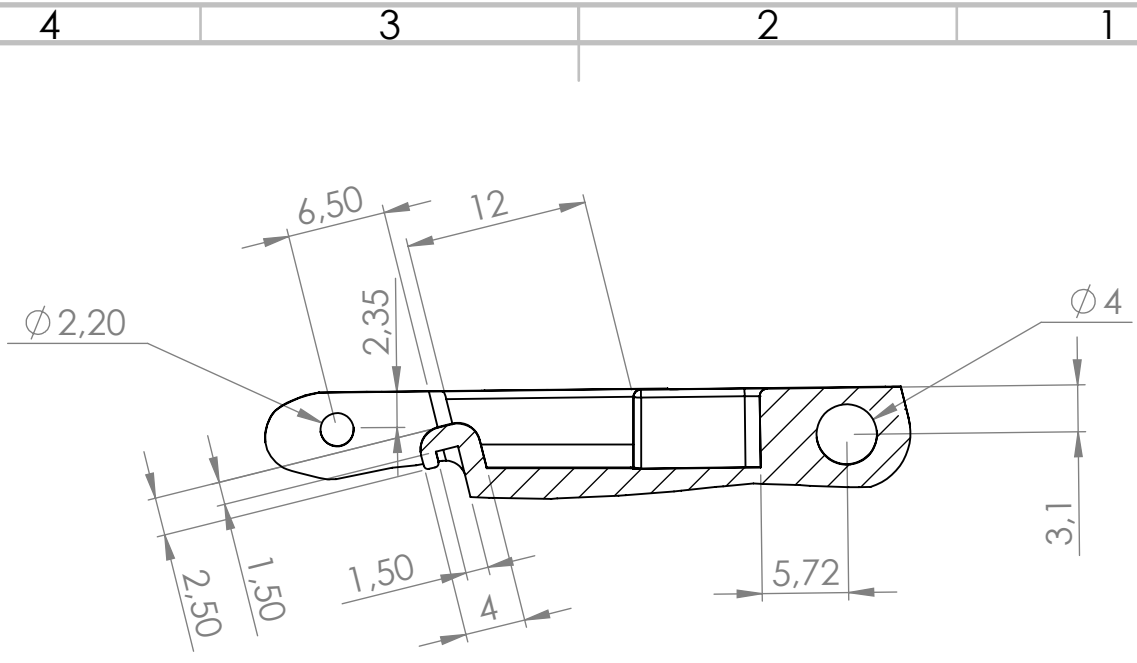
  
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ESCALA  
**2:1**

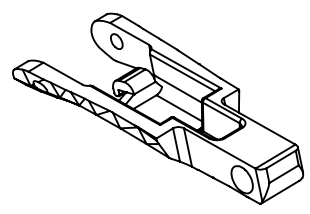
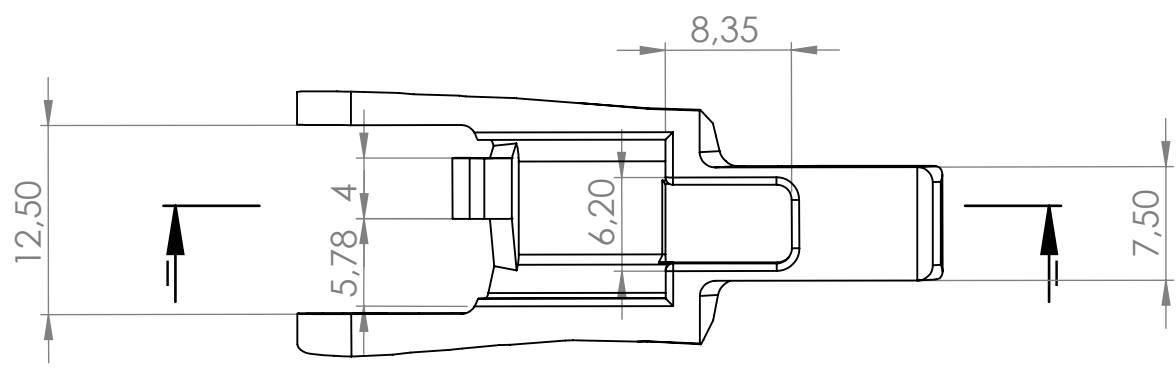
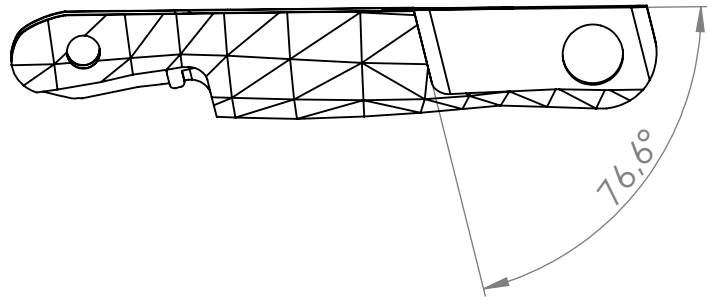
**TFG\_P05\_2**


Nº PLANOL:	501
SUBSTITUEIX A:	-
Especialitat	GEM

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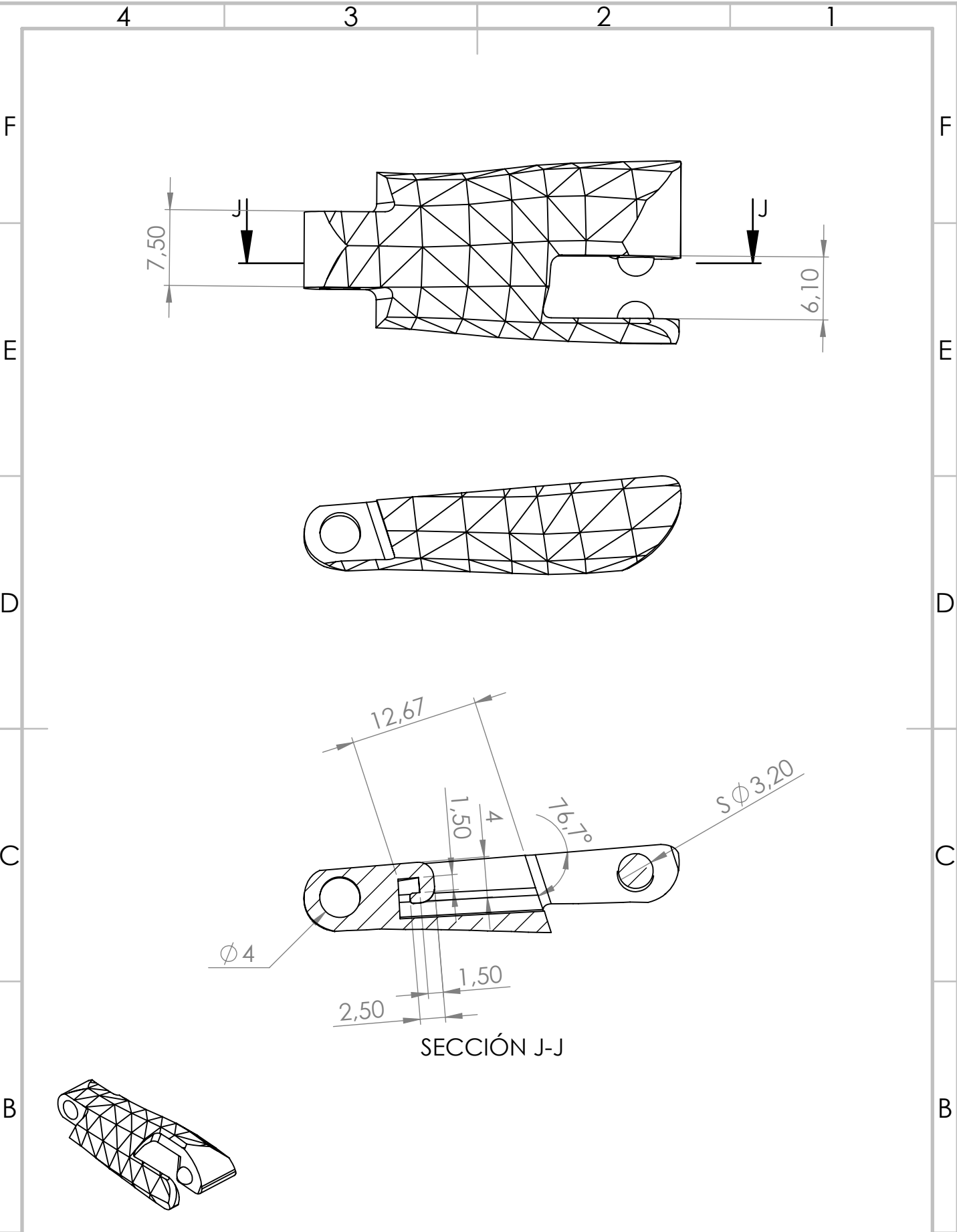



SECCIÓN I-I

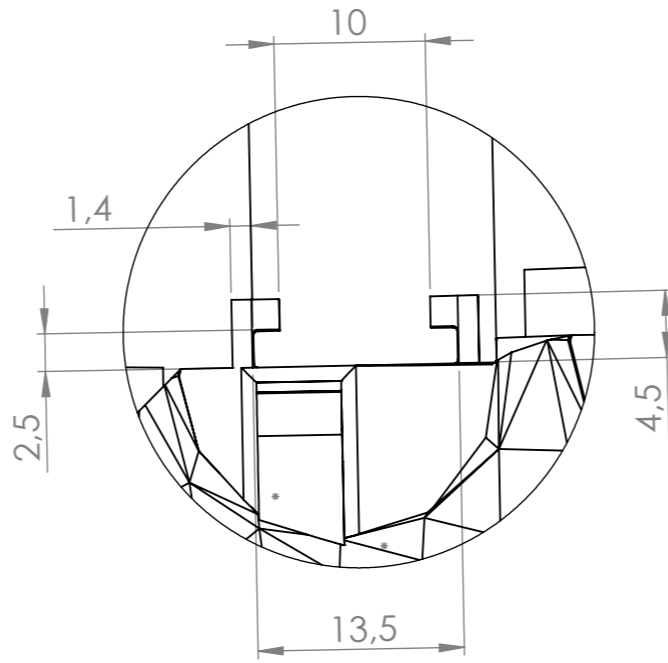
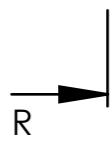
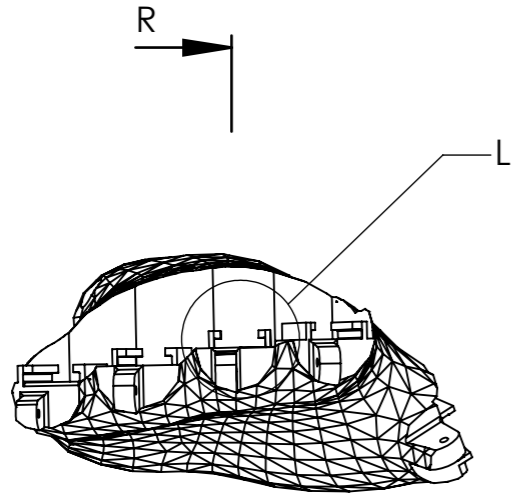


	DATA	NOM		
DIBUIXAT	18/12/21	PAU QUINTANA CASANOVAS		
COMPROVAT	20/12/21	FERNANDO JULIÁN PEREZ		
ESCALA	TFG_P05_1_inf		Nº PLANOL:	502
2:1			SUBSTITUEIX A:	-
			Especialitat	GEM

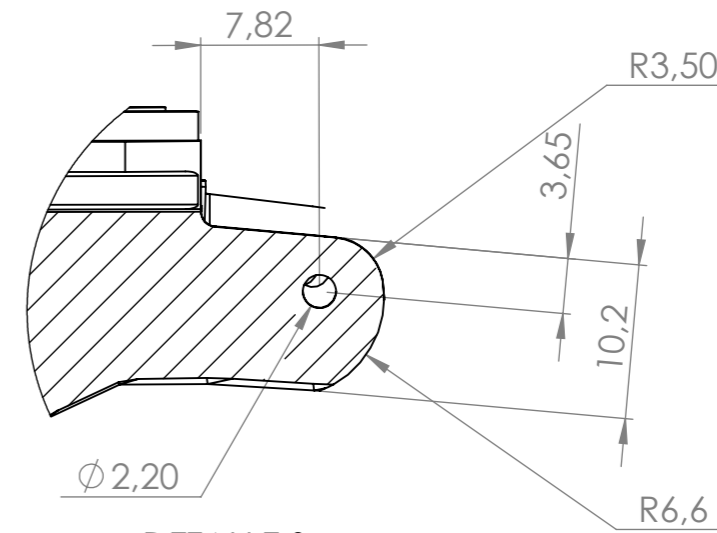
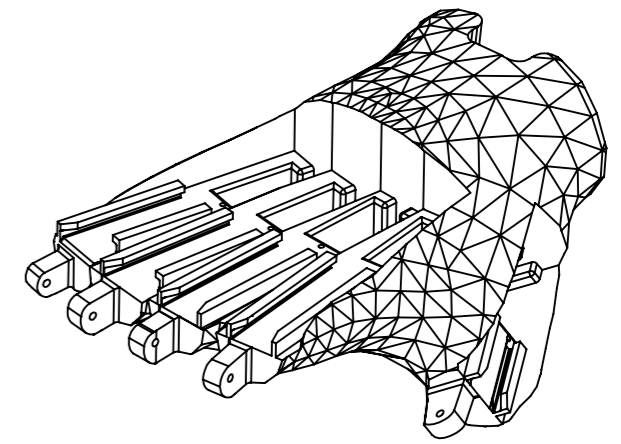




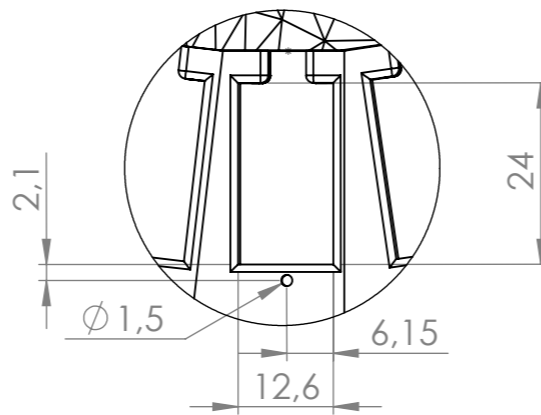
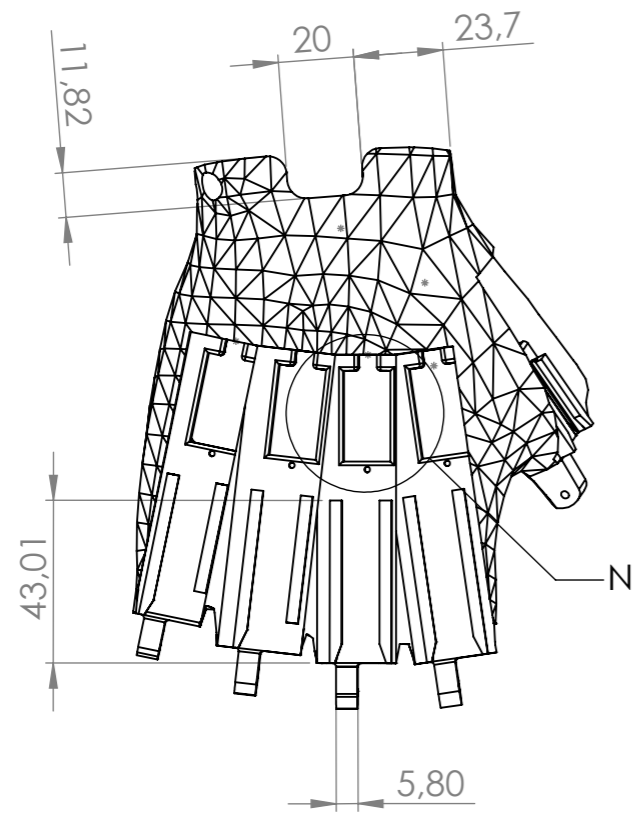
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DIBUIXAT	18/12/21	PAU QUINTANA CASANOVAS	
COMPROVAT	20/12/21	FERNANDO JULIÁN PEREZ	
ESCALA	TFG_P05_1_sup		Nº PLANOL: 503
2:1			SUBSTITUEIX A: -
			Especialitat GEM



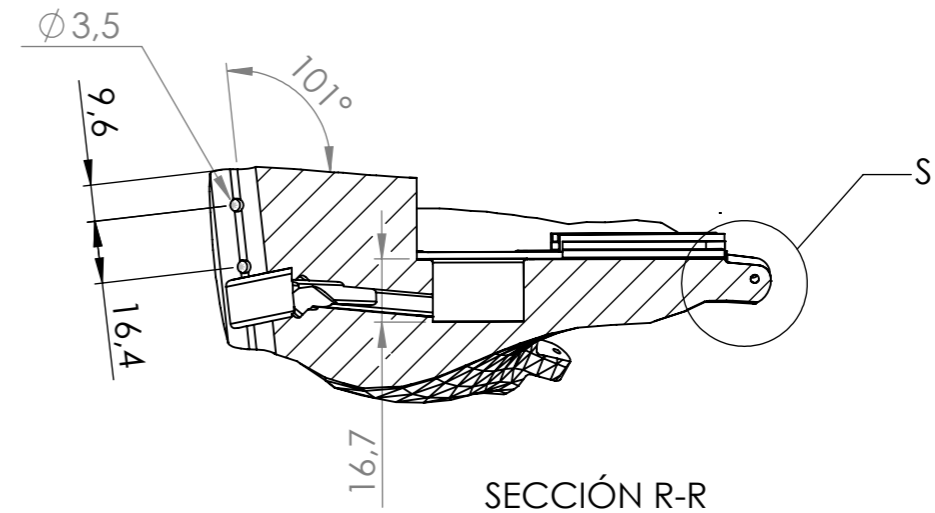
DETALLE L  
ESCALA 2 : 1



DETALLE S  
ESCALA 2 : 1

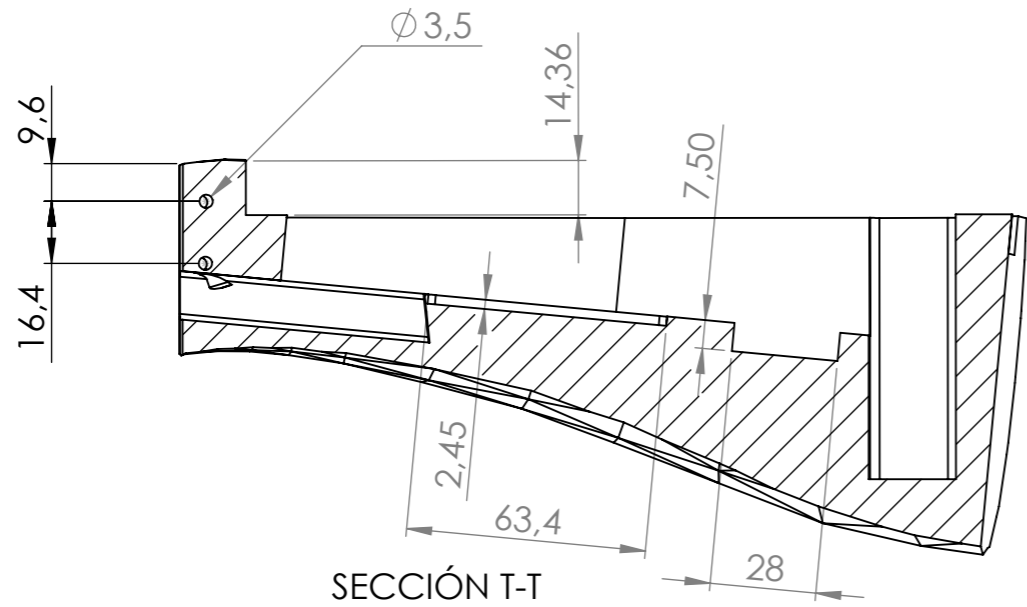


DETALLE N  
ESCALA 1 : 1

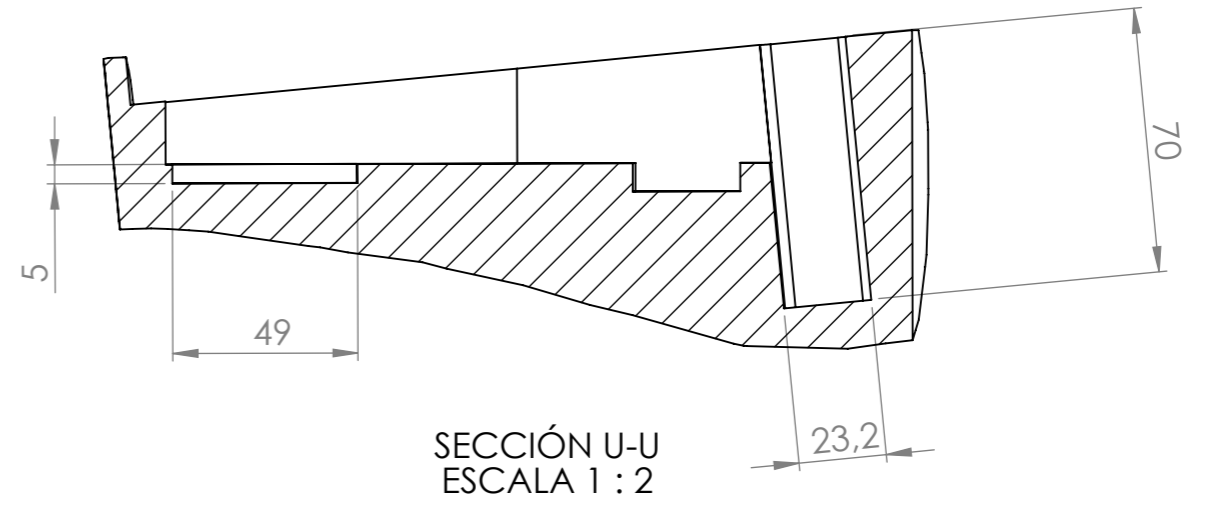


SECCIÓN R-R

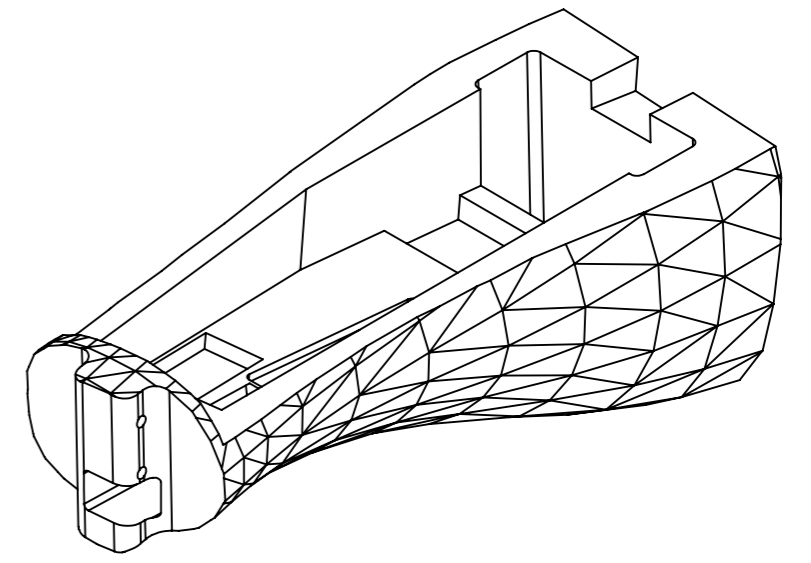
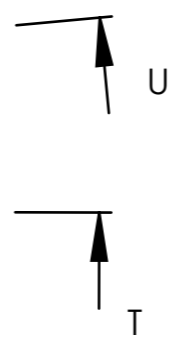
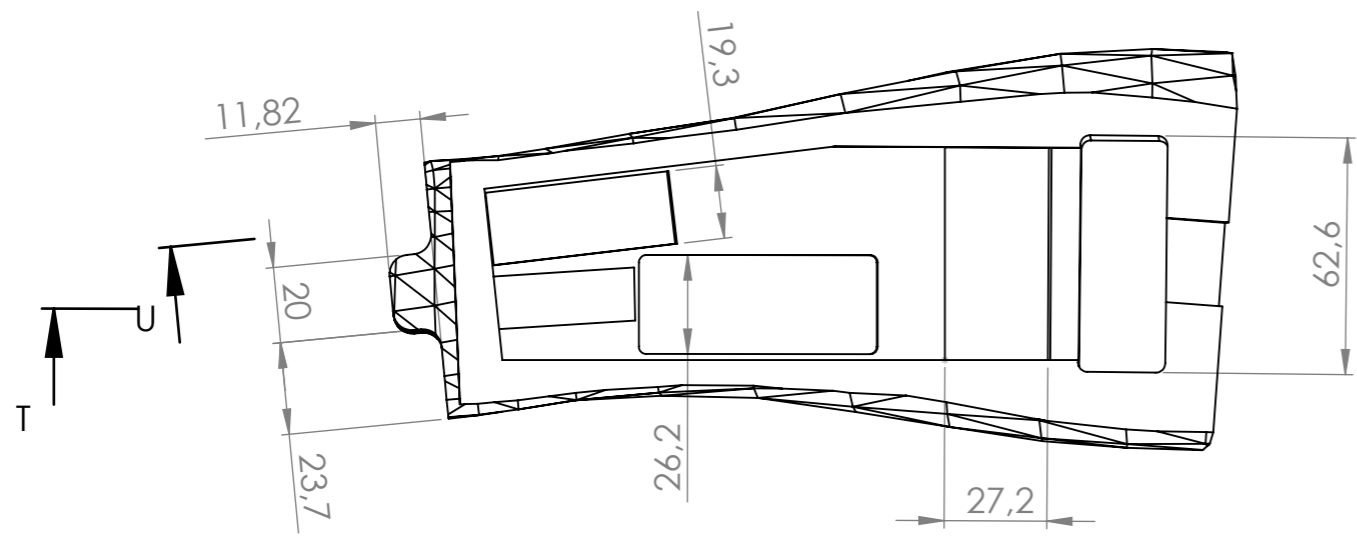
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DIBUIXAT	18/12/21	PAU QUINTANA CASANOVAS			Nº PLANOL:	601
COMPROVAT	20/12/21	FERNANDO JULIÁN PEREZ			SUBSTITUEIX A:	-
ESCALA	TFG_P00_1		Especialitat	GEM		
1:2						



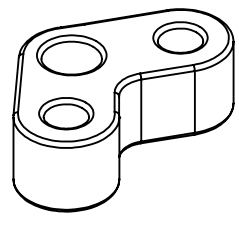
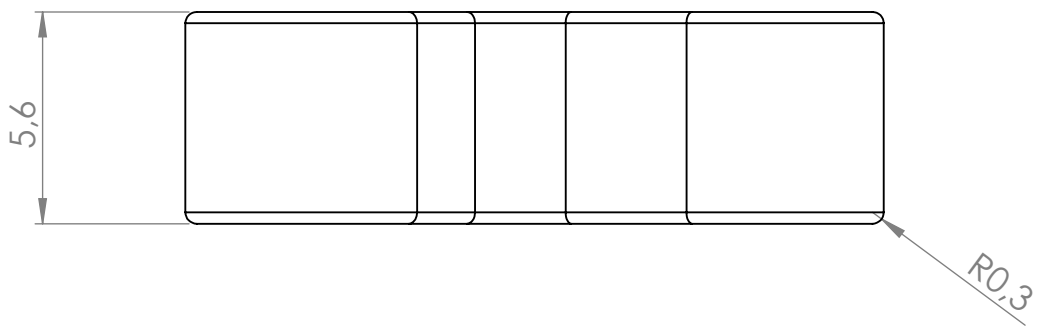
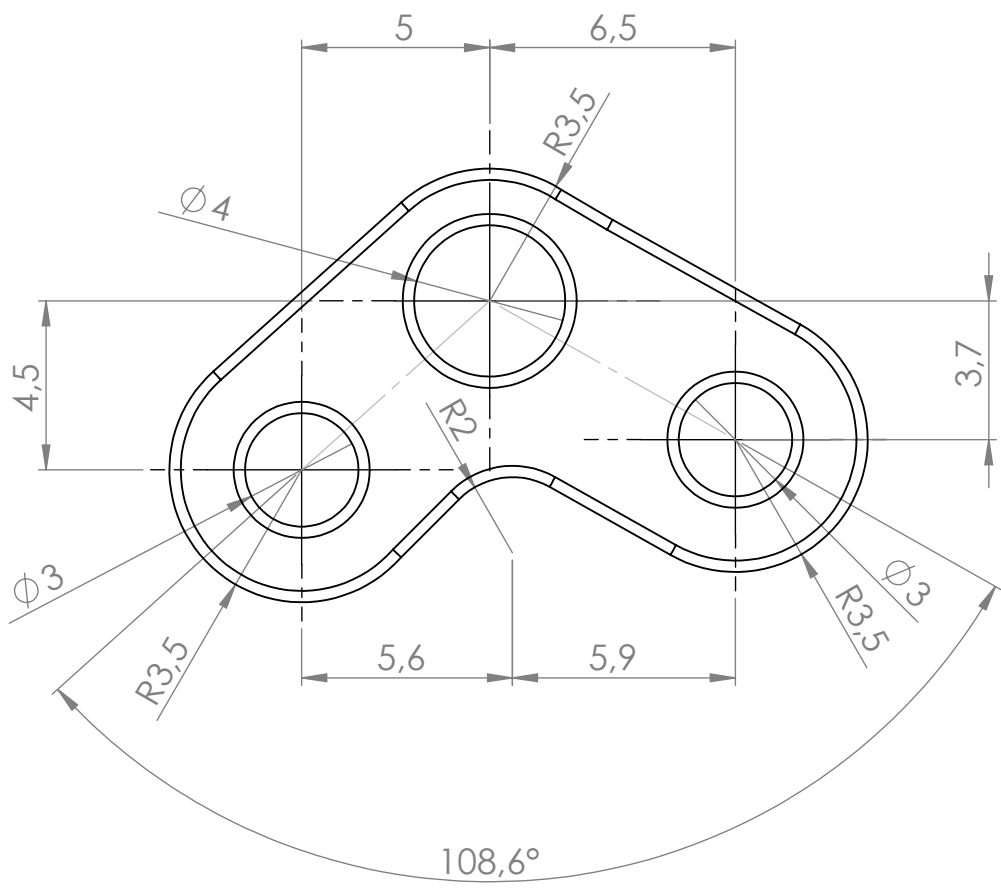
SECCIÓN T-T  
ESCALA 1 : 2




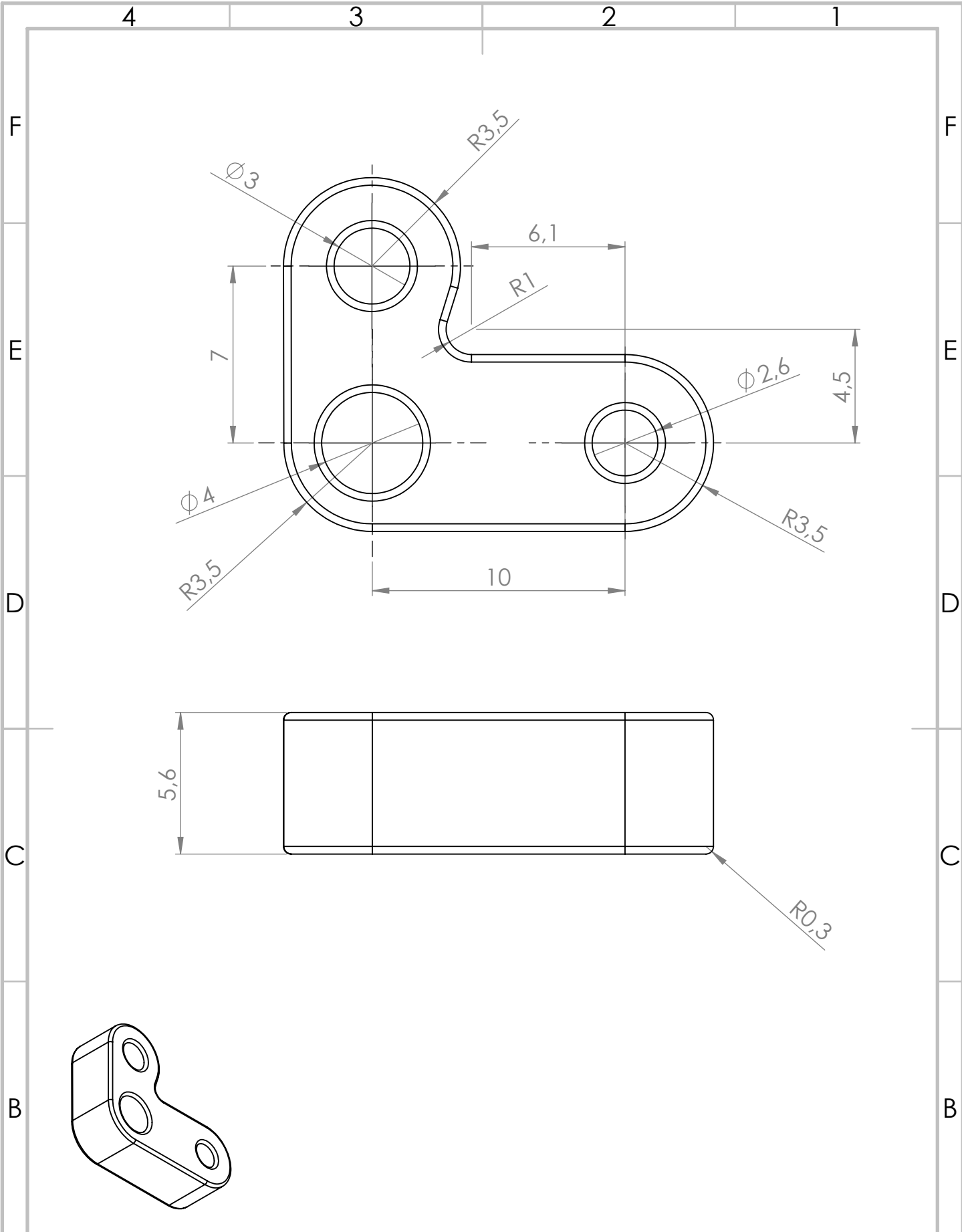
SECCIÓN U-U  
ESCALA 1 : 2




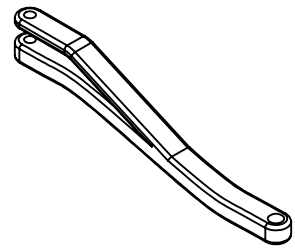
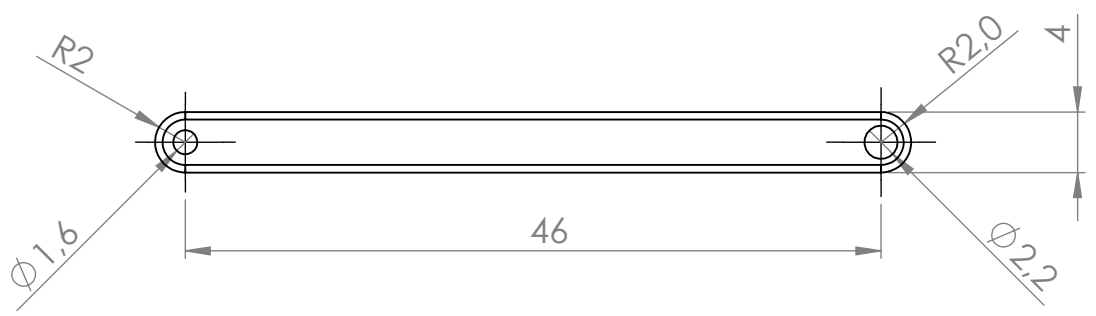
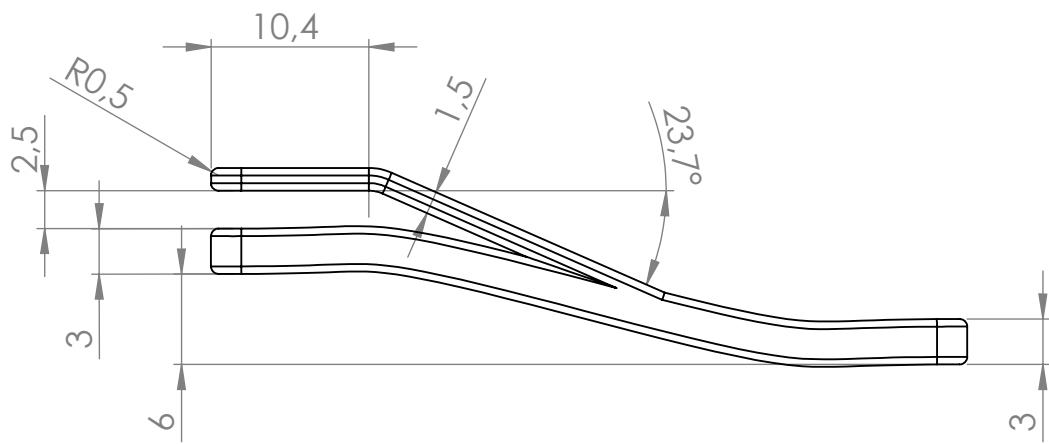
	DATA	NOM				
DIBUIXAT	18/12/21	PAU QUINTANA CASANOVAS			Nº PLANOL:	602
COMPROVAT	20/12/21	FERNANDO JULIÁN PEREZ			SUBSTITUEIX A:	-
ESCALA	TFG_P00_2		Especialitat	GEM		
1:2						



	DATA	NOM		
DIBUIXAT	18/12/21	PAU QUINTANA CASANOVAS		
COMPROVAT	20/12/21	FERNANDO JULIÁN PEREZ		
ESCALA	<h1>TFG_P16</h1>		Nº PLANOL:	603
5:1			SUBSTITUEIX A:	-
			Especialitat	GEM



	DATA	NOM	
DIBUIXAT	18/12/21	PAU QUINTANA CASANOVAS	
COMPROVAT	20/12/21	FERNANDO JULIÁN PEREZ	
ESCALA	<h1>TFG_P15</h1>		Nº PLANOL: 604
5:1			SUBSTITUEIX A: -
			Especialitat: GEM

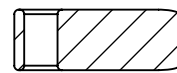
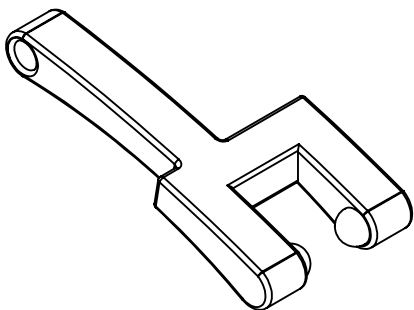
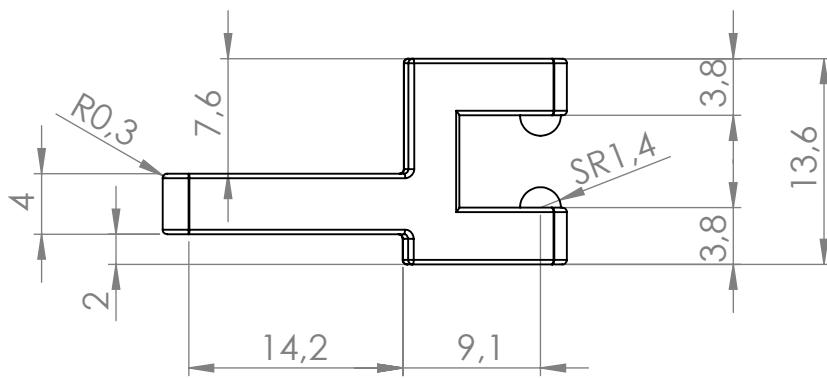
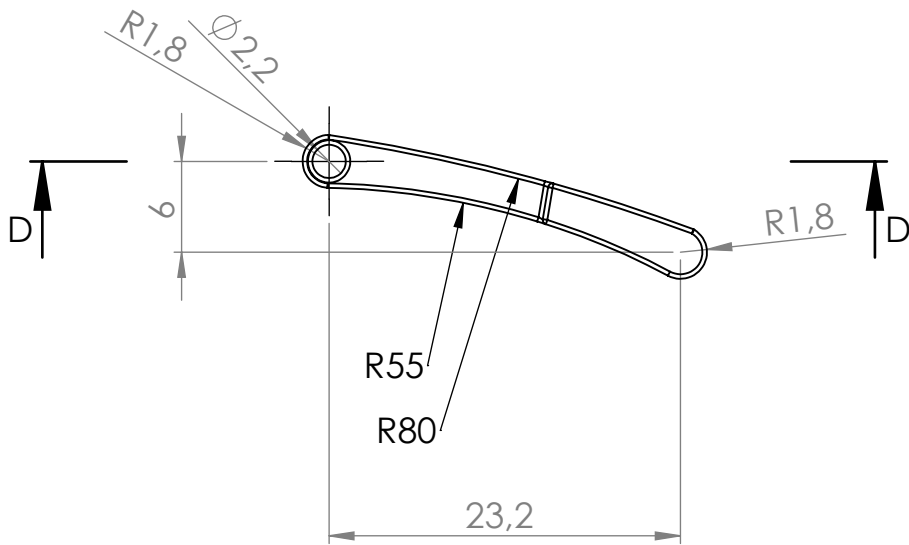


	DATA	NOM
DIBUIXAT	18/12/21	PAU QUINTANA CASANOVAS
COMPROVAT	20/12/21	FERNANDO JULIÁN PEREZ


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ESCALA	<h1>TFG_P06</h1>
2:1	

Nº PLANOL:	605
SUBSTITUEIX A:	-
Especialitat	GEM



SECCIÓN D-D

	DATA	NOM
DIBUIXAT	18/12/21	PAU QUINTANA CASANOVAS
COMPROVAT	20/12/21	FERNANDO JULIÁN PEREZ


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ESCALA	<b>TFG_P07</b>
<b>2:1</b>	

Nº PLANOL:	606
SUBSTITUEIX A:	-
Especialitat	GEM

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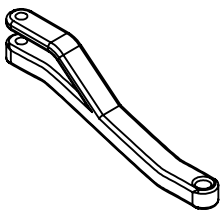
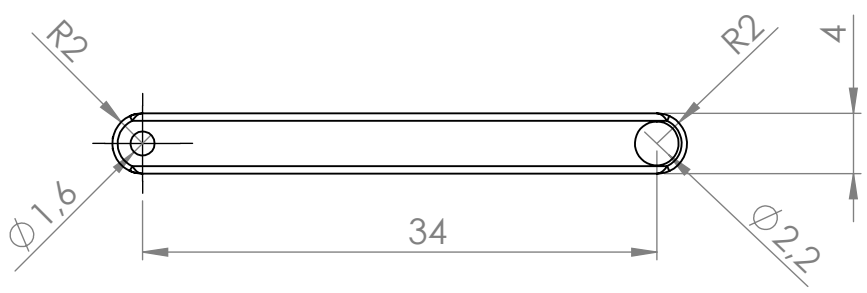
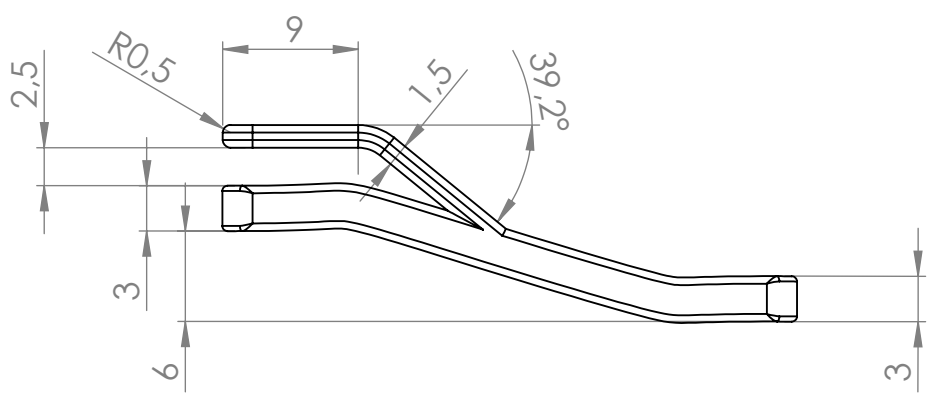
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	DATA	NOM
DIBUIXAT	18/12/21	PAU QUINTANA CASANOVAS
COMPROVAT	20/12/21	FERNANDO JULIÁN PEREZ


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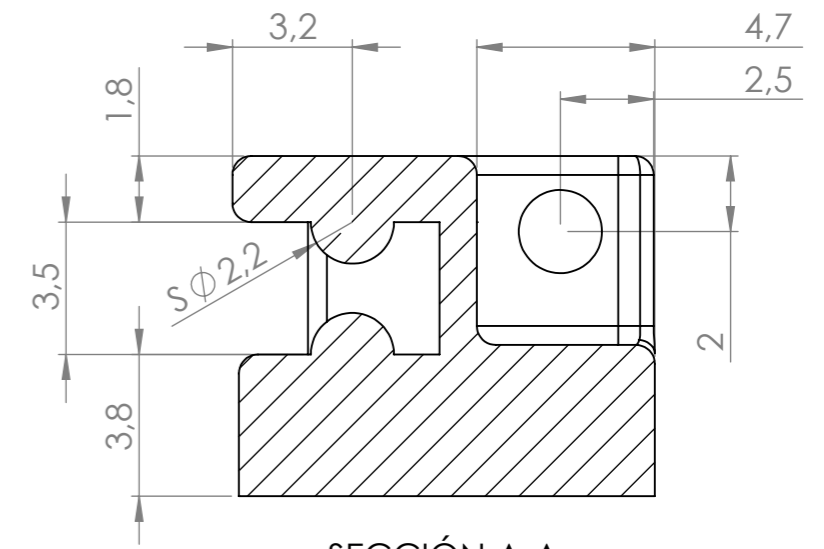
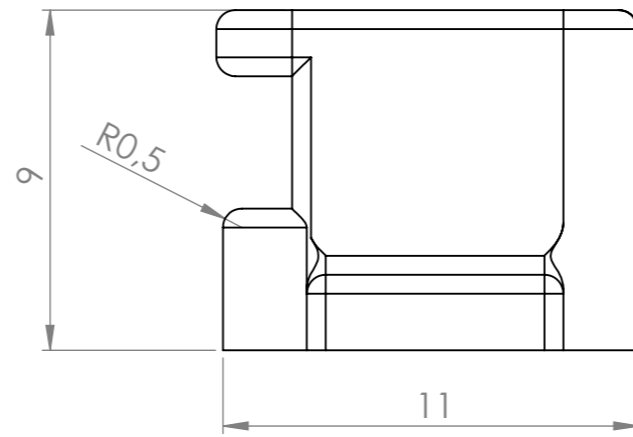
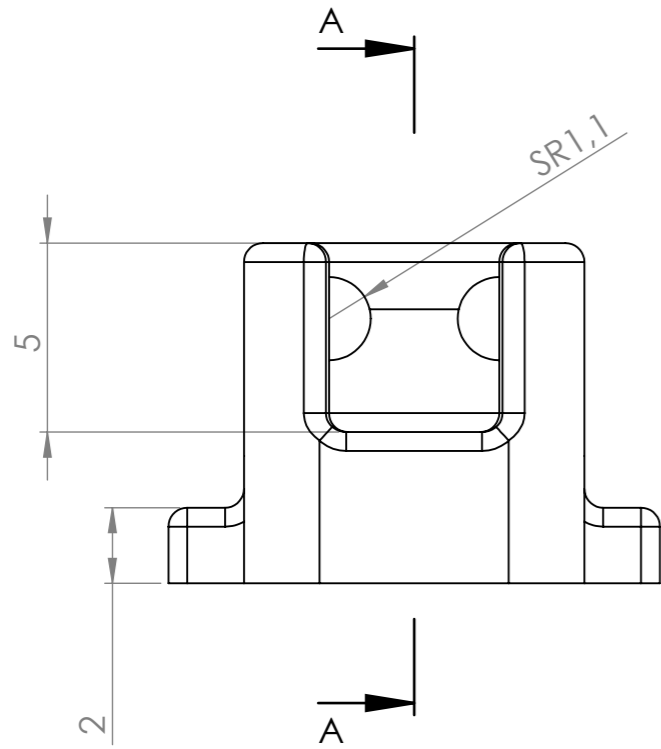
ESCALA  
**2:1**

**TFG\_P10**

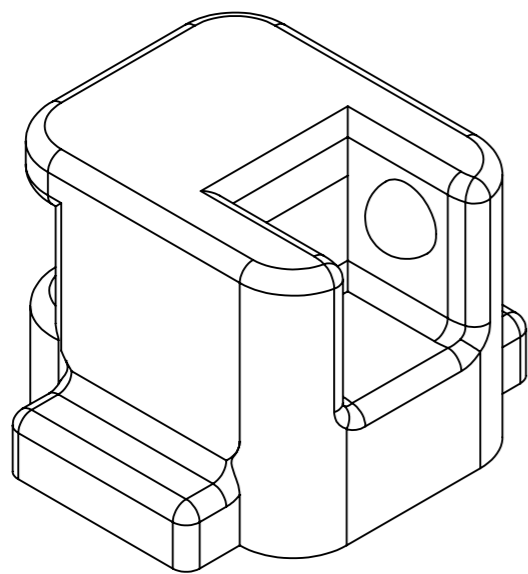
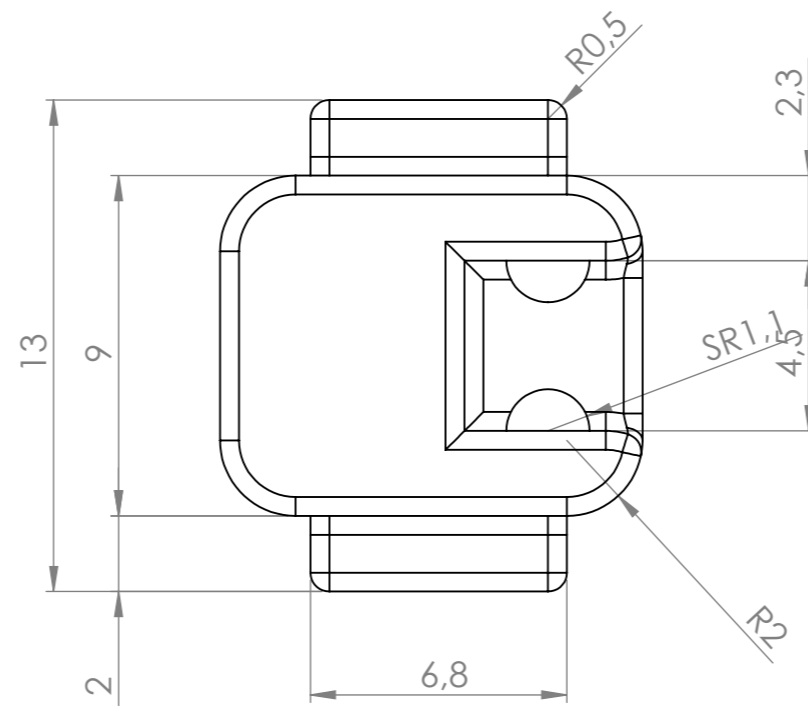
Nº PLANOL:	607
SUBSTITUEIX A:	-
Especialitat	GEM


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SECCIÓN A-A  
ESCALA 5 : 1

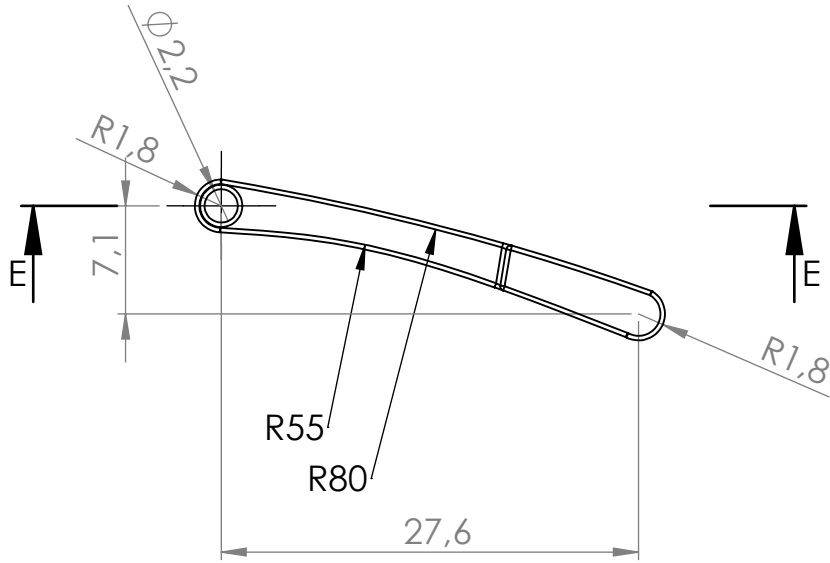


	DATA	NOM				
DIBUIXAT	18/12/21	PAU QUINTANA CASANOVAS			Nº PLANOL:	608
COMPROVAT	20/12/21	FERNANDO JULIÁN PEREZ			SUBSTITUEIX A:	-
ESCALA	5:1		Especialitat	GEM		
TFG_P08						

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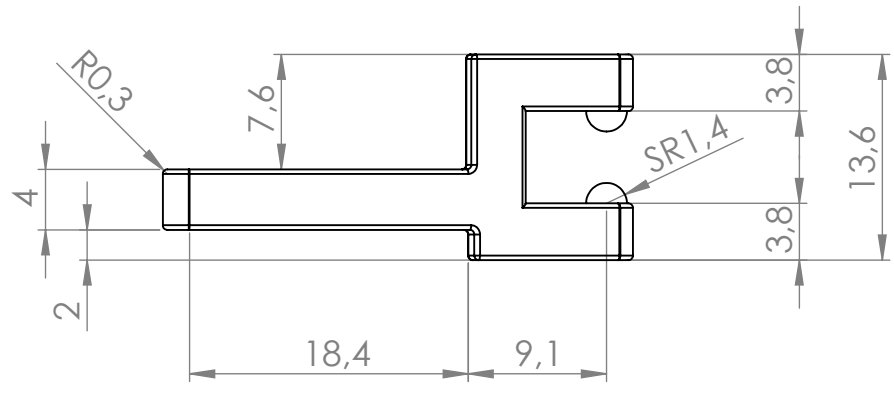


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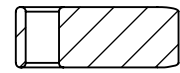
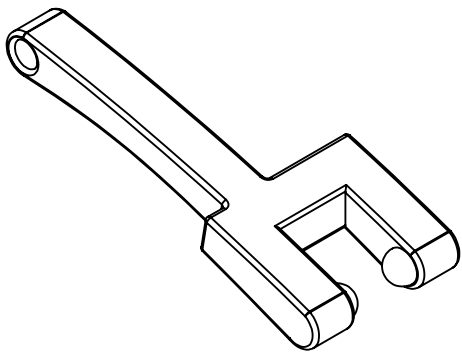
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SECCIÓN E-E

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	DATA	NOM
DIBUIXAT	18/12/21	PAU QUINTANA CASANOVAS
COMPROVAT	20/12/21	FERNANDO JULIÁN PEREZ

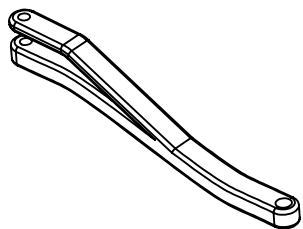
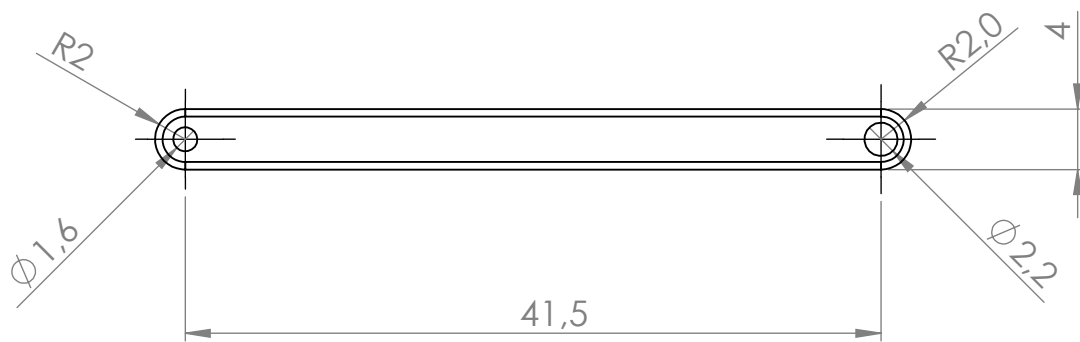
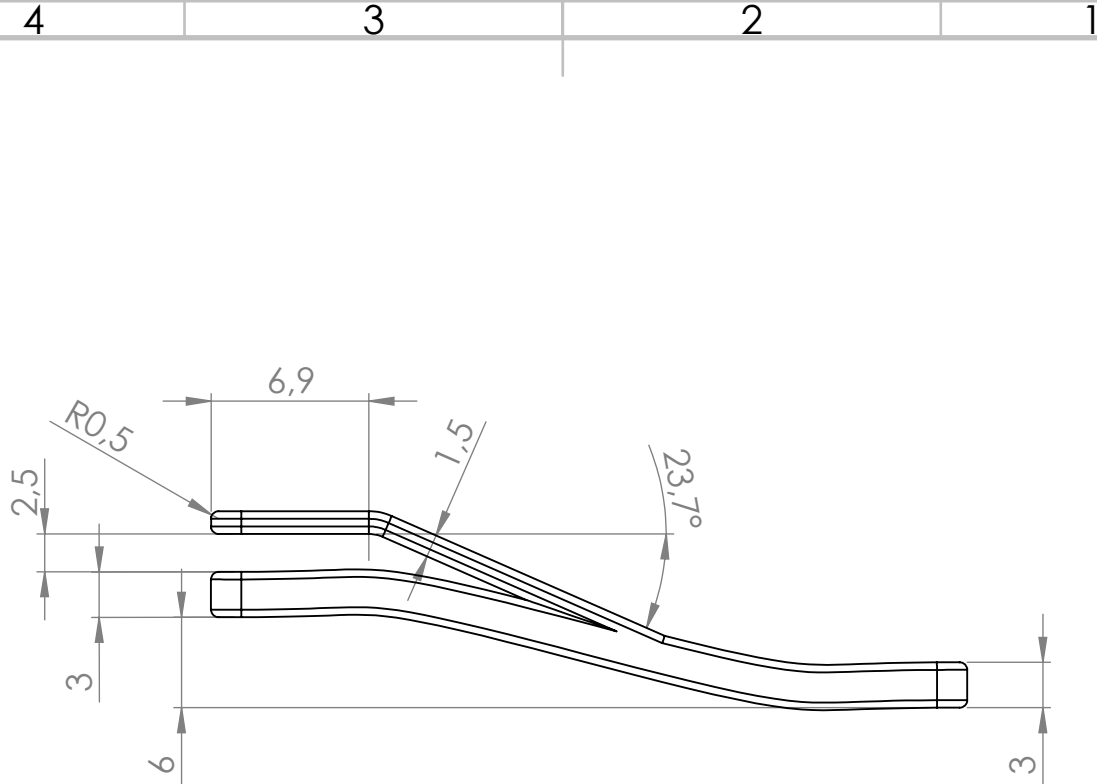
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ESCALA  
2:1

TFG\_P12

Nº PLANOL:	609
SUBSTITUEIX A:	-
Especialitat	GEM

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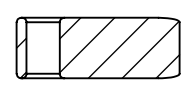
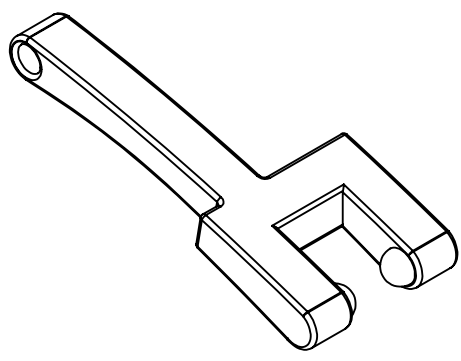
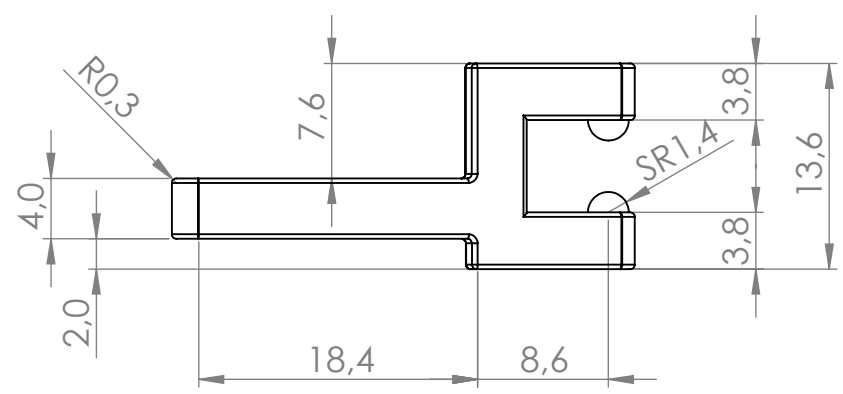
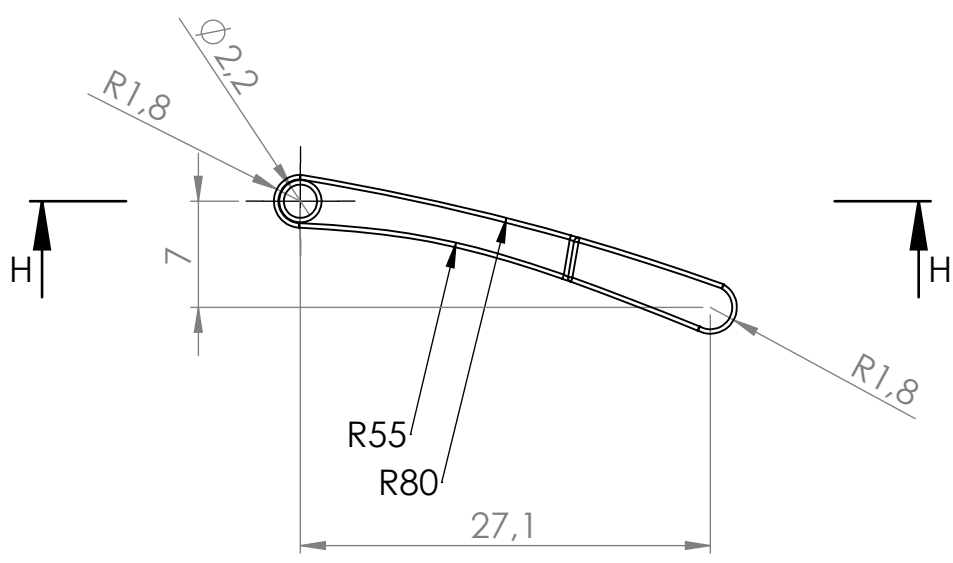
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Especialitat	GEM



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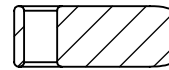
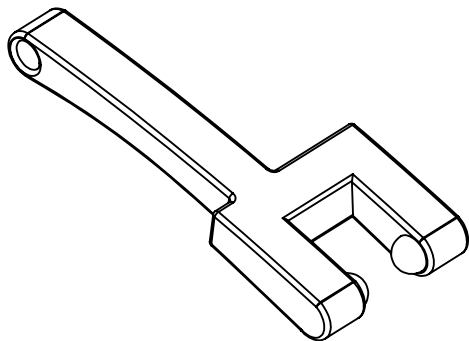
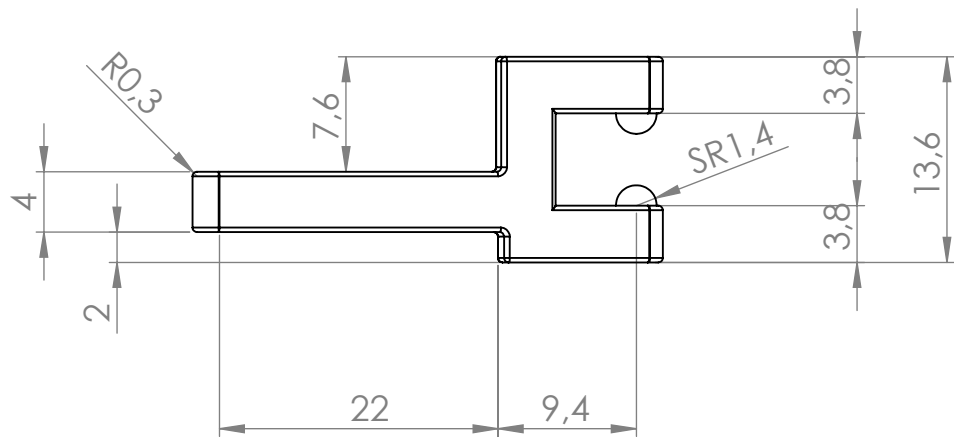
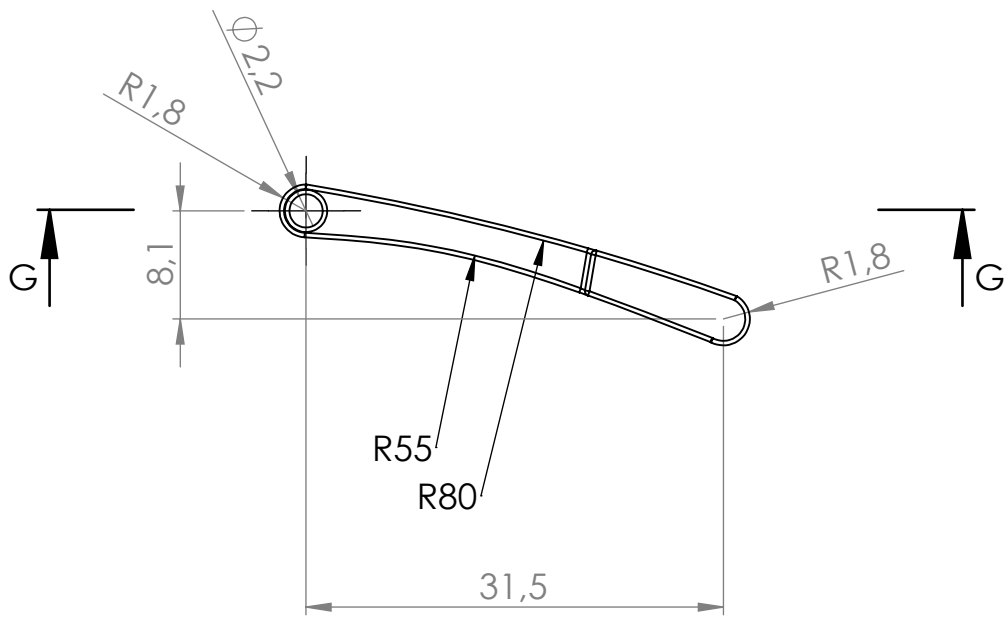
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DIBUIXAT	18/12/21	PAU QUINTANA CASANOVAS
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Especialitat	GEM



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N3 PLANOL:	612
SUBSTITUEIX A:	-
Especialitat	GEM