



**EPS**

Escola Politècnica  
Superior

## Projecte/Treball Fi de Carrera

**Estudi:** Enginyeria Tècn. Ind. Mecànica. Pla 2002

**Títol:** CAPÇAL EXTRUSOR PER A UN SISTEMA DE  
TECNOLOGIA ADDITIVA

**Document:** DOCUMENT 2: PLÀNOLS

**Alumne:** Gerard Danés i Pibernat

**Director/Tutor:** Joaquim de Ciurana Gay

**Departament:** Eng. Mecànica i de la Construcció Industrial

**Àrea:** Enginyeria de Processos de Fabricació

**Convocatòria** (mes/any): 09/2014



## ÍNDIX

### RELACIÓ DE PLÀNOLS

C01 Conjunt extrusor

C02 Conjunt calefactor / aïllant

P01 Suport unió Fab@home

P02 Suport unió capçal extrusor

P03 Suport base capçal

P04 Cambra conformació

P05 Dau extrusor

P06 Femella fixació cambra conformació

P07 Vis sens fi extrusor

P08 Acoplament vis sens fi – motor

P09 Barra separadora base – motor

P10 Suport motor

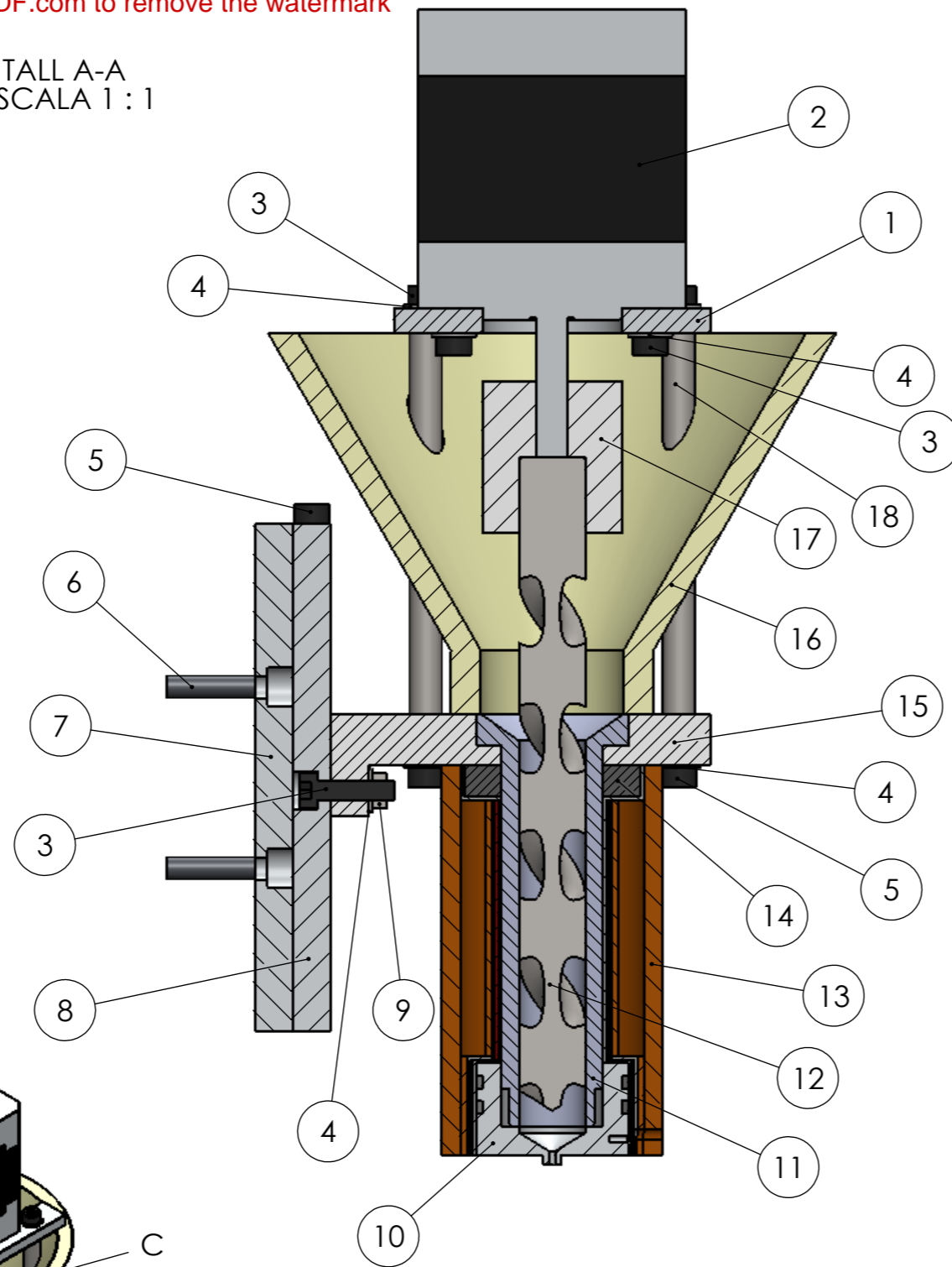
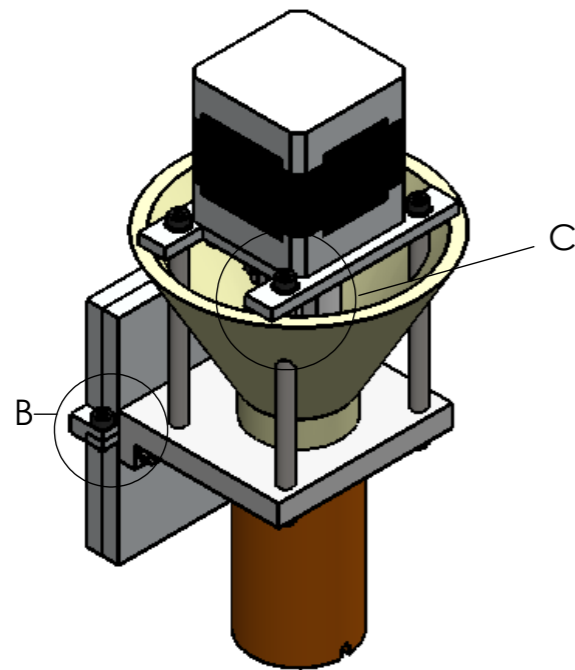
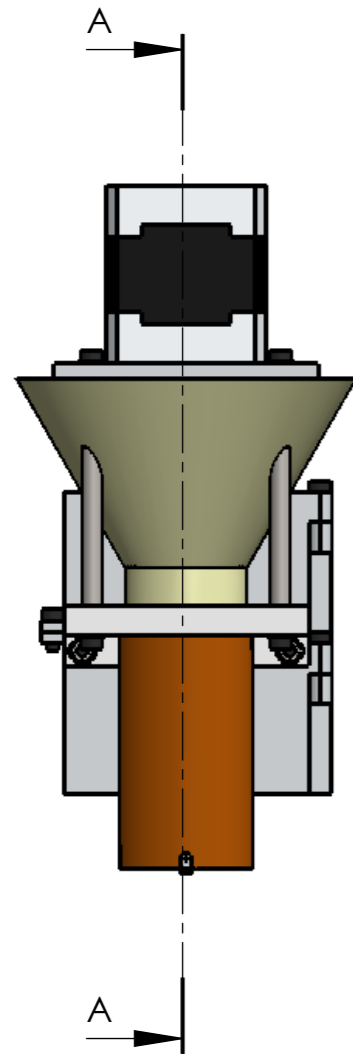
P11 Tolva de material

E01 Connexió elèctrica del sistema d'extrusió a la Fab@home

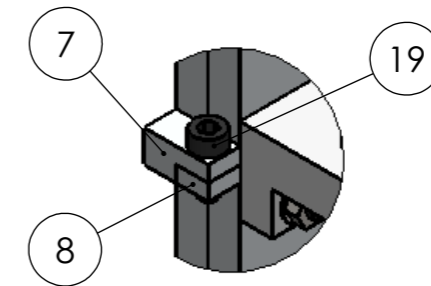
E02 Connexió elèctrica del sistema calefactor

T01 Temperatura del material al llarg de l'extrusió

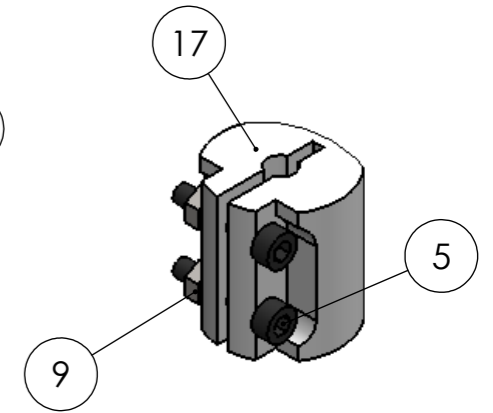
TALL A-A  
ESCALA 1 : 1



DETALLE B  
ESCALA 1 : 1



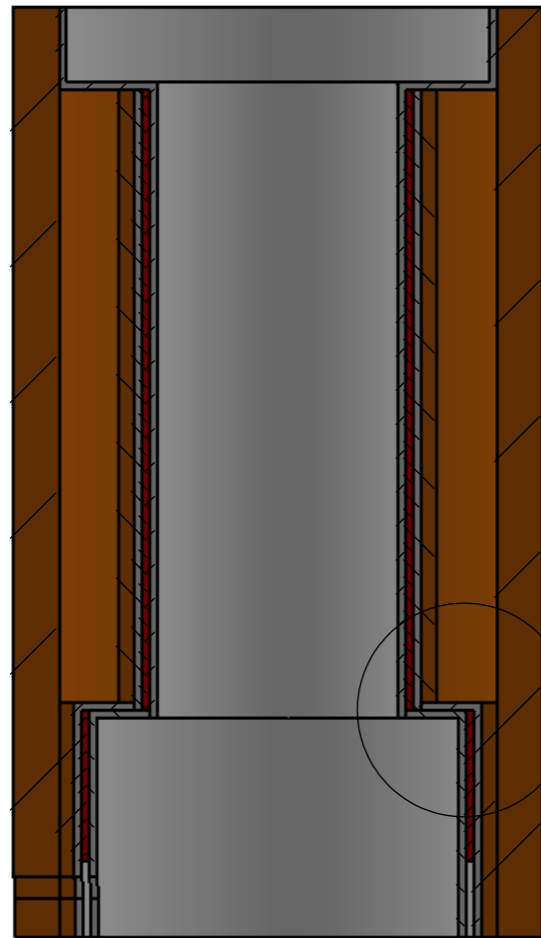
DETALLE C  
ESCALA 1:1



19	COMERCIALIZAT	CARGOL ALLEN DIN-912 M3X8	1
18	P09	BARRA SEPARADORA BASE - MOTOR	4
17	P08	ACOBLAMENT VIS SENS FI - MOTOR	1
16	P11	TOLVA DE MATERIAL	1
15	P03	SUPORT BASE CAPÇAL	1
14	P06	FEMELLA FIXACIO CAMBRA CONFORMACIO	1
13	C02	CONJUNT CALECTOR / AILLANT	1
12	P07	VIS SENS FI EXTRUSOR	2
11	P04	CAMBRA CONFORMACIO	1
10	P05	DAU EXTRUSOR	1
9	COMERCIALIZAT	FEMELLA HEXAGONAL DIN-934 M3	5
8	P02	SUPORT UNIO CAPÇAL EXTRUSOR	1
7	P01	SUPORT UNIO FAB@HOME	1
6	COMERCIALIZAT	CARGOL ALLEN WHITWORTH 9/64"	4
5	COMERCIALIZAT	CARGOL ALLEN DIN-912 M3X16	11
4	COMERCIALIZAT	VOLANDERA DIN-125 M3	15
3	COMERCIALIZAT	CARGOL ALLEN DIN-912 M3X12	8
2	COMERCIALIZAT	MOTOR PAS A PAS NEMA 17 SY42STH38-1684A	1
1	P10	PLACA MOTOR	1
N.º DE ELEMENT	N.º DE PLANOL	DESCRIPCIO / REFERENCIA	QUANTITAT

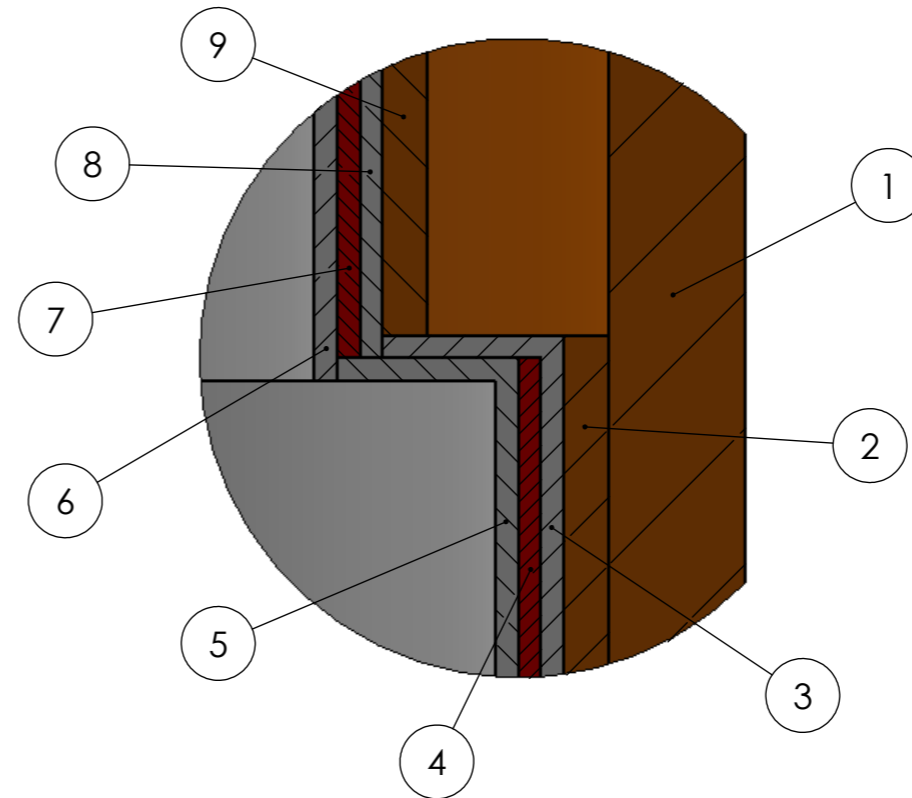
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ESCALA 2 : 1

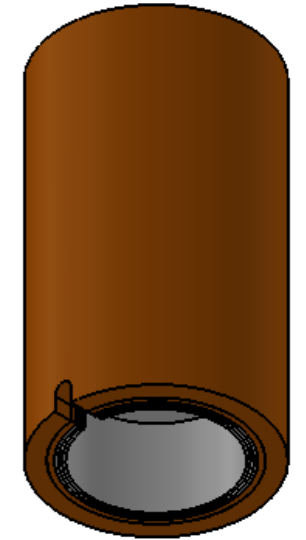


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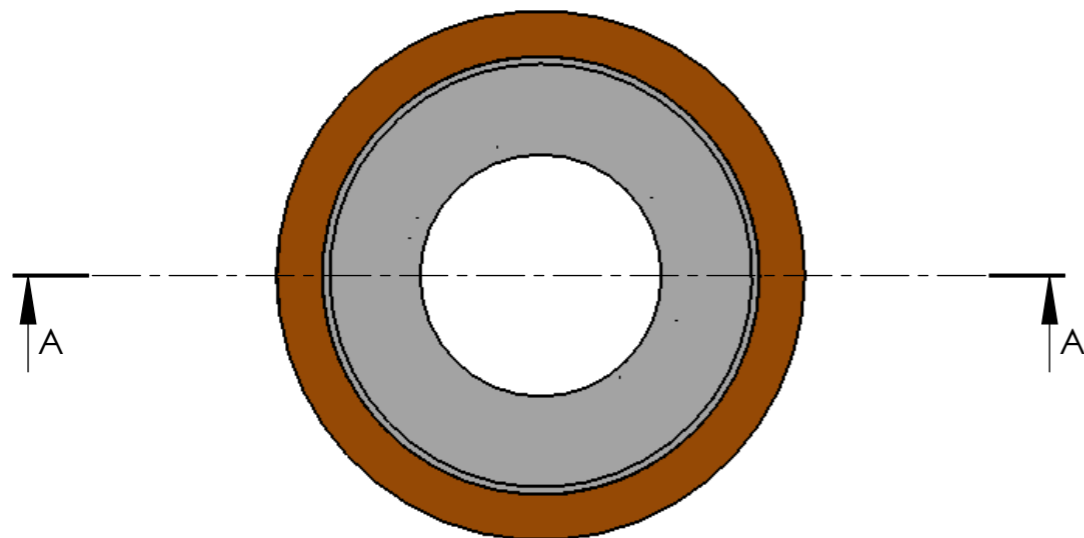
DETALLE B  
ESCALA 6 : 1



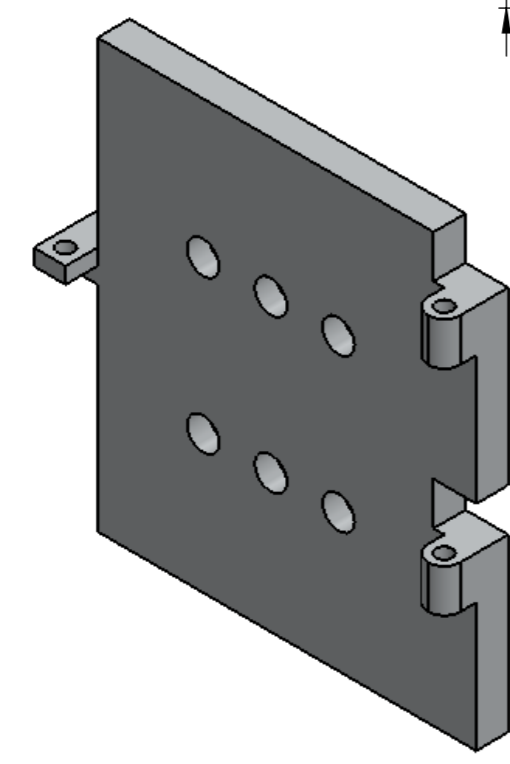
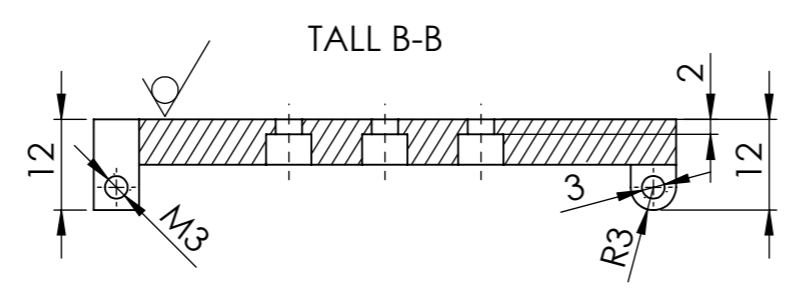
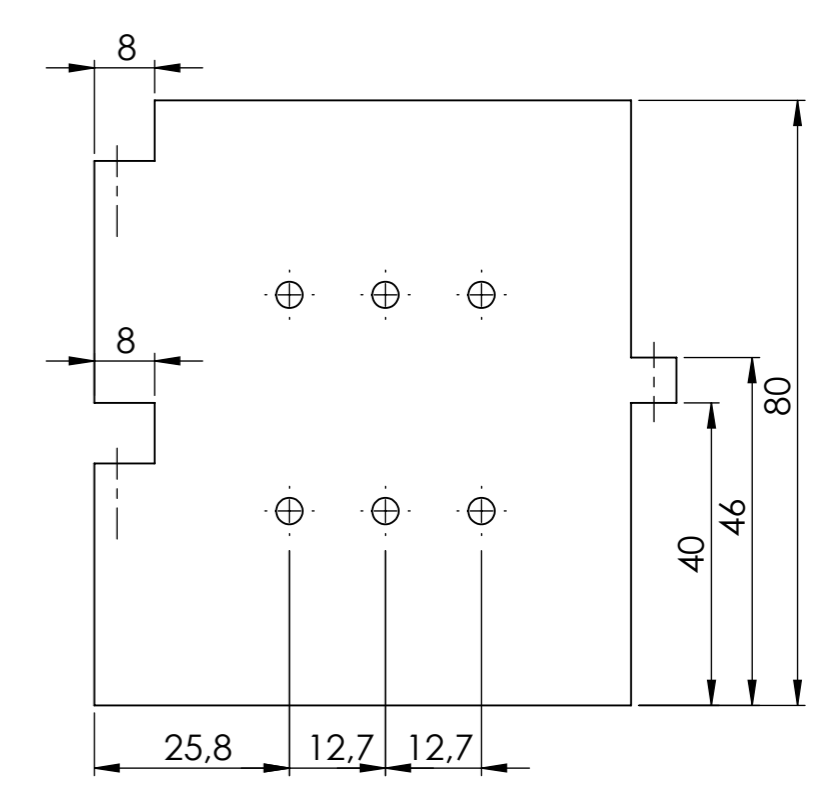
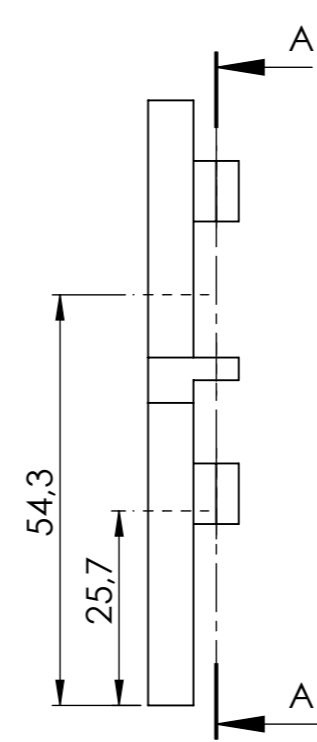
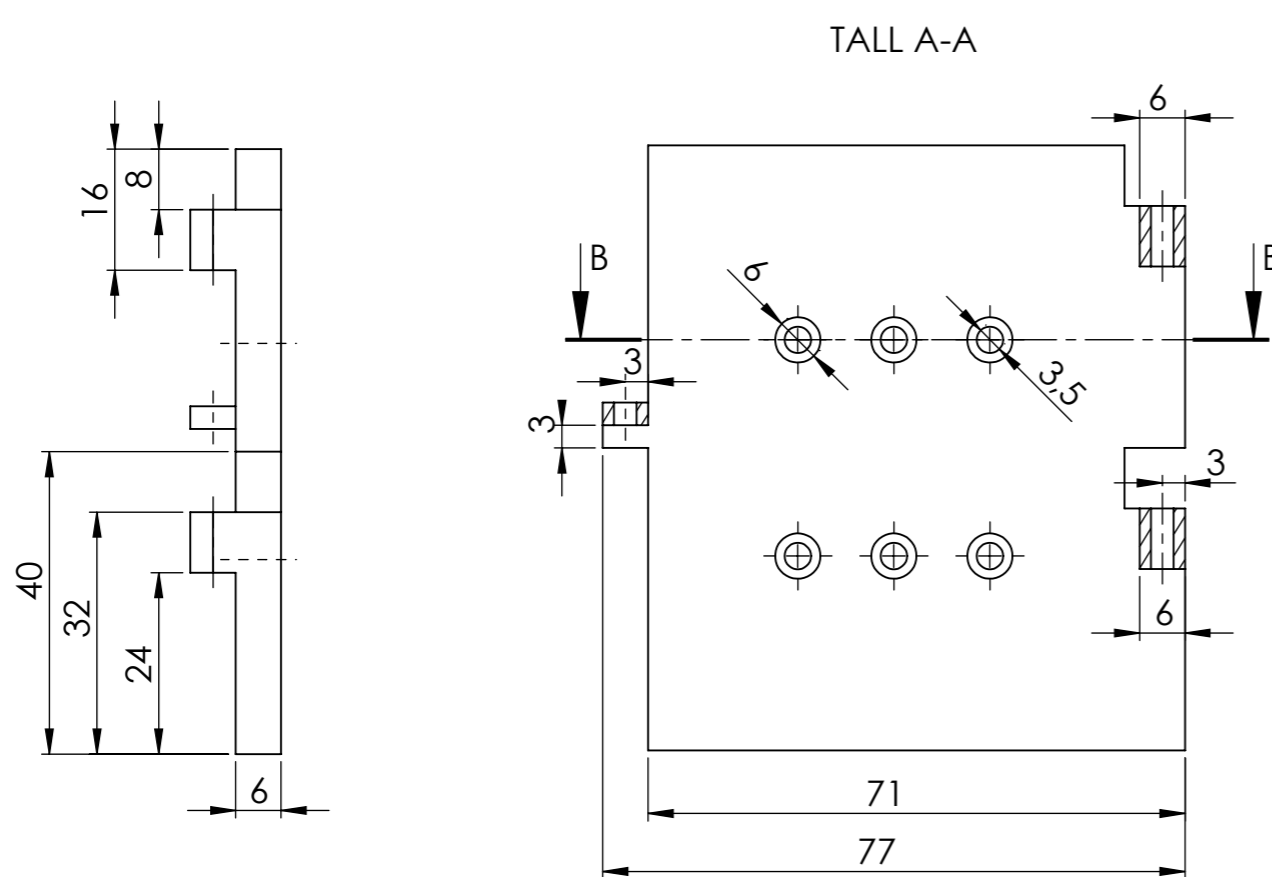
EL PRESENT PLANOL ES UN ESQUEMA ORIENTATIU DE LES DIFERENTS CAPES QUE ESTA COMPOST EL CONJUNT CALEFACTOR I AILLANT




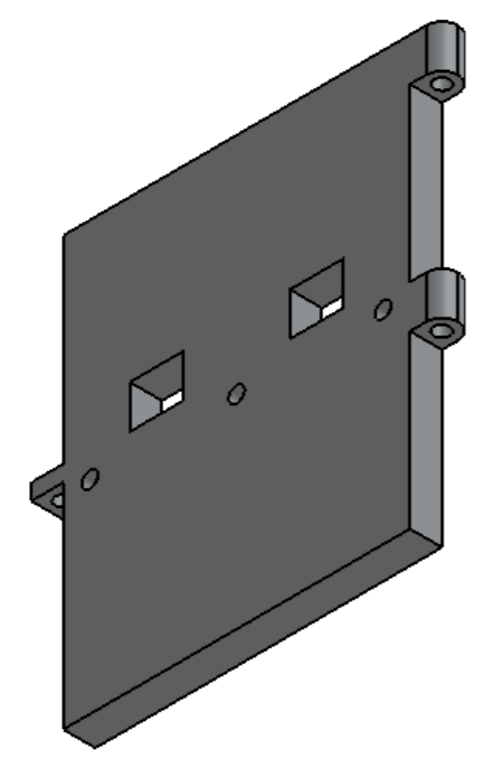
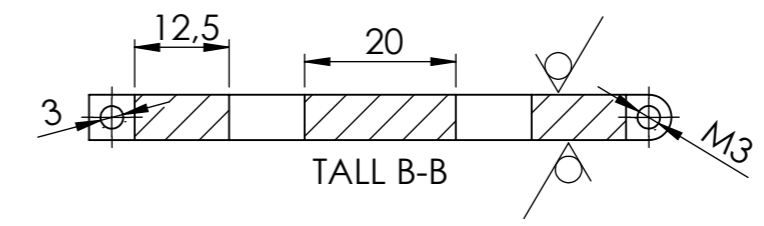
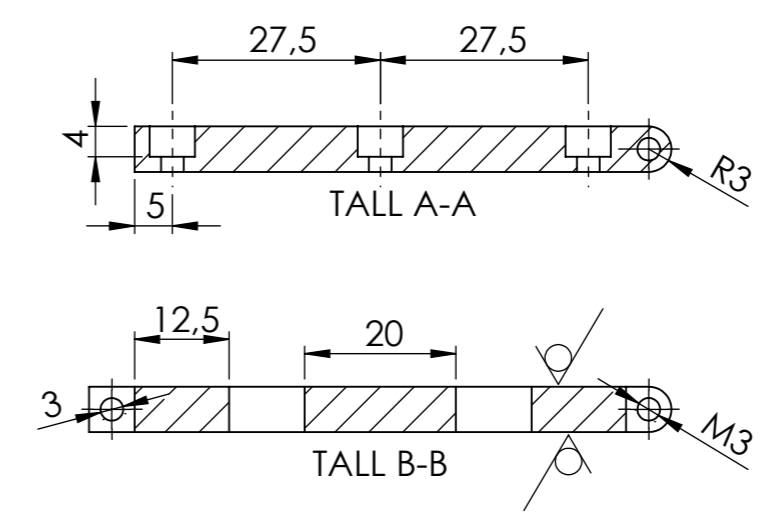
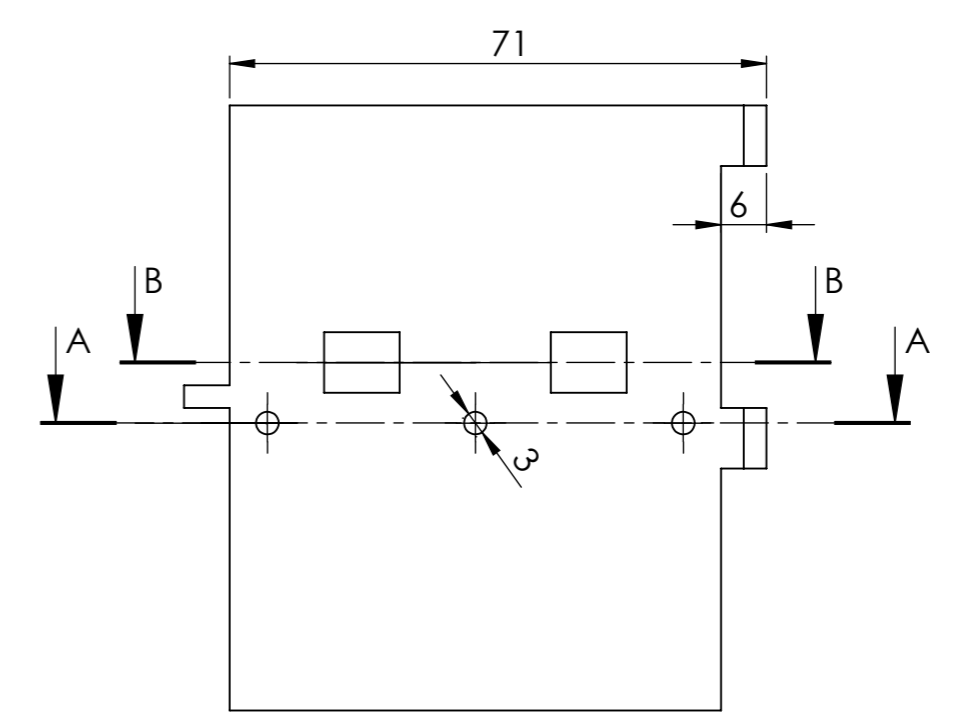
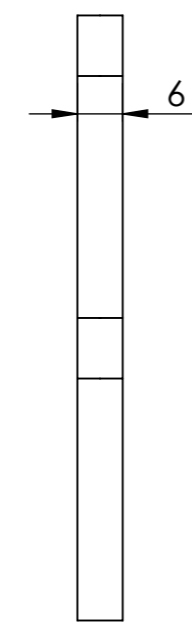
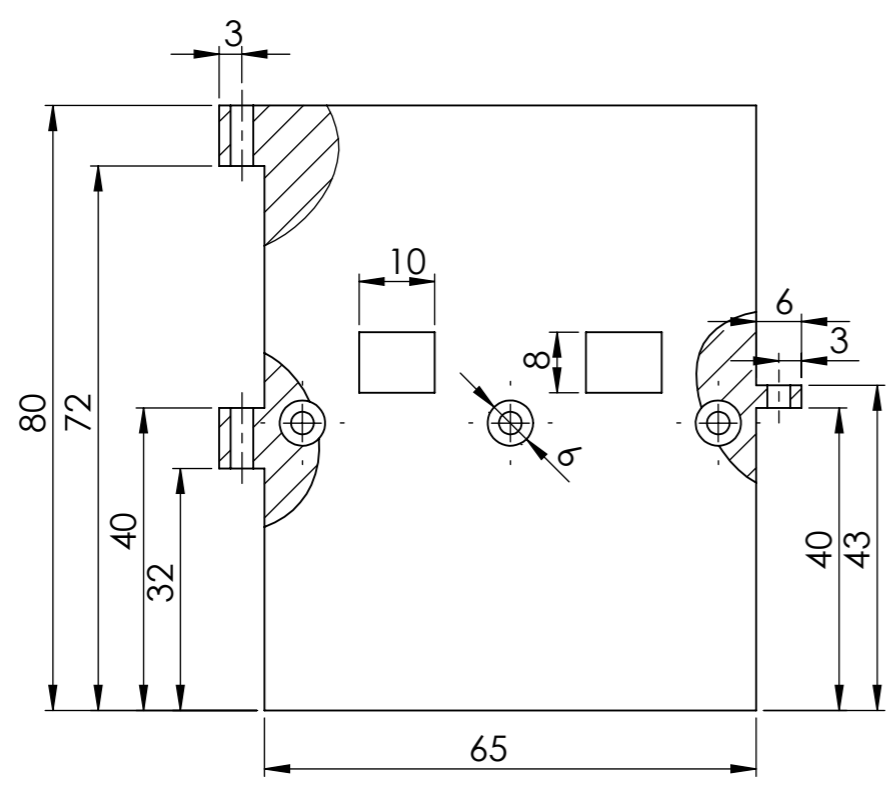
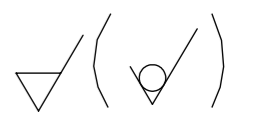
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8	AE1.2	CINTA AILLANT ELECTRICA AMB TELA DE FIBRA DE VIDRE
7	FR1	FIL RESISTIU NICROM 80 20 $\phi$ 0.25 mm
6	AE1.1	CINTA AILLANT ELECTRICA AMB TELA DE FIBRA DE VIDRE
5	AE2.1	CINTA AILLANT ELECTRICA AMB TELA DE FIBRA DE VIDRE
4	FR2	FIL RESISTIU NICROM 80 20 $\phi$ 0.25 mm
3	AE2.2	CINTA AILLANT ELECTRICA AMB TELA DE FIBRA DE VIDRE
2	AT1.2	FUNDA ANTICALORICA DE FIBRA DE VIDRE $\phi$ 18
1	AT2.1	FUNDA ANTICALORICA DE FIBRA DE VIDRE $\phi$ 25
N.ºELEMENT	Nº MARCA	MATERIAL




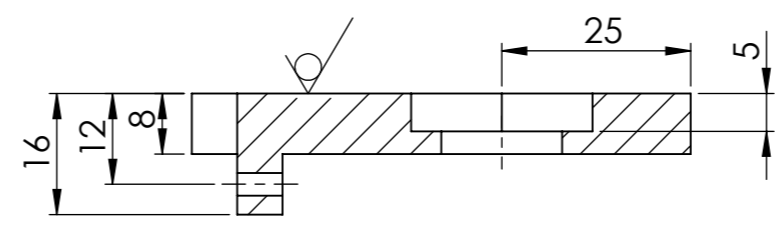
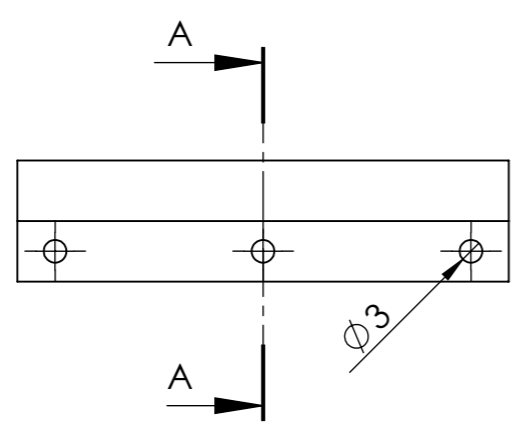
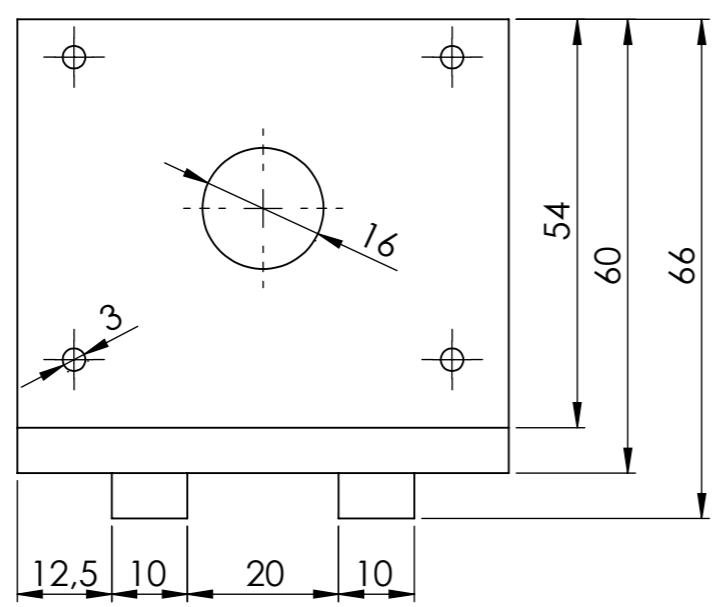
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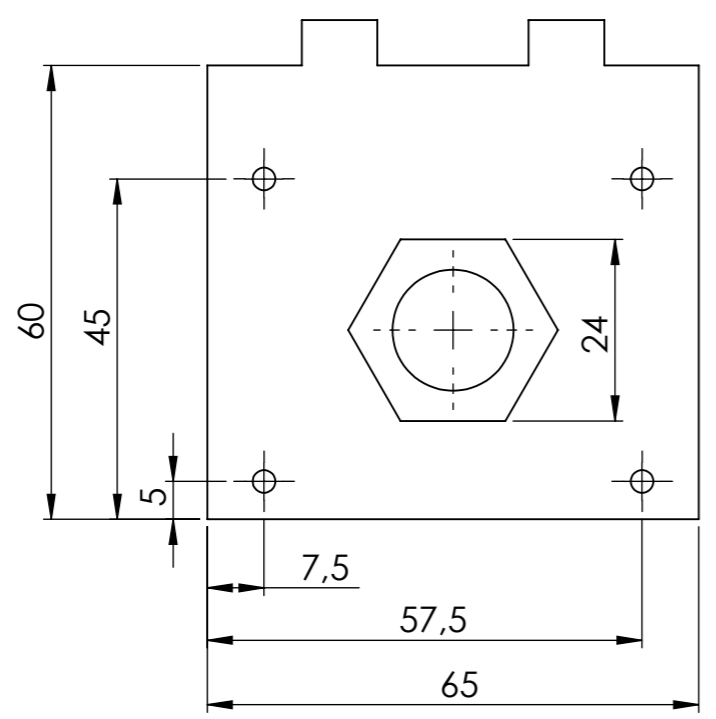
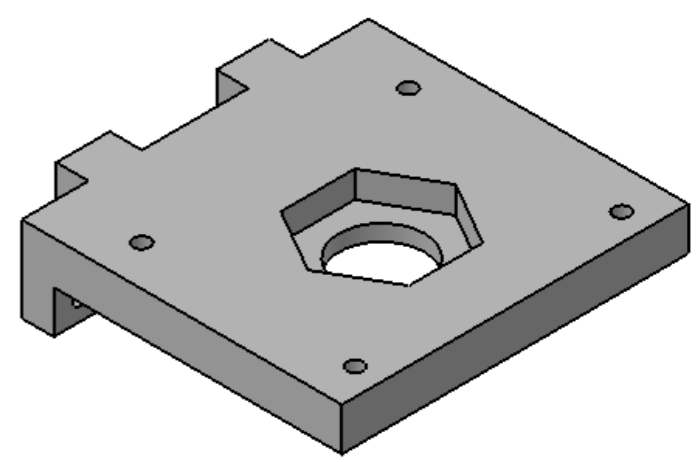
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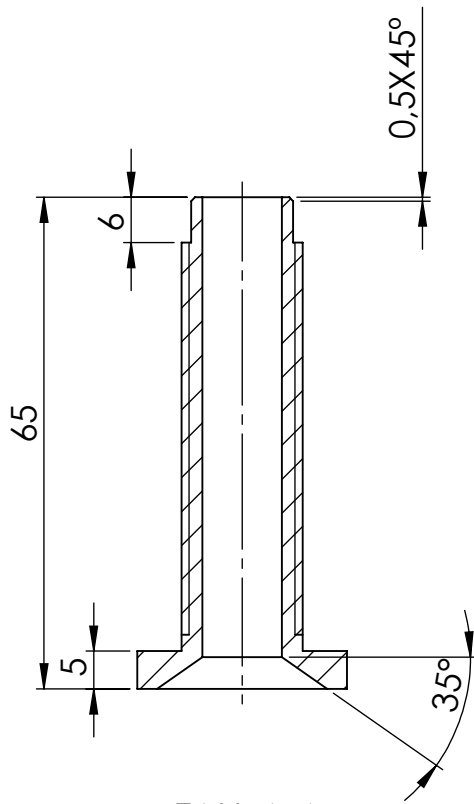
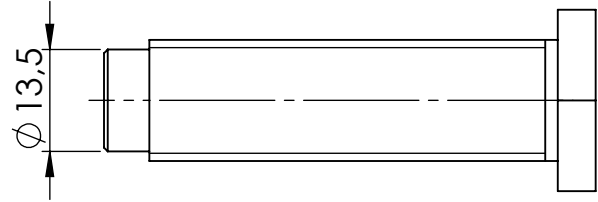
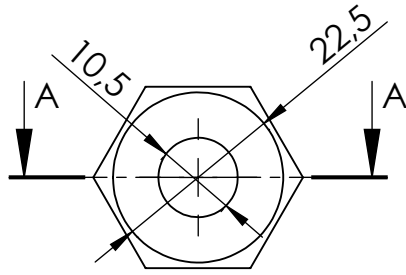
TALL A-A



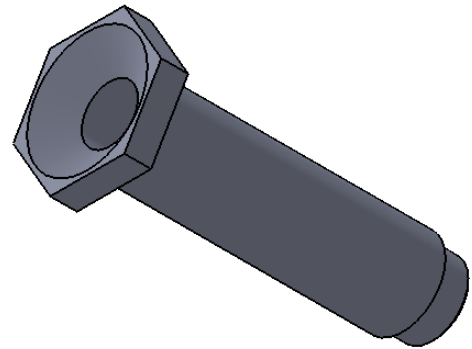
RECUBRIMENT SUPERFICIAL		SENSE RECUBRIMENT		MATERIAL	PLACA DE TEFLO DE 100X20X100																																															
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P03		G.DANES		26/07/2014		1/1		A3																																												




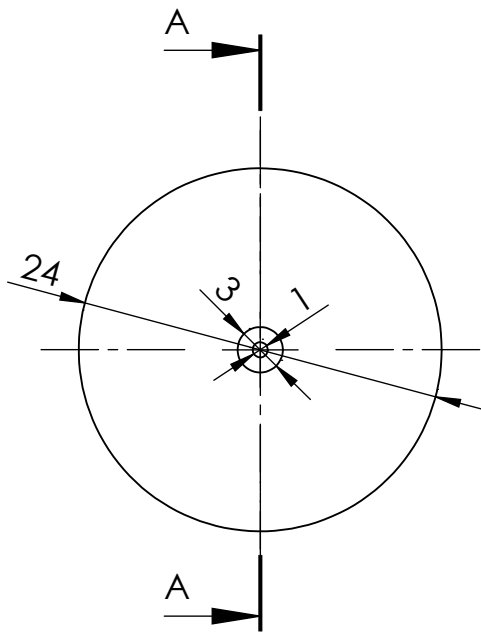




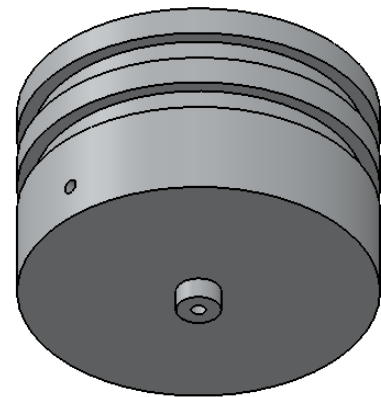
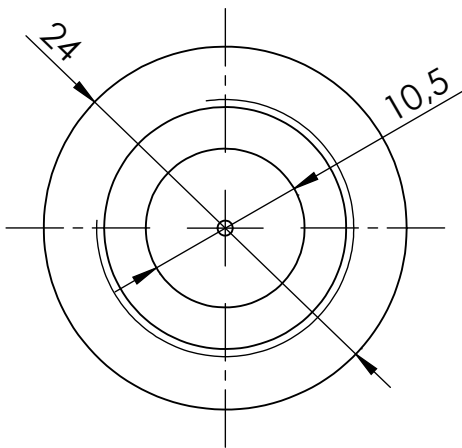
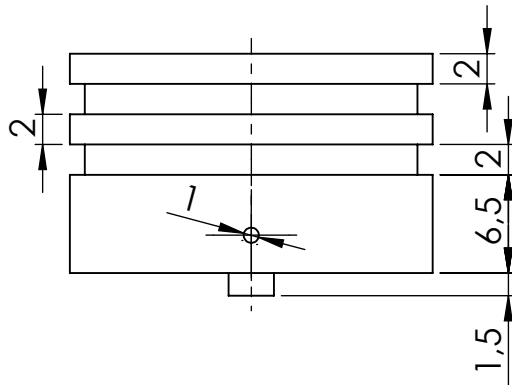
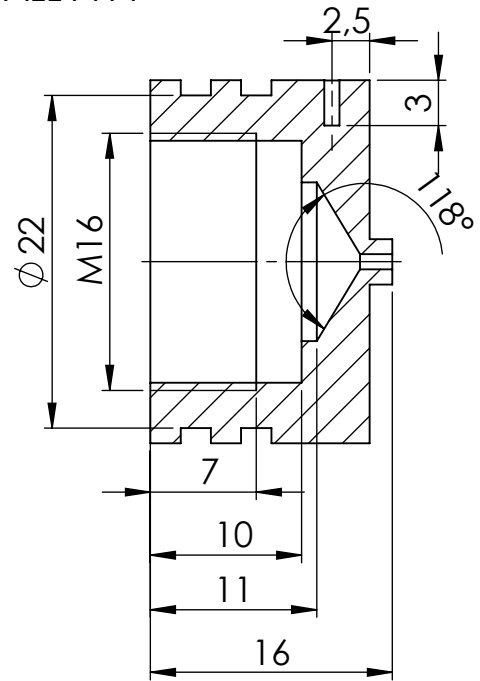
TALL A-A



RECUBRIMENT SUPERFICIAL		SENSE RECUBRIMENT		MATERIAL	CARGOL HEXAGONAL DIN-933 AISI304 M-16X60																																													
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		<b>P04</b>	G.DANES	26/07/2014	<b>1/1</b>	<b>A4</b>																																												



TALL A-A



RECUBRIMENT SUPERFICIAL

SENSE RECUBRIMENT

MATERIAL

RODO D'ALUMINI AL-7075 DE Ø30X30

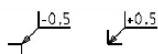
MIDES NOMINALS	TOLERA. LINEALS	MIDES NOMINALS	—	⊥	≡	↗
0,5 ... 6	±0,1	... 10	0,05	0,4	0,6	0,2
> 6 ... 30	±0,2	> 10 ... 30	0,1	0,4	0,6	
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> 400 ... 1000	±0,8	> 300 ... 1000	0,6	0,8	0,8	
> 1000 ... 2000	±1,2	> 1000 ... 3000	0,8	1	1	



ESCOLA  
POLITÈCNICA  
SUPERIOR

DENOMINACIO PLANOL

DAU EXTRUSOR



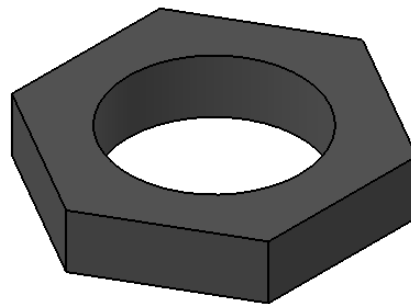
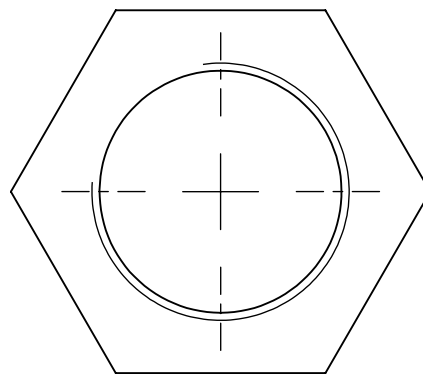
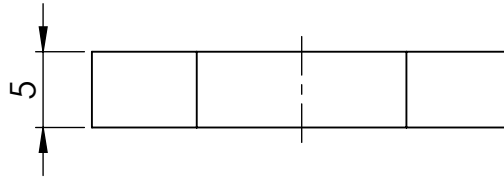
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

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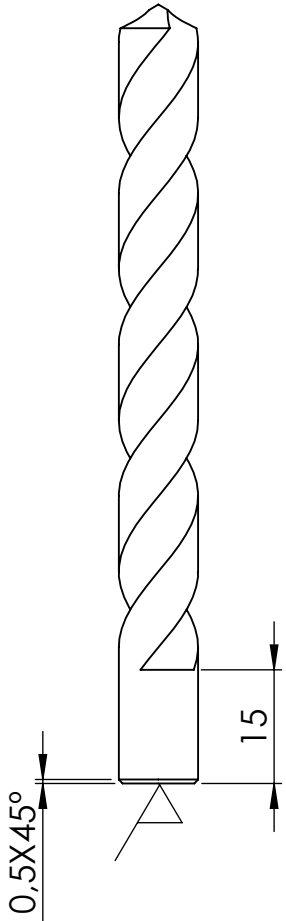
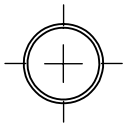
DATA  
26/07/2014

ESCALA  
2/1

FORMAT  
A4



RECUBRIMENT SUPERFICIAL		SENSE RECUBRIMENT		MATERIAL	FEMELLA HEXAGONAL DIN-936 M16																																													
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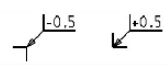
RECUBRIMENT SUPERFICIAL	SENSE RECUBRIMENT	MATERIAL	BROCA HELICOIDAL DIN-338 HSS Ø 10.5 L.TALL 87
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MIDES NOMINALS	TOLERA. LINEALS	MIDES NOMINALS	—	⊥	≡	↗
0,5 ... 6	±0,1	... 10	0,05	0,4	0,6	0,2
> 6 ... 30	±0,2	> 10 ... 30	0,1	0,4	0,6	
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> 120 ... 400	±0,5	> 100 ... 300	0,4	0,6	0,6	
> 400 ... 1000	±0,8	> 300 ... 1000	0,6	0,8	0,8	
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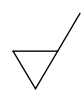


ESCOLA POLITÈCNICA SUPERIOR

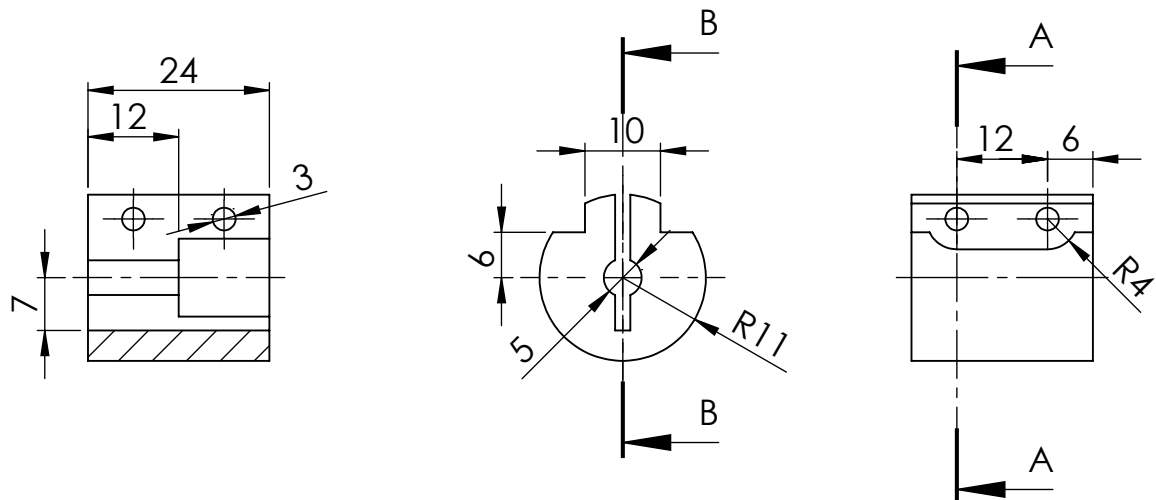
DENOMINACIO PLANOL  
VIS SENS FI EXTRUSOR



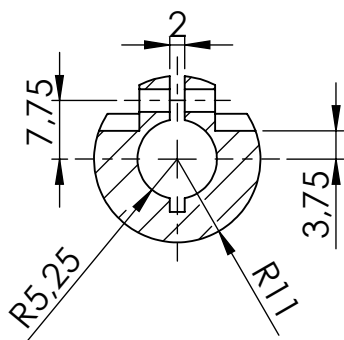
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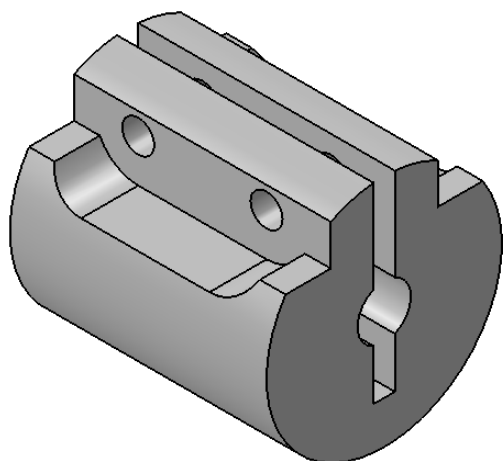
TALL B-B




TALL A-A

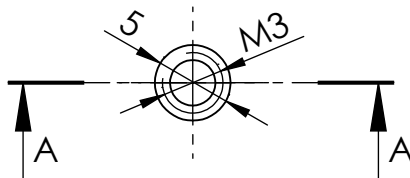
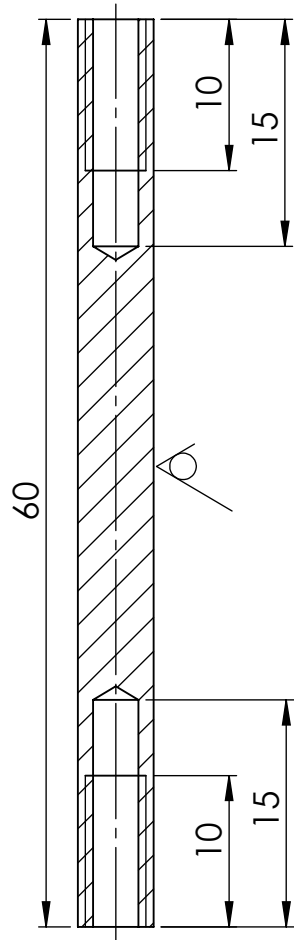
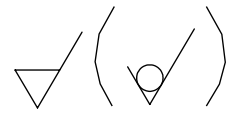





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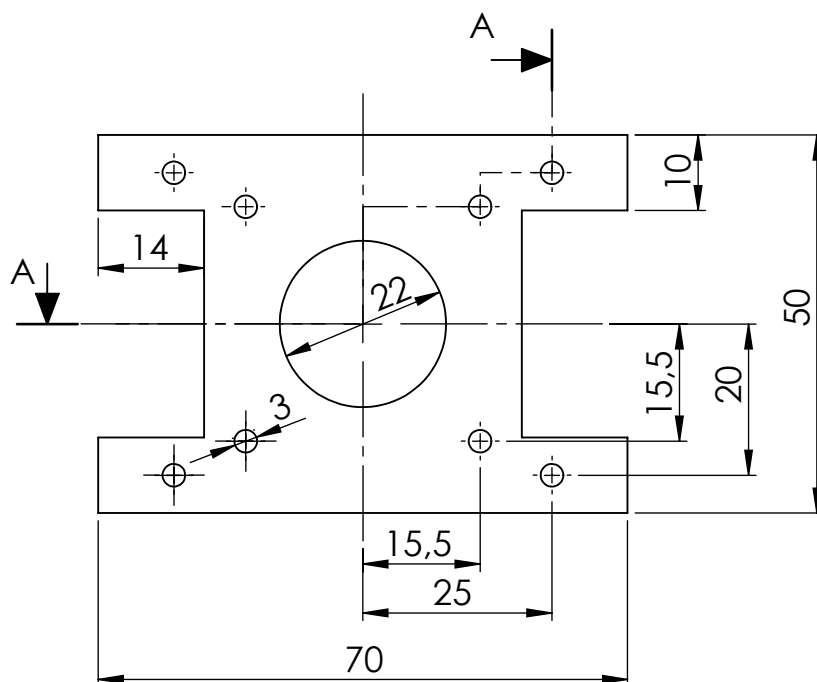


RECUBRIMENT SUPERFICIAL	SENSE RECUBRIMENT	MATERIAL	RODO NILO (PA-6) DE Ø 30 X 35																																												
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		ACOBLAMENT VIS SENS FI-MOTOR																																													
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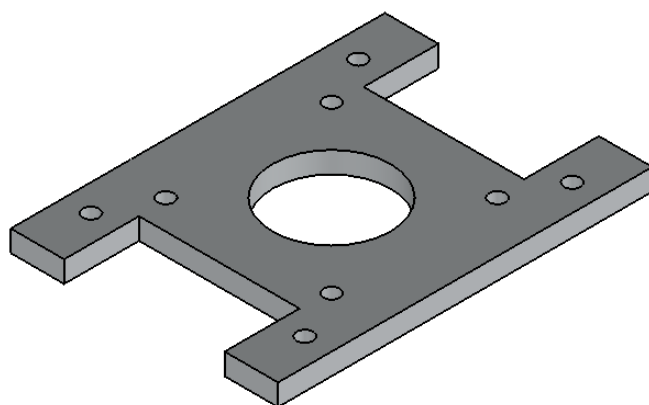
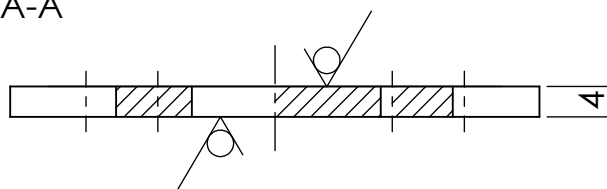
TALL A-A



RECUBRIMENT SUPERFICIAL		SENSE RECUBRIMENT		MATERIAL	RODO D'ALUMINI AL-2011 DE Ø5X70																																													
<table border="1"> <thead> <tr> <th>MIDES NOMINALS</th> <th>TOLERA. LINEALS</th> <th>MIDES NOMINALS</th> <th>—</th> <th>⊥</th> <th>≡</th> <th>↗</th> </tr> </thead> <tbody> <tr> <td>0,5 ... 6</td> <td>±0,1</td> <td>... 10</td> <td>0,05</td> <td>0,4</td> <td>0,6</td> <td rowspan="6">0,2</td> </tr> <tr> <td>&gt; 6 ... 30</td> <td>±0,2</td> <td>&gt; 10 ... 30</td> <td>0,1</td> <td>0,4</td> <td>0,6</td> </tr> <tr> <td>&gt; 30 ... 120</td> <td>±0,3</td> <td>&gt; 30 ... 100</td> <td>0,2</td> <td>0,4</td> <td>0,6</td> </tr> <tr> <td>&gt; 120 ... 400</td> <td>±0,5</td> <td>&gt; 100 ... 300</td> <td>0,4</td> <td>0,6</td> <td>0,6</td> </tr> <tr> <td>&gt; 400 ... 1000</td> <td>±0,8</td> <td>&gt; 300 ... 1000</td> <td>0,6</td> <td>0,8</td> <td>0,8</td> </tr> <tr> <td>&gt; 1000 ... 2000</td> <td>±1,2</td> <td>&gt; 1000 ... 3000</td> <td>0,8</td> <td>1</td> <td>1</td> </tr> </tbody> </table>		MIDES NOMINALS	TOLERA. LINEALS	MIDES NOMINALS	—	⊥	≡	↗	0,5 ... 6	±0,1	... 10	0,05	0,4	0,6	0,2	> 6 ... 30	±0,2	> 10 ... 30	0,1	0,4	0,6	> 30 ... 120	±0,3	> 30 ... 100	0,2	0,4	0,6	> 120 ... 400	±0,5	> 100 ... 300	0,4	0,6	0,6	> 400 ... 1000	±0,8	> 300 ... 1000	0,6	0,8	0,8	> 1000 ... 2000	±1,2	> 1000 ... 3000	0,8	1	1	 <p><b>ESCOLA POLITÈCNICA SUPERIOR</b></p>		DENOMINACIO PLANOL <b>BARRA SEPARADORA BASE-MOTOR</b>		
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		<b>P09</b>	G.DANES	26/07/2014	<b>2/1</b>	<b>A4</b>																																												



TALL A-A

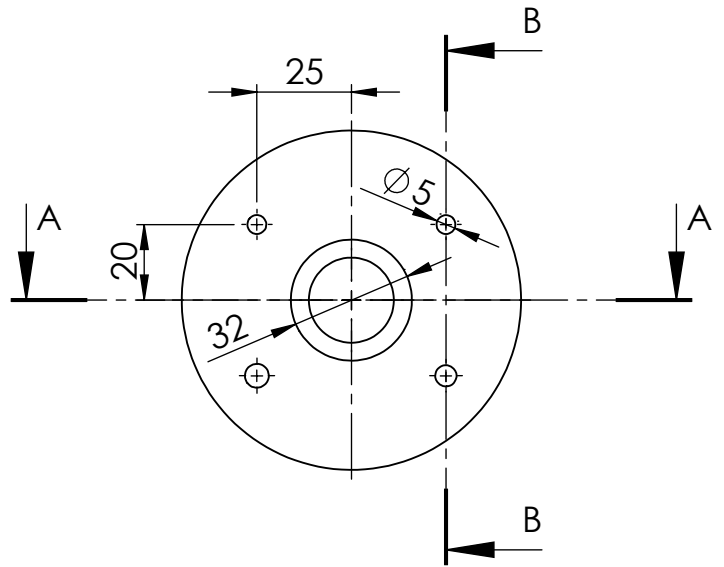
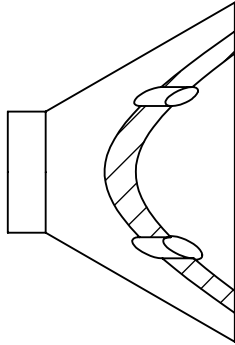


La posició dels forats és igual a tots els quadrants. El diàmetre dels forats és 3

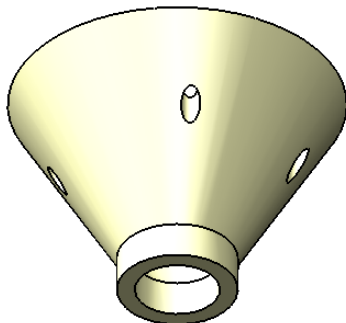
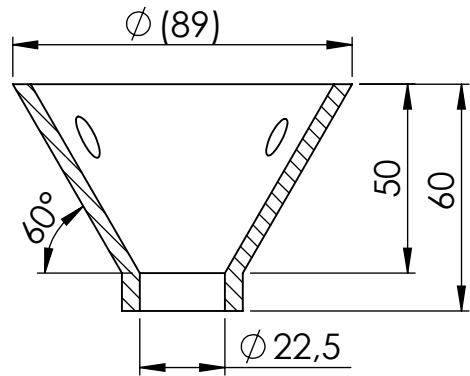
RECUBRIMENT SUPERFICIAL	SENSE RECUBRIMENT	MATERIAL	PLACA D'ALUMINI AL-7075 DE 70X4X80																																														
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		<b>P10</b>	G.DANES	26/07/2014	1/1	A4																																											


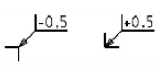


TALL B-B



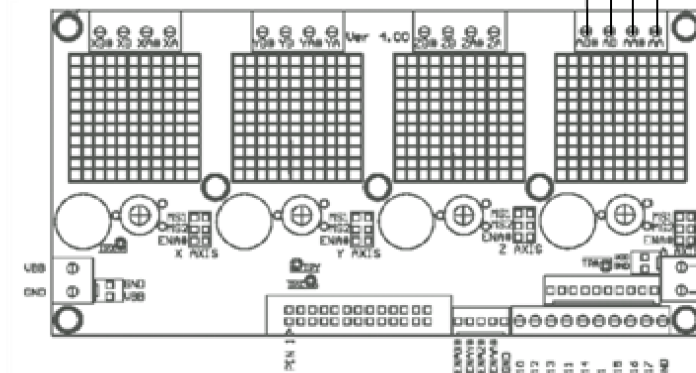
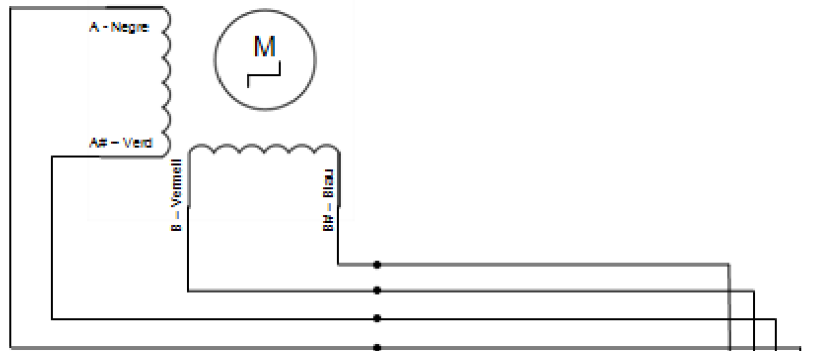
TALL A-A



RECUBRIMENT SUPERFICIAL		SENSE RECUBRIMENT		MATERIAL	RODO NILO (PA-6) DE Ø100X100																																													
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		Nº PLANOL	DIBUIXAT PER	DATA	ESCALA	FORMAT																																												
		P11	G.DANES	26/07/2014	1/1	A4																																												



Motor pas a pas NEMA 17  
(SY42STH38-1684A)



Placa de control  
(XS-3525/8S-4)



ESCOLA  
POLITÀCNICA  
SUPERIOR

DENOMINACIÓ PLANOL

CONNEXIÓ ELÈCTRICA DEL SISTEMA  
D'EXTRUSIÓ A LA FAB@HOME

Nº PLANOL  
E01

DIBUIXAT PER  
G.DANES

DATA  
26/07/2014

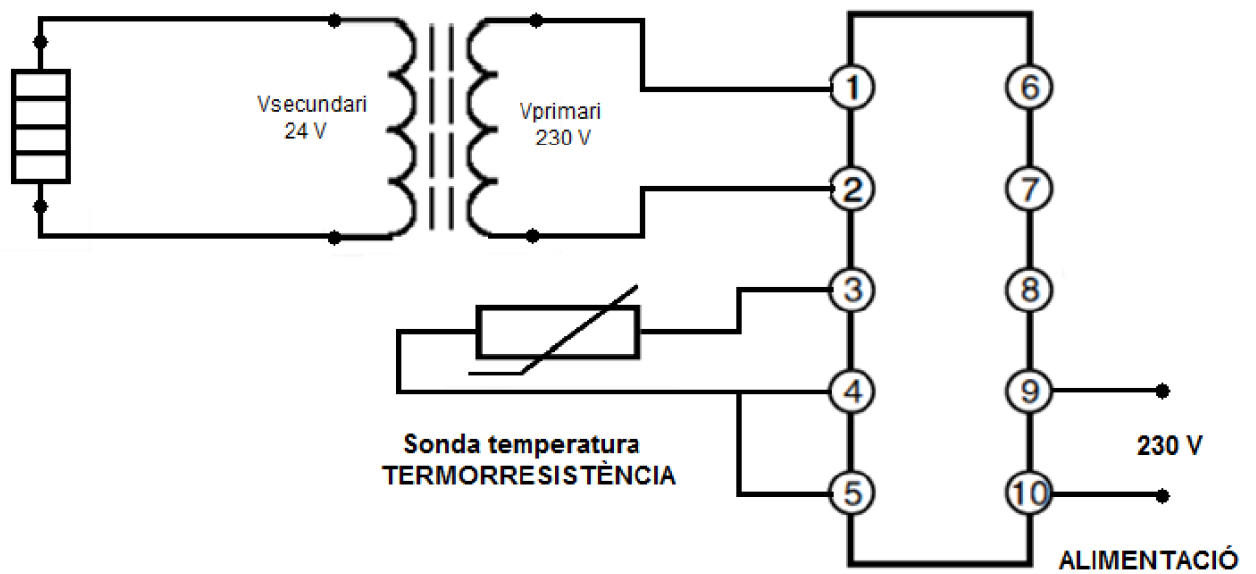
ESCALA  
-

FORMAT  
A4

Fil resistiu  
NICROM Ø0.25mm

Transformador  
BREVE ref.STM100/24V

Controlador temperatura  
OMROM ref. E5CSV



ESCOLA  
POLITÈCNICA  
SUPERIOR

DENOMINACIÓ PLANOL

ESQUEMA ELECTRIC SISTEMA  
CALEFACTOR

Nº PLANOL  
E02

DIBUIXAT PER  
G.DANES

DATA  
26/07/2014

ESCALA  
-

FORMAT  
A4

