

A.1 Anexo 1



VERIFICA RESISTENZA MASSIMA DEL TELAIO

PROCEDURA
DI PROVA
N° PPS00025

Rev.	Emissione	Descrizione
0	10/09/98	Prima Emissione
I	28/01/99	Nel carico massimo di rottura verticale messo F^* al posto di F_N
II	04/08/99	Cambiato il limite di deformabilità nel calcolo dell'energia di deformazione da 50 mm a 80 mm per il carico orizzontale e verticale. Adattato i valori dei carichi su scooter sia per l'applicazione della forza al perno ruota sia sulla seduta sella.
III		
IV		
V		
VI		
VII		
VIII		
IX		
X		

Emesso / Verificato (Rep. Esperienze)	Approvato (Direzione Tecnica)
Pavani Daniele	Roman Mariano

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1. SCOPO E CAMPO DI APPLICAZIONE

Scopo della presente procedura è quello di definire le attrezzature, le modalità di esecuzione e di presentazione dei risultati della prova statica sul telaio di una moto per verificarne la resistenza a rottura.

2. RIFERIMENTI

Modulo Aprilia MRS00025 : “Modulo richiesta prova”

Modulo Aprilia MPS00025 : “Modulo relazione di prova”

Procedure di prova Aprilia n° PPS00004 e PPS00005

3. DEFINIZIONI

F^*	=	Carico di riferimento
F	=	Carico generico esercitato dal pistone dell'attuatore
F_{LIM}	=	Carico di riferimento per la valutazione dello snervamento
F_R	=	Carico di rottura
Def_{res}	=	Deformazione residua dopo l'applicazione del carico F_{LIM}
L_D	=	Lavoro di deformazione
P_M	=	Peso della moto in ordine di marcia
P_{ANT}	=	Peso statico sulla ruota anteriore
P_{POST}	=	Peso statico sulla ruota posteriore
P	=	Peso totale della moto a pieno carico
ε	=	Angolo di sterzo (sospensione a quadrilatero)
f	=	Coefficiente di attrito
b	=	Distanza punto sotto-cannotto perno ruota in verticale
e	=	Distanza punto sotto-cannotto perno ruota in orizzontale
R_A	=	Raggio della ruota anteriore completa di pneumatico
R_P	=	Raggio della ruota posteriore completa di pneumatico
F_N	=	Reazione verticale sulla ruota anteriore
F_H	=	Reazione orizzontale sulla ruota anteriore
F_{TOT}	=	Reazione globale sulla ruota anteriore
α	=	Angolo di attrito
F_{MAX}	=	Forza massima esercitata sul perno ruota anteriore in frenata
M	=	Momento esercitato sugli steli in frenata
L_E	=	Lunghezza dello stelo forcella dalla piastra di sterzo inferiore tutto esteso
L_C	=	Lunghezza dello stelo forcella dalla piastra di sterzo inferiore a pacco
C	=	Corsa della sospensione anteriore

Si definiscono le tipologie di veicoli:

- **SCOOTER** uso prevalente su percorsi cittadini
- **SPORT** uso sportivo su pista e strada
- **ENDURO** uso su strada e tratti in fuoristrada
- **CROSS** uso prevalente in fuoristrada

4. STRUMENTAZIONE DI PROVA

Macchina di prova composta da :

- attuatore oleodinamico
- cella di carico
- condizionatore di segnale delle celle di carico

5. DATI SPECIFICI DI PROVA

I dati specifici di prova vengono forniti dal richiedente la prova mediante il modulo consegna particolari per prove e misure n° MRS00025.

6. CONDOTTA DELLA PROVA

Si distingue tra prova di resistenza con carico applicato all'anteriore (applicato in direzione orizzontale) e con carico applicato al posteriore (applicato in direzione verticale) :

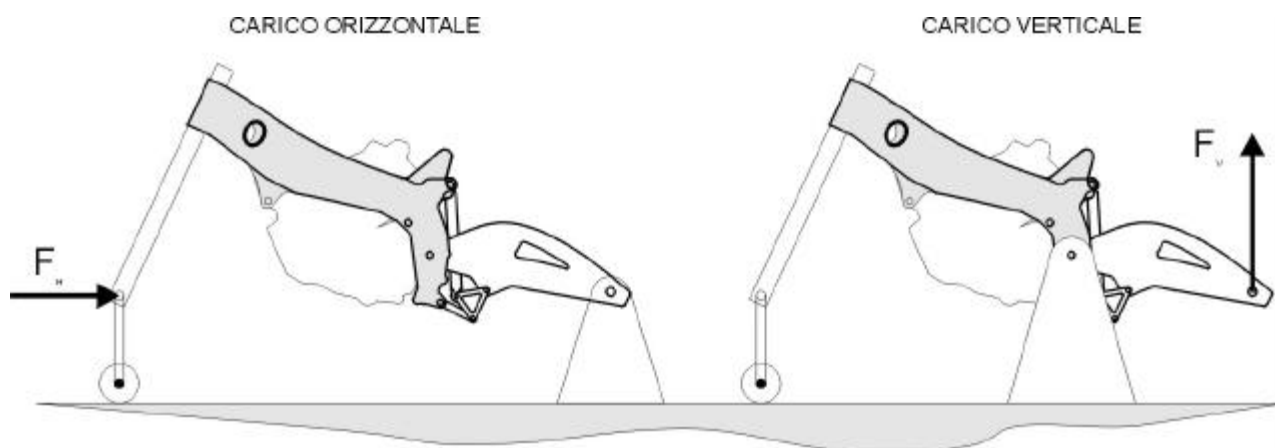


Figura 1 : Carico orizzontale e verticale

6.1 Carico orizzontale

6.1.1 calcolo semplificato del valore di sollecitazione massimo F_{LIM}

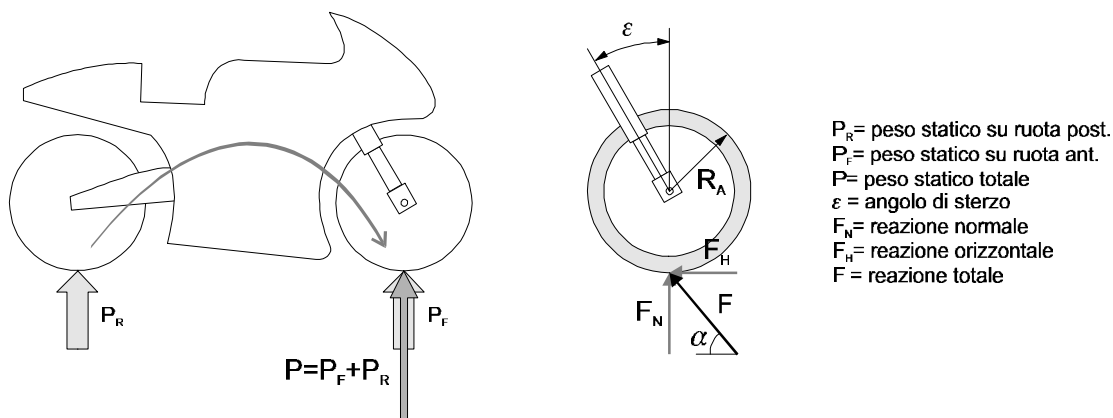


Figura 2 : Sollecitazioni statiche su moto ferma, trasferimento di carico all'anteriore e sollecitazioni sulla ruota anteriore in frenata

Si suppone che la sollecitazione massima all'anteriore sia quella derivante dalla manovra di frenata brusca nelle migliori condizioni di aderenza : trasferimento di carico completo sull'anteriore (tutto il peso sulla ruota anteriore) e coefficiente di attrito pari a 0.8:

$$F_N = P_M + 190 \text{ kg}$$

P_M = peso moto in ordine di marcia [kg]
190 kg = (80+80+30) kg (peso pilota+passaggero+bagagli)

si calcola il carico di riferimento (forza orizzontale da applicare al perno ruota anteriore per ottenere la sollecitazione massima in fase di frenata) :

$$F_{\text{ORIZ}}^* = F_N \left[0.8 \left(1 + \frac{R_A}{b} \right) - \frac{e}{b} \right]$$

(b è la distanza tra il punto sotto-cannotto e il perno ruota con sospensioni a pacco, in direzione verticale rispetto al suolo, e è la distanza tra il punto sotto-cannotto e il perno ruota in direzione orizzontale, vedi figura 3).

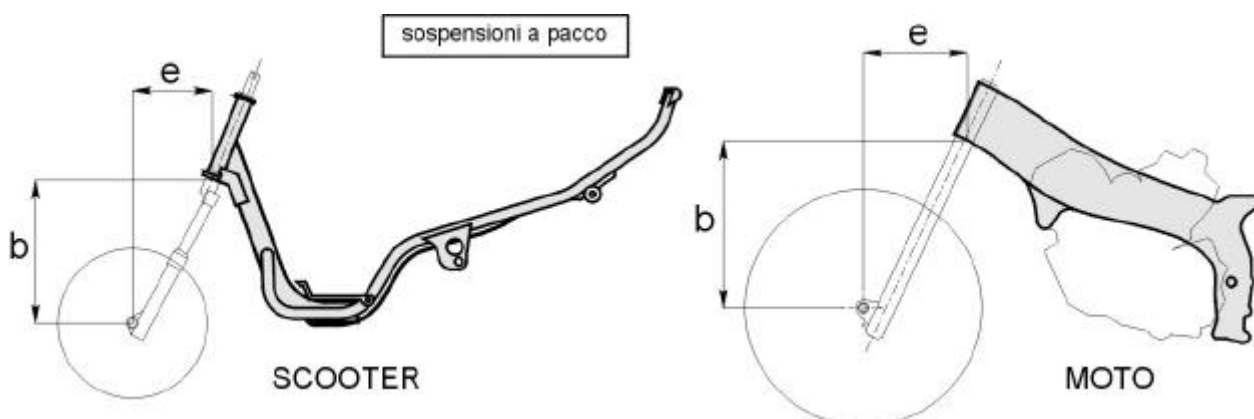


Figura 3 : Distanza perno ruota – punto sotto-cannotto

Determino ora il carico di riferimento per la sollecitazione massima a snervamento :

$$F_{\text{LIM,oriz}} = v \ F_{\text{oriz}}^* \quad \text{con} \quad \begin{array}{l} v = 1,75 \text{ scooter} \\ v = 2,00 \text{ moto} \end{array}$$

6.1.2 Montaggio del telaio al banco (carico orizzontale)

Il telaio viene fissato al banco tramite una maschera rigida che va a bloccare il perno ruota posteriore con un vincolo di cerniera, mentre il perno ruota anteriore viene sostenuto da un appoggio con carrello di altezza pari al raggio della stessa ruota anteriore (sia per le moto che per gli scooter), come illustrato nelle figure 4 e 5.

Il telaio viene montato completo di cannotto di sterzo con relativi cuscinetti, piastre di sterzo superiore e inferiore, forcellone completo di tutti i biellismi del cinematismo della sospensione posteriore (comprese viti e bussole o cuscinetti originali), il tutto montato secondo le direttive di progetto.

Gli steli della sospensione anteriore e l'ammortizzatore posteriore vengono sostituiti da barre rigide della lunghezza pari a quella degli elementi originali nella situazione di massima compressione (a pacco).

Nel caso del telaio degli scooter la situazione è analoga, con la sola differenza che al posto del forcellone c'è il motore ; tutte le direttive viste sopra valgono comunque anche in questo caso (ammortizzatore sostituito da barra rigida, bussole e biellismi originali, coppie previste dal progetto, ecc.); eventuali tamponi in gomma o silent-block vanno sostituiti con elementi rigidi in metallo delle stesse dimensioni.

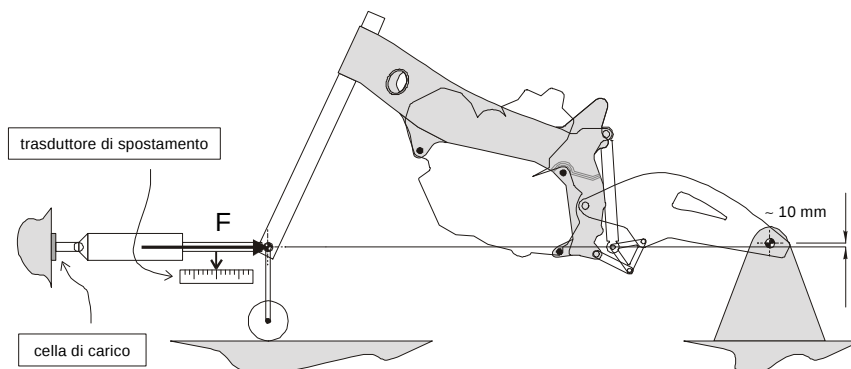


Figura 4: Telaio montato sul banco per la prova a carico orizzontale (moto)

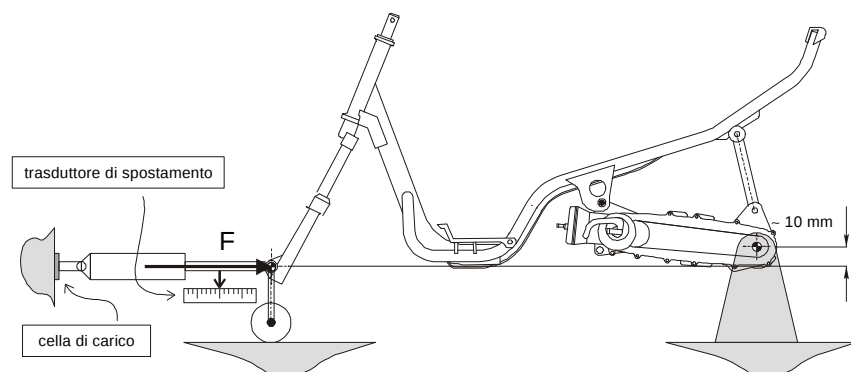


Figura 5 : Telaio montato sul banco per la prova a carico orizzontale (scooter)

6.1.3 Applicazione del carico

Il carico viene fatto variare secondo lo schema seguente :

- fase 1 - si aumenta gradualmente il carico fino al valore di **$0.5F^*$** [kg] (carico di assestamento)
- fase 2 - si riporta lentamente il carico a **50 kg**
- fase 3 - si aumenta gradualmente il carico fino al valore di **$F_{LIM} = vF^*$** , carico di riferimento per lo snervamento
- fase 4 - si riporta lentamente il carico a **50 kg**
- fase 5 - si aumenta gradualmente il carico fino a **rottura** del telaio

Il carico viene fatto variare con una velocità non superiore ai 30 mm/min.

I valori dei carichi e dei relativi spostamenti vanno registrati su un diagramma Forze-Spostamenti (vedi fig. 6).

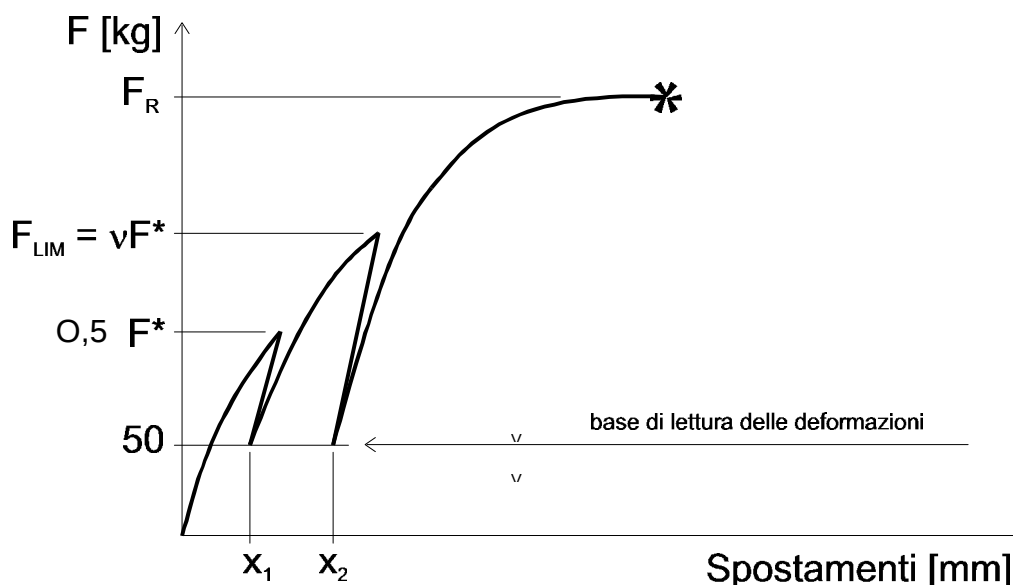


Figura 6 : Diagramma Forze-Spostamenti

6.2 Carico verticale

6.2.1 Calcolo semplificato del valore di sollecitazione

Il carico di riferimento è costituito dal peso della moto in ordine di marcia a pieno carico (moto a secco più pilota, passeggero, e liquidi motore) ripartito sulla ruota posteriore :

$$\begin{aligned} F_{\text{vert}}^* &= [(P_M + 110 \text{ Kg}) 0,5] + 80 \text{ Kg} \quad \text{moto} \\ F_{\text{vert}}^* &= [(P_M + 110 \text{ Kg}) 0,6] + 80 \text{ Kg} \quad \text{scooter} \end{aligned}$$

Dove: P_M = peso moto in ordine di marcia + pieno benzina

Il carico di riferimento per lo snervamento, da applicare al telaio con le modalità indicate più avanti è :

$$F_{\text{LIM,vert}} = v F_{\text{vert}}^* \quad \text{con}$$

$v = 2,15$ Scooter (carico al perno ruota)
$v = 2,70$ Scooter (carico sulla sella)
$v = 2,95$ Sport
$v = 3,70$ Enduro
$v = 6,85$ Cross

6.2.2 Montaggio del telaio al banco

Moto o scooter aventi l'ammortizzatore posteriore montato con biellismi: il telaio viene fissato al banco tramite una maschera che va a vincolare il perno forcellone (vedi fig.9).

Il telaio viene montato completo di canotto di sterzo con relativi cuscinetti, piastre di sterzo superiore e inferiore, forcellone completo di tutti i biellismi del cinematismo della sospensione posteriore (comprese viti e bussole o cuscinetti originali), il tutto montato secondo le direttive di progetto.

Gli steli della sospensione anteriore e l'ammortizzatore posteriore vengono sostituiti da barre rigide della lunghezza pari a quella degli elementi originali nella situazione di massima compressione (a pacco).

Gli elementi deformabili, tipo silent-block vanno sostituiti con elementi rigidi.

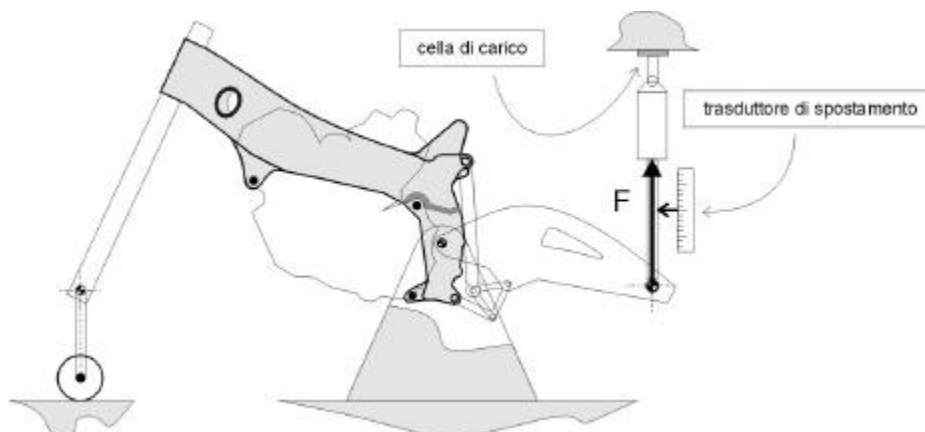


Figura 9 : Telaio montato sul banco per la prova a carico verticale (moto)

Scooter: nel caso di telaio di uno scooter la situazione è analoga, con la sola differenza che al posto del forcellone c'è il motore; tutte le direttive viste sopra valgono comunque anche in questo caso (ammortizzatore sostituito da barra rigida, bussole e biellismi originali, coppie previste dal progetto, ecc.); eventuali tamponi in gomma o silent-block vanno sostituiti con elementi rigidi in metallo delle stesse dimensioni.

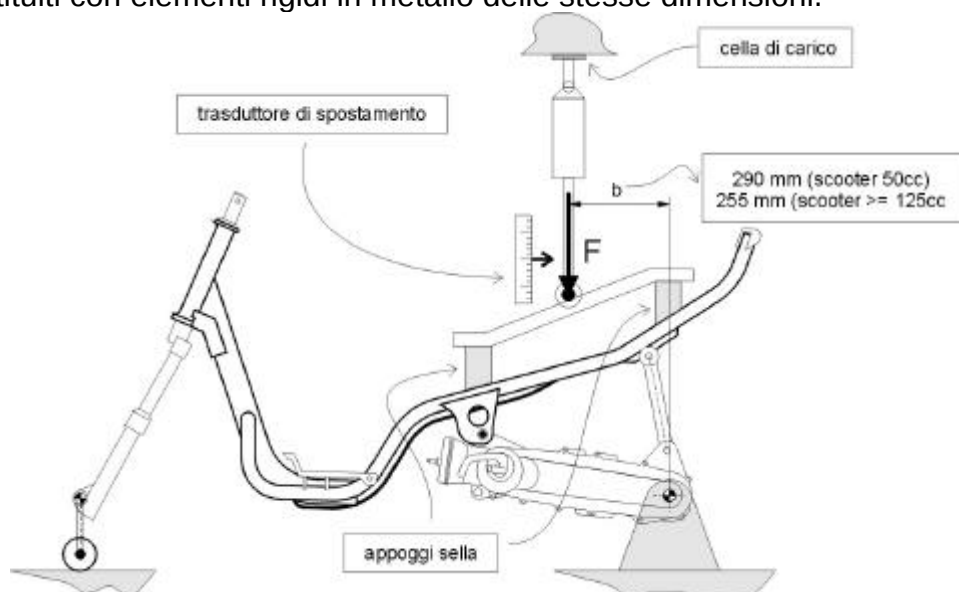


Figura 10 : Telaio scooter montato sul banco per la prova a carico verticale

6.2.3 Applicazione del carico verticale

Il carico viene fatto variare secondo lo schema seguente :

- fase 1 - si aumenta gradualmente il carico fino al valore di $0.5F^*$ [kg] (carico di assestamento)
- fase 2 - si riporta lentamente il carico a **50 kg**
- fase 3 - si aumenta gradualmente il carico fino al valore di $F_{LIM} = vF^*$, carico di riferimento per lo snervamento
- fase 4 - si riporta lentamente il carico a **50 kg**
- fase 5 - si aumenta gradualmente il carico fino a **rottura** del telaio

Il carico viene fatto variare con una velocità non superiore ai 30 mm/min.

I valori dei carichi e dei relativi spostamenti vanno registrati su un diagramma Forze-Spostamenti (vedi fig. 11).

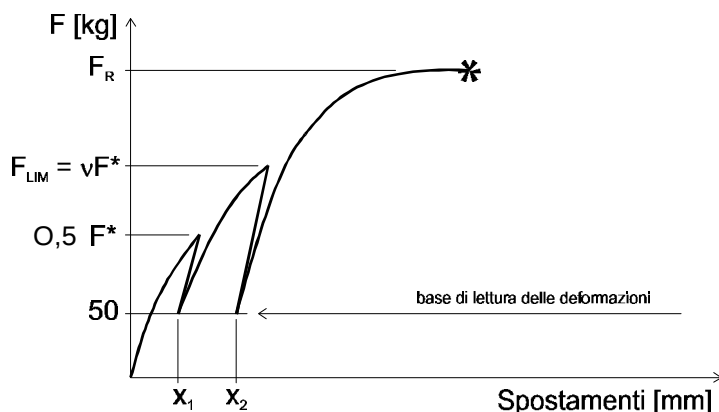


Figura 11 : Diagramma Forze-Spostamenti

7. REQUISITI DI ACCETTABILITÀ

7.1 Carico orizzontale

Per il superamento della prova statica a carico frontale del telaio devono essere rispettati i seguenti punti :

1. la deformazione residua del telaio $Def_{res,oriz}$ (riferita all'asse del pistone) deve essere :

$$Def_{res,oriz} = (x_2 - x_1) \leq 2 \text{ mm}$$

2. l'area sotto la curva del diagramma Forze-Spostamenti (indicata dalla lettera L_D in figura 12), che rappresenta il lavoro di deformazione deve essere :

$L_{D,oriz} \geq$	0,10	F_N	[Kgm]	Scooter
$L_{D,oriz} \geq$	0,15	F_N	[Kgm]	Sport
$L_{D,oriz} \geq$	0,30	F_N	[Kgm]	Enduro
$L_{D,oriz} \geq$	0,30	F_N	[Kgm]	Cross

il valore massimo della deformazione da considerare per il calcolo dell'area L_D è di 80 mm, ovvero se, dopo la rottura, il valore $0.7 F_R$ viene raggiunto con deformazioni superiori ai 80 mm il limite della curva deve essere spostato a questo valore (vedi fig. 13)

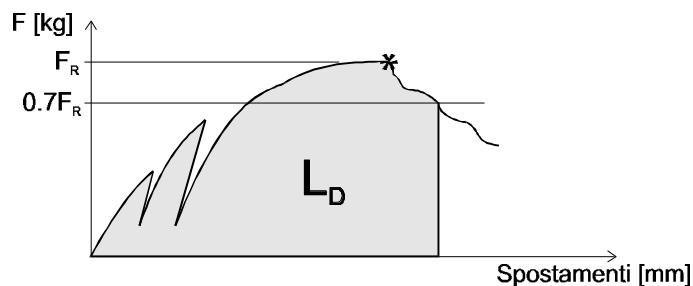


Figura 12 : Area rappresentante il lavoro di deformazione

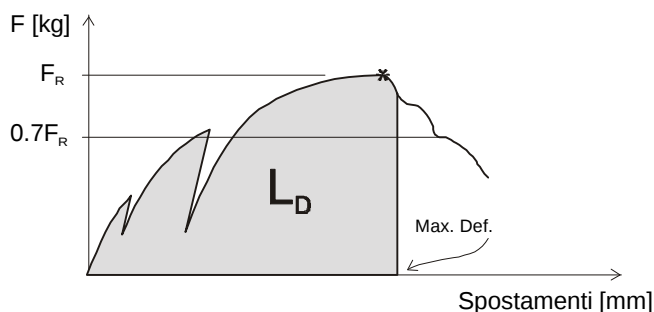


Figura 13 : Area da considerare per il calcolo del lavoro di deformazione nel caso la deformazione superi il valore limite di 80 mm

3. Il carico massimo di rottura orizzontale deve essere :

$F_{R,oriz} \geq 3,75 F_N$	[Kg]	Scooter
$F_{R,oriz} \geq 5,00 F_N$	[Kg]	Sport
$F_{R,oriz} \geq 5,00 F_N$	[Kg]	Enduro
$F_{R,oriz} \geq 8,50 F_N$	[Kg]	Cross

7.2 Carico verticale

Per il superamento della prova statica a carico verticale al posteriore del telaio devono essere rispettati i seguenti punti :

1. la deformazione residua del telaio $Def_{res,vert}$ (riferita all'asse del pistone) deve essere :

$$Def_{res,vert} = (x_2 - x_1) \leq 5 \text{ mm}$$

2. l'area sotto la curva del diagramma Forze-Spostamenti (indicata dalla lettera L_D in figura 14), che rappresenta il lavoro di deformazione deve essere :

$L_{D,vert} \geq$	0,19	F^*_{vert}	[Kgm]	Scooter
$L_{D,vert} \geq$	0,22	F^*_{vert}	[Kgm]	Sport
$L_{D,vert} \geq$	0,29	F^*_{vert}	[Kgm]	Enduro
$L_{D,vert} \geq$	0,45	F^*_{vert}	[Kgm]	Cross

il valore massimo della deformazione da considerare per il calcolo dell'area L_D è di 80 mm, ovvero se, dopo la rottura, il valore $0.7 F_R$ viene raggiunto con deformazioni superiori ai 80 mm il limite della curva deve essere spostato a questo valore (vedi fig. 15)

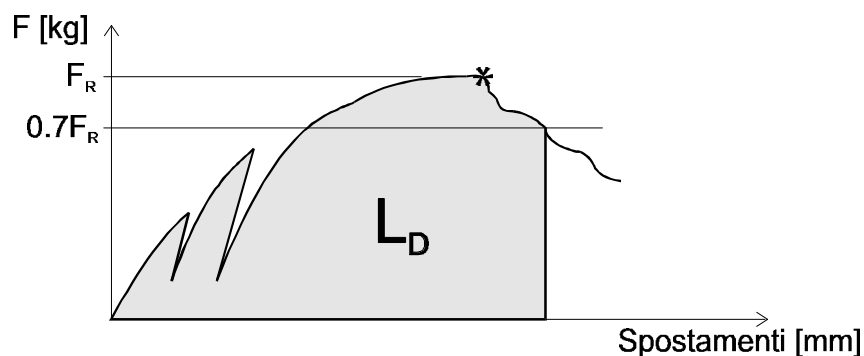


Figura 14 : Area rappresentante il lavoro di deformazione

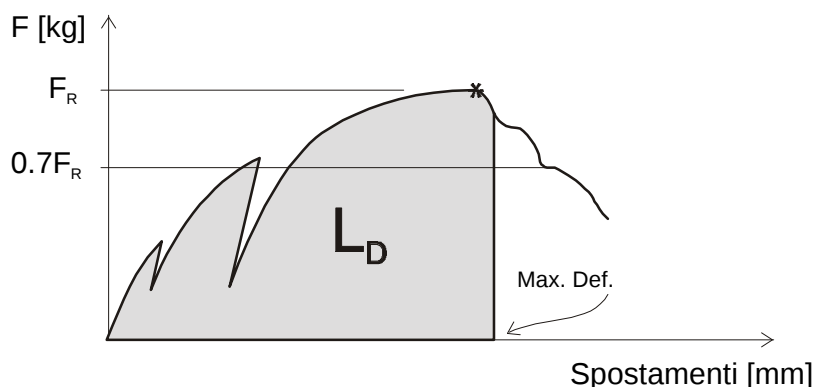


Figura 15 : Area da considerare per il calcolo del lavoro di deformazione nel caso la deformazione superi il valore limite di 80 mm

	VERIFICA RESISTENZA MASSIMA DEL TELAIO	PROCEDURA DI PROVA N° PPS00025
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3. Il carico massimo di rottura verticale deve essere :

$$F_{R,vert} \geq \varepsilon F_{vert}^* \quad \text{con}$$

$\varepsilon = 4,30$ Scooter (carico al perno ruota)
$\varepsilon = 5,40$ Scooter (carico sulla sella)
$\varepsilon = 5,90$ Sport
$\varepsilon = 6,60$ Enduro
$\varepsilon = 12,00$ Cross

8. PRESENTAZIONE DEI RISULTATI

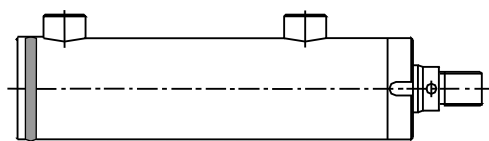
I risultati vanno documentati nella relazione di prova compilata secondo le modalità espresse nel modulo specifico (MPS00025), contenente in allegato il diagramma carico-deformazione e le eventuali illustrazioni della prova e/o delle rotture sul pezzo provato.

A.2 Anexo 2

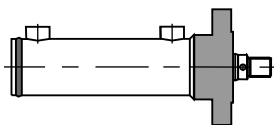


CILINDROS HIDRÁULICOS HYDRAULIC CYLINDERS

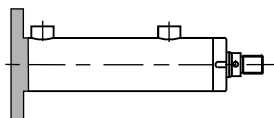
CG



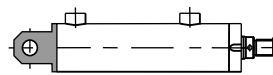
XS - Ejecución Base
XS - Bore Cylinder



AS - Brida delantera
AS - Front flange Mounting



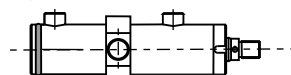
BS - Brida trasera
BS - Rear flange Mounting



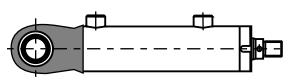
DS - Charnela trasera
DS - Eye Mounting



ES - Fijación patas
ES - Foot Mounting



FS - Fijación muñones
FS - Head trunnion Mounting



GS - Charnela Rótula
GS - Espherical Eye Mounting

CARACTERISTICAS										
Norma	ISO - 3320									
Tipo de construcción	Tapas y fijaciones soldadas									
Presión mínima	15 bars									
Presión nominal	210 bars									
Presión de prueba	250 bars									
Posición de montaje	s/pedido									
Temperatura ambiente	-20°C + 80°C con juntas tipo M									
Temperatura de fluido	-20°C + 80°C con juntas tipo M									
Fluido	Aceite mineral CETOP RP 91 - H									
Viscosidad	12...90 m.m./s									
Filtración	Grado de filtración según NAS 1638									
Tipo de estanqueidad	Ver código para pedido									
Ø Camisa - Pistón (m/m)	32	40	50	63	80	100	125	160	200	250
Ø Vástago	16	22/28	28/36	36/45	45/56	56/70	70/90	90/110	110/140	140/180
Velocidad max. (m/s) tipo M	0,5				0,4		0,25			
Velocidad max. (m/s) tipo T	1						0,7			
Tolerancia de carrera	Según tablas anteriores -T-									

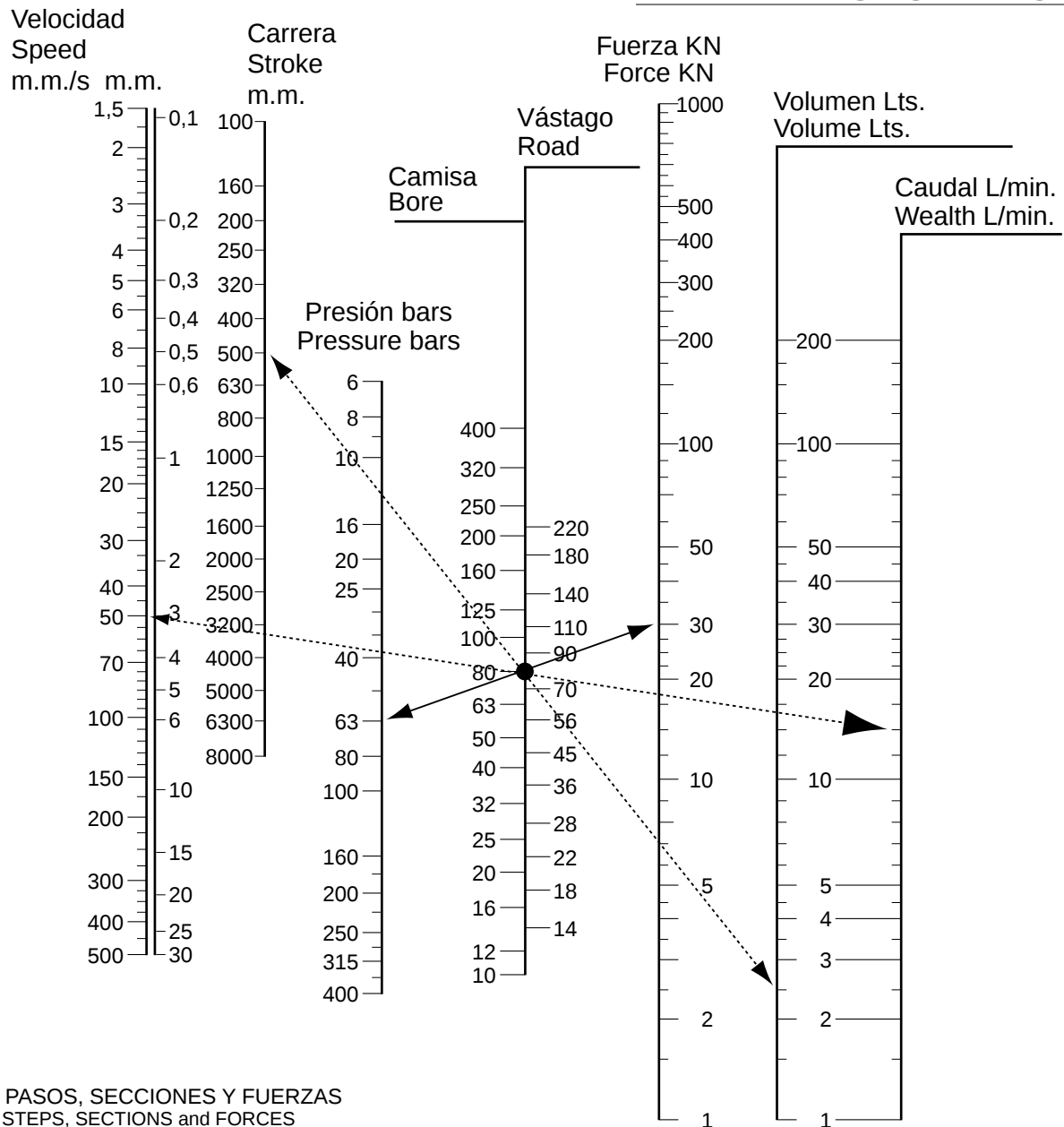
SPECIFICATIONS										
Norm	ISO - 3320									
Sort of construction	Lids and welded fixings									
Minimalpressure	15 bars									
Nominal pressure	210 bars									
Test pressure	250 bars									
Assembly position	As desired									
Ambient temperature	-20°C + 80°C with together type M									
Fluid temperature	-20°C + 80°C with together type M									
Fluid	Mineral oil CETOP RP 91 - H									
Viscosity	12...90 m.m./s									
Filtration	Dil contamination NAS 1638									
Sort of estanqueidad	See ordering code									
Shirt - Piston (m/m)	32	40	50	63	80	100	125	160	200	250
Scion	16	22/28	28/36	36/45	45/56	56/70	70/90	90/110	110/140	140/180
Speed max. (m/s) type M	0,5				0,4		0,25			
Speed max. (m/s) type T	1						0,7			
Stroke tolerance	In reference with dimensions table									



CILINDROS HIDRÁULICOS HYDRAULIC CYLINDERS

CG

DETERMINACIÓN DEL CILINDRO DETERMINATION OF THE CYLINDER



DIÁMETRO. PASOS, SECCIONES Y FUERZAS
DIAMETERS. STEPS, SECTIONS and FORCES

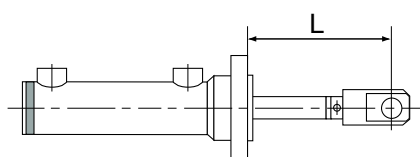
DIÁMETROS	32/16	40/22	50/28	60/30	63/36	70/30	80/45	90/45	100/56	120/70	125/70	140/90	160/90	200/110	250/140
Sección total	8,04	12,56	19,36	28,27	31,17	38,48	50,26	63,61	78,53	113,09	122,71	153,93	201,06	314,16	490,87
Sección Vástago.N	2,01	3,80	6,15	7,06	10,17	7,06	15,90	15,90	24,63	38,48	38,48	63,61	63,61	95,03	153,90
Sección ANULAR	6,03	8,78	13,48	21,21	21	31,42	34,36	47,41	53,90	74,61	84,23	90,32	137,45	219,13	336,97

DIÁMETROS	32/20	40/28	50/36	60/30	63/45	70/30	80/56	90/45	100/70	120/70	125/90	140/90	160/110	200/140	250/180
Sección Vástago.D	3,14	6,15	10,17	7,06	15,90	7,06	24,63	15,90	38,48	38,48	63,61	63,61	95,03	153,90	254,40
Sección Anular	4,90	6,41	9,46	21,21	15,27	7,06	25,63	15,90	40,05	38,48	59,10	63,61	106,03	160,26	236,40
Conexiones Rosca GAS	1/4"	3/8"	3/8"	3/8"	1/2"	3/8"	1/2"	1/2"	3/4"	1/2"	3/4"	3/4"	1"	1 1/4"	1 1/4"

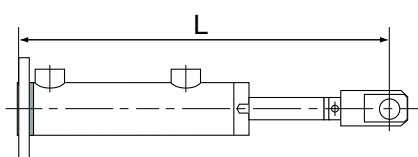


CILINDROS HIDRÁULICOS HYDRAULIC CYLINDERS

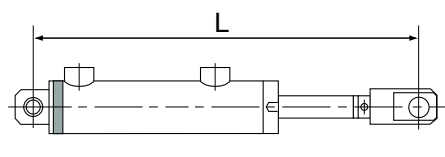
CG



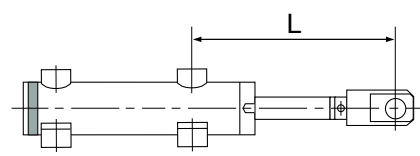
AS



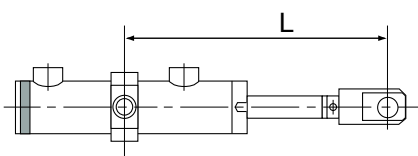
BS



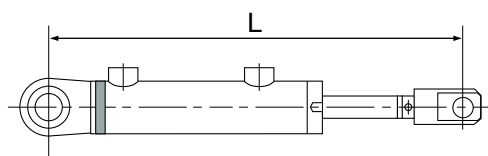
DS



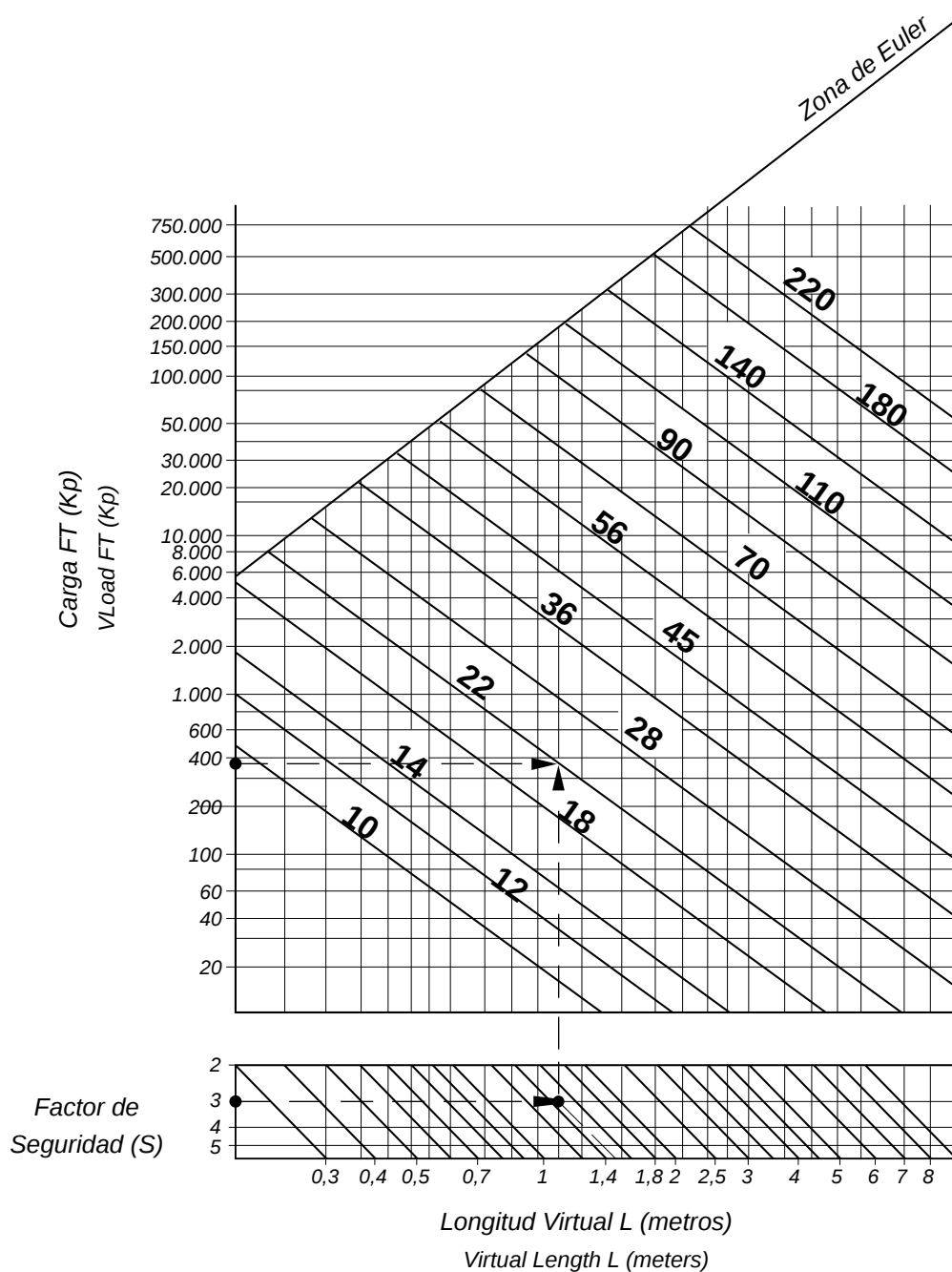
ES



FS



GS





DESIGNACION CILINDROS REF.:CG

CG - 050 / 036/036 - 300 - XS - M - 01

TIPO

PISTON

VASTAGO

DOBLE VASTAGO

LONGITUD CARRERA

SERIE

JUNTAS

M - ESTANDAR
T - VITÓN

FIJACIÓN

XS – Cilindro base
AS – Brida delantera
BS – Brida trasera
DS – Charnela trasera
ES – Fijación patas
FS – Fijación muñones
GS – Charnela rótula

MODEL CODE FOR CG CYLINDERS

CG - 050 / 036/036 - 300 - XS - M - 01

TYPE

BORE Ø

ROD Ø

ROD Ø (if requiered)

STROKE

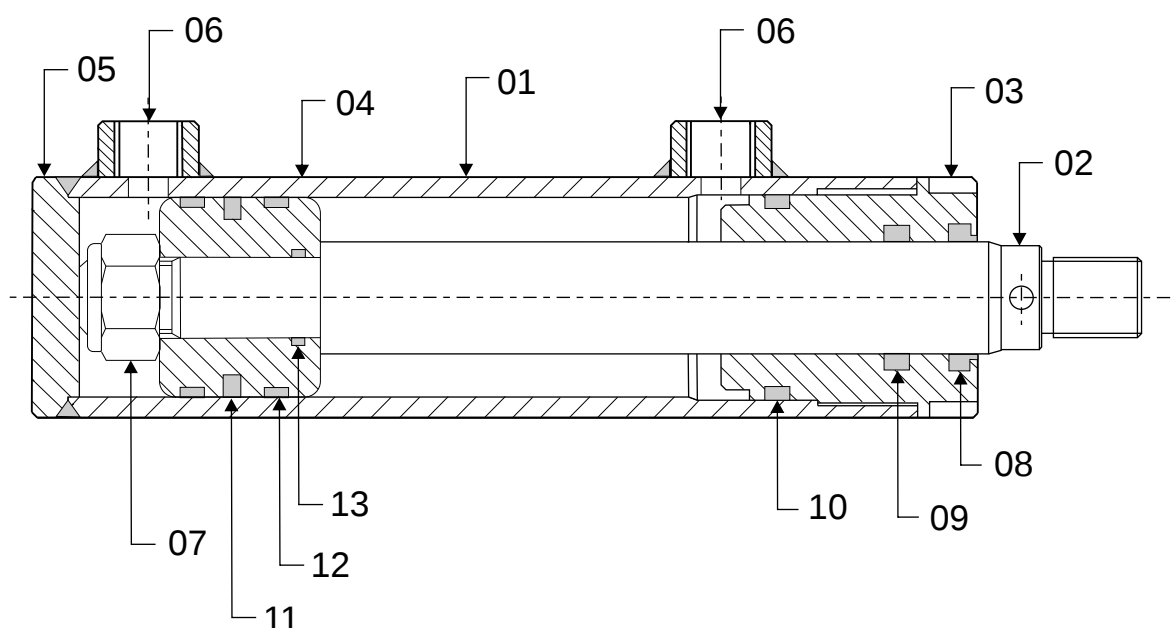
SERIES

SEALS

M - ESTANDAR
T - VITÓN

ATTACHMENTS

XS – Bore cylinder
AS – Front Flange Mountain
BS – Rear flange
DS – Eye mountain
ES – Foot mountain
FS – Head trunnion mountiing
GS – Espherical eye mounting

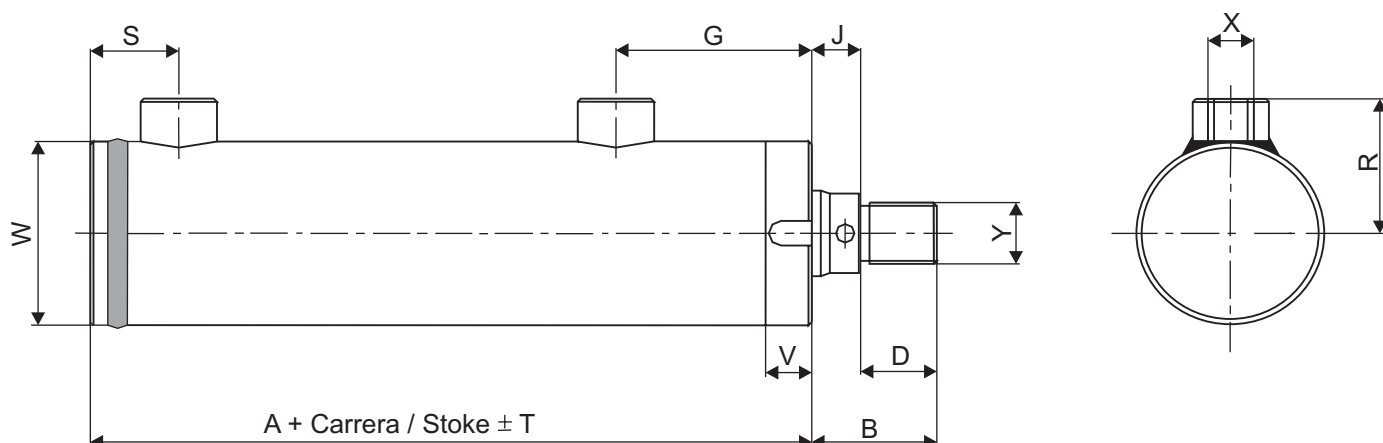


DESCRIPCION	
01	Camisa
02	Vástago
03	Guía vástago
04	Pistón
05	Tapa trasera
06	Mechón entradas aceite
07	Tuerca autoblocante
08	Rascador (ISO 6195/C)
09	Junta vástago (ISO 5597/1)
10	Junta tórica + Aro apoyo
11	Junta pistón (ISO 7425/1)
12	Guía pistón (ISO/CD-10766)
13	Junta tórica

DESCRIPTION	
01	Cylinder housing
02	Rod
03	Rod guide rings
04	Piston
05	Rear cylinder head
06	Income lock oil
07	Lock nut
08	Wiper (ISO 6195/C)
09	Rod seal (ISO 5597/1)
10	Dring seal
11	Piston seal (ISO 7425/1)
12	Low-friction seal (ISO/CD-10766)
13	Dring seal



TIPO / TYPE : XS



EJECUCIÓN BASE - BORE CYLINDER

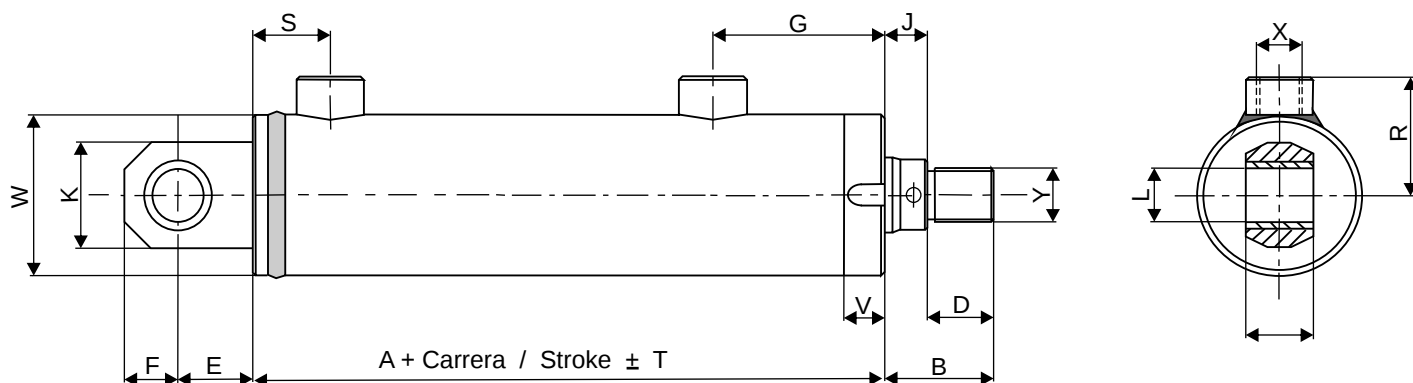
TIPO CG		X	Y	A	B	D	G	J	R	S	T	V	W
CG-032	16	1/4" G	12 x 125	106	30	16	50	14	31	26	2	10	42
CG-040	022	3/8" G.	16 x 150	126	35	20	62	15	39	25	2	15	50
	028												
CG-050	028	3/8" G.	20 x 150	136	41	25	64	16	44	29	2	15	60
	036												
CG-063	036	1/2" G.	27 x 2	149	48	32	64	16	54	35	2	15	75
	045												
CG-080	045	1/2" G.	33 x 2	168	59	40	74	19	65	40	2	15	95
	056												
CG-100	056	3/4" G.	42 x 2	189	70	50	84	20	77	45	3	16	115
	070												
CG-125	070	3/4" G.	52 x 2	203	80	55	88	25	92	57	3	20	145
	090												
CG-160	090	1" G.	68 x 3	255	100	70	112	30	118	72	3	20	185
	110												
CG-200	110	1 1/4" G.	90 x 3	297	125	90	127	35	145	90	3	25	230
	140												
CG-250	140	1 1/4" G.	110 x 3	338	150	110	155	40	174	103	4	30	28
	180												

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TIPO / TYPE: DS
Charnela macho / Eye mounting

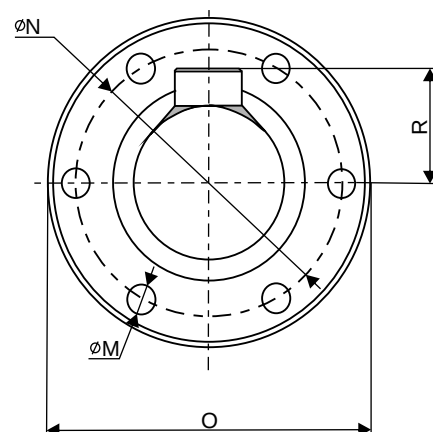
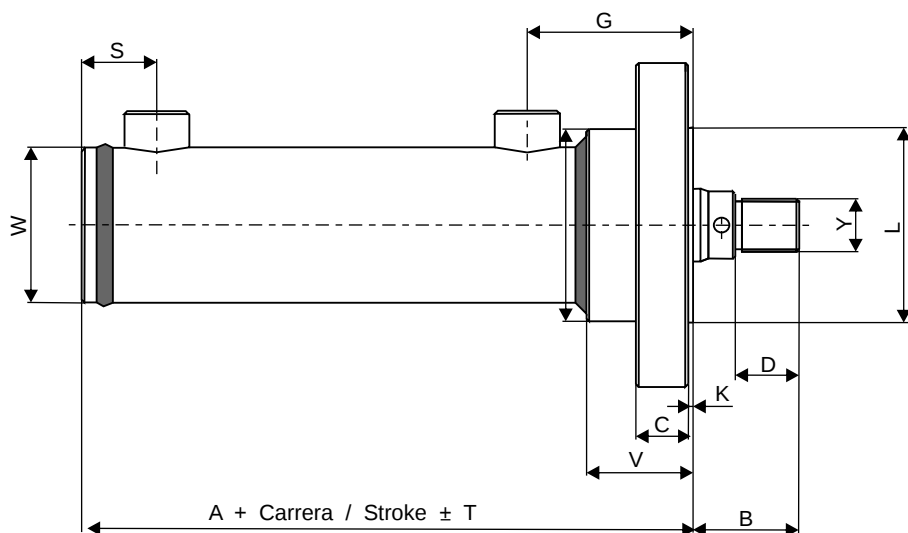


TIPO CG		X	Y	A	B	C	D	E	F	G	J	K	L	R	S	T	V	W
CG-032	16	1/4" G	12 X 125	106	30	16	16	20	13	50	14	26	12	31	26	2	10	42
CG-040	022 028	3/8" G.	16 X 150	126	35	20	20	25	16	62	15	32	16	39	25	2	15	50
CG-050	028 036	3/8" G.	20 X 150	136	41	25	25	28	20	64	16	40	20	44	29	2	15	60
CG-063	036 045	1/2" G.	27 X 2	149	48	32	32	32	25	64	16	50	25	54	35	2	15	75
CG-080	045 056	1/2" G.	33 X 2	168	59	40	40	45	32	74	19	64	32	65	40	2	15	95
CG-100	056 070	3/4" G.	42 X 2	189	70	50	50	55	40	84	20	80	40	77	45	3	16	115
CG-125	070 090	3/4" G.	52 X 2	203	80	60	55	65	50	88	25	100	50	92	57	3	20	145
CG-160	090 110	1" G.	68 X 3	255	100	80	70	75	63	112	30	126	63	118	72	3	25	185
CG-200	110 140	1 1/4" G.	90 X 3	297	125	100	90	95	80	127	35	160	80	145	90	3	25	230
CG-250	140 180	1 1/4" G.	110 X 3	338	150	120	110	130	100	155	40	200	100	174	103	4	30	298



TIPO / TYPE: AS

Brida delantera / Front flange mounting



TIPO CG		X	Y	A	B	C	D	G	J	K	L	M	N	O	R	S	T	V	W
CG-032	16	1/4" G	12 X 125	106	30	15	16	50	52	2	52	7	67	80	31	26	2	32	42
CG-040	022 028	3/8" G.	16 X 150	126	35	17	20	662	62	2	60	9	82	100	39	25	2	40	50
CG-050	028 036	3/8" G.	20 X 150	136	41	20	25	64	74	2	75	11	103	125	44	29	2	41	60
CG-063	036 045	1/2" G.	27 X 2	149	48	24	32	64	89	2	90	13	120	145	54	35	2	39	75
CG-080	045 056	1/2" G.	33 X 2	168	59	28	40	74	112	2	110	15	142	170	65	40	2	46	95
CG-100	056 070	3/4" G.	42 X 2	189	70	34	50	84	135	3	135	17	170	202	77	45	3	52	115
CG-125	070 090	3/4" G.	52 X 2	203	80	40	55	88	170	3	168	21	210	250	92	57	3	53	145
CG-160	090 110	1" G.	68 X 3	255	100	54	70	112	218	3	215	29	270	320	118	72	3	67	185
CG-200	110 140	1 1/4" G.	90 X 3	297	125	65	90	127	272	3	270	32	330	385	145	90	3	80	230
CG-250	140 180	1 1/4" G.	110 X 3	338	150	65	110	155	335	5	330	29	390	440	174	103	4	105	298

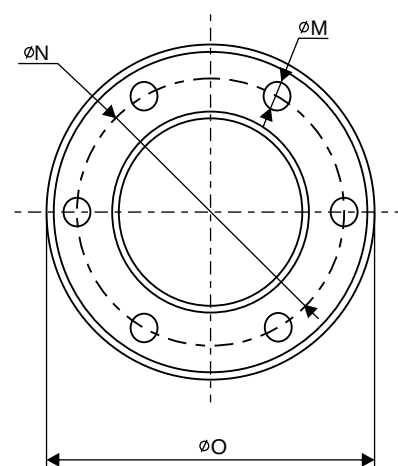
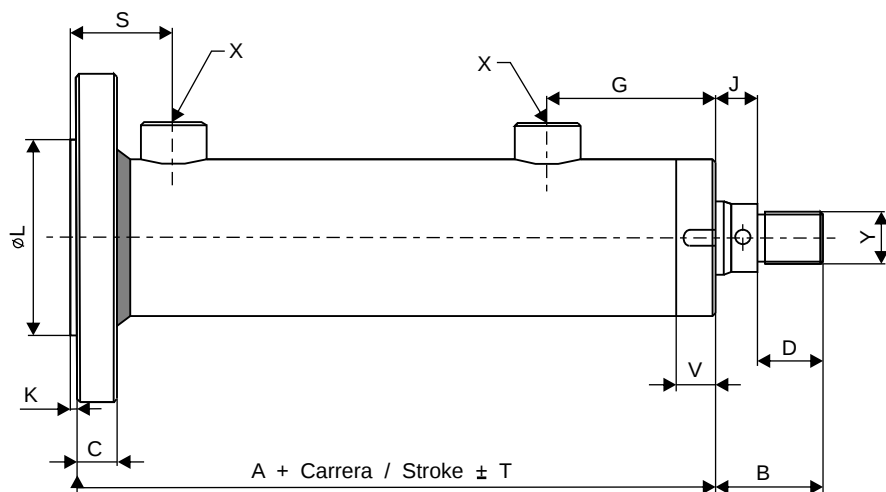
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TIPO / TYPE: BS

Brida trasera / Rear flange mounting



Nota: El cilindro serie: CG-250 lleva 12 taladros equidistantes (M) en vez de 6.

Note: The cylinder series:CG-250 carries 12 equidistant drills (M) instead of 6.

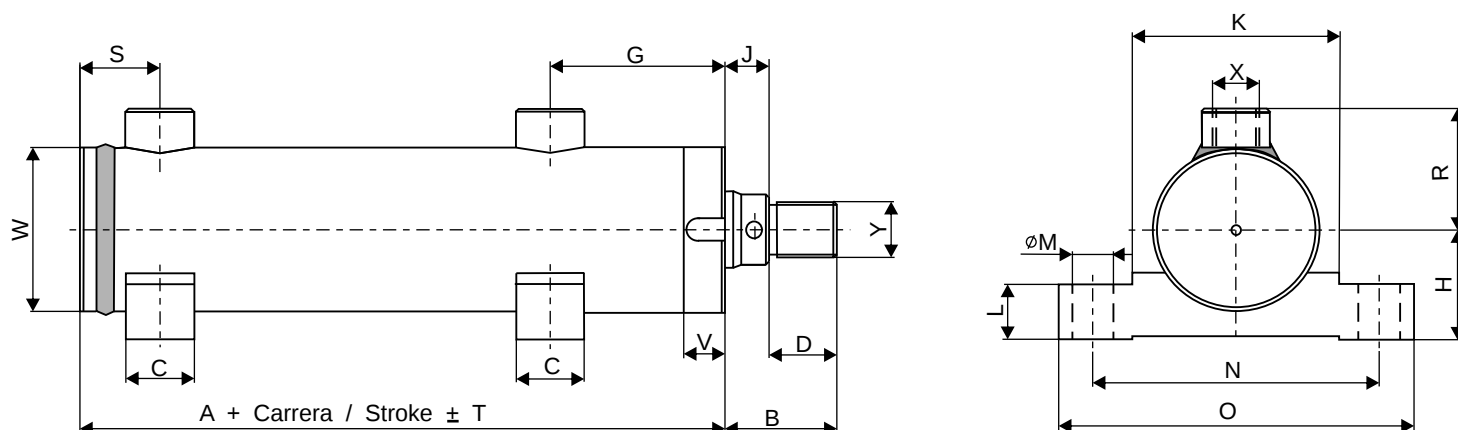
TIPO CG		X	Y	A	B	C	D	G	J	K	L	M	N	O	S	T	V	W
CG-032	16	1/4" G	12 X 125	110	30	10	16	50	14	2	52	7	67	80	30	2	10	42
CG-040	022	3/8" G.	16 X 150	133	35	13	20	62	15	2	60	9	82	100	32	2	15	50
	028																	
CG-050	028	3/8" G.	20 X 150	144	41	15	25	64	16	2	75	11	103	125	39	2	15	60
	036																	
CG-063	036	1/2" G.	27 X 2	157	48	18	32	64	16	2	90	13	120	145	43	2	15	75
	045																	
CG-080	045	1/2" G.	33 X 2	178	59	22	40	74	19	2	110	15	142	170	50	2	15	95
	056																	
CG-100	056	3/4" G.	42 X 2	197	70	25	50	84	20	3	135	17	170	202	53	3	16	115
	070																	
CG-125	070	3/4" G.	52 X 2	210	80	30	55	88	25	3	168	21	210	250	64	3	20	145
	090																	
CG-160	090	1" G.	68 X 3	263	100	38	70	112	30	3	215	29	270	320	80	3	20	185
	110																	
CG-200	110	1 1/4" G.	90 X 3	299	125	42	90	127	35	3	270	32	330	385	92	3	25	230
	140																	
CG-250	140	1 1/4" G.	110 X 3	345	150	55	110	155	40	5	330	29	390	440	110	4	30	298
	180																	

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TIPO / TYPE: ES Fijación por patas / Foot mounting



TIPO CG		X	Y	A	B	C	D	G	H	J	K	L	M	N	O	R	S	T	V	W
CG-032	16	1/4" G.	12 X 125	106	30	20	16	50	28	14	52	16	11	75	95	31	26	2	10	42
CG-040	022	3/8" G.	16 X 150	126	35	25	20	62	35	15	65	20	13	94	118	39	25	2	15	50
	028																			
CG-050	028	3/8" G.	20 X 150	136	41	25	25	64	40	16	76	20	15	105	130	44	29	2	15	60
	036																			
CG-063	036	1/2" G.	27 X 2	149	48	30	32	64	50	16	94	25	17	130	160	54	35	2	15	75
	045																			
CG-080	045	1/2" G.	33 X 2	168	59	35	40	74	62	19	116	28	19	160	195	65	40	2	15	95
	056																			
CG-100	056	3/4" G.	42 X 2	189	70	40	50	84	73	20	140	32	23	185	225	77	45	3	16	115
	070																			
CG-125	070	3/4" G.	52 X 2	203	80	44	55	88	88	25	170	36	25	220	265	90	57	3	20	145
	090																			
CG-160	090	1" G.	68 X 3	255	100	58	70	112	115	30	224	45	35	295	355	118	72	3	20	185
	110																			
CG-200	110	1 1/4" G.	90 X 3	297	125	68	90	127	140	35	275	55	41	355	425	145	90	3	25	230
	140																			
CG-250	140	1 1/4" G.	110 X 3	338	150	78	110	155	175	40	335	65	47	425	510	175	105	4	30	298
	180																			

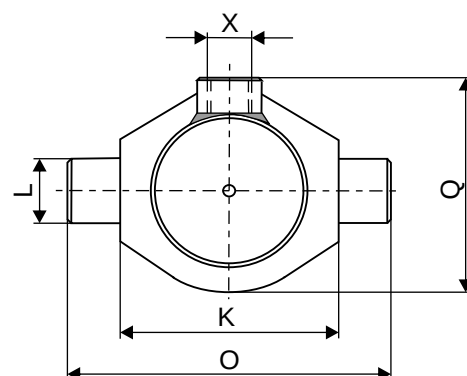
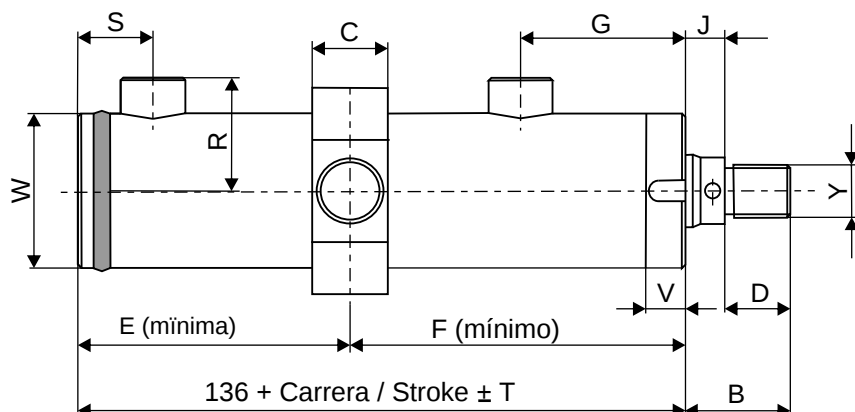
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TIPO / TYPE: FS

Fijación para muñones / Head trunnion mounting



TIPO CG		X	Y	A	B	C	D	E	F	G	J	K	L	O	Q	R	S	T	V	W
CG-032	16	1/4" G	12 X 125	106	30	20	16	59	83	50	14	56	16	80	54	31	26	2	10	42
CG-040	022	3/8" G.	16 X 150	126	35	24	20	63	100	62	15	70	20	102	65	39	25	2	15	50
	028																			
CG-050	028	3/8" G.	20 X 150	136	41	30	25	70	105	64	16	85	25	125	80	44	29	2	15	60
	036																			
CG-063	036	1/2" G.	27 X 2	149	48	36	32	82	111	64	16	105	32	155	95	54	35	2	15	75
	045																			
CG-080	045	1/2" G.	33 X 2	168	59	36	40	88	122	74	19	125	32	175	120	65	40	2	15	95
	056																			
CG-100	056	3/4" G.	42 X 2	189	70	45	50	103	142	84	20	156	40	220	145	77	45	3	16	115
	070																			
CG-125	070	3/4" G.	52 X 2	203	80	55	55	118	150	88	25	190	50	270	174	92	57	3	20	145
	090																			
CG-160	090	1" G.	68 X 3	255	100	70	70	146	187	112	30	250	63	350	236	118	72	3	20	185
	110																			
CG-200	110	1 1/4" G.	90 X 3	297	125	90	90	178	223	127	35	300	80	426	290	145	90	3	25	230
	140																			
CG-250	140	1 1/4" G.	110 X 3	338	150	110	110	210	257	155	40	360	100	520	345	174	103	4	30	298
	180																			

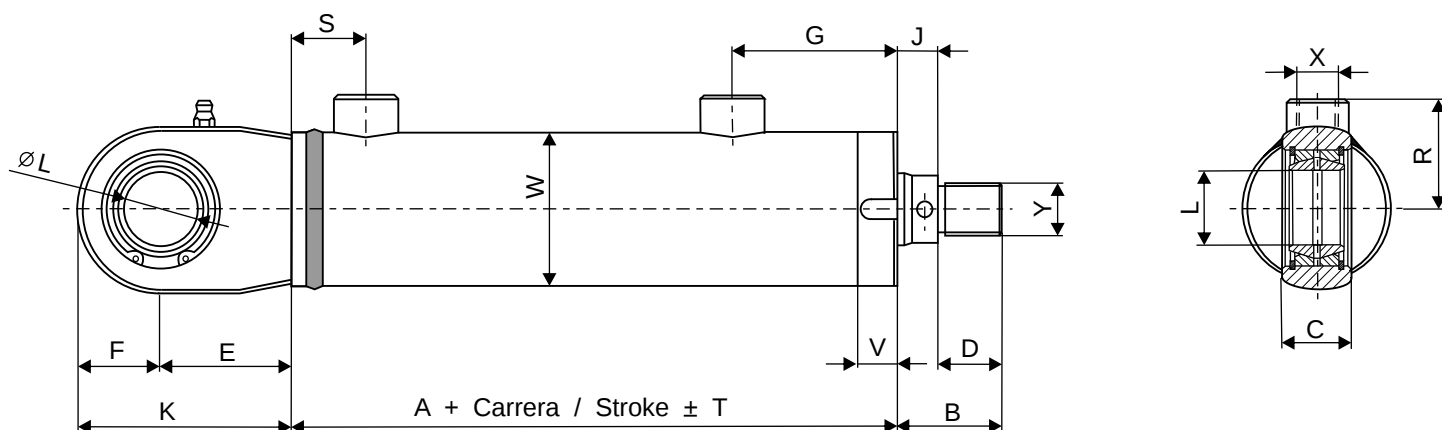
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TIPO / TYPE: GS

Charnela rótula trasera / Espherical eye mounting



TIPO CG		X	Y	A	B	C	D	E	F	G	J	K	L	R	S	T	V	W
CG-032	16	1/4" G	12 X 125	106	30	19	16	38	25	50	14	63	20	31	26	2	10	42
CG-040	022 028	3/8" G.	16 X 150	126	35	23	20	45	28	62	15	73	25	39	25	2	15	50
CG-050	028 036	3/8" G.	20 X 150	136	41	28	25	51	32	64	16	83	30	44	29	2	15	60
CG-063	036 045	1/2" G.	27 X 2	149	48	30	32	61	39	64	16	100	35	54	35	2	15	75
CG-080	045 056	1/2" G.	33 X 2	168	59	35	40	69	47	74	19	116	40	65	40	2	15	95
CG-100	056 070	3/4" G.	42 X 2	189	70	40	50	88	58	84	20	146	50	77	45	3	16	115
CG-125	070 090	3/4" G.	52 X 2	203	80	50	55	100	65	88	25	165	60	92	57	3	20	145
CG-160	090 110	1" G.	68 X 3	255	100	60	70	141	88	112	30	229	80	118	72	3	20	185
CG-200	110 140	1 1/4" G.	90 X 3	297	125	70	90	145	125	127	35	270	100	145	90	3	25	230
CG-250	140 180	1 1/4" G.	110 X 3	338	150	80	110	165	145	155	40	310	110	174	103	4	30	298

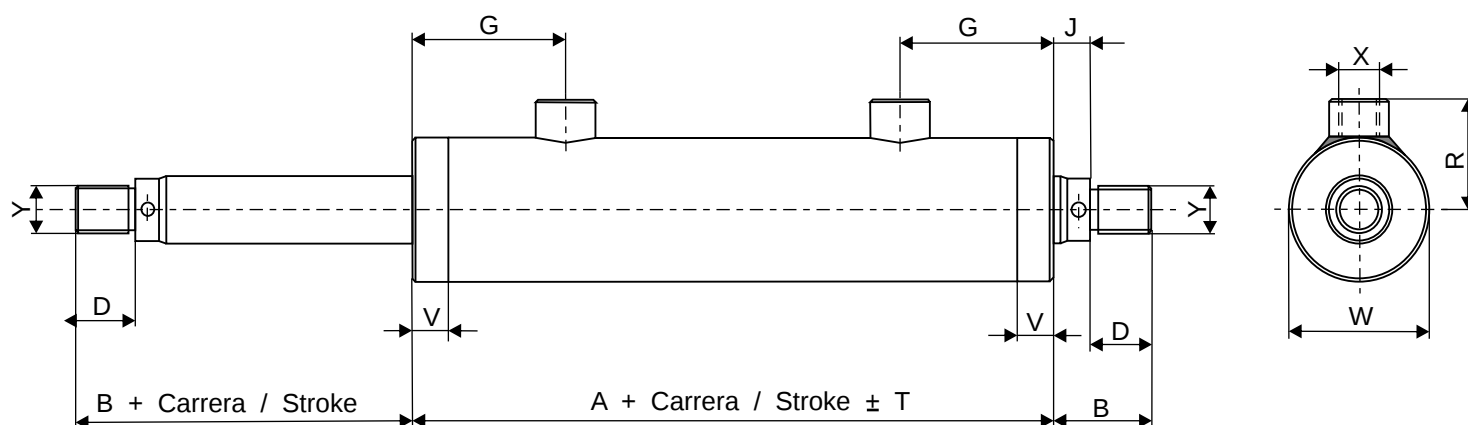
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TIPO / TYPE: XD

Cilindro de doble vástago / Double rod cylinder



TIPO CG		X	Y	A	B	D	G	J	R	T	V	W
CG-032	16	1/4" G	12 X 125	129	30	16	50	14	31	2	10	42
CG-040	022	3/8" G.	16 X 150	159	35	20	62	15	39	2	15	50
	028											
CG-050	028	3/8" G.	20 X 150	168	41	25	64	16	44	2	15	60
	036											
CG-063	036	1/2" G.	27 X 2	170	48	32	64	16	54	2	15	75
	045											
CG-080	045	1/2" G.	33 X 2	190	59	40	74	19	65	2	15	95
	056											
CG-100	056	3/4" G.	42 X 2	212	70	50	84	20	77	3	16	115
	070											
CG-125	070	3/4" G.	52 X 2	222	80	55	88	25	92	3	20	145
	090											
CG-160	090	1" G.	68 X 3	277	100	70	112	30	118	3	20	185
	110											
CG-200	110	1 1/4" G.	90 X 3	318	125	90	127	35	145	3	25	230
	140											
CG-250	140	1 1/4" G.	110 X 3	375	150	110	155	40	174	4	30	298
	180											

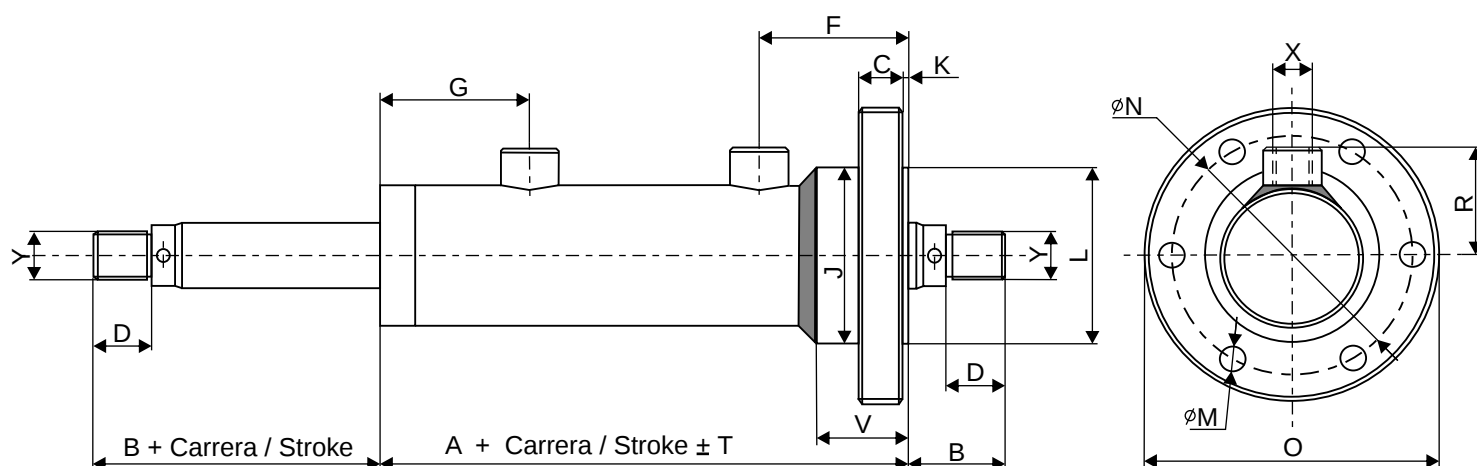
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TIPO / TYPE: AD

Cilindro de doble vástago / Double rod cylinder



Nota: El cilindro serie: CG-250 lleva 12 taladros equidistantes (M) en vez de 6.
Note: The cylinder series:CG-250 carries 12 equidistant drills (M) instead of 6.

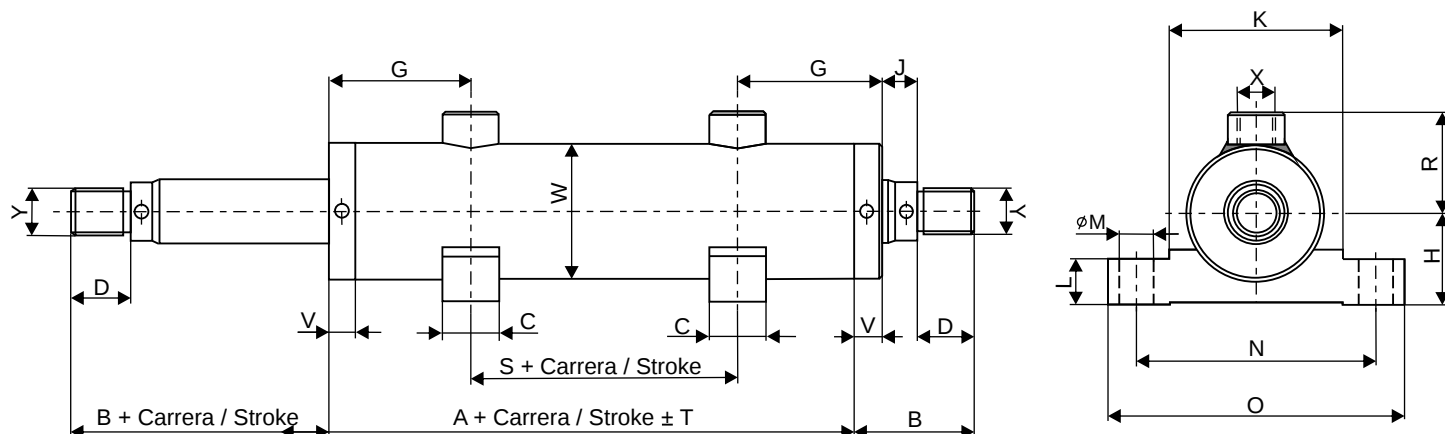
TIPO CG		X	Y	A	B	C	D	F	G	J	K	L	M	N	O	R	T	V	W
CG-032	16	1/4" G	12 X 125	129	30	15	16	48	50	52	2	52	7	67	80	31	2	32	42
CG-040	022 028	3/8" G.	16 X 150	159	35	17	20	60	62	62	2	60	9	82	100	39	2	40	50
CG-050	028 036	3/8" G.	20 X 150	168	41	20	25	62	64	74	2	75	11	103	125	44	2	41	60
CG-063	036 045	1/2" G.	27 X 2	170	48	24	32	62	64	89	2	90	13	120	145	54	2	39	75
CG-080	045 056	1/2" G.	33 X 2	190	59	28	40	72	74	112	2	110	15	142	170	65	2	46	95
CG-100	056 070	3/4" G.	42 X 2	212	70	34	50	81	84	135	3	135	17	170	202	77	3	52	115
CG-125	070 090	3/4" G.	52 X 2	222	80	40	55	85	88	170	3	168	21	210	250	92	3	53	145
CG-160	090 110	1" G.	68 X 3	277	100	54	70	109	112	218	3	215	29	270	320	118	3	67	185
CG-200	110 140	1 1/4" G.	90 X 3	318	125	65	90	124	127	272	3	270	32	330	385	145	3	80	230
CG-250	140 180	1 1/4" G.	110 X 3	375	150	65	110	150	155	335	5	330	29	390	440	174	4	105	298

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TIPO / TYPE: ED

Cilindro de doble vástago / Double rod cylinder



TIPO CG		X	Y	A	B	C	D	G	H	J	K	L	M	N	O	T	V	W
CG-032	16	1/4" G	12 X 125	129	30	20	16	50	28	14	52	16	11	75	95	2	10	42
CG-040	022 028	3/8" G.	16 X 150	159	35	25	20	62	35	15	65	20	13	94	118	2	15	50
CG-050	028 036	3/8" G.	20 X 150	168	41	25	25	64	40	16	76	20	15	105	130	2	15	60
CG-063	036 045	1/2" G.	27 X 2	170	48	30	32	64	50	16	94	25	17	130	160	2	15	75
CG-080	045 056	1/2" G.	33 X 2	190	59	35	40	74	62	19	116	28	19	160	195	2	15	95
CG-100	056 070	3/4" G.	42 X 2	212	70	40	50	84	73	20	140	32	23	185	225	3	16	115
CG-125	070 090	3/4" G.	52 X 2	222	80	44	55	88	88	25	170	36	25	220	265	3	20	145
CG-160	090 110	1" G.	68 X 3	227	100	58	70	112	115	30	224	45	35	295	355	3	20	185
CG-200	110 140	1 1/4" G.	90 X 3	318	125	68	90	127	140	35	275	55	41	355	425	3	25	230
CG-250	140 180	1 1/4" G.	110 X 3	375	150	78	110	155	175	40	335	65	47	425	510	4	30	298

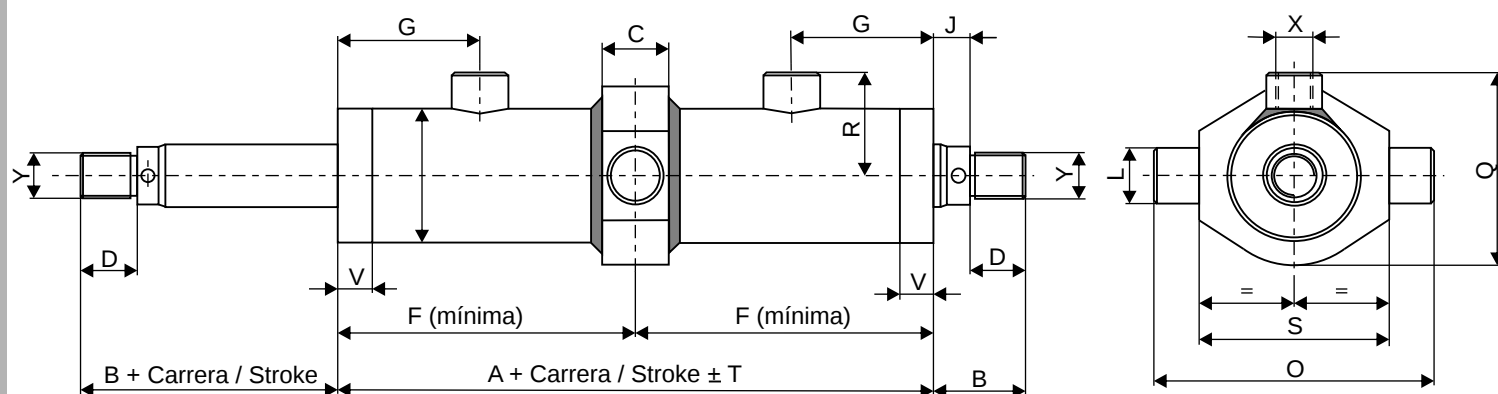
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TIPO / TYPE: FD

Muñones intermedios / Intermediate trunnion mounting
Cilindro de doble vástago / Double rod cylinder



DIAMETRO CILINDRO	032	040	050	063	080	100	125	160	200	250
Carrera mínima	37	41	52	52	54	72	84	103	128	149

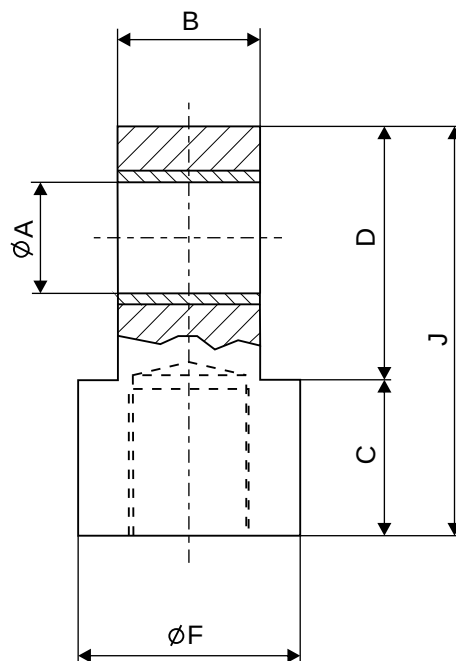
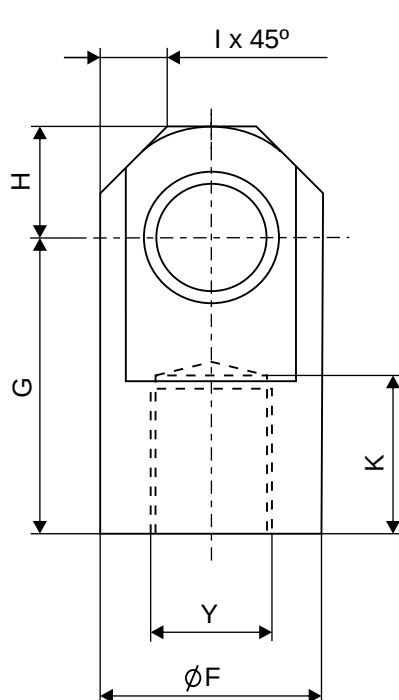
TIPO CG		X	Y	A	B	C	D	F	G	J	K	L	O	Q	R	T	V	W
CG-032	16	1/4" G	12 X 125	129	30	20	16	83	50	14	56	16	80	54	31	2	10	42
CG-040	022	3/8" G.	16 X 150	159	35	24	20	100	62	15	70	20	102	65	39	2	15	50
	028																	
CG-050	028	3/8" G.	20 X 150	168	41	30	25	105	64	16	85	25	125	80	44	2	15	60
	036																	
CG-063	036	1/2" G.	27 X 2	170	48	36	32	111	64	16	105	32	155	95	54	2	15	75
	045																	
CG-080	045	1/2" G.	33 X 2	190	59	36	40	122	74	19	125	32	175	120	65	2	15	95
	056																	
CG-100	056	3/4" G.	42 X 2	212	70	45	50	142	84	20	156	40	220	145	77	3	16	115
	070																	
CG-125	070	3/4" G.	52 X 2	222	80	55	55	150	88	25	190	50	270	174	92	3	20	145
	090																	
CG-160	090	1" G.	68 X 3	277	100	70	70	187	112	30	250	63	350	236	118	3	20	185
	110																	
CG-200	110	1 1/4" G.	90 X 3	318	125	90	90	223	127	35	300	80	426	290	145	3	25	230
	140																	
CG-250	140	1 1/4" G.	110 X 3	375	150	110	110	257	155	40	360	100	520	345	174	4	30	298
	180																	

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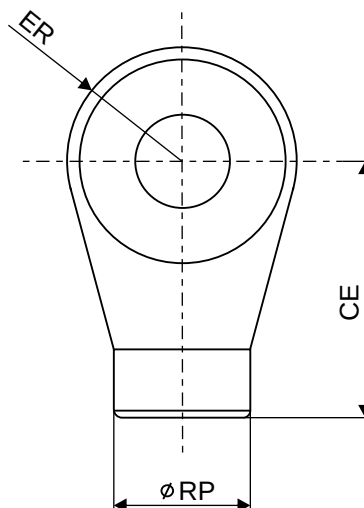
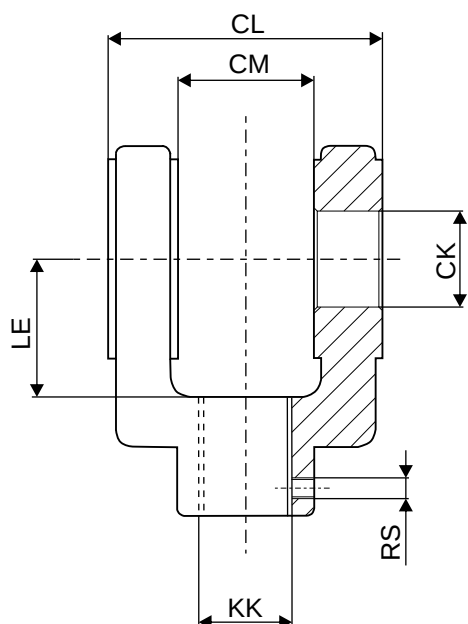
TIPO / TYPE: AMG
Arrastrador macho / Plain rod eye



TIPO AMG	YØ	A	B	C	D	K	F	G	H	I	J
AMG 000032	12 X 125	12	16	16	31	18	26	34	13	6.5	47
AMG 000040	16 X 150	16	20	24	41	22	32	49	16	8	65
AMG 000050	20 X 150	20	25	28	48	26	40	56	20	10	76
AMG 000063	27 X 2	25	32	35	57	33	50	67	25	15	92
AMG 000080	33 X 2	32	40	44	77	42	64	89	32	17	121
AMG 000100	42 X 2	40	50	54	95	52	80	109	40	20	149
AMG 000125	52 X 2	50	60	58	115	57	100	123	50	27	173
AMG 000160	68 X 3	63	80	75	138	72	126	150	63	35	213
AMG 000200	90 X 3	80	100	95	175	90	160	190	80	45	270
AMG 000250	110 X 3	100	120	115	230	112	200	245	100	55	345



TIPO / TYPE: AHG
Horquilla / Rod clevis



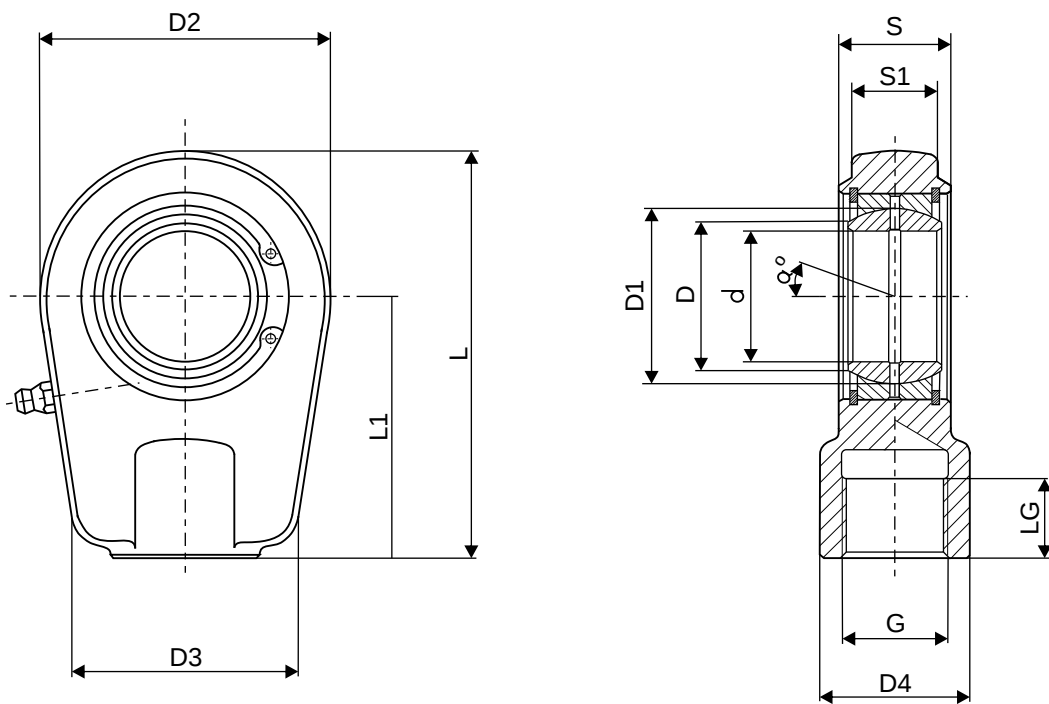
ISO 8133

TIPO AHG	KK	CE	CK	CL	CM	ER	LE	RP	RS
AHG 012125	12 X 125	36	12	32	16	17	19	21	M5
AHG 016150	16 X 150	54	20	60	30	29	32	32	M6
AHG 020150	20 X 150	60	20	60	30	29	32	32	M6
AHG 027200	27 X 2	75	28	80	40	34	39	40	M6
AHG 033200	33 X 2	99	36	100	50	50	54	55	M8
AHG 042200	42 X 2	113	45	120	60	53	57	55	M8
AHG 048200	48 X 2	126	56	140	70	59	63	75	M8
AHG 064300	64 X 3	168	70	160	80	78	83	95	M12
AHG 080300	80 X 3	168	70	160	80	78	83	95	M12



TIPO / TYPE: ARG

Cabeza de rótula / Rod eye with spherical bearing



Los cilindros suministrados con "CHAPE ROTULA" se adaptarán las roscas a los diámetros standard de las mismas. (INA, SKF, etc...).

TIPO ARG	G	d	D	D1	D2	D3	D4	S	S1	L	L1	LG	α°
ARG 000032	16 x 150	20	24	29	56	46	25	19	15	80	50	17	9
ARG 000040	16 x 150	25	29	35,5	56	46	25	23	19	80	50	17	7
ARG 000050	22 x 150	30	34	40,7	64	40	32	28	21	94	60	23	6
ARG 000063	28 x 150	35	39,5	47	78	66	40	30	23	112	70	29	6
ARG 000080	35 x 150	40	45	53	94	76	49	35	25	135	85	36	7
ARG 000100	45 x 150	50	56	66	116	90	61	40	32	168	105	46	6
ARG 000125	58 x 150	60	66,5	80	130	120	75	50	41	200	130	59	7
ARG 000160	80 x 2	80	89	105	176	160	105	60	50	265	170	101	6
ARG 000200	110 x 2	100	109,5	130	230	200	138	70	60	360,7	235	111	7
ARG 000250	120 x 3	110	121	140	265	220	152	80	60	408,2	265	125	6

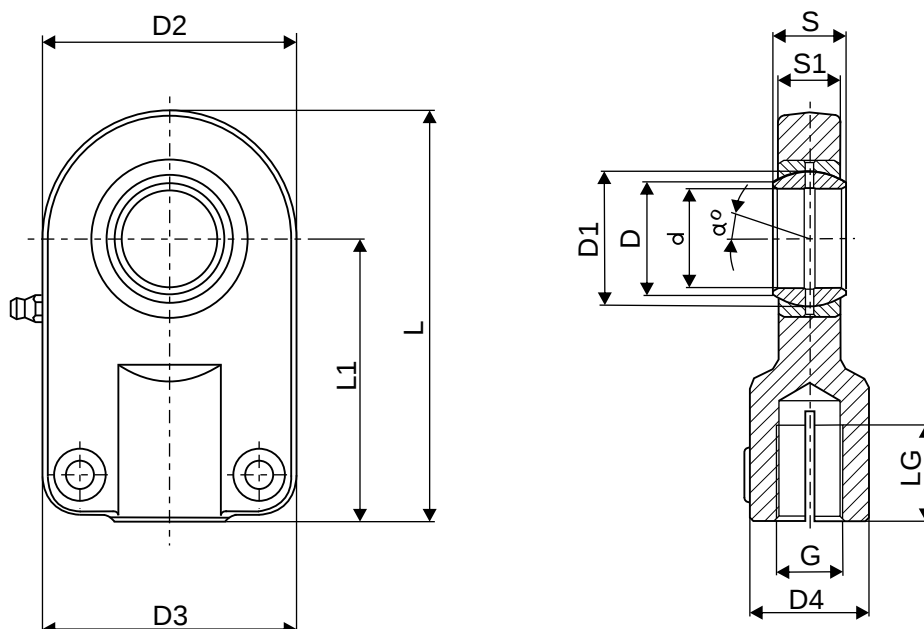
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TIPO / TYPE: AIG

Cabeza de rótula / Rod eye with spherical bearing



DIN 24555 - ISO 8133

TIPO AIG	G	d	D	D1	D2	D3	D4	S	S1	L	L1	LG	α°
AIG 010125	10 x 125	12	15	18	35	35	17	9	8	59,5	42	15	11
AIG 012125	12 x 125	16	20,5	25	45	45	21	10	11	70,5	48	17	10
AIG 014150	14 x 150	20	24	29	55	55	25	16	13	85,5	58	19	9
AIG 016150	16 x 150	25	29	35,5	65	65	30	20	17	100,5	68	23	7
AIG 020150	20 x 150	30	34	47,7	80	80	36	22	19	125	85	29	6
AIG 027200	27 x 2	40	45	53	100	100	45	28	23	155	105	37	7
AIG 033200	33 x 2	50	56	66	120	120	55	35	30	190	130	46	6
AIG 042200	42 x 2	60	66,5	80	160	160	68	44	38	230	150	57	6
AIG 048200	48 x 2	80	89	105	205	205	90	55	47	287	185	64	6
AIG 064300	64 x 3	100	109,5	130	240	240	110	70	57	360	240	86	6

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A.3 Anexo 3

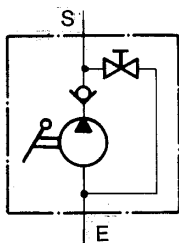
Roquet



Bombas manuales Manual pumps

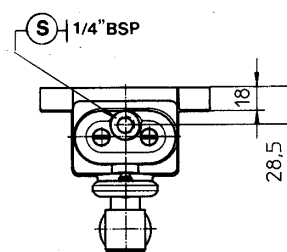
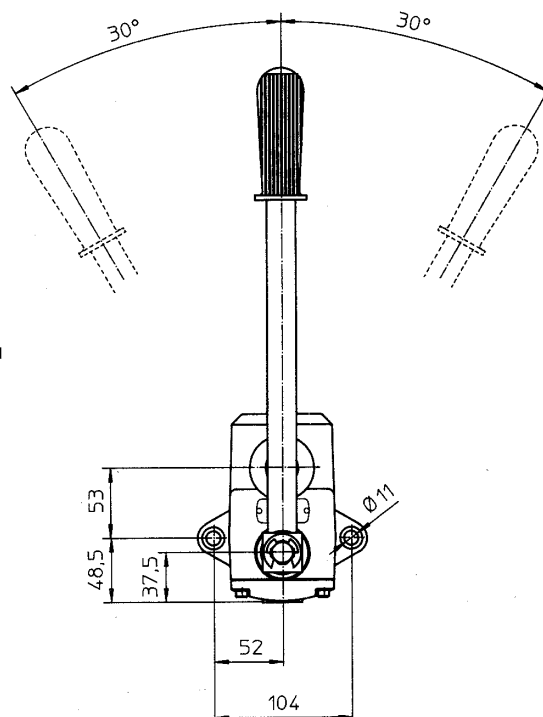
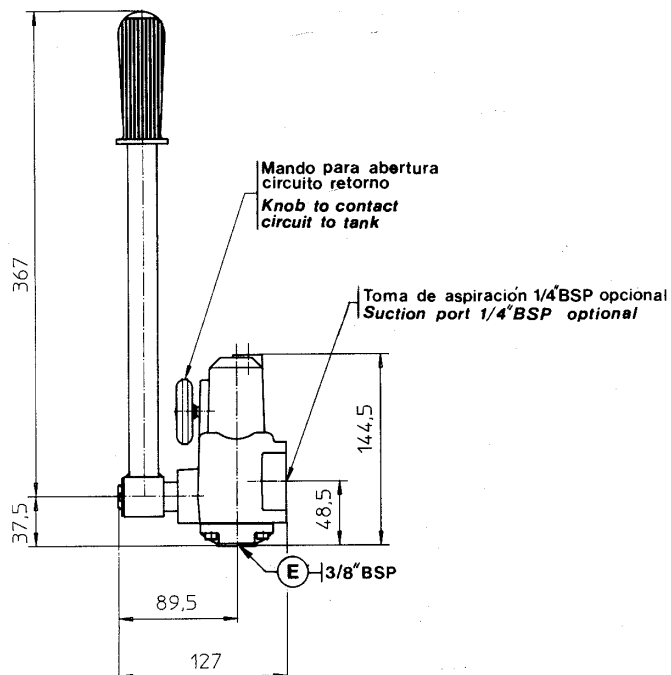
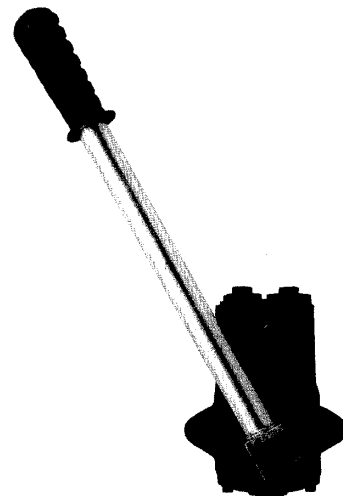
DATOS TECNICOS HIDRAULICOS - HYDRAULIC TECHNICAL DATA

Referencia Reference	376	377
Presión máxima Max. pressure	125 bar	250 bar
Volumen por embolada Displacement per stroke (one sense)	7,3 cm ³	3,8 cm ³
Esfuerzo en palanca a 125 bar Lever effort at	30 kg.	15 kg.
Esfuerzo en palanca a 250 bar Lever effort at	—	30 kg.
Peso aproximado Approx. weight	4,1 kg.	



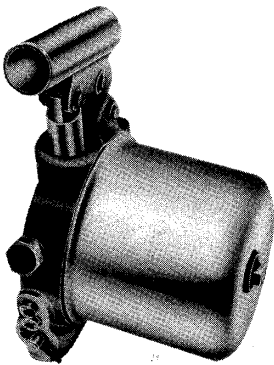
E - Entrada aceite
Oil inlet

S - Salida aceite a presión
Pressure outlet

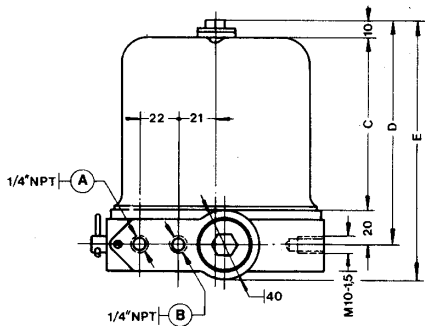


Bomba manual con depósito - Manual pump with tank

DATOS TECNICOS HIDRAULICOS - HYDRAULIC TECHNICAL DATA	
Presión máxima de trabajo Max. working pressure	250 bar
Esfuerzo en palanca Lever effort	27 kg.
Diámetro émbolo Piston diameter	20 mm.
Carrera Stroke	30 mm.
Caudal Flow rate	9,4 cm ³ por embolada per stroke (one sense)
Taraje válvula seguridad Safety valve setting pressure	225 bar
Gama de temperaturas Temperature range	-20°C...+80°C
Gama de viscosidades Viscosity range	1,5°E...8°E

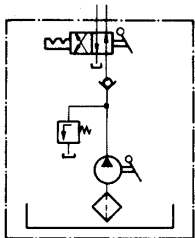
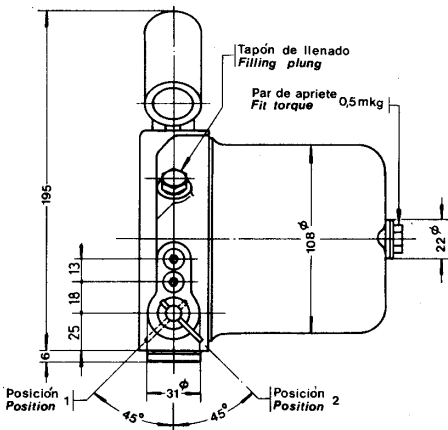
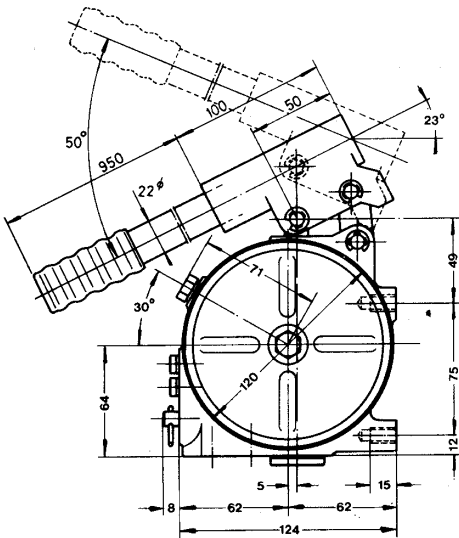


Situación depósito derecha
Tank situated at right



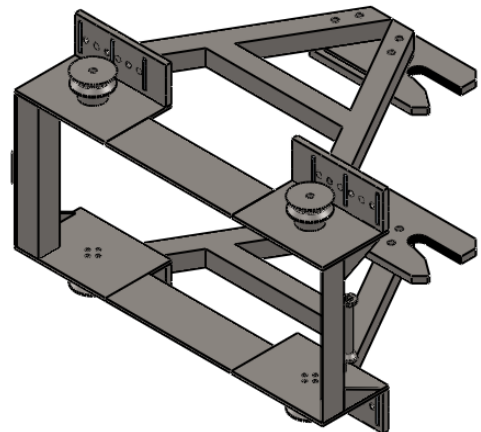
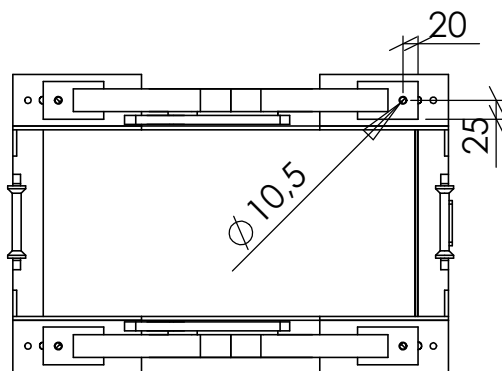
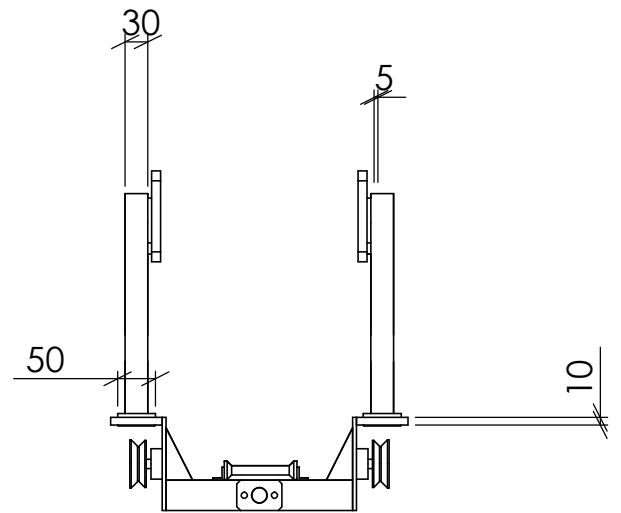
RFA		C	D	E	Accionamiento Operation	Capacidad Depósito Tank capacity	Peso Weight
Situación depósito derecha Tank situa- ted at right	Situación depósito izquierda Tank situa- ted at left						
27903	28003	155	185	205	Sin palanca Without lever	1,3 l.	4,7
27906	28006				Con palanca With lever		
27901	28001	95	125	145	Sin palanca Without lever	0,8 l.	4,2
27905	28005				Con palanca With lever		

Posición 1 salida presión por la toma B
Position 1 pressure outlet through port B
Posición 2 salida presión por la toma A
Position 2 pressure outlet through port A

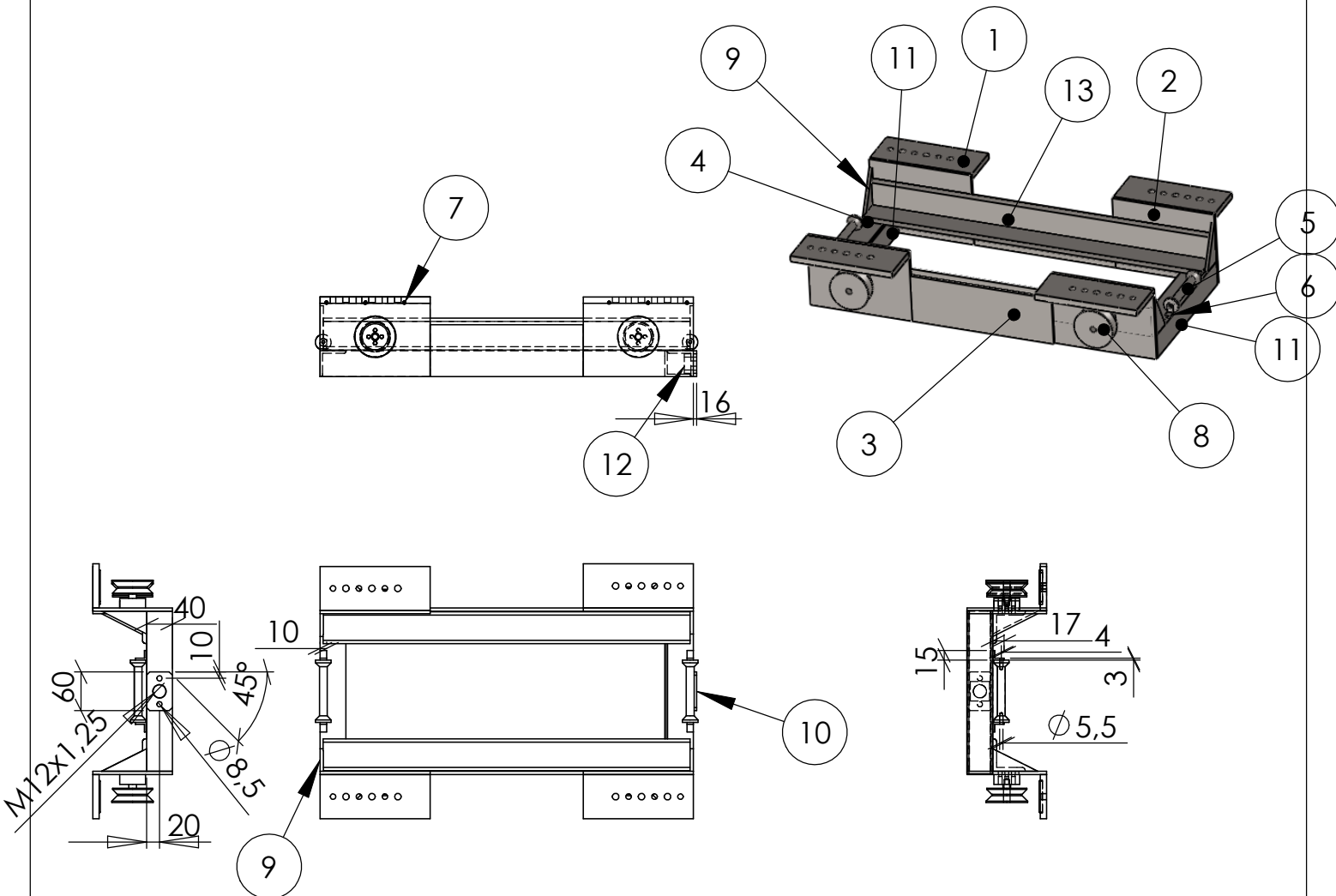


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A.4 Anexo 4



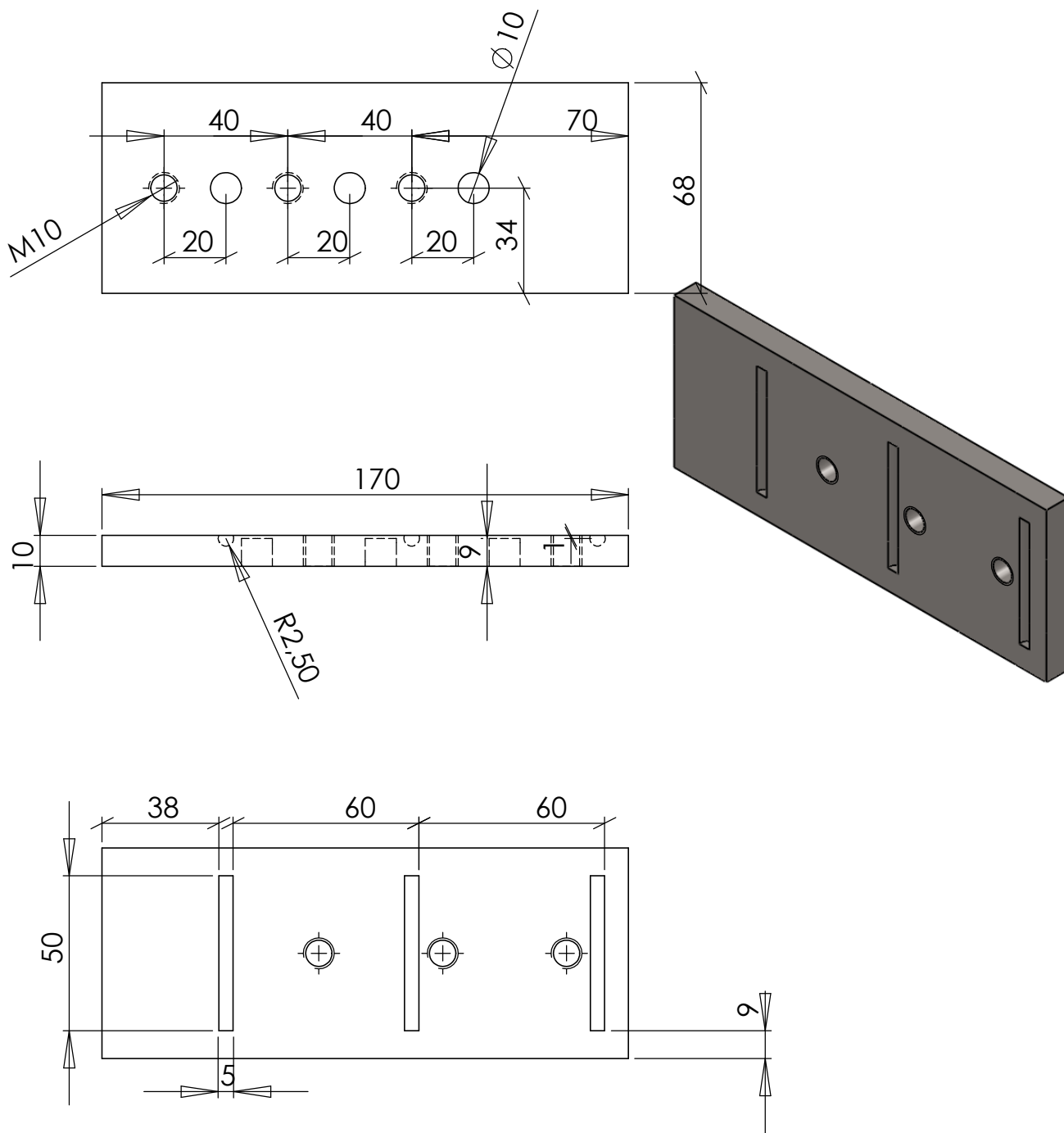
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			CHECKED					
			ENG APPR.					
			MFG APPR.					
		MATERIAL	Q.A.		SIZE DWG. NO. REV. A 1.5 Enganche trasero			
		ACERO	COMMENTS:					
NEXT ASSY	USED ON	FINISH						
APPLICATION		DO NOT SCALE DRAWING						
					SCALE:1:10	WEIGHT:	SHEET 1 OF 1	



Nº	CANT	DESCRIPCIÓN	MATERIAL
1	4	Pletina 170x60x10 (Ver plano 1.5.5.1)	Acero F-1110
2	4	Pletina 123x170x5 (Ver plano 1.5.5.2)	Acero F-1110
3	2	Pletina 236x80x10	Acero F-1110
4	1	Angular 40x4x264 (Ver plano 1.5.5.4)	Acero A 42B
5	2	Rodillo apoyos guía (Ver plano 1.5.5.5)	Acero F-1110
6	4	Emganche rodillo	Acero F-1110
7	12	Rodamientos Ø 5x50	
8	4	Guiadores (Ver plano 1.5.5.8)	Acero F-1110
9	4	Cartabón 35x70x5	Acero F-1110
10	1	Pletina enganche cilindro	Acero F-1110
11	2	Angular 40x4x264	Acero A 42B
12	1	Husillo Complemento (Pletina 30x30x10 con M8 en el centro)	Acero A 42B
13	2	Angular 30x3x566	Acero F-1110

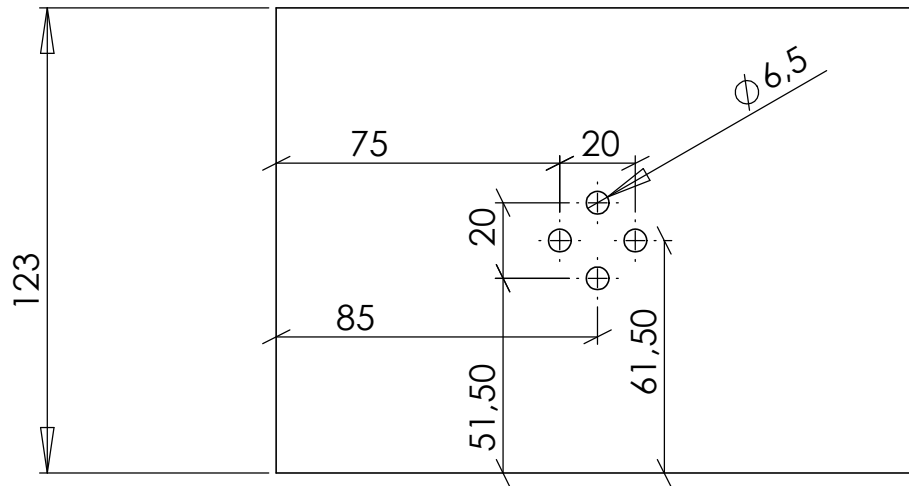
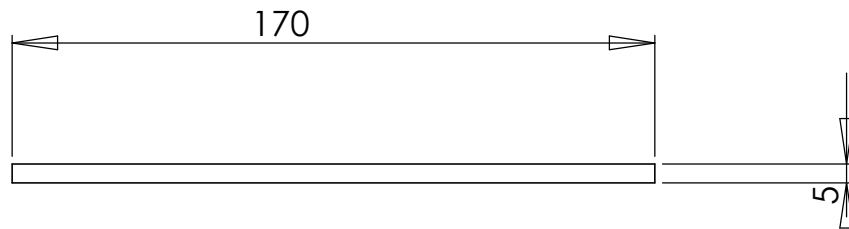
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		DIMENSIONS ARE IN MM TOLERANCES: FRACTIONAL ± ANGULAR: MACH ± BEND ± TWO PLACE DECIMAL ± THREE PLACE DECIMAL ±	NAME		DATE	
			DRAWN		Ocejo	
			CHECKED			
			ENG APPR.			
			MFG APPR.			
		MATERIAL	Q.A.			COMMENTS:
		FINISH				
NEXT ASSY		USED ON				
APPLICATION		DO NOT SCALE DRAWING				
			SIZE		DWG. NO.	REV.
			A		1.5.5 Carro	
			SCALE: 1:10		WEIGHT:	SHEET 1 OF 1



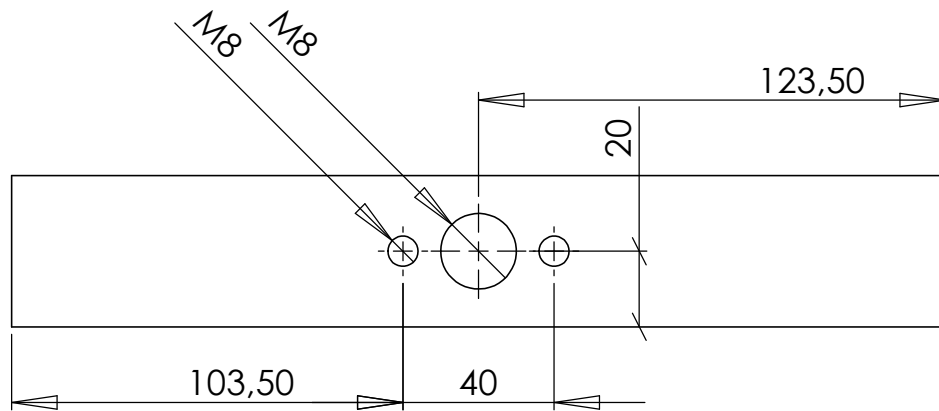
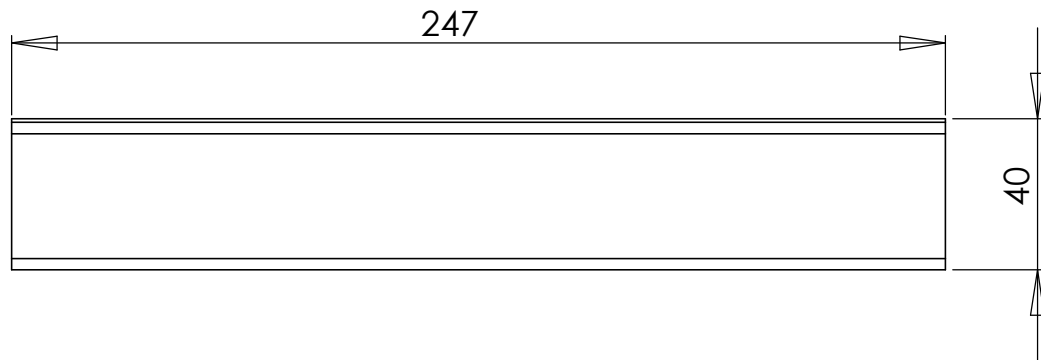
4 piezas iguales

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				DRAWN	Ocejo	11-08-2010				
				CHECKED						
				ENG APPR.						
				MFG APPR.						
				Q.A.						
				COMMENTS:						
	NEXT ASSY	USED ON	FINISH					SIZE	DWG. NO.	REV.
APPLICATION		DO NOT SCALE DRAWING						A	1.5.5.1 Alojamiento rodamientos	
				SCALE: 1:2		WEIGHT:		SHEET 1 OF 1		

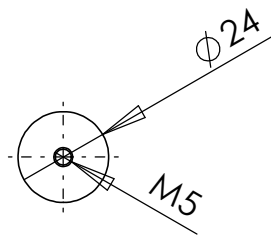
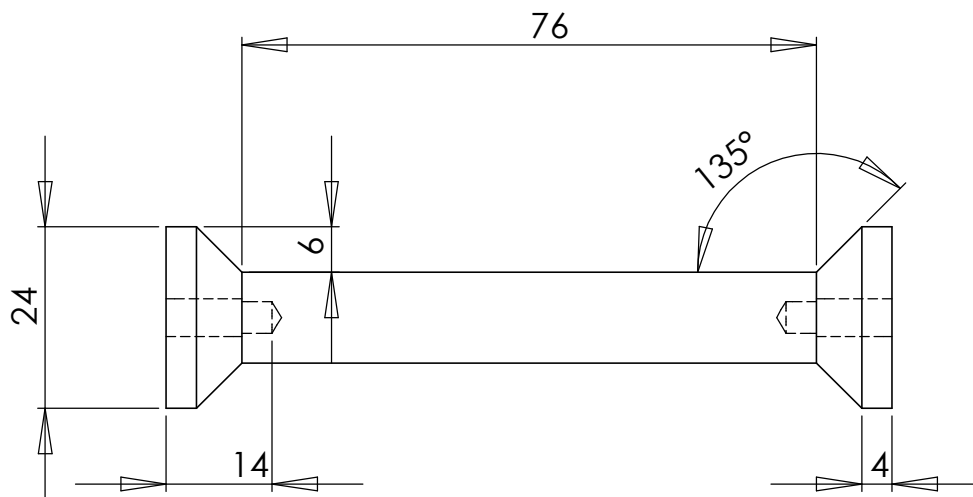


Cuatro piezas iguales

		DIMENSIONS ARE IN MM TOLERANCES: FRACTIONAL ± ANGULAR: MACH ± BEND ± TWO PLACE DECIMAL ± THREE PLACE DECIMAL ±		NAME	DATE			
			DRAWN	Ocejo	15-08-2010			
			CHECKED					
			ENG APPR.					
			MFG APPR.					
		MATERIAL	Q.A.			SIZE A DWG. NO. 1.5.5.2 Pletina REV.		
		COMMENTS:						
NEXT ASSY	USED ON	FINISH					SCALE: 1:2 WEIGHT: SHEET 1 OF 1	
APPLICATION		DO NOT SCALE DRAWING						

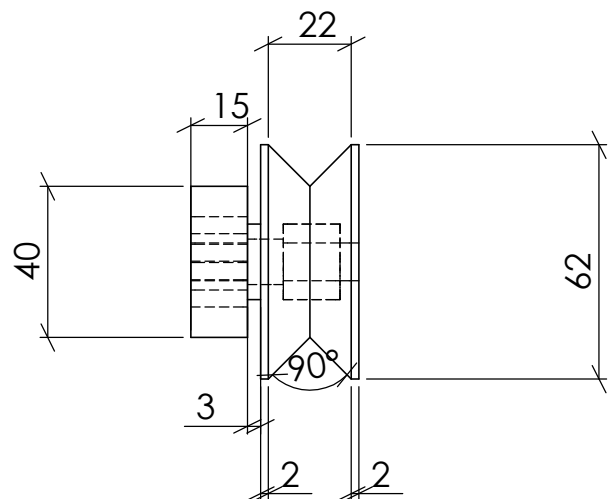


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			TOLERANCES:		DRAWN	Ocejo	11-08-2010			
			FRACTIONAL ±		CHECKED					
			ANGULAR: MACH ± BEND ±		ENG APPR.					
			TWO PLACE DECIMAL ±		MFG APPR.					
			THREE PLACE DECIMAL ±		Q.A.					
			MATERIAL		COMMENTS:					
			FINISH					SIZE	DWG. NO.	REV.
	NEXT ASSY	USED ON						A	1.5.5.4 Angular	
	APPLICATION		DO NOT SCALE DRAWING		SCALE:1:5		WEIGHT:	SHEET 1 OF 1		



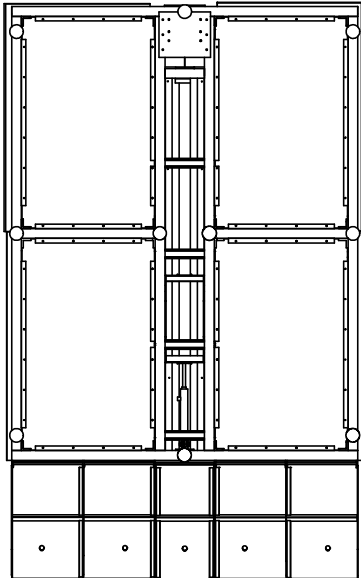
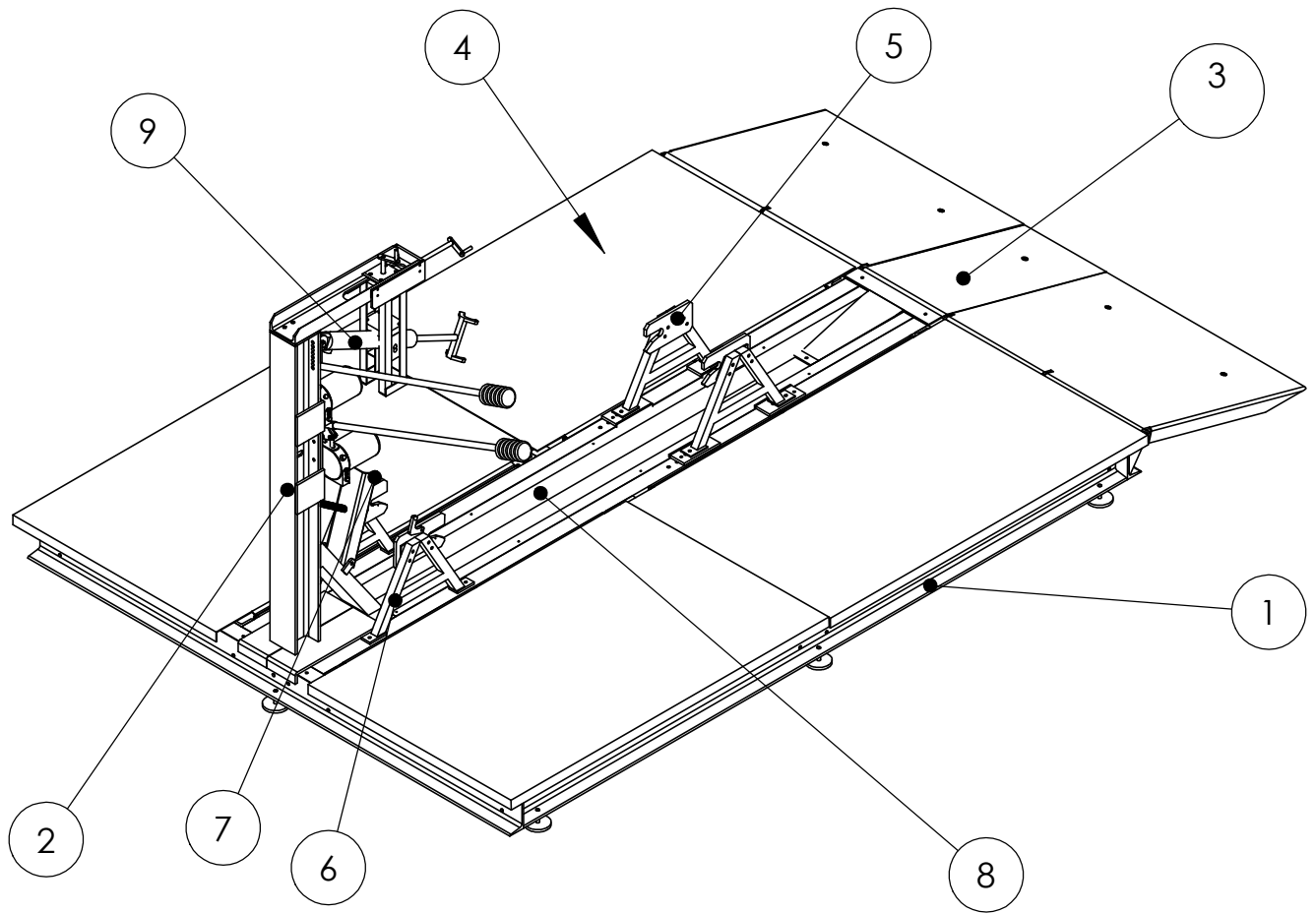
Dos piezas iguales

		DIMENSIONS ARE IN MM TOLERANCES: FRACTIONAL ± ANGULAR: MACH ± BEND ± TWO PLACE DECIMAL ± THREE PLACE DECIMAL ±		Ocejo	DATE			
			DRAWN	Ocejo	11-08-2010			
			CHECKED					
			ENG APPR.					
			MFG APPR.					
		MATERIAL	Q.A.					
		FINISH	COMMENTS:					
NEXT ASSY	USED ON							
APPLICATION					DO NOT SCALE DRAWING			
			SIZE	DWG. NO.		REV.		
			A	1.5.5.5 Rodillo apoyos guía				
			SCALE:1:2	WEIGHT:		SHEET 1 OF 1		



		DIMENSIONS ARE IN MM TOLERANCES: FRACTIONAL ± ANGULAR: MACH ± BEND ± TWO PLACE DECIMAL ± THREE PLACE DECIMAL ±		NAME	DATE			
			DRAWN	Ocejo	11-08-2010			
			CHECKED					
			ENG APPR.					
			MFG APPR.					
		MATERIAL	Q.A.			SIZE A DWG. NO. 1.5.5.8 Guidadores REV.		
		FINISH	COMMENTS:					
NEXT ASSY	USED ON							
APPLICATION		DO NOT SCALE DRAWING	SCALE:1:2				WEIGHT:	SHEET 1 OF 1

B. Planos

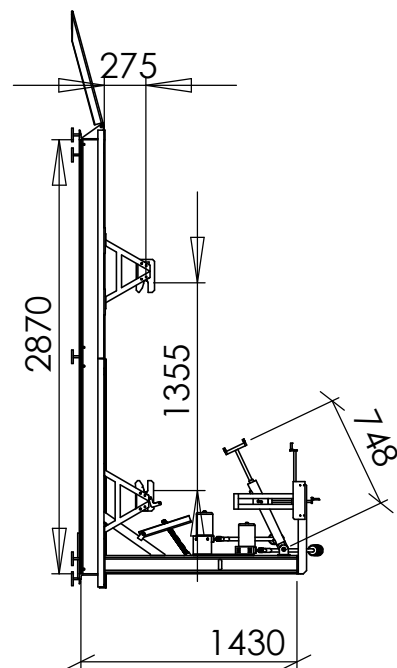
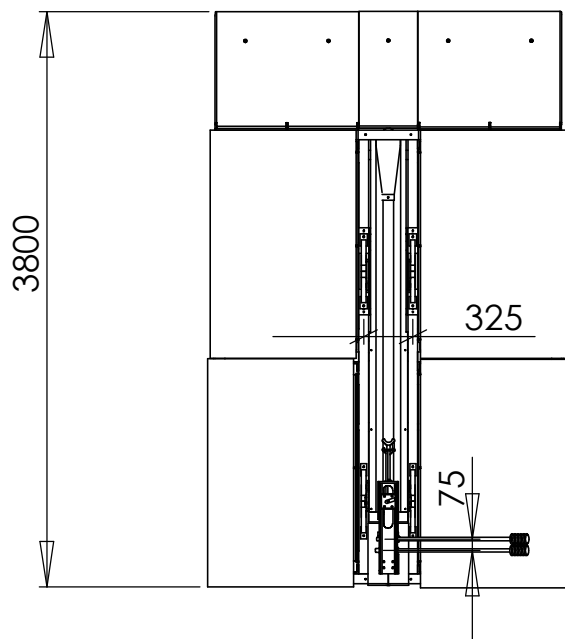
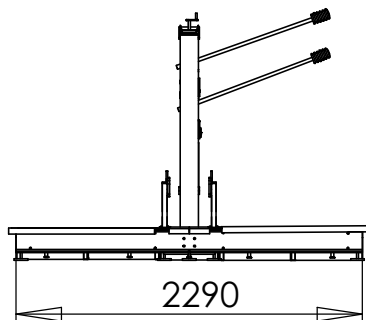


Nº	CANT.	DESCRIPCIÓN
1	1	Bancada (Ver plano 1.1.0)
2	1	Pilar (Ver palno 1.2.0)
3	1	Rampas (Ver palno 1.3.0)
4	1	Portones (Ver plano 1.4.0)
5	1	Enganche trasero (Ver plano 1.5.0)
6	1	Enganche delantero (Ver plano 1.6.0)
7	1	Tope moto (Ver palno 1.7.0)
8	1	Carril moto (Ver plano 1.8.0)
9	1	Cilindro hidráulico carro traslación CG-040

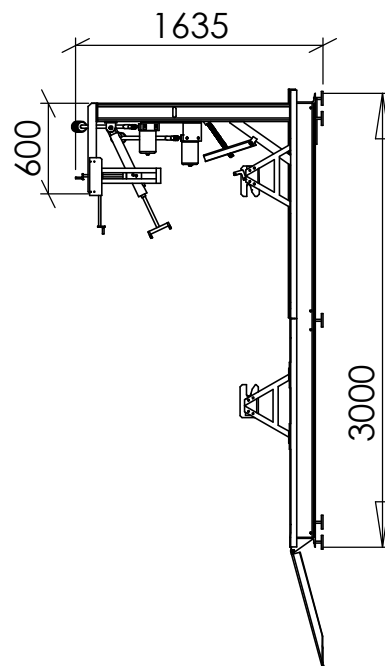
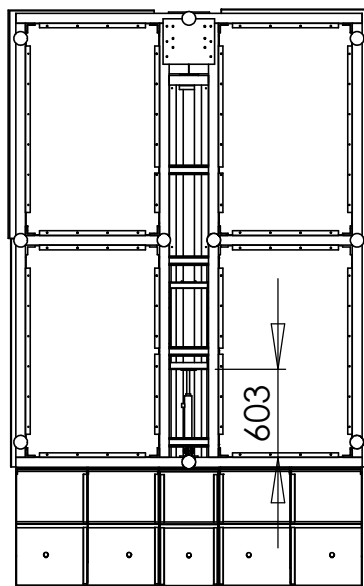
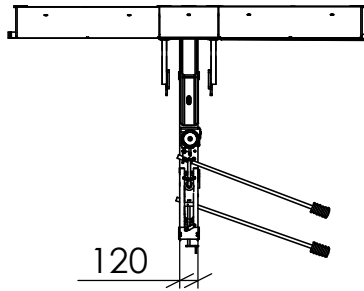
		DIMENSIONS ARE IN MM TOLERANCES: FRACTIONAL ± ANGULAR: MACH ± BEND ± TWO PLACE DECIMAL ± THREE PLACE DECIMAL ±		NAME	DATE	
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			CHECKED			
			ENG APPR.			
			MFG APPR.			
		MATERIAL	Q.A.			COMMENTS:
		FINISH				
NEXT ASSY	USED ON					
APPLICATION		DO NOT SCALE DRAWING	SIZE		DWG. NO.	REV.
			A		1 Banco de motos	
			SCALE:1:100		WEIGHT:	SHEET 1 OF 1

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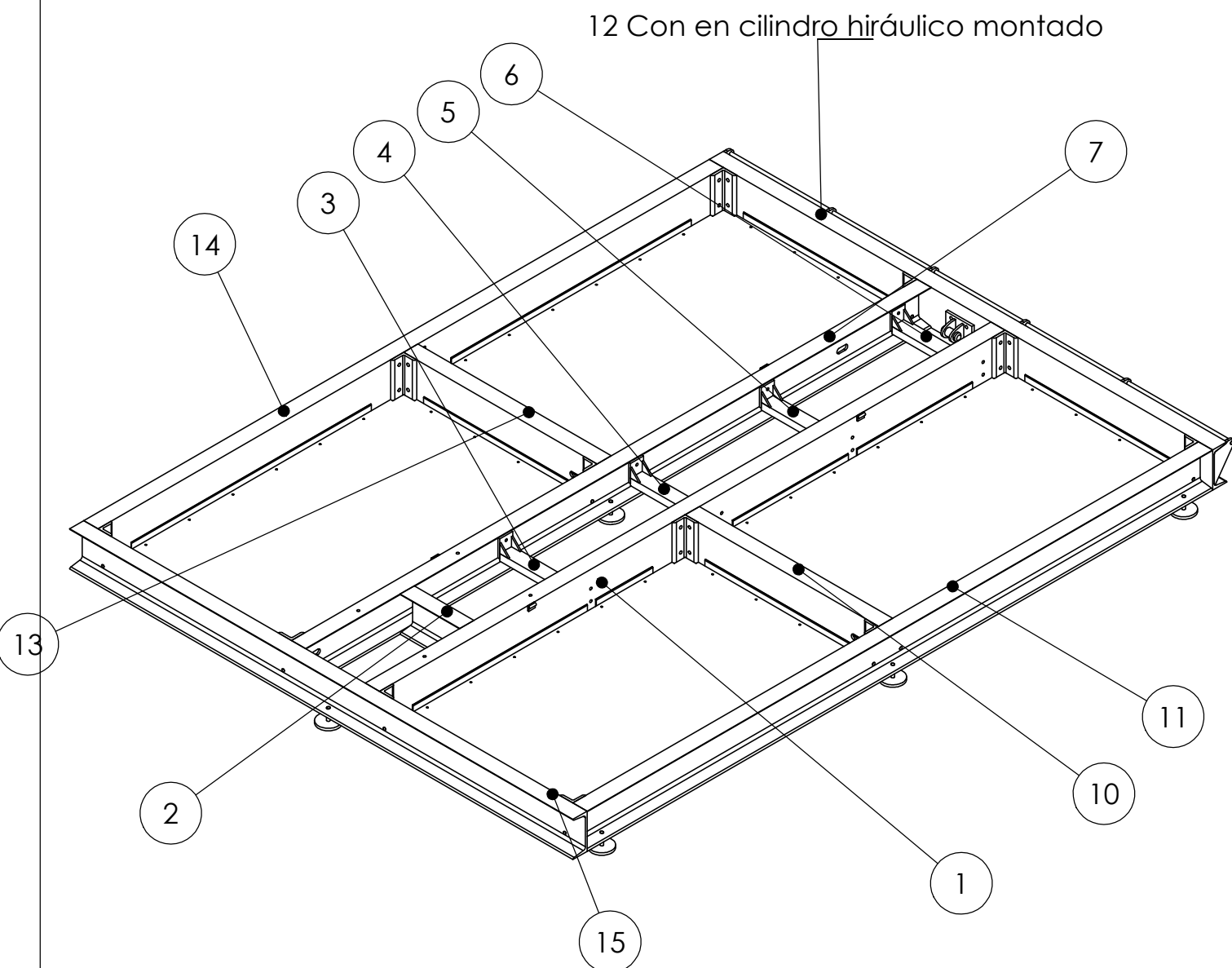
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			CHECKED						
			ENG APPR.						
			MFG APPR.						
		MATERIAL	Q.A.						
		COMMENTS:							
NEXT ASSY	USED ON	FINISH							
APPLICATION		DO NOT SCALE DRAWING							
				SIZE		DWG. NO.		REV.	
				A		1.0.1 Banco de motos			
				SCALE:1:100		WEIGHT:		SHEET 1 OF 2	



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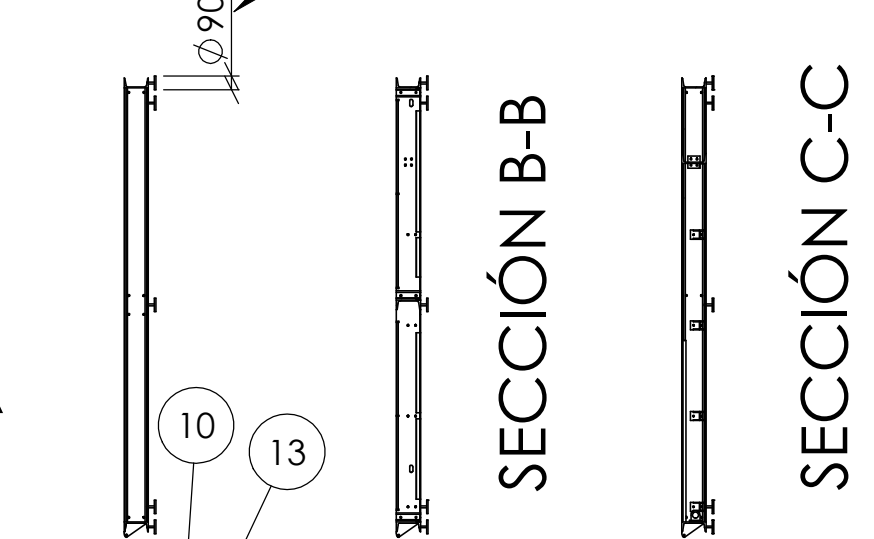
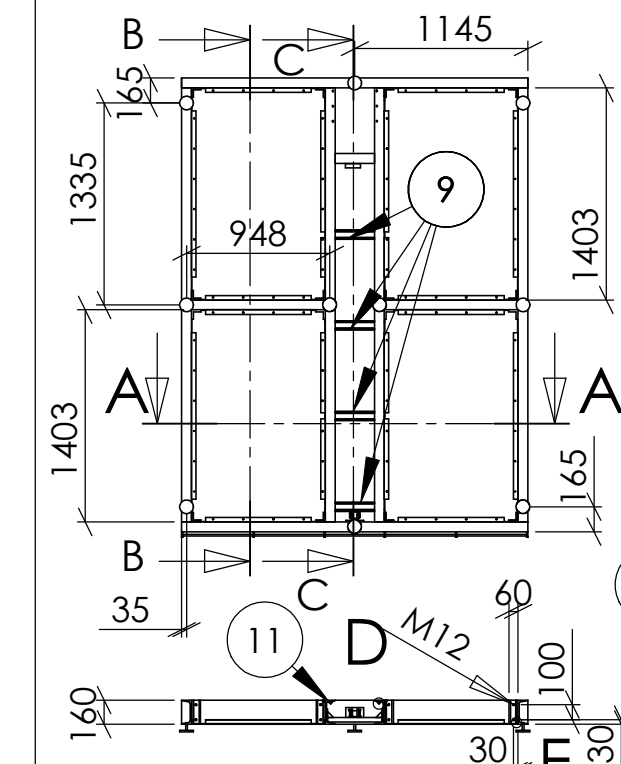
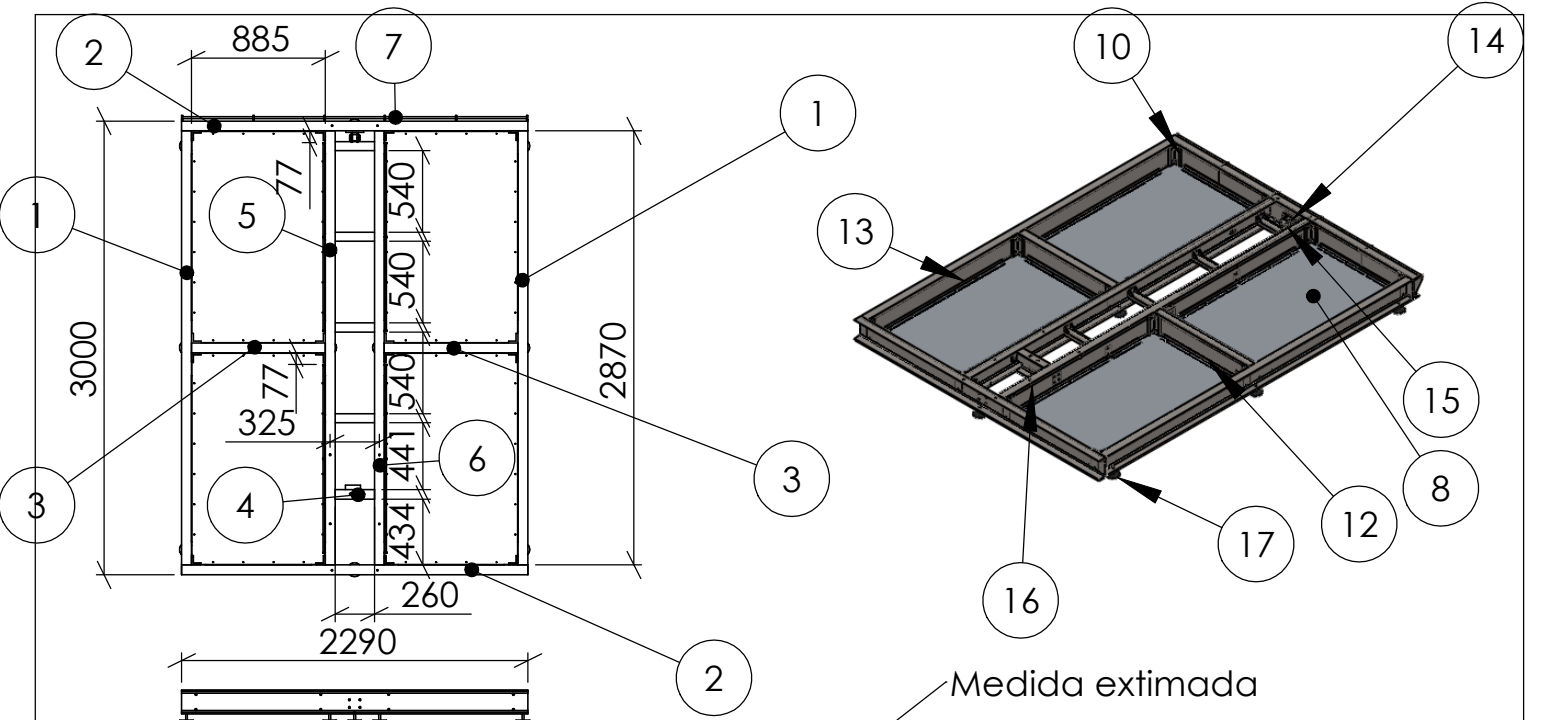
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			CHECKED					
			ENG APPR.					
			MFG APPR.					
		MATERIAL	Q.A.					
		COMMENTS:						
NEXT ASSY	USED ON				FINISH			
APPLICATION		DO NOT SCALE DRAWING	SIZE A		DWG. NO. 1.0.2 Banceo de motos		REV.	
			SCALE:1:100		WEIGHT:		SHEET 2 OF 2	

Numeración de pasos a seguir para el montaje de la bancada



8 Se introduce el enganche trasero
9 Se introduce el carril
16 Se introduce el Poste Lado

		DIMENSIONS ARE IN MM TOLERANCES: FRACTIONAL ± ANGULAR: MACH ± BEND ± TWO PLACE DECIMAL ± THREE PLACE DECIMAL ±		NAME	DATE	
			DRAWN		23-07-2010	
			CHECKED			
			ENG APPR.			
			MFG APPR.			
		MATERIAL	Q.A.			
		FINISH	COMMENTS:			
NEXT ASSY	USED ON					
APPLICATION	DO NOT SCALE DRAWING					
			SIZE	DWG. NO.		
			A	Pasos Montaje		
			SCALE: 1:50	WEIGHT: 388460.20		SHEET 1 OF 1



DETALLE E
ESCALA 1 : 5

Nº	CANT.	DESCRIPCIÓN	MATERIAL
1	2	Perfil UPN160x2870 (Ver plano 1.1.1)	Acero A 42B
2	2	Perfil UPN160x2310 (Ver plano 1.1.2)	Acero A 42B
3	2	Perfil UPN160x888 (Ver plano 1.1.3)	Acero A 42B
4	2	Perfil UPN160x274 (Ver plano 1.1.4)	Acero A 42B
5	1	Perfil UPN 160x2870 Izdo (Ver plano 1.1.5)	Acero A 42B
6	1	Perfil UPN 160x2870 Dcho (Ver plano 1.1.6)	Acero A 42B
7	1	Unión bancada con rampas (Ver plano 1.1.7)	Acero A 42B
8	4	Chapa fondo cajón 1,5 (Ver plano 1.1.8)	Acero F-1110
9	4	Distanciadores canalón (Ver plano 1.1.9)	Acero F-1110
10	12	Angulares 60	Acero A 42B
11	2	Guías Carril (Ver plano 1.1.11)	Acero F-1110
12	6	Angular chapa fondo 30x700 (Ver plano 1.1.12)	Acero A 42B
13	4	Angular chapa fondo 30x1100 (Ver plano 1.1.12)	Acero A 42B
14	1	Plefina enganche trasero cilindro traslación (Ver plano 1.2.14)	Acero F-1110
15	1	Bulón trasero cilindro traslación Ø25x60	Acero F-1110
16	4	Bisagras portones (Ver plano 1.1.16)	Acero F-1110
17	10	Soportes antivibratorios (150 kg por soporte)	Comercial

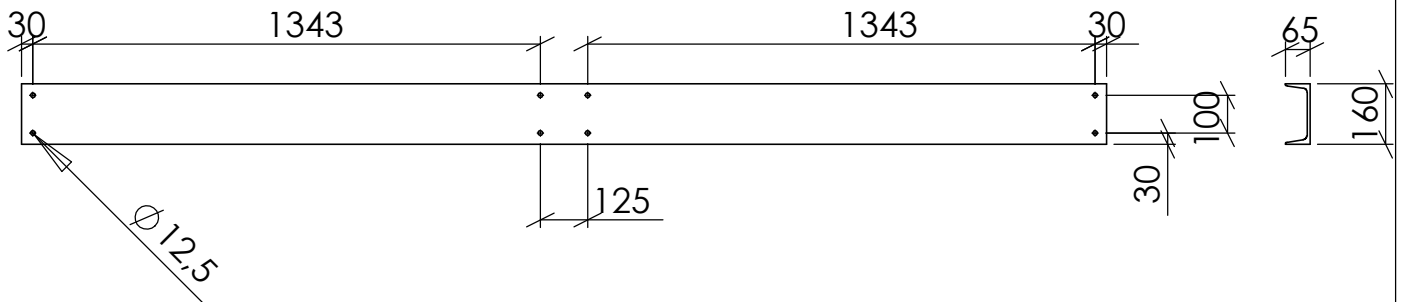
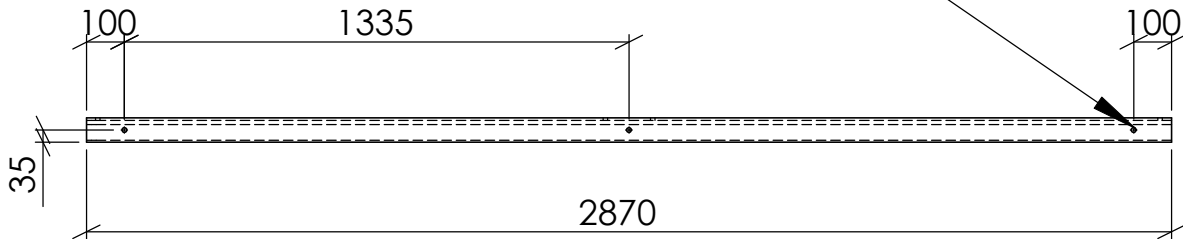
SECCIÓN A-A

DETALLE D
ESCALA 1 : 5

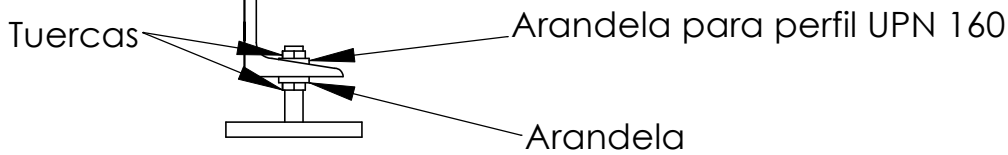
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		DIMENSIONS ARE IN MM TOLERANCES: FRACTIONAL ± ANGULAR: MACH ± BEND ± TWO PLACE DECIMAL ± THREE PLACE DECIMAL ±		NAME	DATE				
			DRAWN	Ocejo	29-07-2010				
			CHECKED						
			ENG APPR.						
			MFG APPR.						
		MATERIAL	Acero	Q.A.					
				COMMENTS:					
NEXT ASSY	USED ON	FINISH							
APPLICATION		DO NOT SCALE DRAWING							
		SIZE		DWG. NO.		REV.			
		A		1.1 Bancada					
		SCALE: 1:50		WEIGHT: 391870.78		SHEET 1 OF 1			

Agujeros según soporte antivibratorio



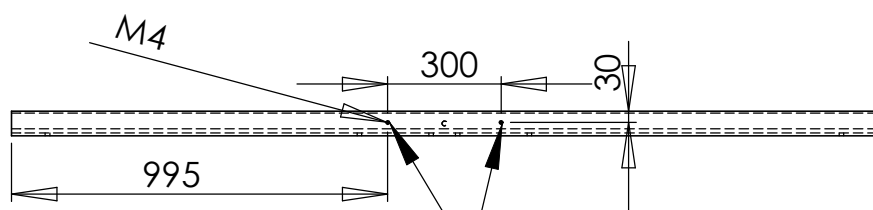
Montaje Soporte antivibratorio con perfiles



Dos perfiles iguales

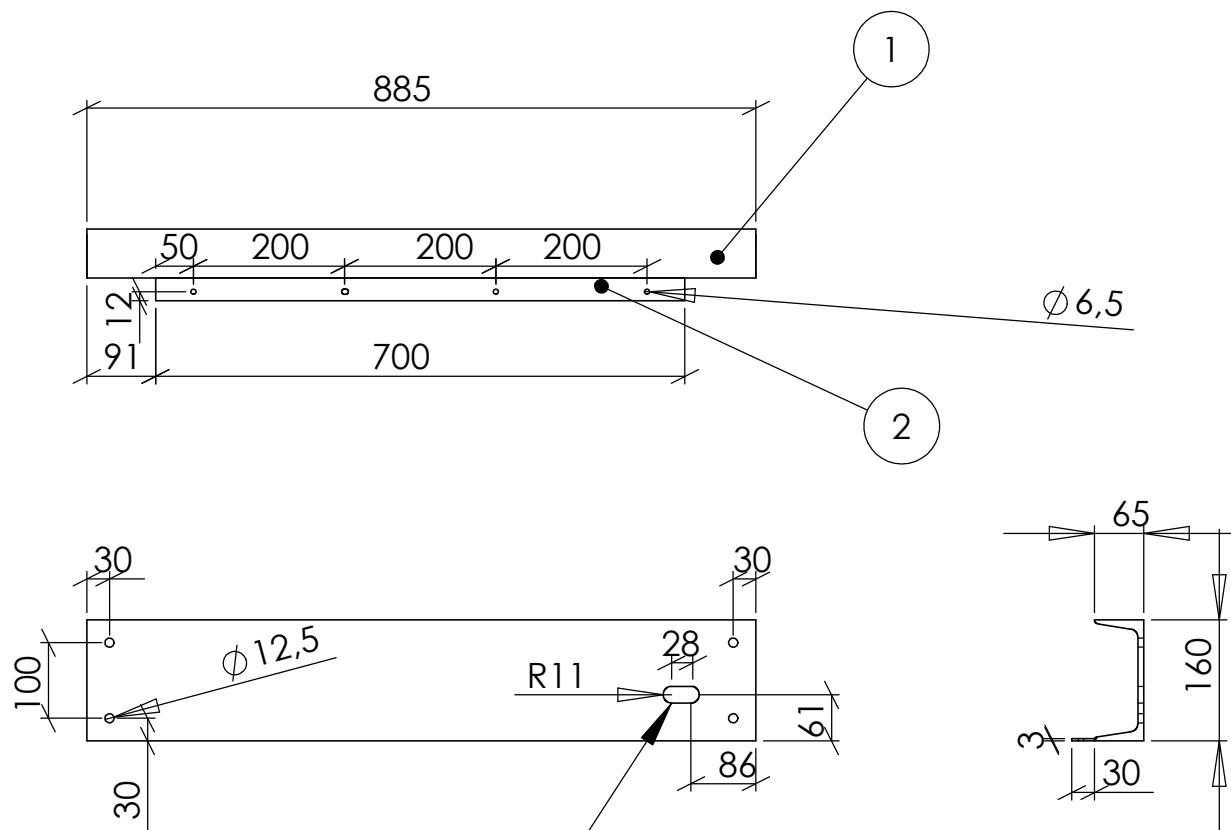
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			CHECKED			
			ENG APPR.			
			MFG APPR.			
		MATERIAL	Q.A.			
		FINISH	COMMENTS:			
NEXT ASSY	USED ON					
APPLICATION						
		DO NOT SCALE DRAWING				

SIZE	DWG. NO.	REV.
A	1.1.1Perfil UPN160-2870	
SCALE:1:50	WEIGHT:	SHEET 1 OF 1



Estos dos enroscados solo en uno de los dos perfiles

		DIMENSIONS ARE IN MM TOLERANCES: FRACTIONAL ± ANGULAR: MACH ± BEND ± TWO PLACE DECIMAL ± THREE PLACE DECIMAL ±		NAME	DATE	
			DRAWN	Ocejo	11-08-2010	
			CHECKED			
			ENG APPR.			
			MFG APPR.			
		MATERIAL	Q.A.			
		FINISH	COMMENTS:			
NEXT ASSY	USED ON					
APPLICATION		DO NOT SCALE DRAWING	SIZE DWG. NO. A 1.1.2 Perfil UPN160-2310 REV.			
			SCALE: 1:20 WEIGHT:		SHEET 1 OF 1	



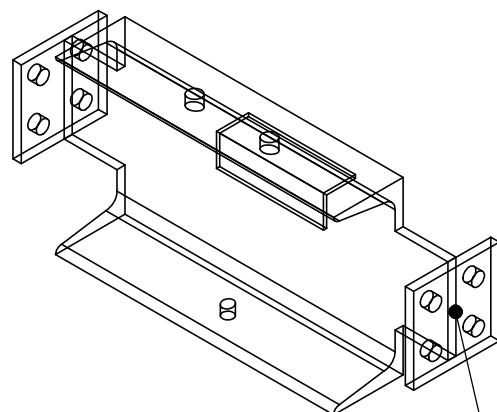
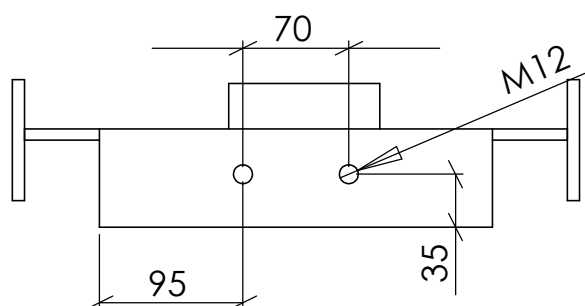
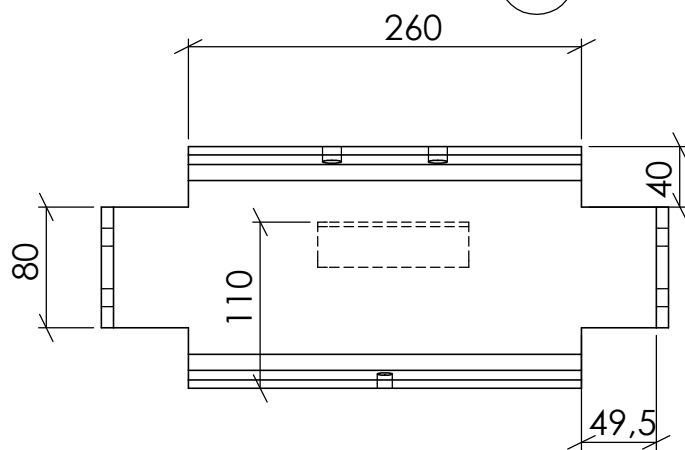
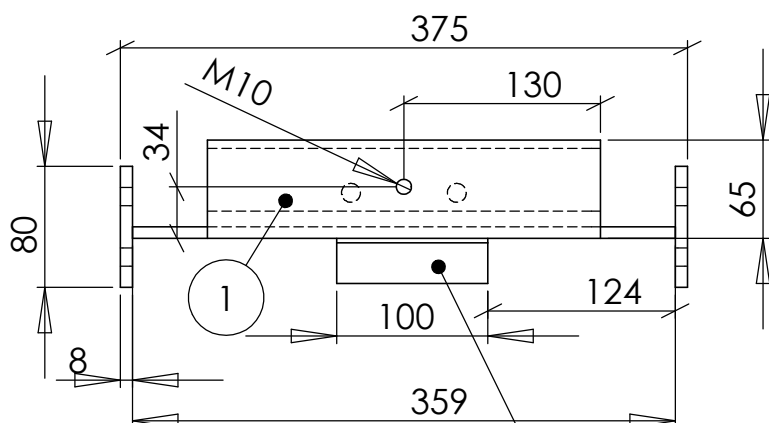
Este agujero solo se pone en uno de los dos perfiles

Nº	CANT.	DESCRIPCIÓN	DESCRIPCIÓN
1	1	Perfil UPN160x888	Acero A 42B
2	1	Pletina 30x3	Acero F-1110

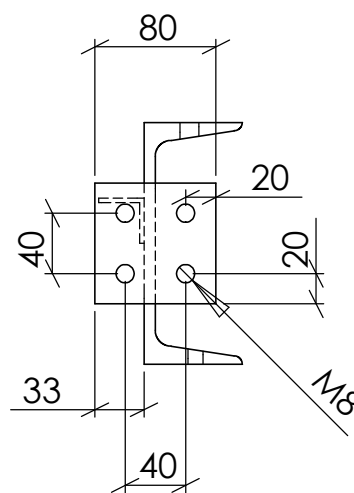
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			CHECKED			
			ENG APPR.			
			MFG APPR.			
		MATERIAL	Q.A.		COMMENTS:	
NEXT ASSY	USED ON	FINISH				
APPLICATION		DO NOT SCALE DRAWING				
		SIZE			DWG. NO.	REV.
		A			1.1.3 Perfil UPN 160x888	
		SCALE: 1:10			WEIGHT:	SHEET 1 OF 1

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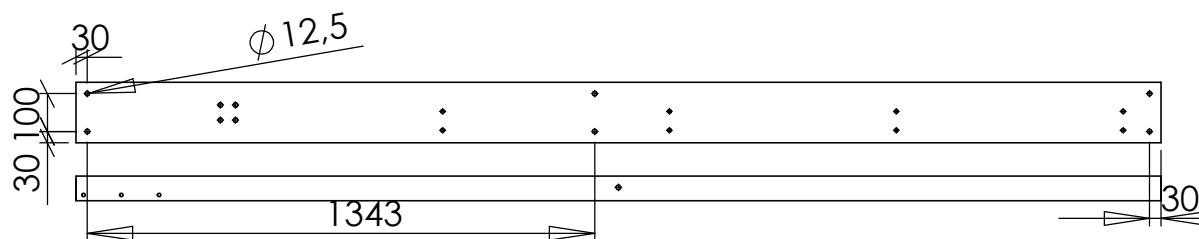
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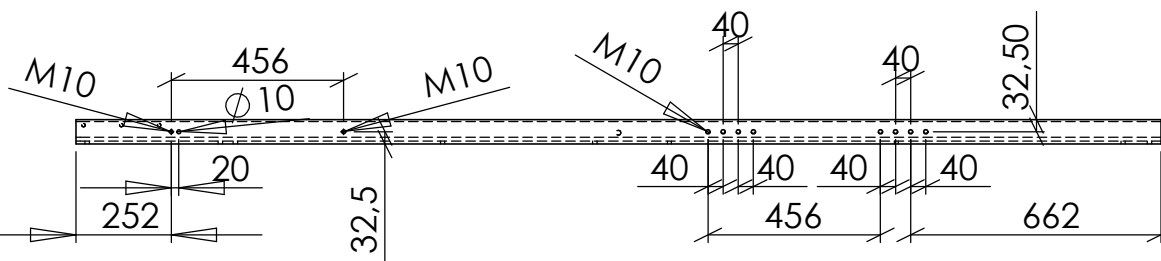
Nº	CANT.	DESCRIPCIÓN	MATERIAL
1	1	Perfil UPN160x274 (Ver plano 1.1.4)	Acero A 42B
2	2	Pletina 80x80x8	Acero F-1110
3	1	Angular 30x3	Acero F-1110

		DIMENSIONS ARE IN MM TOLERANCES: FRACTIONAL ± ANGULAR: MACH ± BEND ± TWO PLACE DECIMAL ± THREE PLACE DECIMAL ±		NAME	DATE			
			DRAWN	Ocejo	11-08-2010			
			CHECKED					
			ENG APPR.					
			MFG APPR.					
		MATERIAL	Q.A.			COMMENTS:		
		FINISH						
NEXT ASSY	USED ON							
APPLICATION		DO NOT SCALE DRAWING	SIZE		DWG. NO.	REV.		
			A		1.1.4 Unión perfiles			
			SCALE: 1:5		WEIGHT: 5847.61		SHEET 1 OF 1	

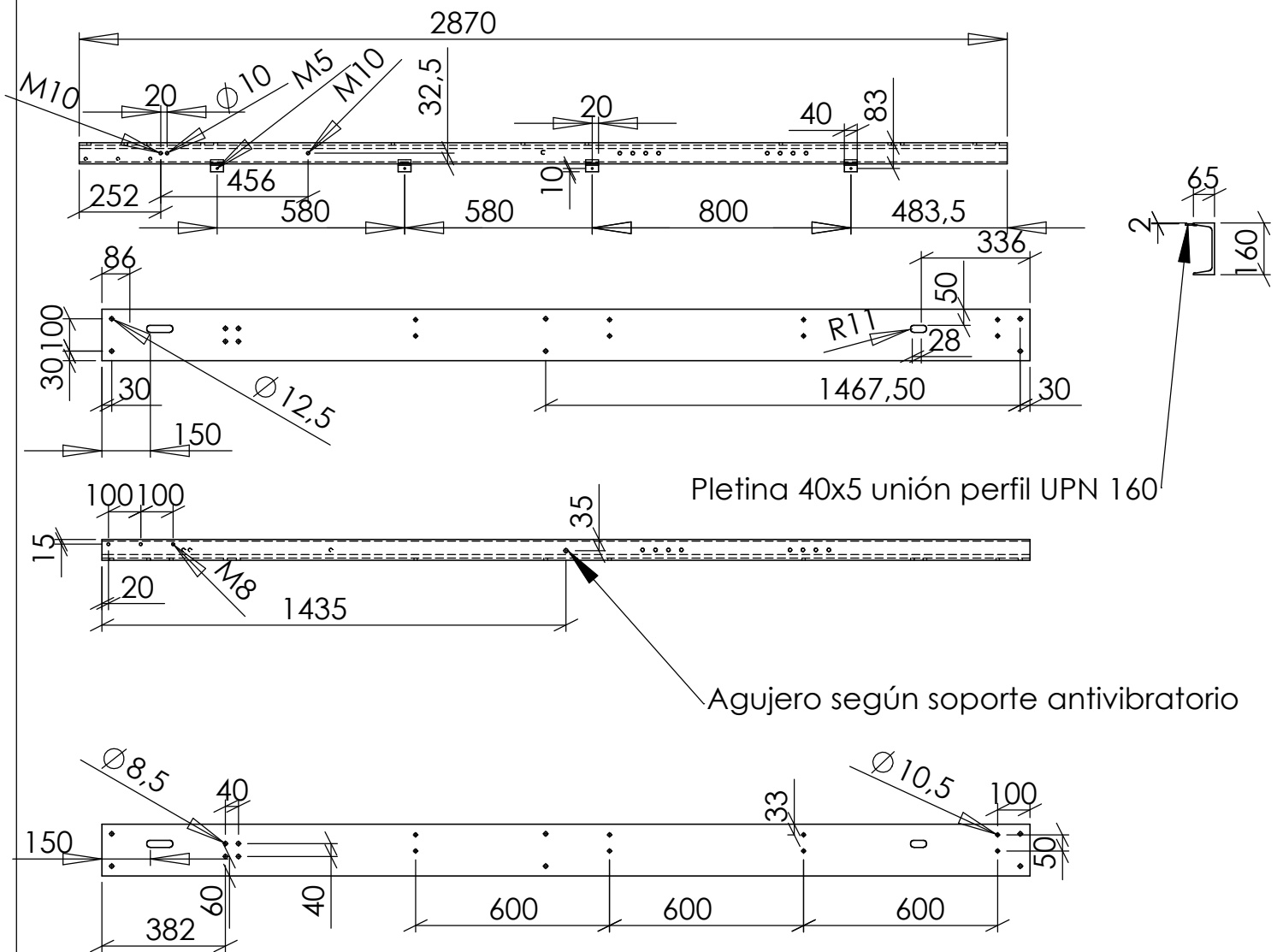
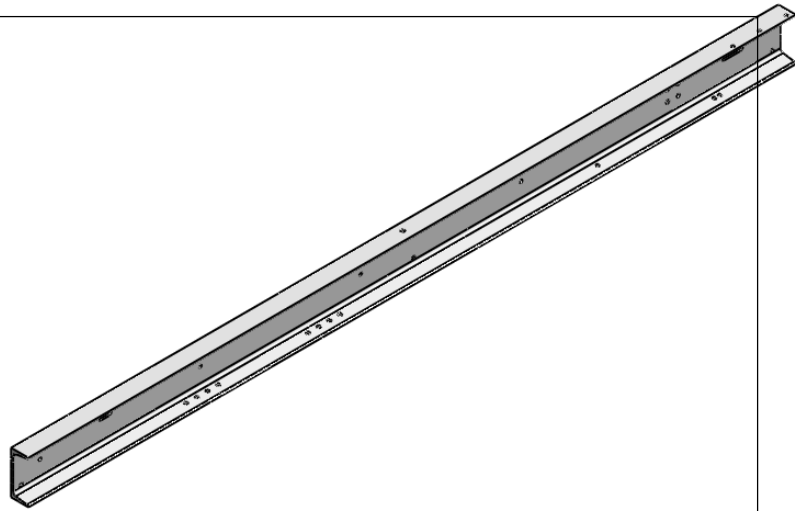
A 3D perspective view of a long, narrow, light gray rectangular object, possibly a metal beam or track. It features a dark gray central strip running along its length, with several small circular features (holes or rivets) spaced out along this strip. The object is shown at an angle, highlighting its length and the internal structure.



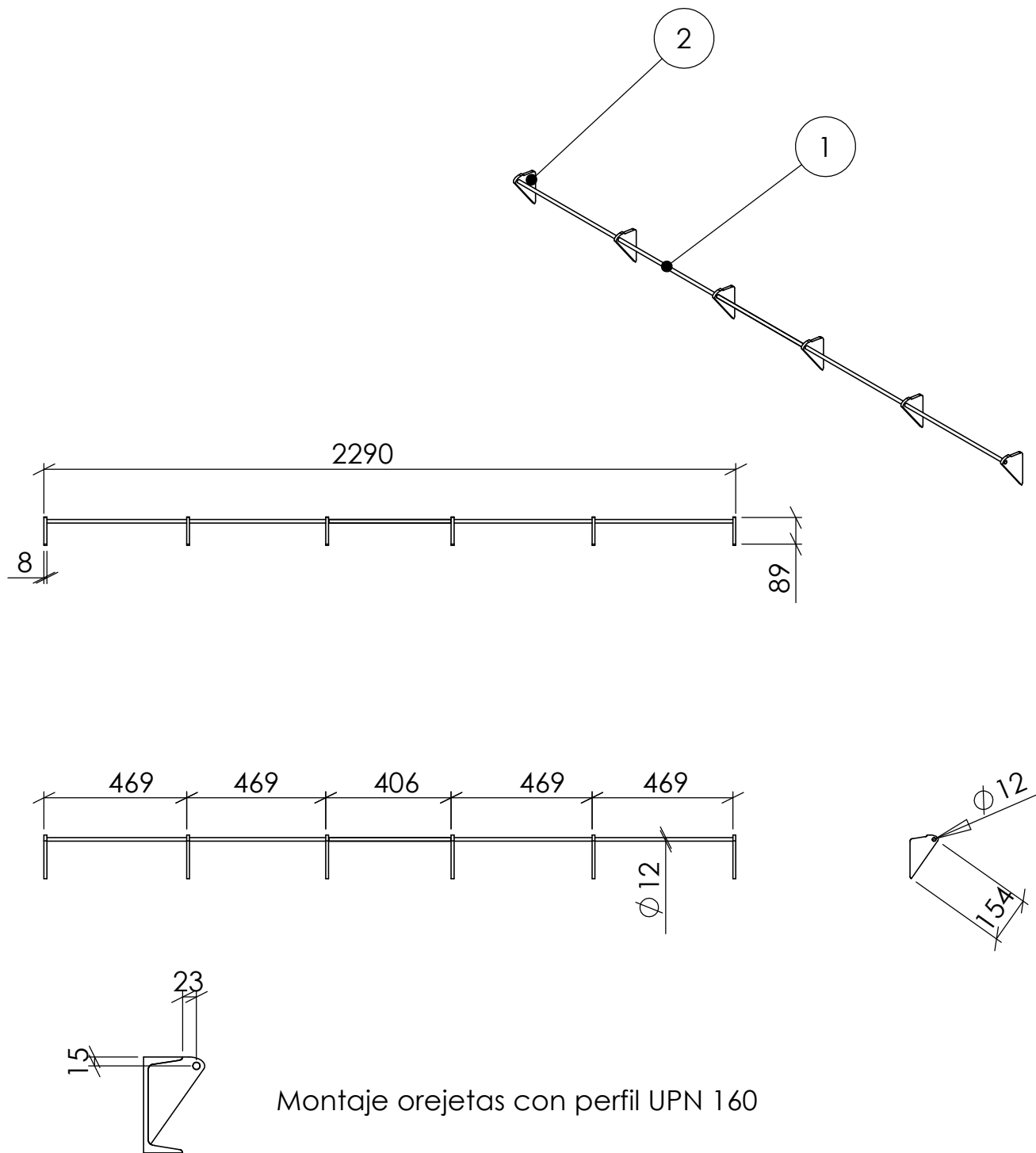
Technical drawing of a stepped shaft. The drawing shows a shaft with a step. The dimensions are: 65 (length of the first section), 2 (width of the step), and 160 (length of the second section).



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		DIMENSIONS ARE IN MM TOLERANCES: FRACTIONAL ± ANGULAR: MACH ± BEND ± TWO PLACE DECIMAL ± THREE PLACE DECIMAL ±		NAME	DATE					
			DRAWN	Ocejo	11-08-2010					
			CHECKED							
			ENG APPR.							
			MFG APPR.							
		MATERIAL	Q.A.				SIZE DWG. NO. A 1.1.6 Perfil UPN 160x2870 Dcho SCALE: 1:50 WEIGHT: SHEET 1 OF 1			
		COMMENTS:								
NEXT ASSY	USED ON	FINISH								
APPLICATION		DO NOT SCALE DRAWING								



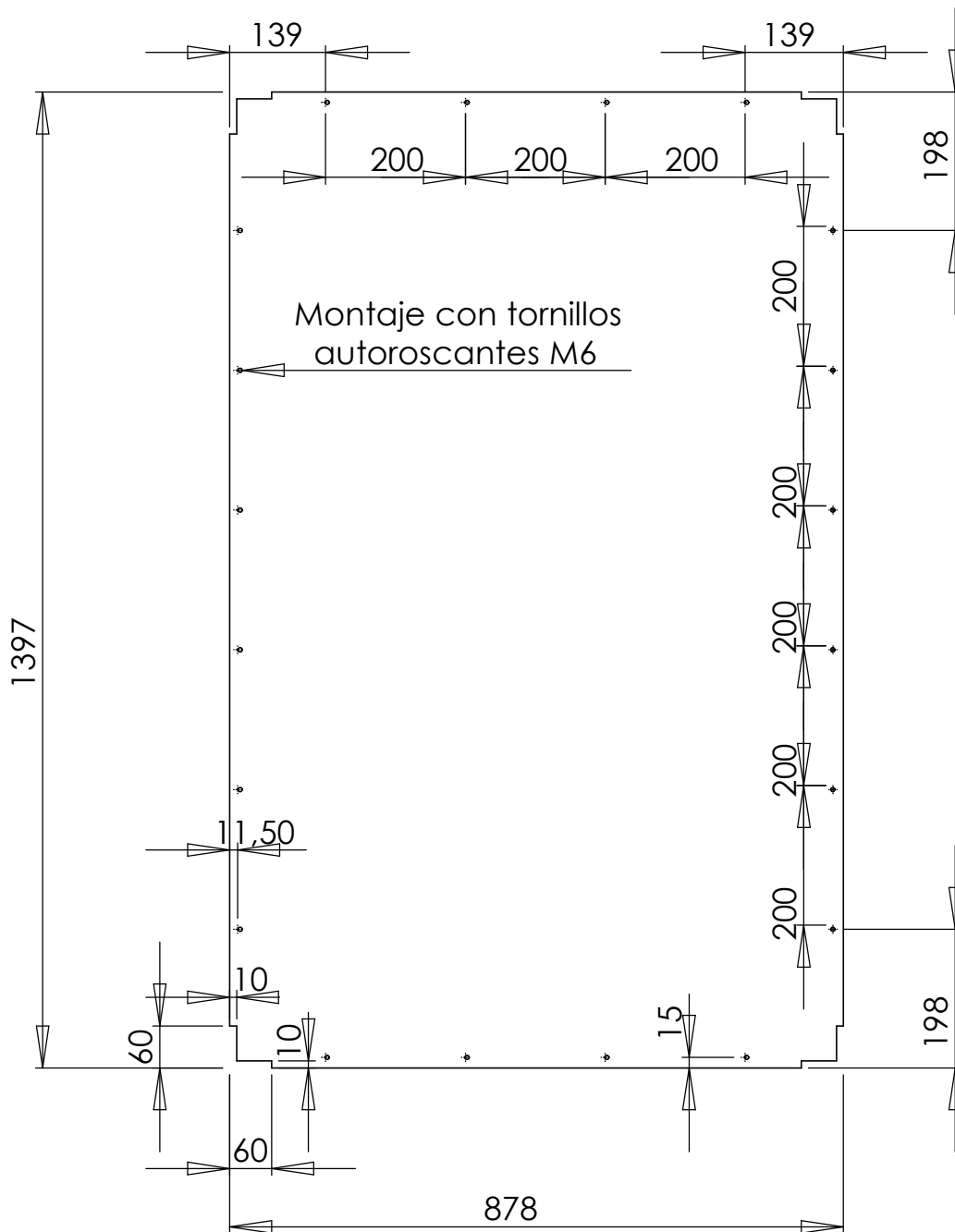
Montaje orejetas con perfil UPN 160

Nº	CANT.	DESCRIPCIÓN	MATERIAL
1	1	Varilla $\varnothing 12 \times 2290$	Acero F-1110
2	6	Orejetas (Forma interior del perfil UPN160 soldado a él)	Acero F-1110

		DIMENSIONS ARE IN MM TOLERANCES: FRACTIONAL ± ANGULAR: MACH ± BEND ± TWO PLACE DECIMAL ± THREE PLACE DECIMAL ±		NAME	DATE			
			DRAWN	Ocejo	11-08-2010			
			CHECKED					
			ENG APPR.					
			MFG APPR.					
			Q.A.					
		MATERIAL	COMMENTS:					
		FINISH						
NEXT ASSY	USED ON		SIZE				DWG. NO.	REV.
APPLICATION		DO NOT SCALE DRAWING	A				1.1.7 Unión con rampas	
			SCALE: 1:50		WEIGHT: 7715.00		SHEET 1 OF 1	

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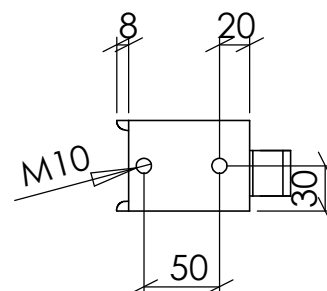
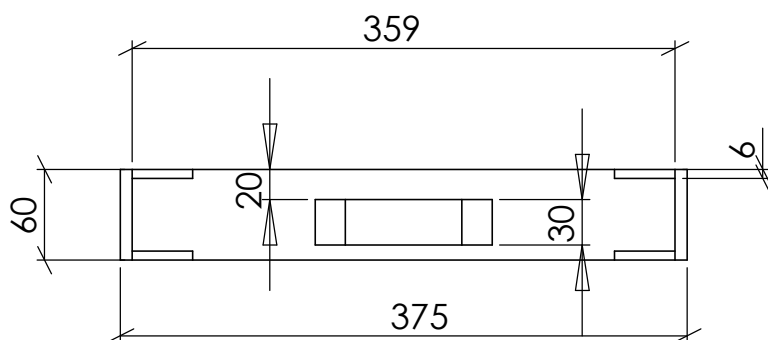
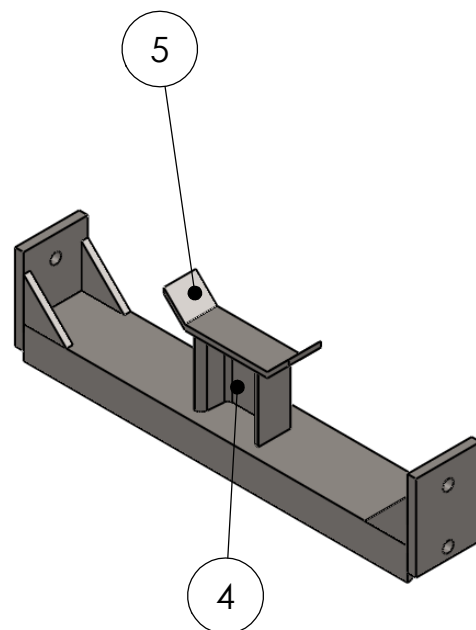
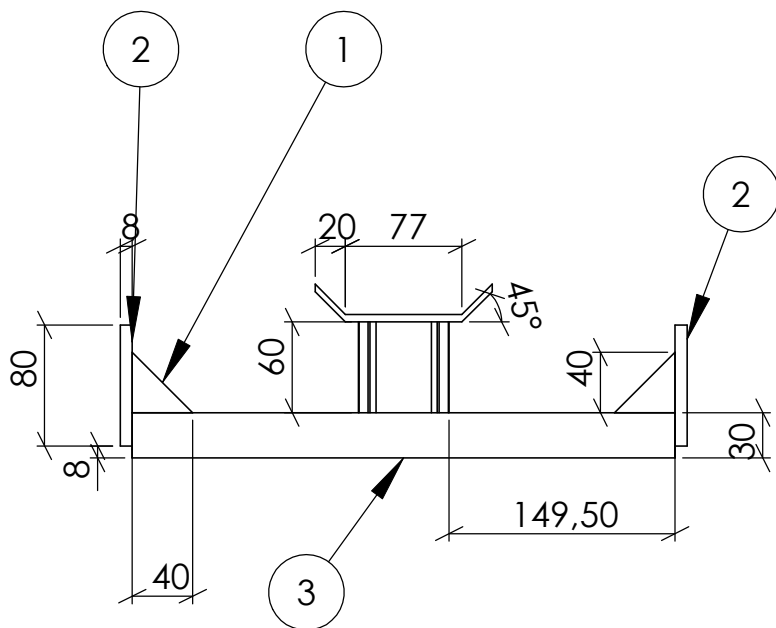
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Chapa acero de espesor 1,5

Cuatro chapas iguales

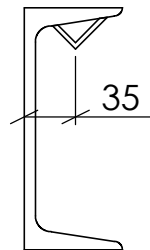
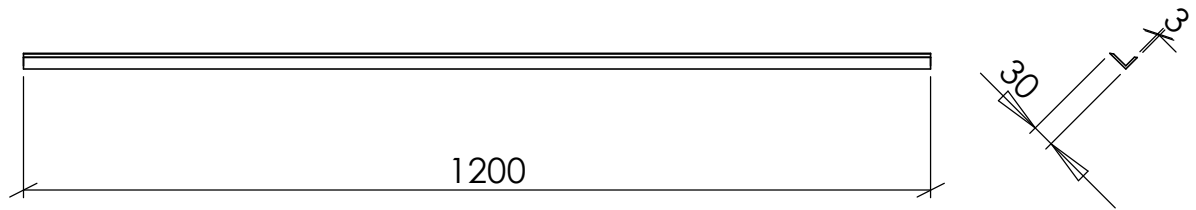
		DIMENSIONS ARE IN MM TOLERANCES: FRACTIONAL ± ANGULAR: MACH ± BEND ± TWO PLACE DECIMAL ± THREE PLACE DECIMAL ±		NAME	DATE			
			DRAWN	Ocejo	11-08-2010			
			CHECKED					
			ENG APPR.					
			MFG APPR.					
		MATERIAL	Q.A.					
		FINISH	COMMENTS:					
NEXT ASSY	USED ON							
APPLICATION		DO NOT SCALE DRAWING			SIZE	DWG. NO.	REV.	
					A	1.1.8 Panel Fondo conjunto		
					SCALE:1:10	WEIGHT:	SHEET 1 OF 1	



Cuatro montajes iguales

Nº	CANT.	DESCRIPCIÓN	MATERIAL
1	4	Cartabón 40x40x6	Acero F-1110
2	2	Pletina 80x60x8	Acero F-1110
3	1	Perfil UPN60x373	Acero A 42B
4	1	Perfil UPN60x60	Acero A 42B
5	1	Pletina sujeta carril	Acero F-1110

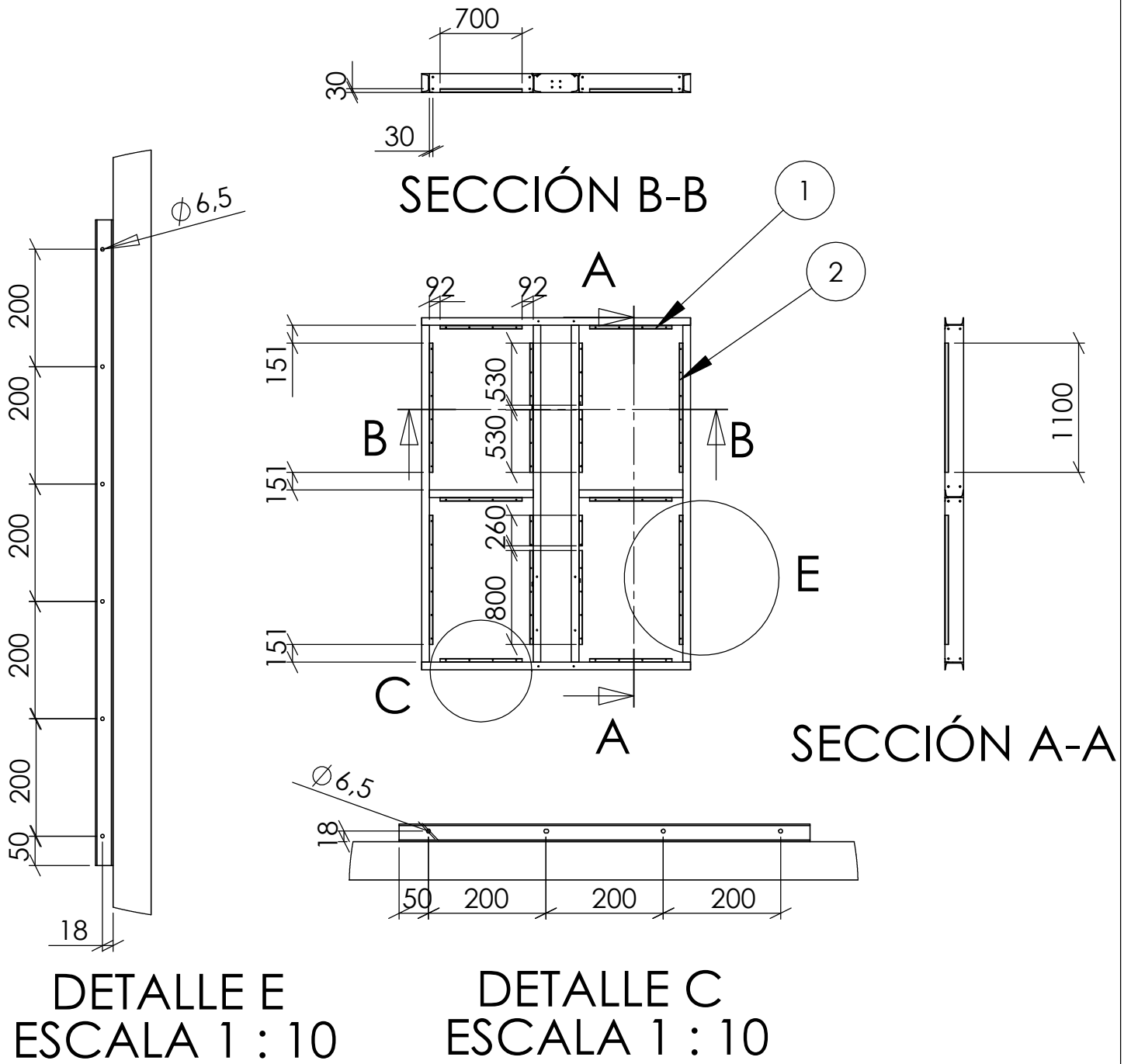
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				DRAWN	Ocejo	29-07-2010
				CHECKED		
				ENG APPR.		
				MFG APPR.		
NEXT ASSY USED ON APPLICATION	MATERIAL FINISH DO NOT SCALE DRAWING	COMMENTS:		SIZE DWG. NO. A 1.1.9 Unión entre perfiles		REV.



Montaje perfil UPN 160 con guías

Dos angulares de 30x3 mm cortando una de las alas a 22

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					DRAWN	Ocejo	11-08-2010			
					CHECKED					
					ENG APPR.					
					MFG APPR.					
					Q.A.					
				MATERIAL	COMMENTS:					
				FINISH						
		NEXT ASSY	USED ON					SIZE A	DWG. NO. 1.1.11 Guías	REV.
		APPLICATION		DO NOT SCALE DRAWING				SCALE:1:10	WEIGHT:	SHEET 1 OF 1

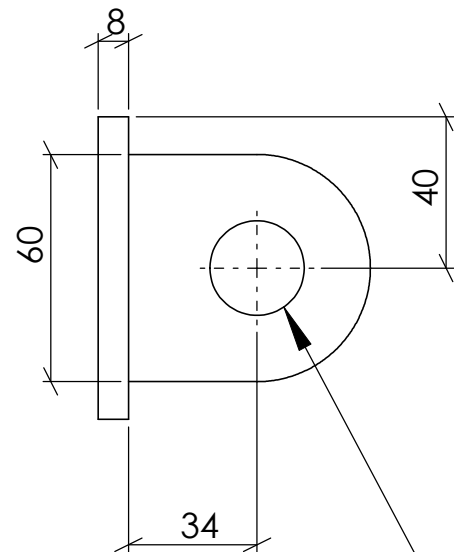
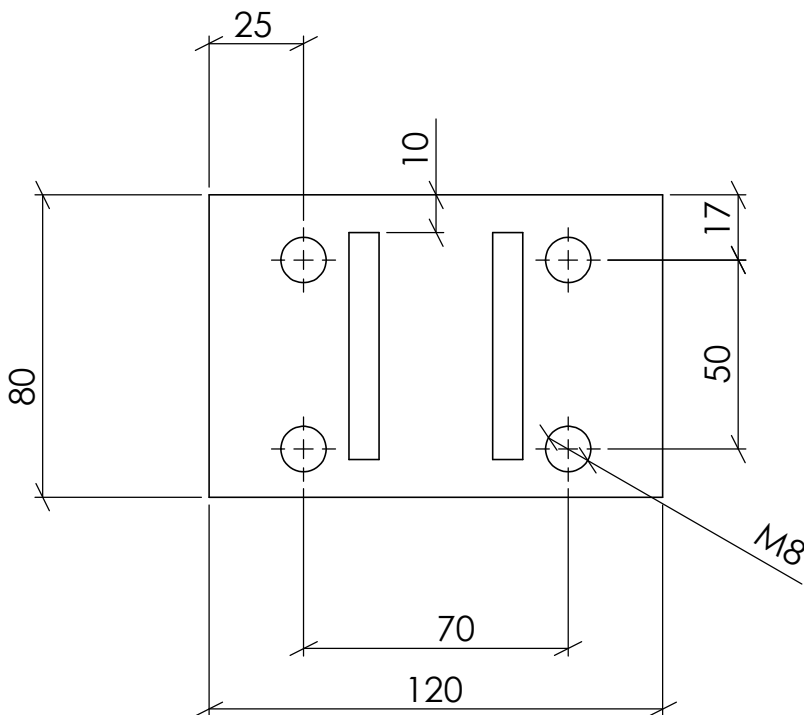
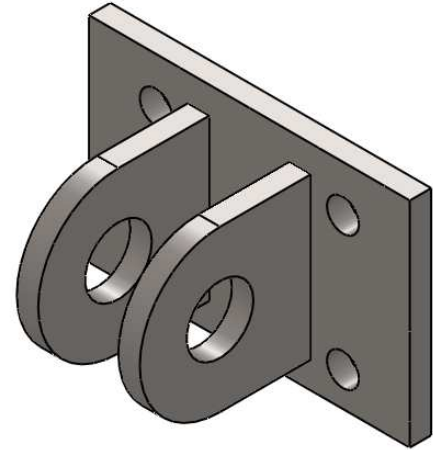
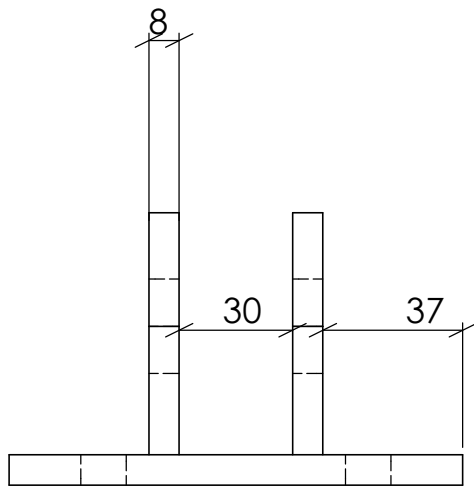


Cuatro de los angulares de 1100 hay que cortarlos como muestra el plano

Nº	CANT.	DESCRIPCIÓN	MATERIAL
1	6	Angular chapa fondo 30x700	Acero A 42B
2	4	Angular chapa fondo 30x1100	Acero A 42B

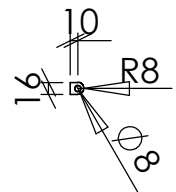
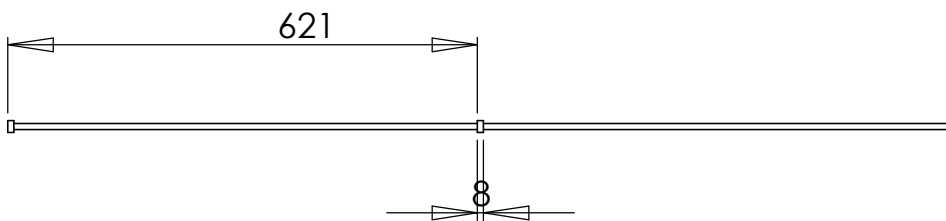
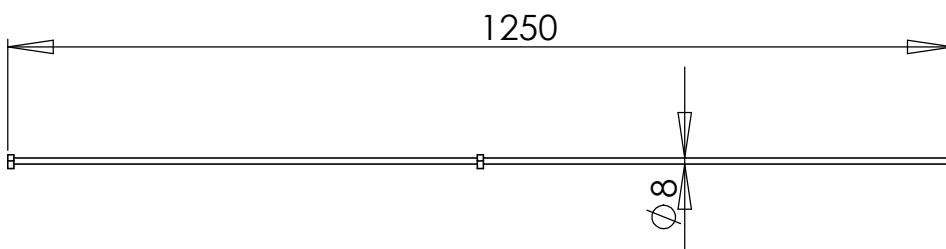
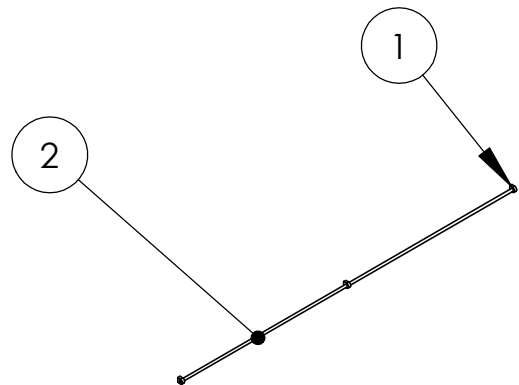
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			CHECKED						
			ENG APPR.						
			MFG APPR.						
		MATERIAL	Q.A.						
		FINISH	COMMENTS:						
NEXT ASSY	USED ON								
APPLICATION									DO NOT SCALE DRAWING
		SIZE	DWG. NO.		REV.				
		A	1.1.12 Angulares						
		SCALE: 1:50				SHEET 1 OF 1			

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Agujero para rótula de diámetro 20

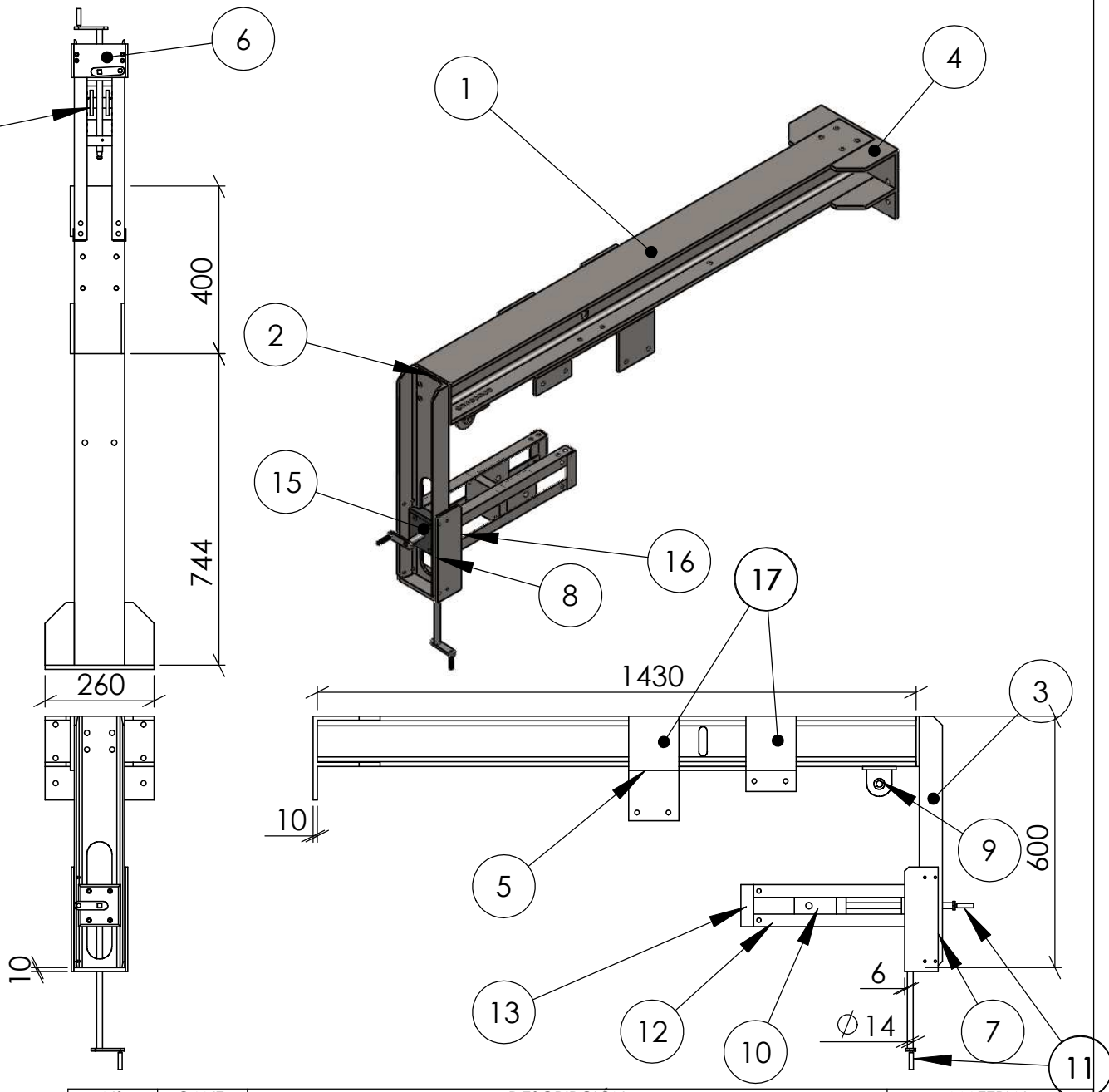
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			MFG APPR.					
		MATERIAL	Q.A.			SIZE A DWG. NO. 1.1.14 Sujección bulón REV.		
		FINISH	COMMENTS:					
NEXT ASSY	USED ON							
APPLICATION		DO NOT SCALE DRAWING	SCALE:1:2			WEIGHT:		SHEET 1 OF 1



		DIMENSIONS ARE IN MM TOLERANCES: FRACTIONAL $\pm$ ANGULAR: MACH $\pm$ BEND $\pm$ TWO PLACE DECIMAL $\pm$ THREE PLACE DECIMAL $\pm$
		MATERIAL
		FINISH
NEXT ASSY	USED ON	
APPLICATION		DO NOT SCALE DRAWING

Nº		CANT.	DESCRIPCIÓN	MATERIAL
1		3	Orejetas	Acero F-1110
2		1	Eje Ø8x1250	Acero F-1110
	NAME	DATE		
DRAWN	Ocejo	11-08-2010		
CHECKED				
ENG APPR.				
MFG APPR.				
Q.A.			COMMENTS:	
SIZE		DWG. NO.		REV.
A		1.1.16 Unión portones		
SCALE:1:20		WEIGHT:		SHEET 1 OF 1

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Nº	CANT.	DESCRIPCIÓN	MATERIAL
1	1	Perfil HEB120x1430 (Ver plano 1.2.1)	Acero A 42B
2	1	Pletina 120x120x8 (Ver plano 1.2.2)	Acero F-1110
3	1	Perfil CPN120x600 (Ver plano 1.2.3)	Acero A 42B
4	1	Pletina pilar suelo (Ver plano 1.2.4)	Acero F-1110
5	1	Conjunto Pletinas bombas (Ver plano 1.2.5)	Acero F-1110
6	1	Pletina final carrera 123x80x10 (Ver plano 1.2.6)	Acero F-1110
7	2	Pletinas guía (Ver plano 1.2.7)	Acero F-1110
8	2	Suplemento 1.5 (Ver plano 1.2.8)	Acero F-1110
9	1	Bulón trasero cilindro traslación Ø25x60	Acero F-1110
10	1	Horquilla movimiento (Ver plano 1.2.10)	Acero F-1110
11	2	Eje manivela (Ver plano 1.2.11)	Acero F-1110
12	4	Angular 30x3 con 420 de longitud (Ver plano 1.2.12)	Acero A42B
13	4	Pletina (Ver plano 1.2.13)	Acero A 42B
14	1	Pletina enganche trasero cilindro traslación (Ver plano 1.2.14)	Acero F-1110
15	1	Soporte manivela vertical (Ver plano 1.2.15)	Acero F-1110
16	1	Taco final carrera horizontal (Ver plano 1.2.16)	Acero F-1110
17	2	Pletina 120x100x10 regulador	Acero F-1110

DIMENSIONS ARE IN MM

TOLERANCES:

FRACTIONAL ±

ANGULAR: MACH ± BEND ±

TWO PLACE DECIMAL ±

THREE PLACE DECIMAL ±

MATERIAL

Material <sin especificar>

FINISH

DO NOT SCALE DRAWING

NAME

Ocejo

DATE

03-08-2010

DRAWN

CHECKED

ENG APPR.

MFG APPR.

Q.A.

COMMENTS:

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NEXT ASSY

USED ON

APPLICATION

SIZE

A

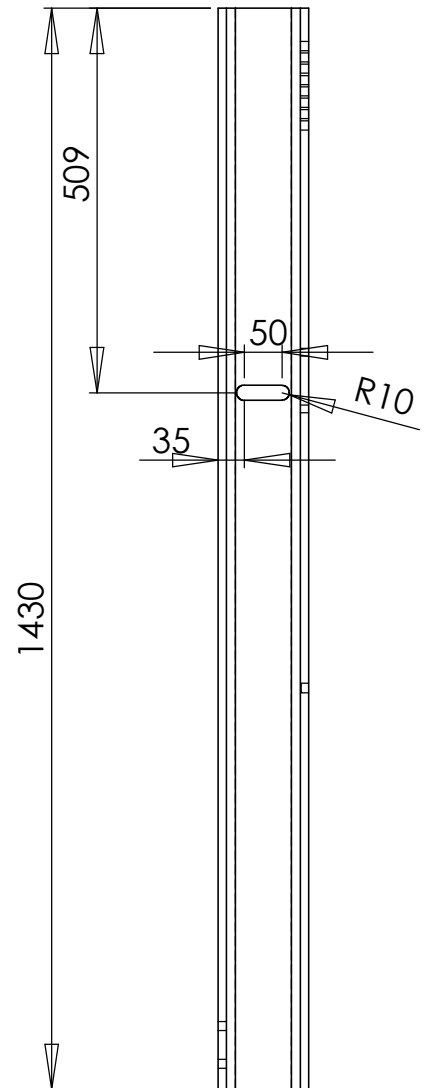
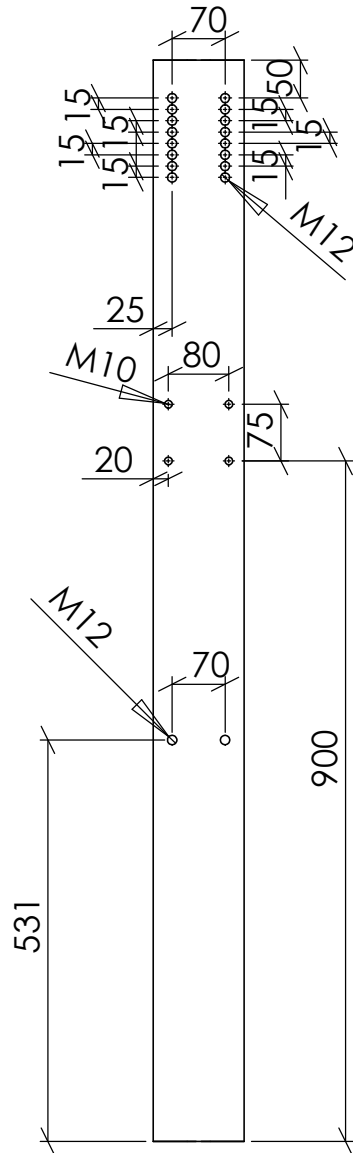
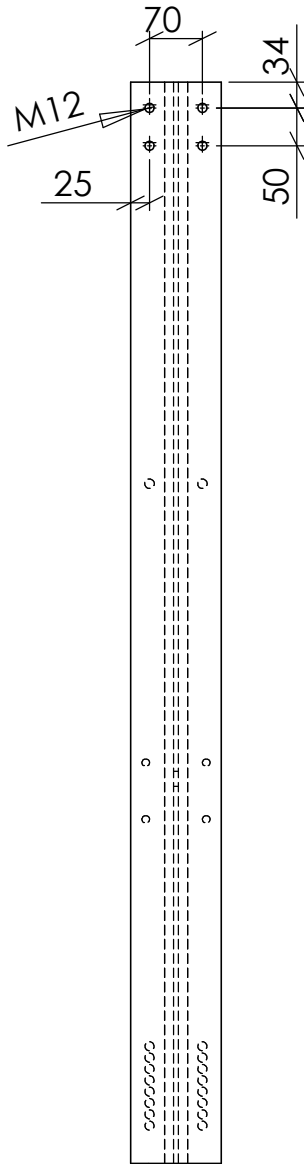
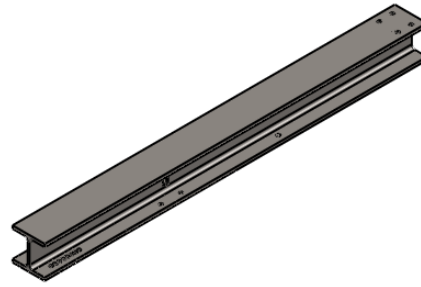
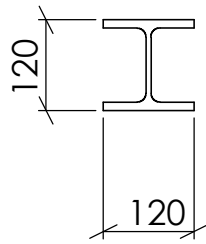
DWG. NO.

1.2 Pilar

REV.

SCALE:1:20

SHEET 1 OF 1

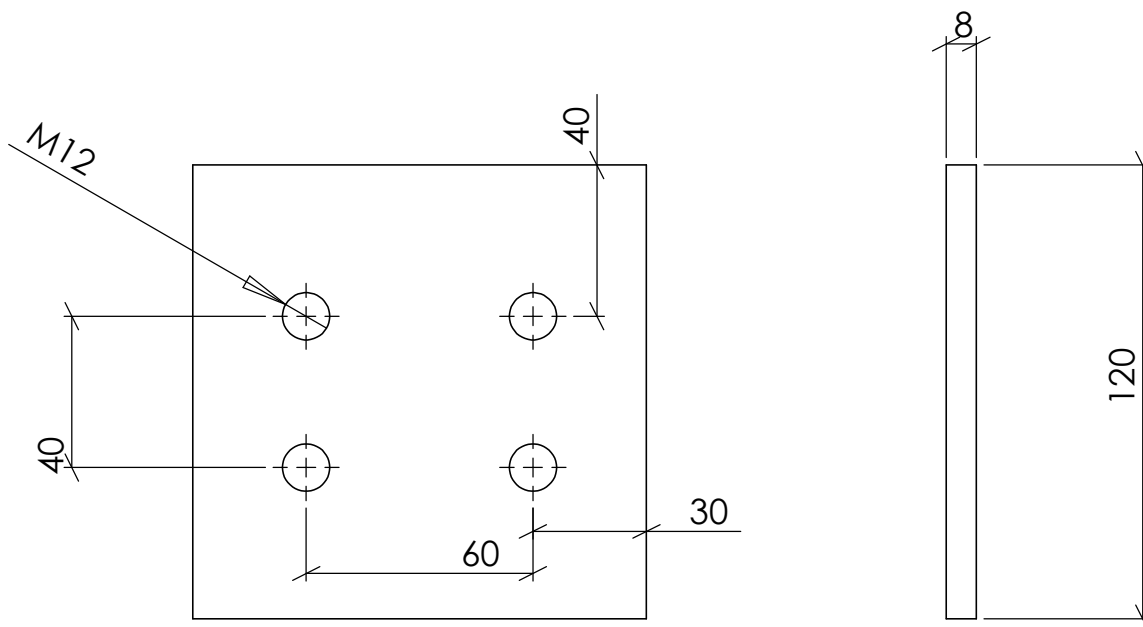
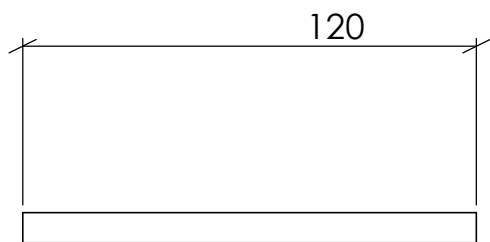


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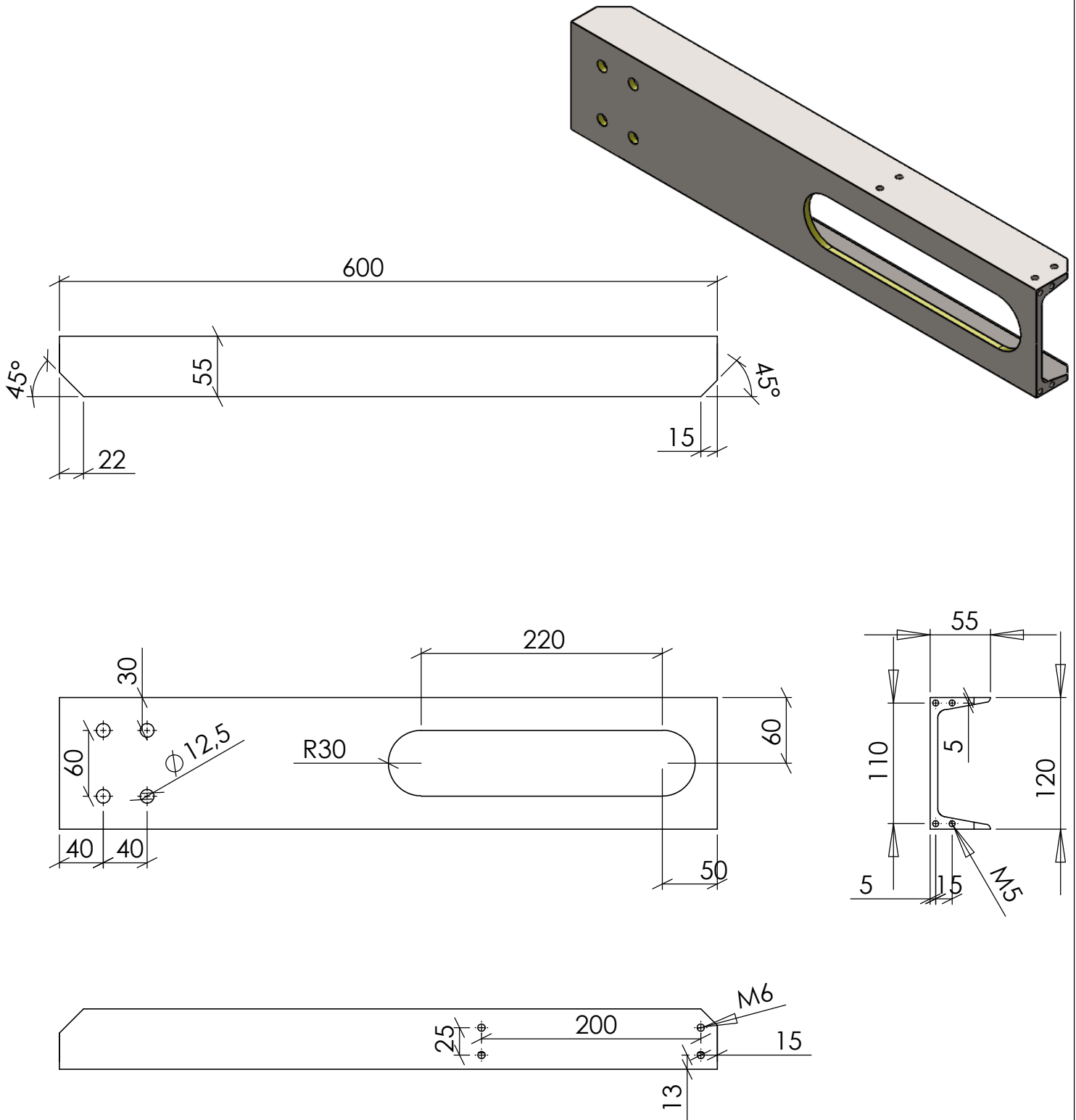
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			CHECKED					
			ENG APPR.					
			MFG APPR.					
		MATERIAL	Q.A.					
		COMMENTS:						
NEXT ASSY	USED ON				FINISH			
APPLICATION		DO NOT SCALE DRAWING	SIZE A		DWG. NO. 1.2.1 Perfil HEB 120		REV.	
			SCALE:1:20					SHEET 1 OF 1



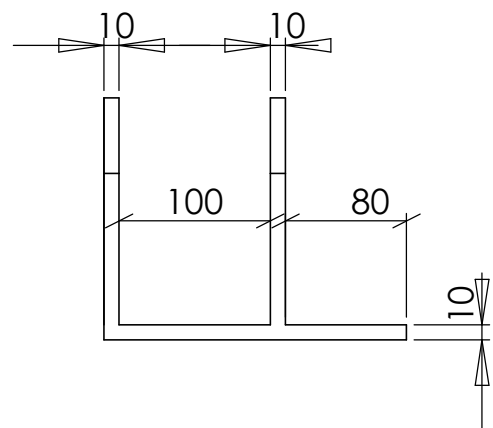
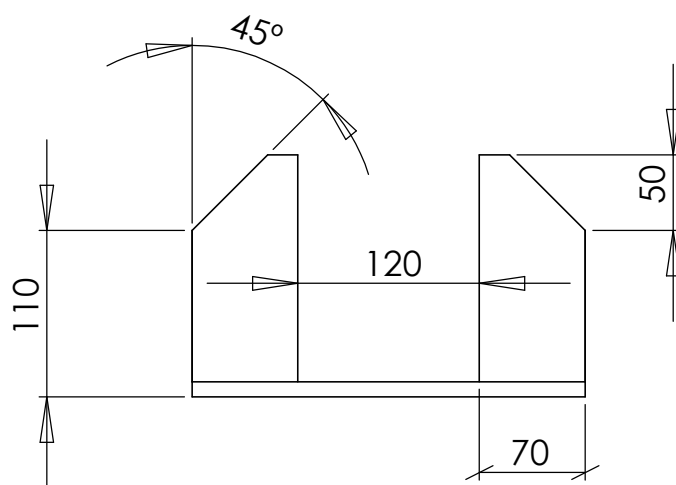
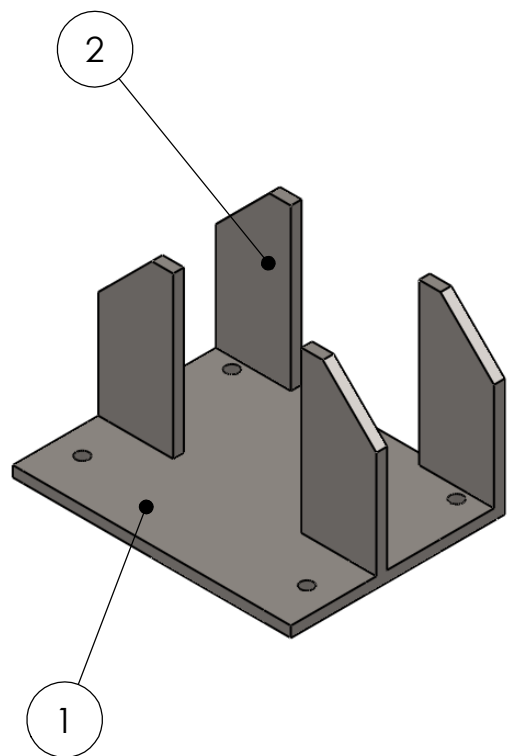
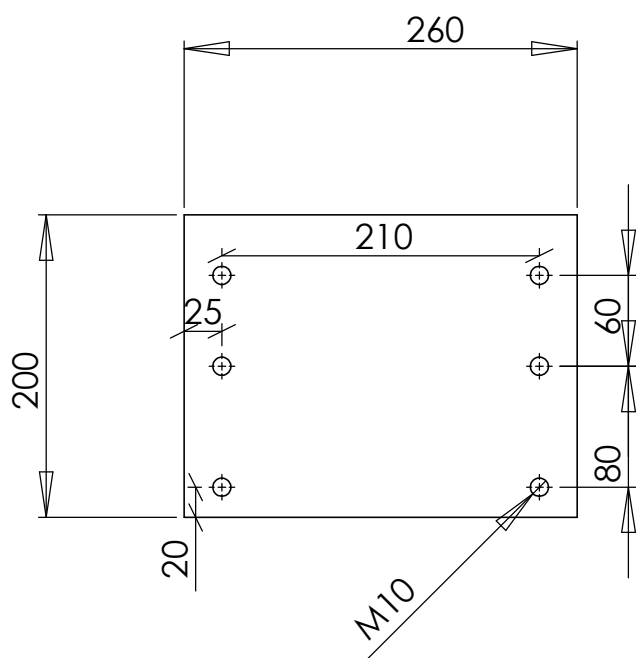
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		TWO PLACE DECIMAL $\pm$		MFG APPR.			
		THREE PLACE DECIMAL $\pm$		Q.A.			
		MATERIAL		COMMENTS:			
NEXT ASSY	USED ON	FINISH					
APPLICATION		DO NOT SCALE DRAWING					
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		A		1.2.2 Pletina			
		SCALE: 1:2		WEIGHT:		SHEET 1 OF 1	



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		DIMENSIONS ARE IN MM TOLERANCES: FRACTIONAL ± ANGULAR: MACH ± BEND ± TWO PLACE DECIMAL ± THREE PLACE DECIMAL ±		NAME	DATE				
			DRAWN	Ocejo	11-08-2010				
			CHECKED						
			ENG APPR.						
			MFG APPR.						
		MATERIAL	Q.A.			COMMENTS:			
NEXT ASSY	USED ON	FINISH							
APPLICATION		DO NOT SCALE DRAWING							
						SIZE	DWG. NO.		REV.
						A	1.2.3 Perfi CPN 120		
						SCALE:1:10		SHEET 1 OF 1	



Nº	CANT.	DESCRIPCIÓN	MATERIAL
1	1	Pletina pilar suelo (Ver plano 1.2.4)	Acero F-1110
2	4	Cartabón	Acero F-1110

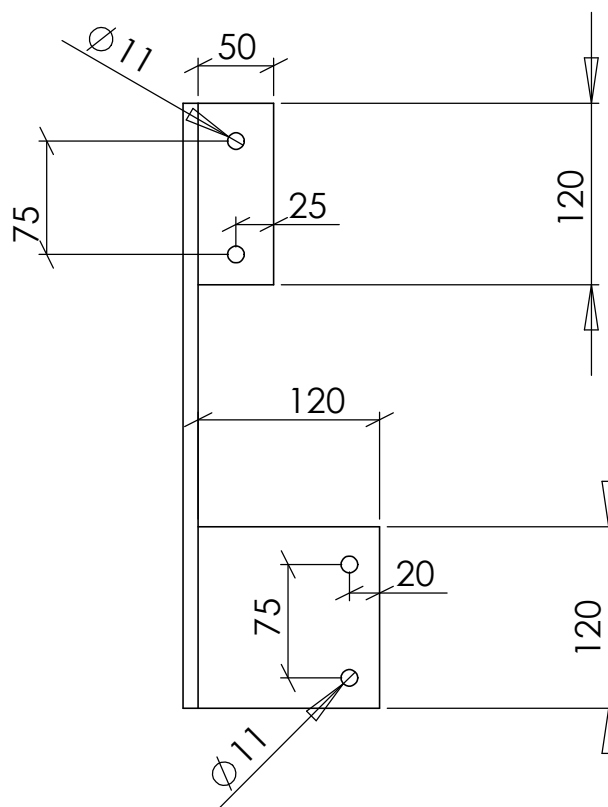
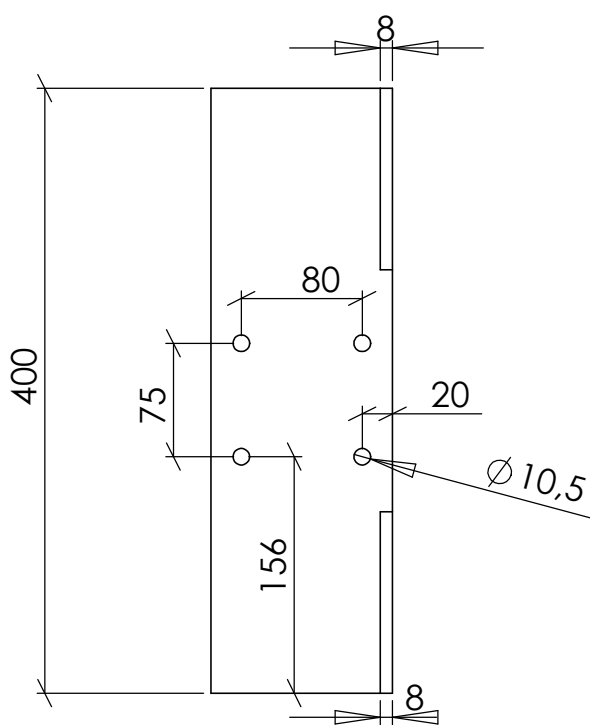
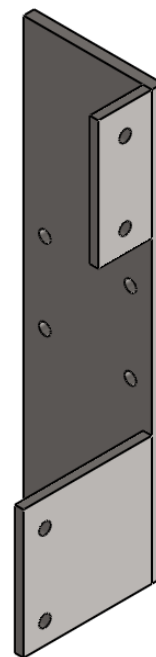
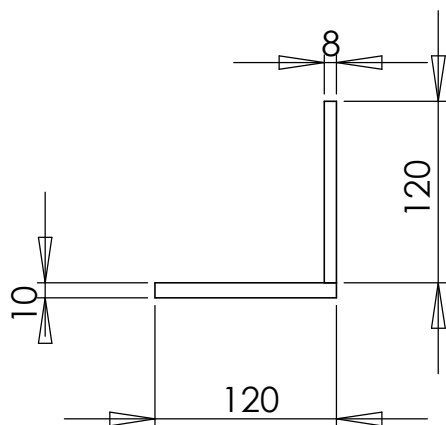
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		TOLERANCES:
		FRACTIONAL ±
		ANGULAR: MACH ± BEND ±
		TWO PLACE DECIMAL ±
		THREE PLACE DECIMAL ±
		MATERIAL
		FINISH
NEXT ASSY	USED ON	
APPLICATION	DO NOT SCALE DRAWING	

	NAME	DATE
DRAWN	Ocejo	11-08-2010
CHECKED		
ENG APPR.		
MFG APPR.		
Q.A.		
COMMENTS:		

SIZE	DWG. NO.	REV.
A	1.2.4 Pletina inferiores pilar	
SCALE: 1:5	WEIGHT:	SHEET 1 OF 1

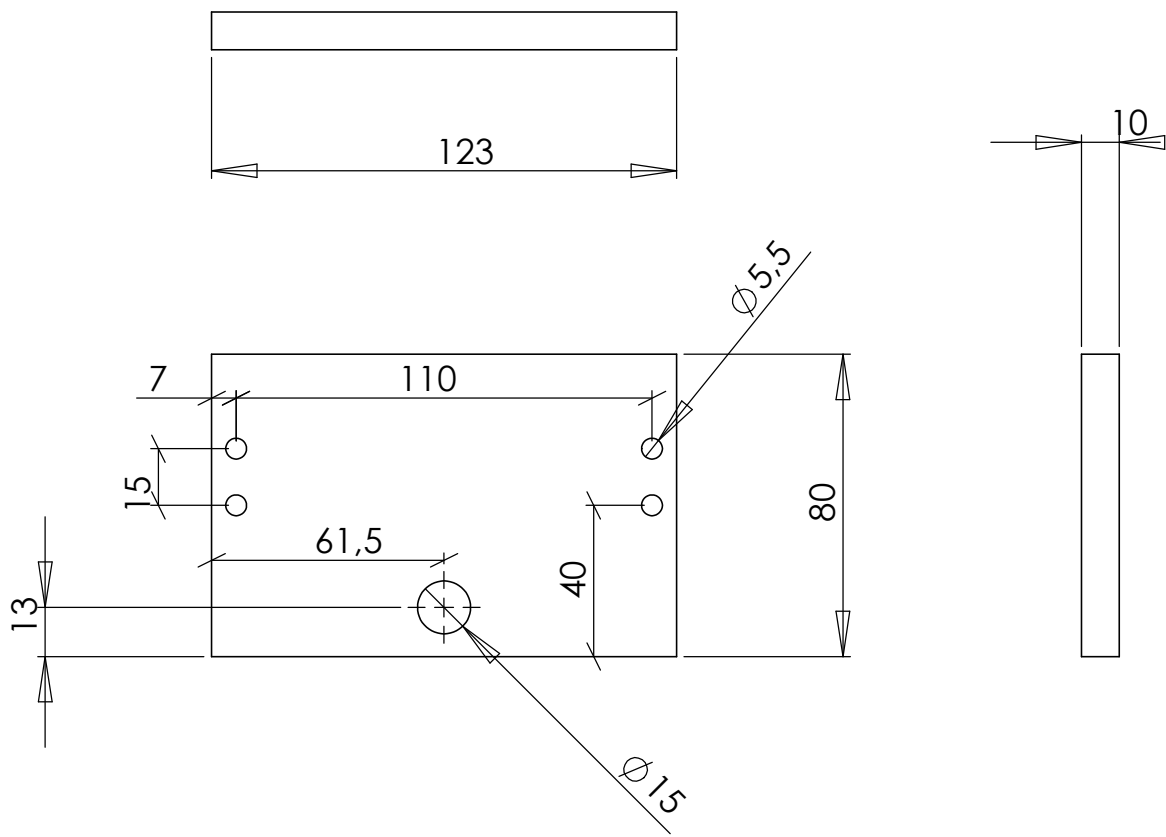
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Las tres pletinas son de acero F-1110

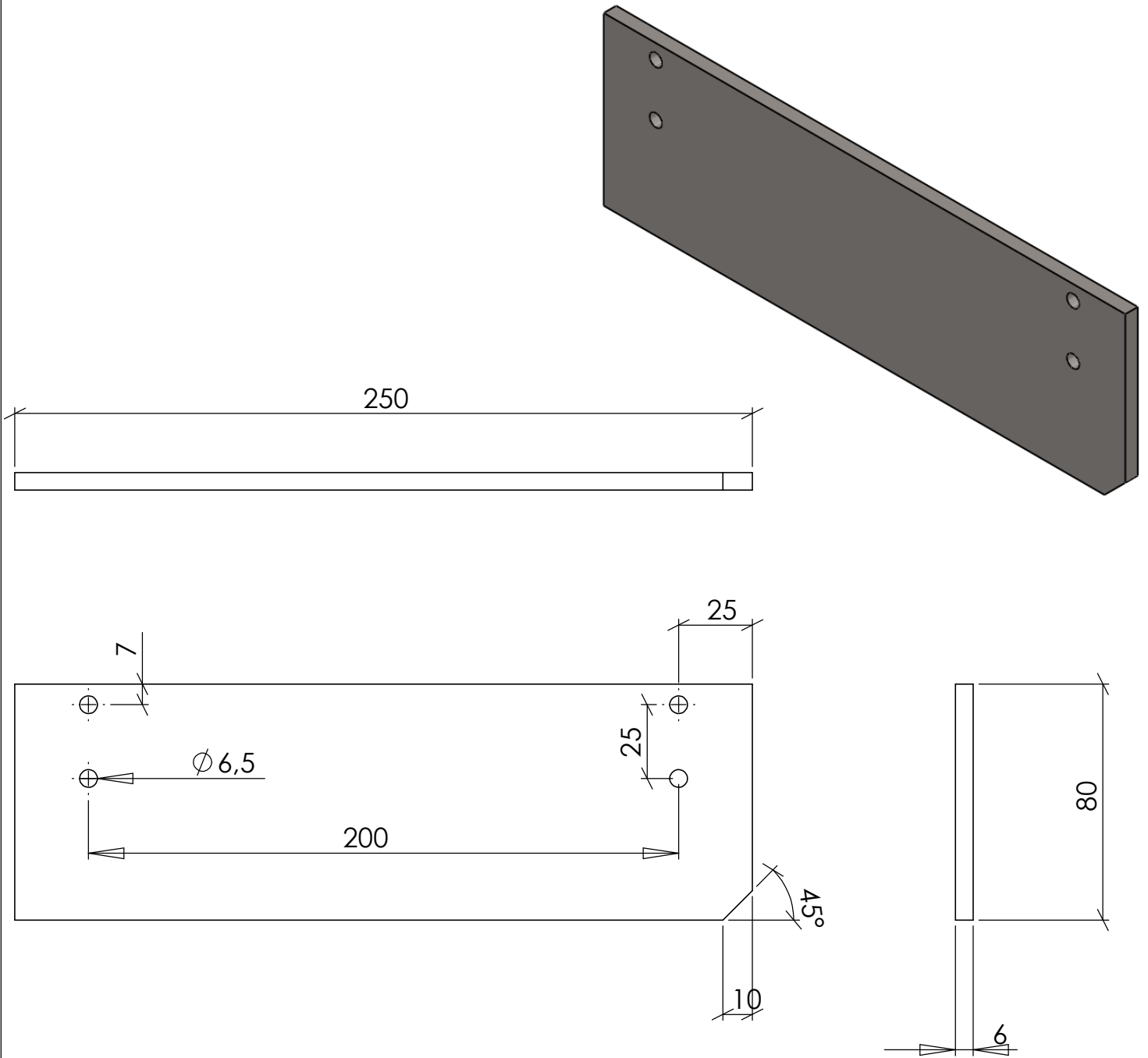
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			CHECKED					
			ENG APPR.					
			MFG APPR.					
		MATERIAL Material <sin especificar>	Q.A.			SIZE DWG. NO. A 1.2.5 Pletinas bombas REV. SCALE: 1:5 SHEET 1 OF 1		
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NEXT ASSY	USED ON	FINISH						
APPLICATION		DO NOT SCALE DRAWING						



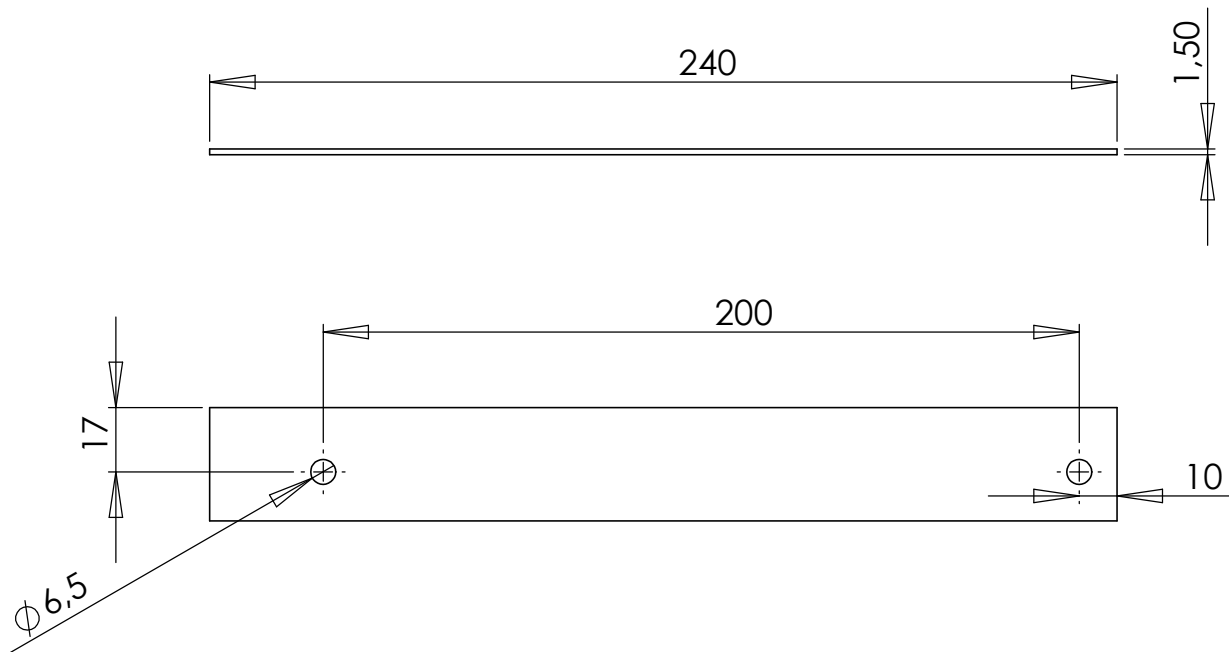
PROPRIETARY AND CONFIDENTIAL

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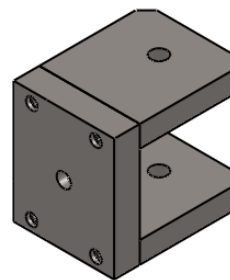
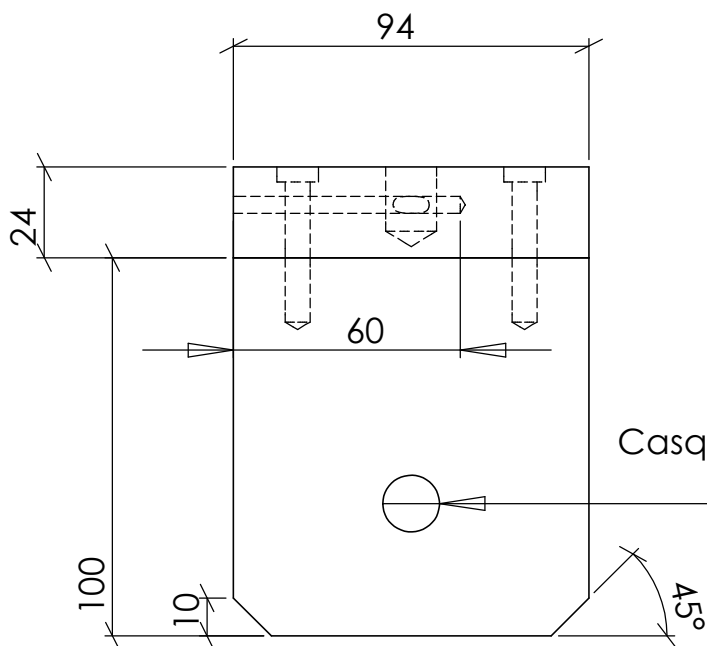
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			CHECKED					
			ENG APPR.					
			MFG APPR.					
		MATERIAL	Q.A.					
		COMMENTS:						
NEXT ASSY	USED ON	FINISH						
APPLICATION		DO NOT SCALE DRAWING						
				SIZE	DWG. NO.		REV.	
				A	1.2.6 Pletina final			
				SCALE:1:2				SHEET 1 OF 1



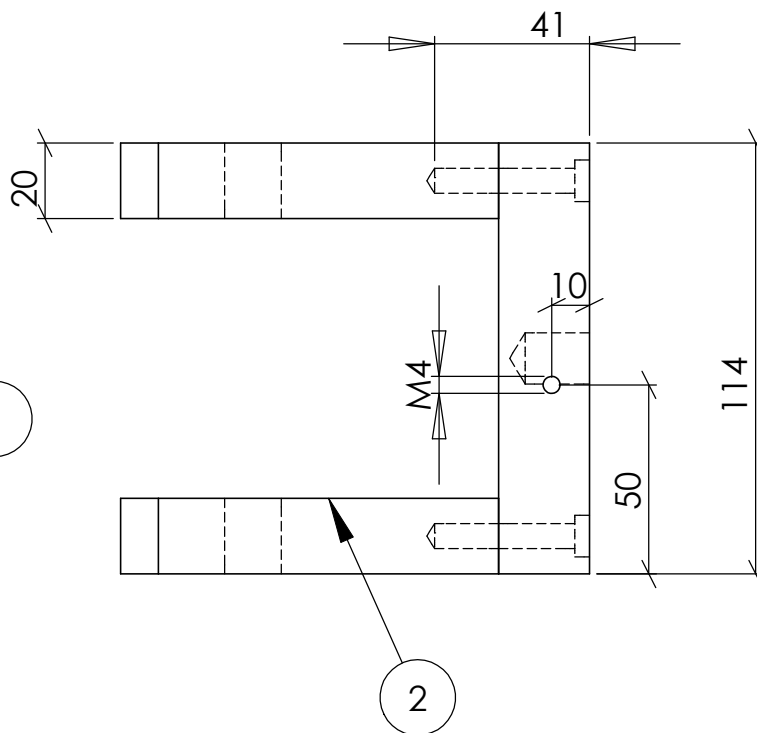
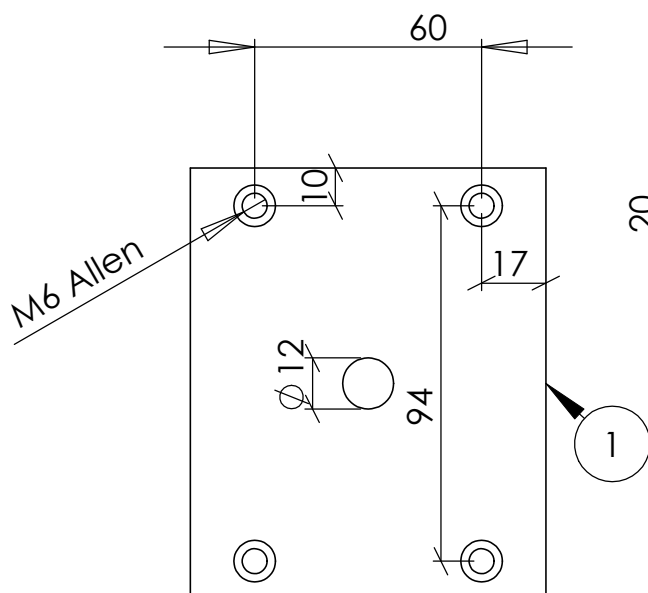
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				DRAWN	Ocejo	03-08-2010				
				CHECKED						
				ENG APPR.						
				MFG APPR.						
				MATERIAL	Q.A.			COMMENTS:		
				FINISH						
	NEXT ASSY	USED ON								
	APPLICATION		DO NOT SCALE DRAWING							
					SIZE	DWG. NO.	1.2.7 Pletina guias		REV.	
					A					
					SCALE:1:5				SHEET 1 OF 1	



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				DRAWN	Ocejo	11-08-2010			
				CHECKED					
				ENG APPR.					
				MFG APPR.					
			MATERIAL	Q.A.					
			COMMENTS:						
	NEXT ASSY	USED ON	FINISH						
	APPLICATION		DO NOT SCALE DRAWING						
		SIZE	DWG. NO.		REV.				
		A	1.2.8 Suplemento 1,5						
		SCALE:1:5	WEIGHT:		SHEET 1 OF 1				



Casquillo bronce ϕ ext 20
 ϕ int 16 long 20

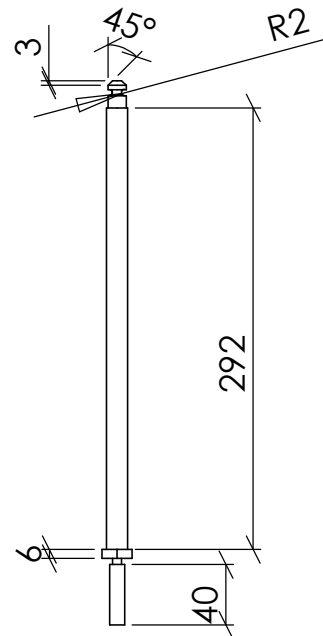
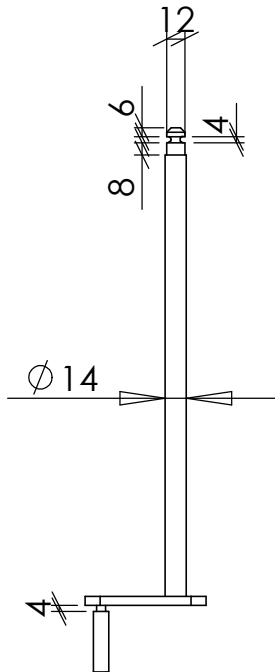
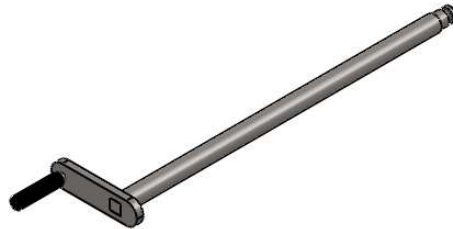
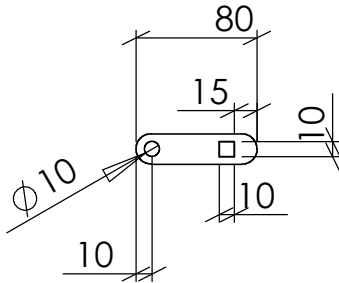


Nº	CANT.	DESCRIPCIÓN	MATERIAL
1	1	Horquilla larguero	Acero F-1110
2	2	Horquillas poste	Acero F-1110

		DIMENSIONS ARE IN MM TOLERANCES: FRACTIONAL ± ANGULAR: MACH ± BEND ± TWO PLACE DECIMAL ± THREE PLACE DECIMAL ±		NAME	DATE	
			DRAWN	Ocejo	03-08-2010	
			CHECKED			
			ENG APPR.			
			MFG APPR.			
		MATERIAL	Q.A.			
		FINISH	COMMENTS:			
NEXT ASSY	USED ON					
APPLICATION						
DO NOT SCALE DRAWING		SIZE DWG. NO.			REV.	
		A 1.2.10 Horquilla eje vertical				
		SCALE: 1:2 WEIGHT:			SHEET 1 OF 1	

PROPRIETARY AND CONFIDENTIAL

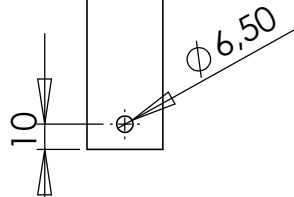
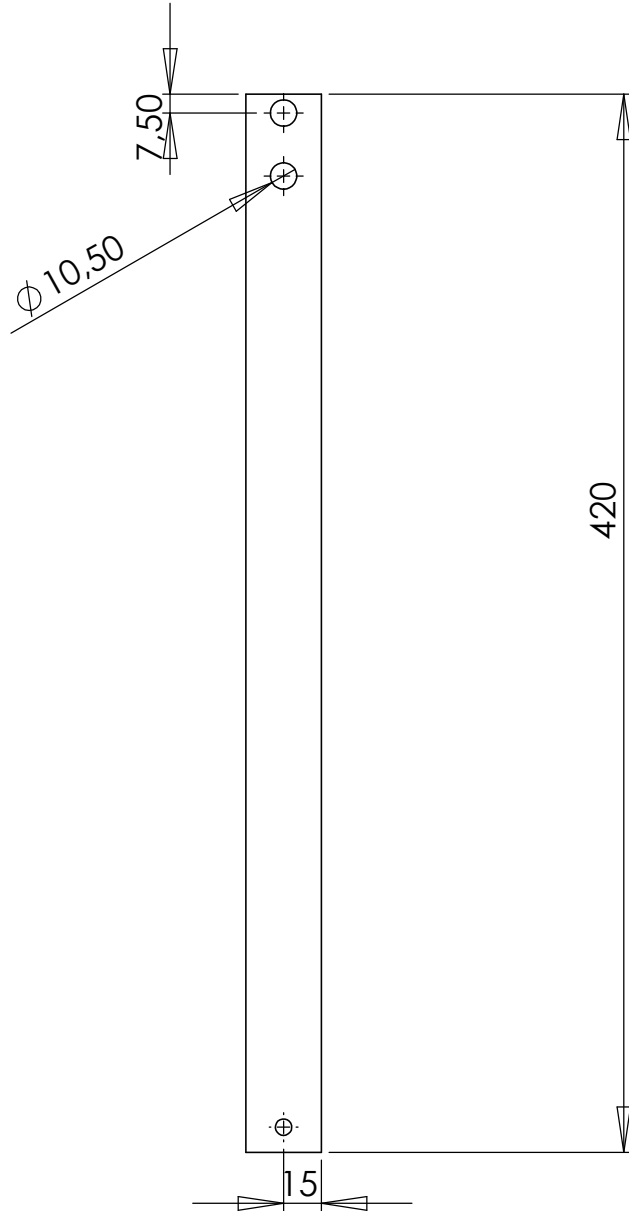
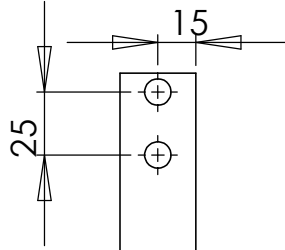
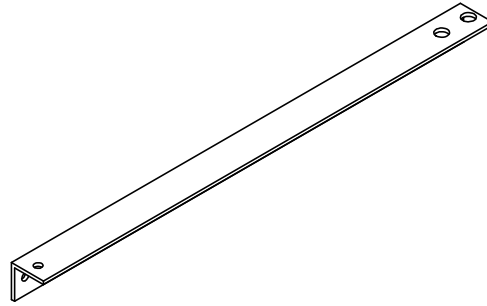
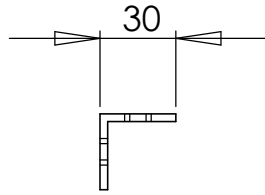
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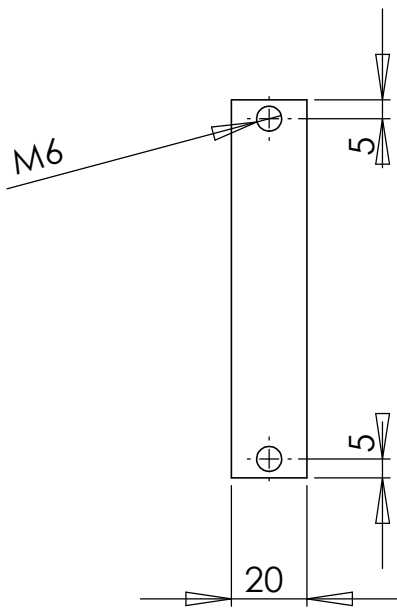
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		DIMENSIONS ARE IN MM TOLERANCES: FRACTIONAL ± ANGULAR: MACH ± BEND ± TWO PLACE DECIMAL ± THREE PLACE DECIMAL ±		NAME	DATE	
				DRAWN	Ocejo	11-08-2010
				CHECKED		
				ENG APPR.		
				MFG APPR.		
				Q.A.		
				COMMENTS:		
		MATERIAL				
		FINISH				
NEXT ASSY	USED ON					
APPLICATION		DO NOT SCALE DRAWING				
SIZE	DWG. NO.					REV.
A	1.2.11 Eje manivela					
SCALE: 1:5	WEIGHT:					SHEET 1 OF 1

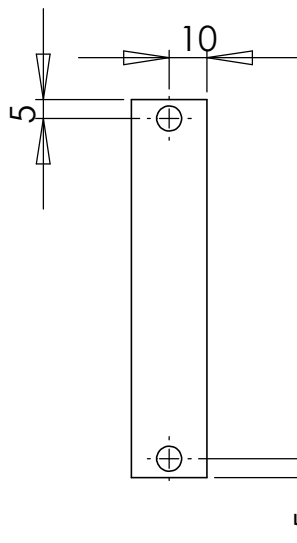
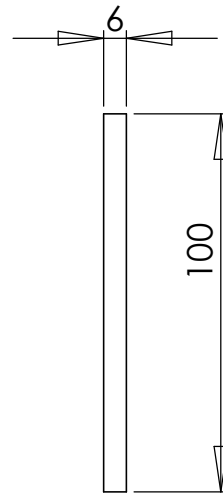


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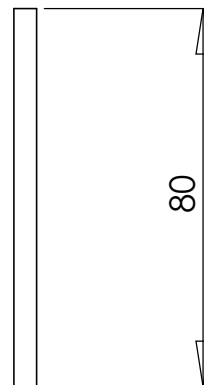
		DIMENSIONS ARE IN MM TOLERANCES: FRACTIONAL ± ANGULAR: MACH ± BEND ± TWO PLACE DECIMAL ± THREE PLACE DECIMAL ±		NAME	DATE			
			DRAWN	Ocejo	07/09/2010			
			CHECKED					
			ENG APPR.					
			MFG APPR.					
		MATERIAL	Q.A.					
		FINISH	COMMENTS:					
NEXT ASSY	USED ON							
APPLICATION			DO NOT SCALE DRAWING					
						SIZE	DWG. NO.	REV.
						A	1.2.12 Angulares 30x3	
						SCALE:1:5	WEIGHT:	SHEET 1 OF 1



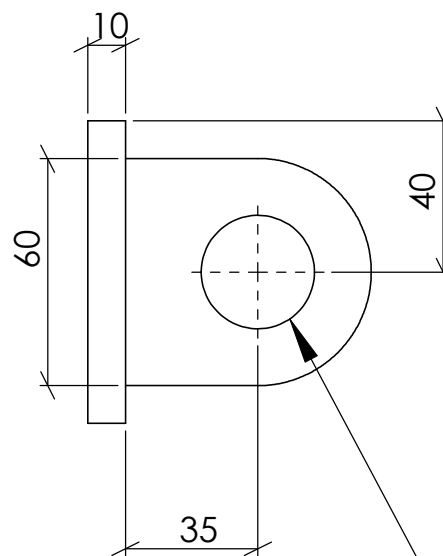
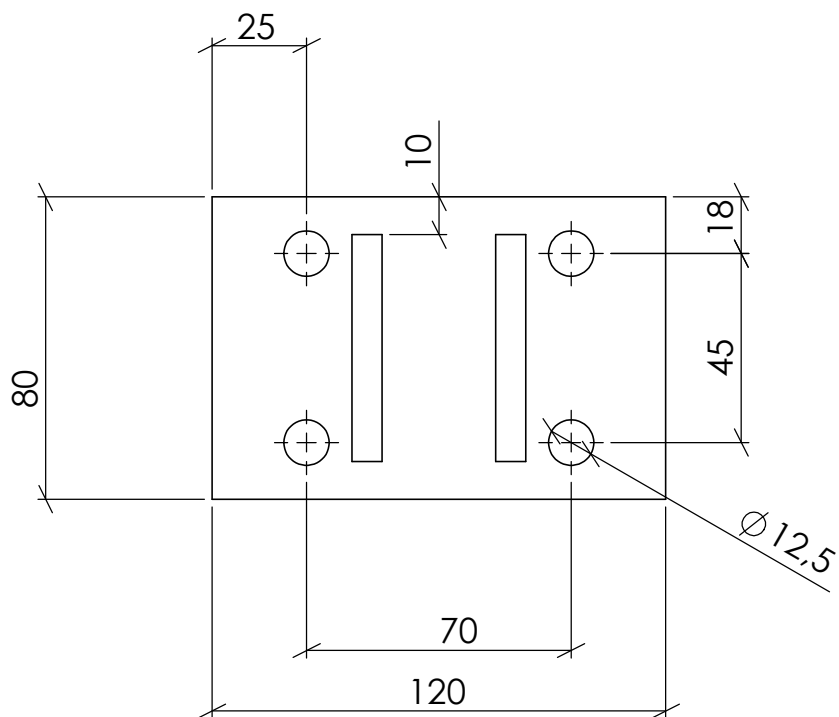
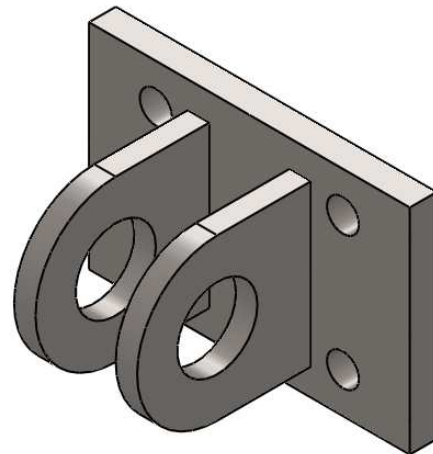
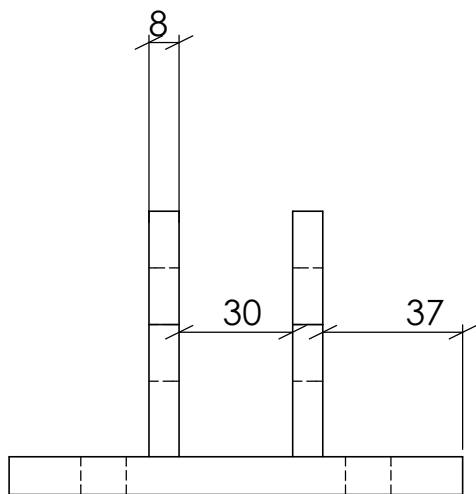
Dos pletinas de 100



Dos pletinas de 80

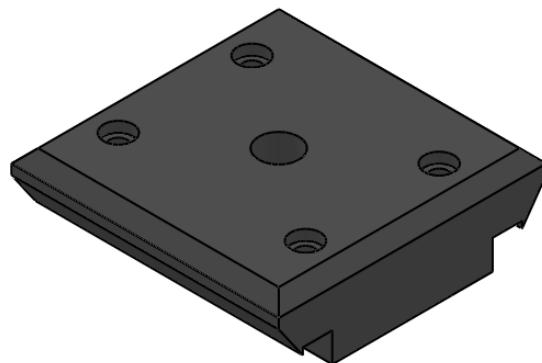
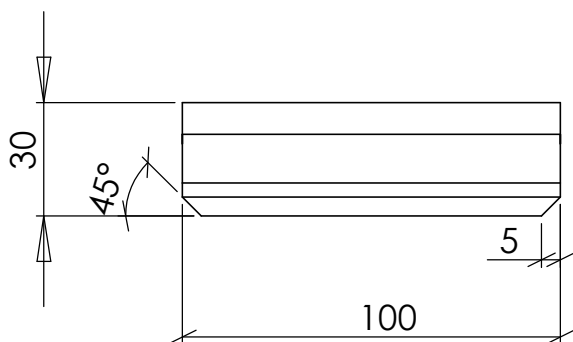


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				DRAWN						
				CHECKED						
				ENG APPR.						
				MFG APPR.						
				Q.A.						
				COMMENTS:						
	NEXT ASSY	USED ON								FINISH
	APPLICATION									DO NOT SCALE DRAWING
		SIZE	DWG. NO.		REV.					
		A								
		SCALE:1:2	WEIGHT:		SHEET 1 OF 1					

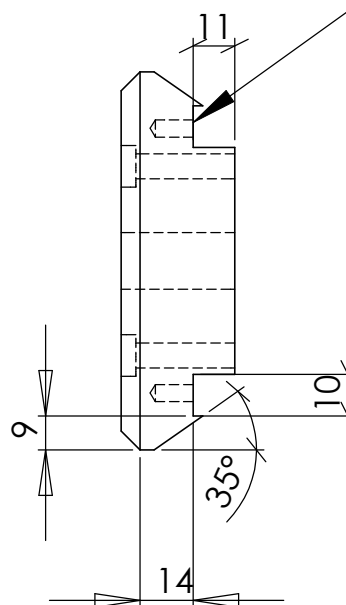
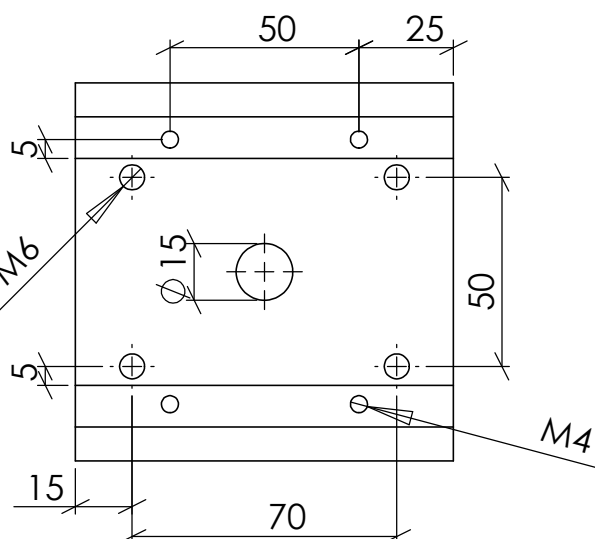


Agujero para rótula de diámetro 25

		DIMENSIONS ARE IN MM TOLERANCES: FRACTIONAL ± ANGULAR: MACH ± BEND ± TWO PLACE DECIMAL ± THREE PLACE DECIMAL ±		NAME	DATE			
			DRAWN	Ocejo	11-08-2010			
			CHECKED					
			ENG APPR.					
			MFG APPR.					
			Q.A.					
		MATERIAL	COMMENTS:					
		FINISH						
NEXT ASSY	USED ON					SIZE	DWG. NO.	REV.
APPLICATION		DO NOT SCALE DRAWING				A	1.2.14 Sujección bulón	
						SCALE: 1:2	WEIGHT:	SHEET 1 OF 1

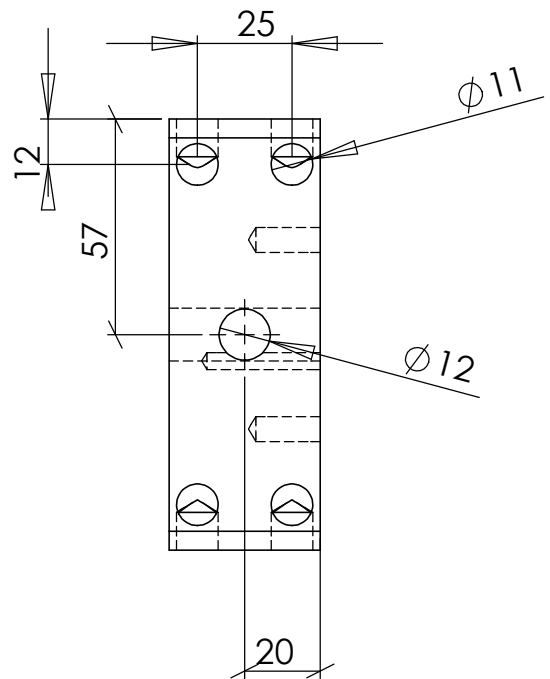
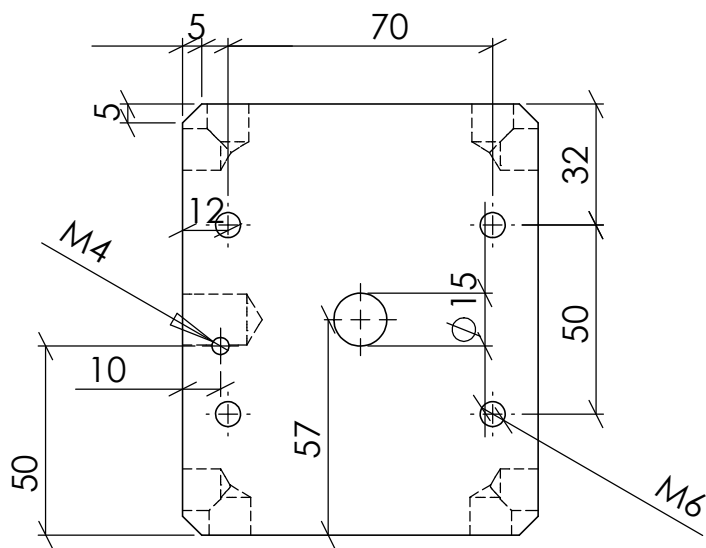
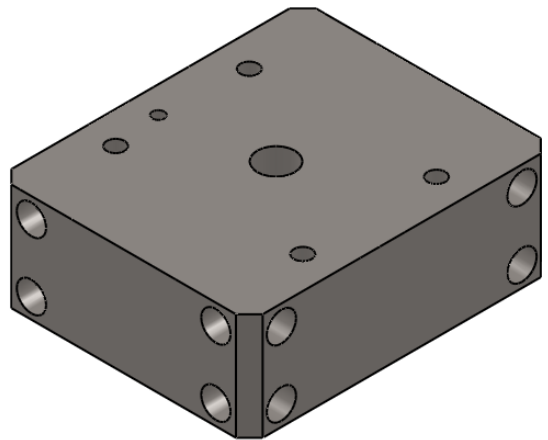
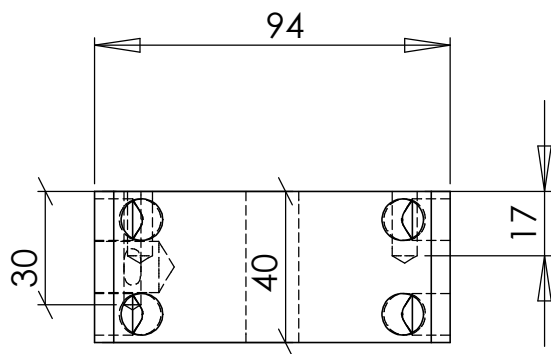


Colocar pletina latón (Ver plano 1.2.17)



Acero

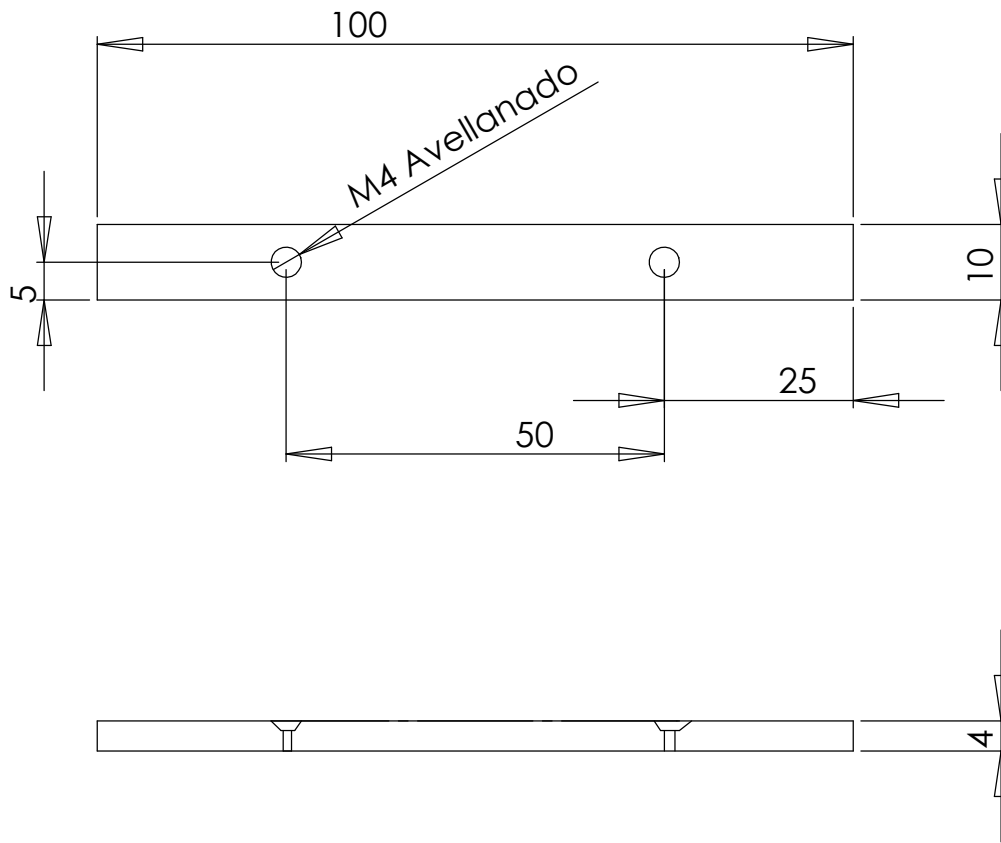
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			DRAWN	Ocejo	11-08-2010	
			CHECKED			
			ENG APPR.			
			MFG APPR.			
		MATERIAL	Q.A.			
		FINISH	COMMENTS:			
NEXT ASSY	USED ON					
APPLICATION						
			SIZE	DWG. NO.		
			A	1.2.15 Soporte manivela vertical		
			SCALE: 1:2		SHEET 1 OF 1	



PROPRIETARY AND CONFIDENTIAL

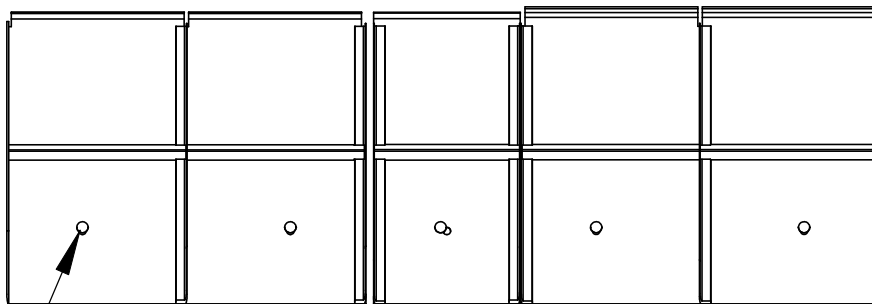
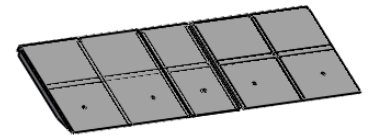
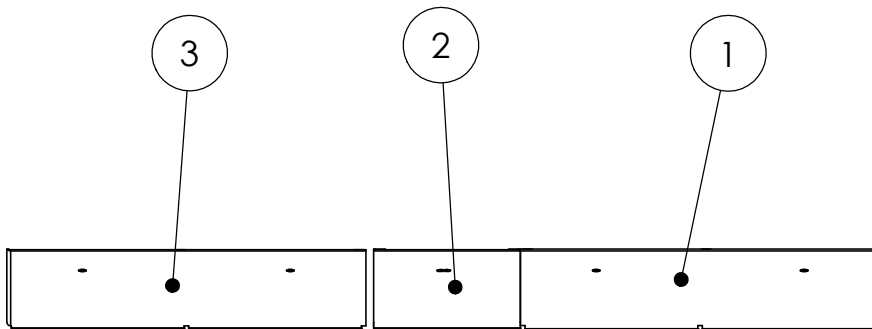
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		DIMENSIONS ARE IN MM TOLERANCES: FRACTIONAL ± ANGULAR: MACH ± BEND ± TWO PLACE DECIMAL ± THREE PLACE DECIMAL ±		NAME	DATE			
			DRAWN	Ocejo	11-08-2010			
			CHECKED					
			ENG APPR.					
			MFG APPR.					
		MATERIAL	Q.A.					
		COMMENTS:						
NEXT ASSY	USED ON				FINISH			
APPLICATION		DO NOT SCALE DRAWING	SIZE A		DWG. NO.	1.2.16 Taco final carrera	REV.	
			SCALE:1:2				SHEET 1 OF 1	



2 piezas de latón

		DIMENSIONS ARE IN MM TOLERANCES: FRACTIONAL ± ANGULAR: MACH ± BEND ± TWO PLACE DECIMAL ± THREE PLACE DECIMAL ±		NAME	DATE	
			DRAWN	Ocejo	07/09/2010	
			CHECKED			
			ENG APPR.			
			MFG APPR.			
		MATERIAL	Q.A.			
		FINISH	COMMENTS:			
NEXT ASSY	USED ON					
APPLICATION						
DO NOT SCALE DRAWING		SIZE	DWG. NO.		REV.	
		A	1.2.17 Pletina latón			
		SCALE:1:1			SHEET 1 OF 1	

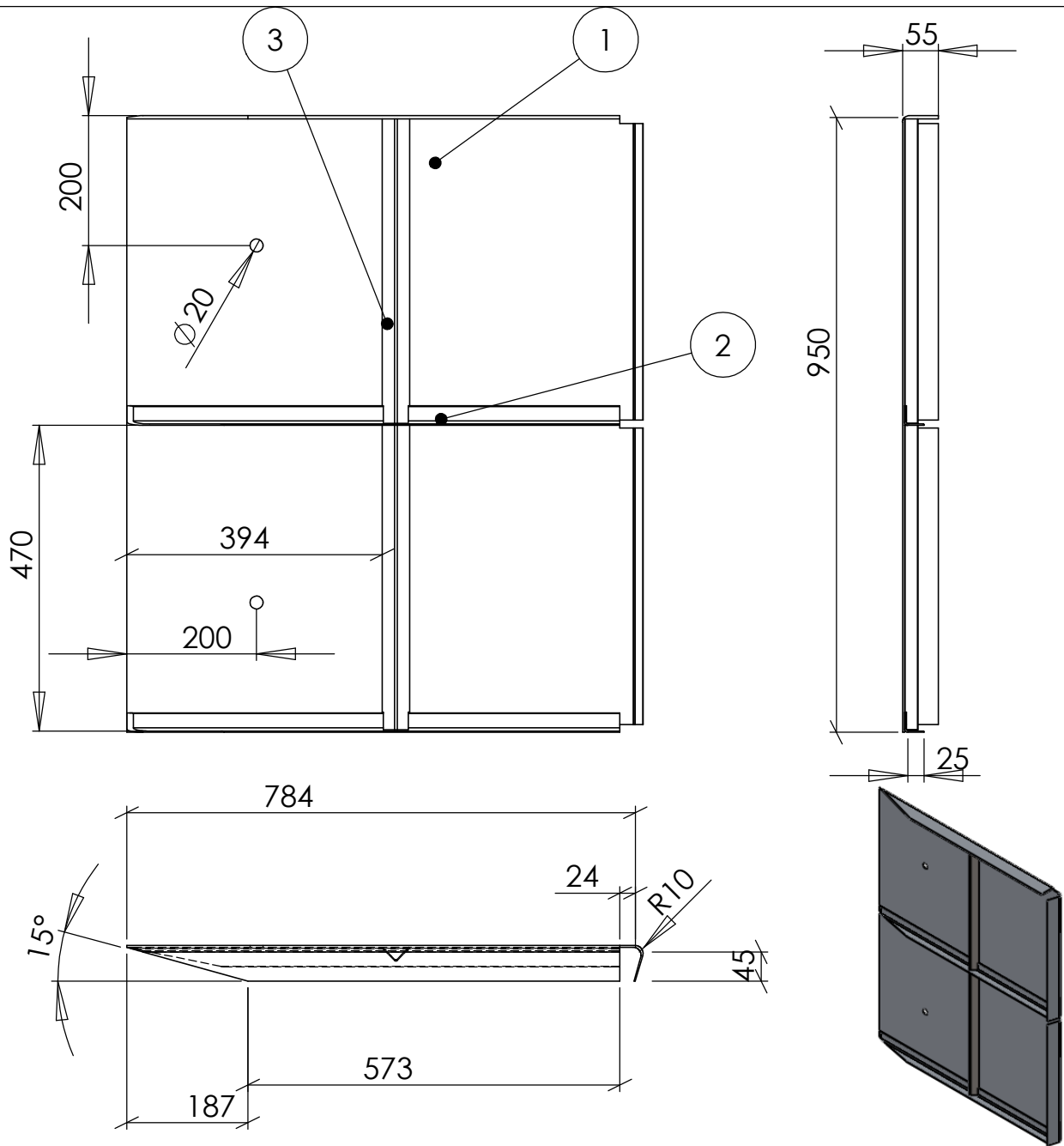


4

Nº	CANT.	DESCRIPCIÓN	MATERIAL
1	1	Rampas laterales dcha (Ver plano 1.3.1)	
2	1	Rampas central (Ver plano 1.3.2)	
3	1	Rampa lateral dcha (Ver plano 1.3.1)	
4	5	Enganche para elevar rampas	Comercial

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Rampa 1,5 mm de base de acero F-1110 y 1,5 mm de chapa de aluminio antideslizante (remachada)

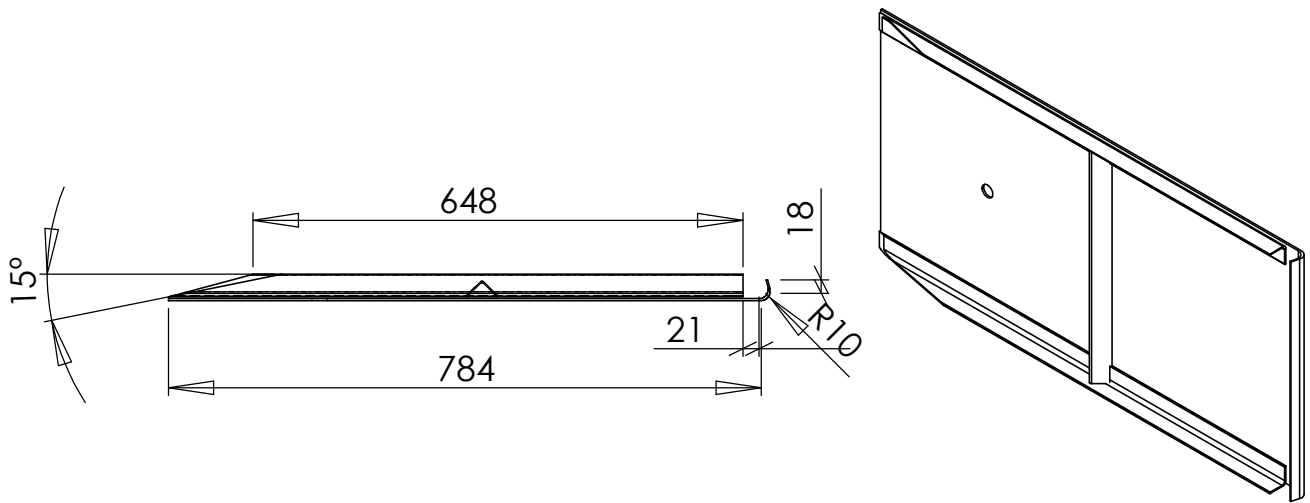
La rampa Izquierda es igual pero la dobléz de la chapa al otro lado y cambiando un angular

Nº	CANT.	DESCRIPCIÓN	MATERIAL
1	1	Rampa	
2	2	Angular 30x2 en frío	Acero A 42B
3	2	Angular 30x2 en frío	Acero A 42B

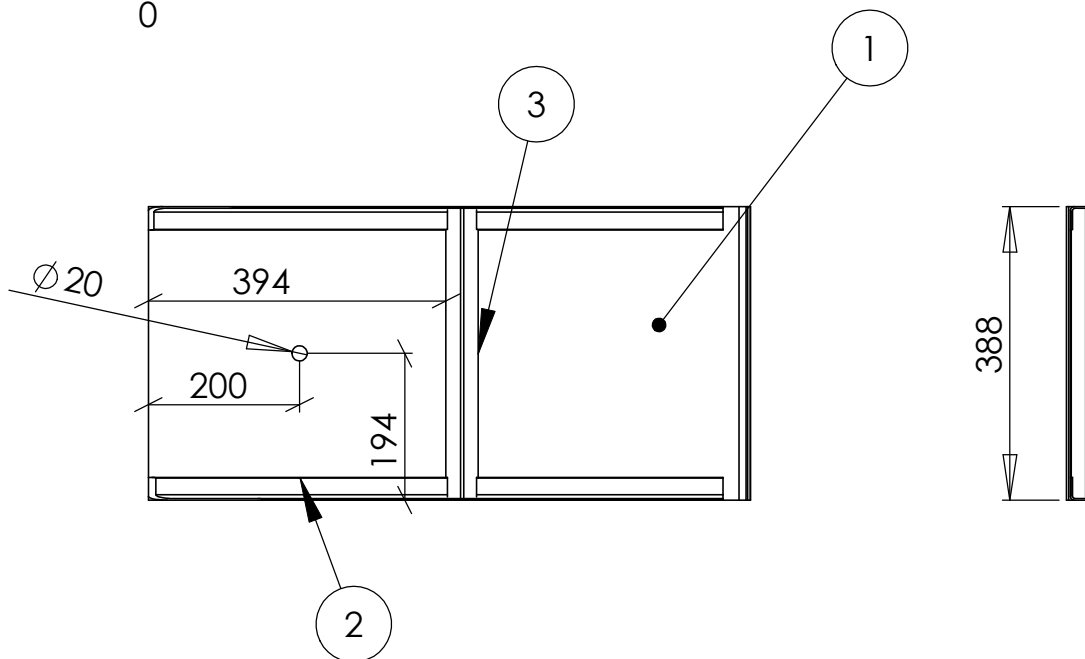
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				DRAWN		
				CHECKED		
				ENG APPR.		
				MFG APPR.		
		MATERIAL		Q.A.		
		FINISH		COMMENTS:		
NEXT ASSY	USED ON					
APPLICATION		DO NOT SCALE DRAWING				
			SIZE	DWG. NO.		REV.
			A	1.3.1 Rampa derecha		
			SCALE:1:10	WEIGHT:		SHEET 1 OF 1

PROPRIETARY AND CONFIDENTIAL

THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF <INSERT COMPANY NAME HERE>. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF <INSERT COMPANY NAME HERE> IS PROHIBITED.



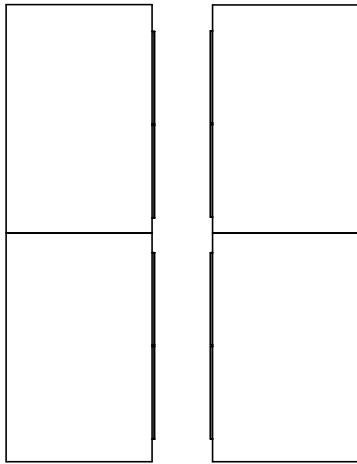
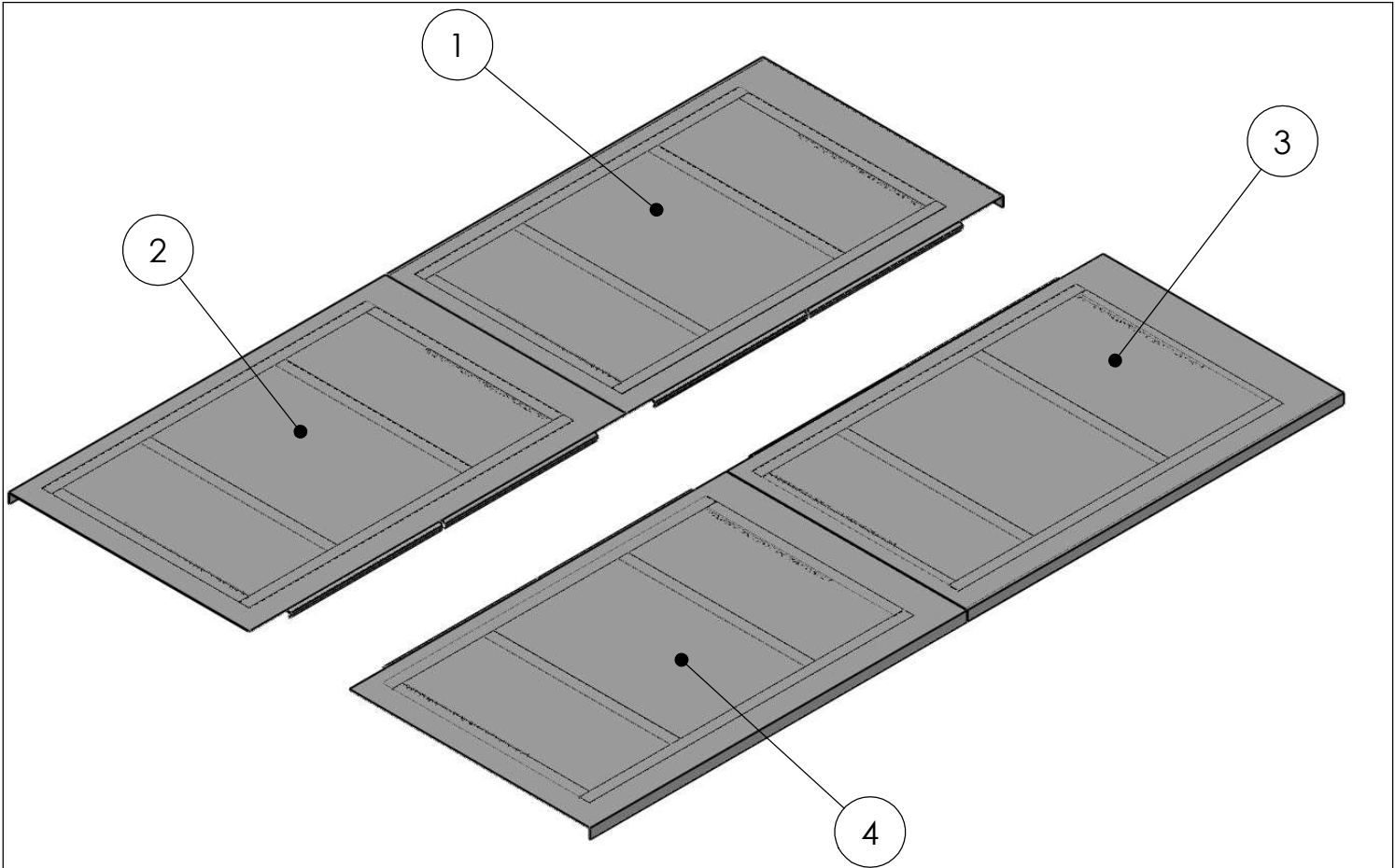
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Rampa 1,5 mm de base de acero F-1110 y 1,5 mm de chapa de aluminio antideslizante (remachada)

Nº	CANT.	DESCRIPCIÓN	MATERIAL
1	1	Rampa	
2	2	Angular 30x2 en frío	Acero A 42B
3	1	Angular 30x2 en frío	Acero A 42B

		DIMENSIONS ARE IN MM TOLERANCES: FRACTIONAL ± ANGULAR: MACH ± BEND ± TWO PLACE DECIMAL ± THREE PLACE DECIMAL ±		NAME	DATE				
			DRAWN	Ocejo	Ocejo				
			CHECKED						
			ENG APPR.						
			MFG APPR.						
			Q.A.						
			COMMENTS:						
NEXT ASSY	USED ON	FINISH					SIZE	DWG. NO.	REV.
APPLICATION		DO NOT SCALE DRAWING					A	1.3.2 Rampa central	
			SCALE:1:10	WEIGHT:			SHEET 1 OF 1		

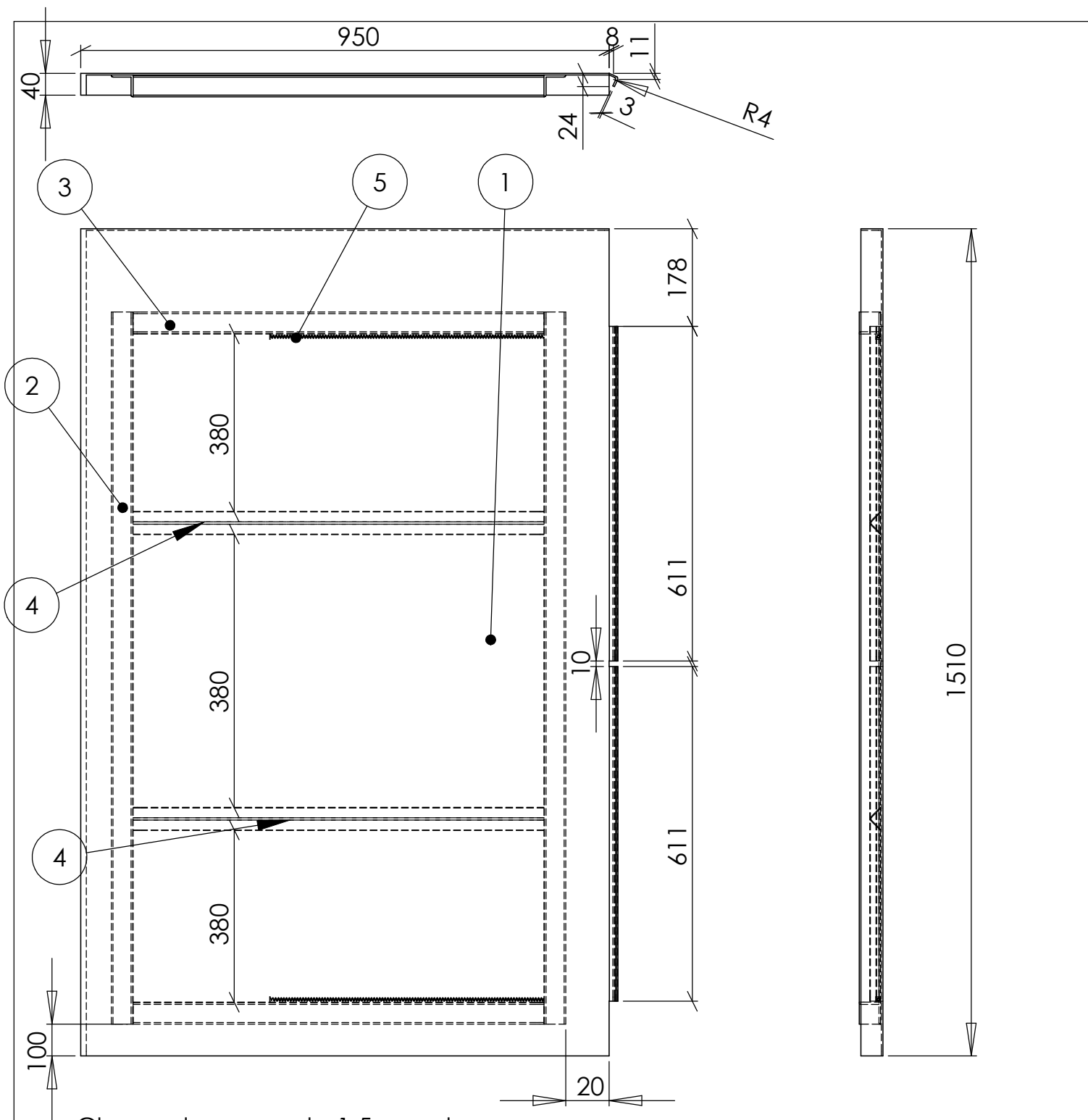


Nº	CANT.	DESCRIPCIÓN
1	1	Portón izdo pilar (Ver plano 1.4.1)
2	1	Portón izdo rampa (Ver plano 1.4.2)
3	1	Portón dcho pilar (Ver plano 1.4.3)
4	1	Portón dcho rampa (Ver plano 1.4.4)

		DIMENSIONS ARE IN MM TOLERANCES: FRACTIONAL ± ANGULAR: MACH ± BEND ± TWO PLACE DECIMAL ± THREE PLACE DECIMAL ±		NAME	DATE			
			DRAWN	Ocejo	15-08-2010			
			CHECKED					
			ENG APPR.					
			MFG APPR.					
		MATERIAL	Q.A.			COMMENTS:		
		FINISH						
NEXT ASSY	USED ON							
APPLICATION		DO NOT SCALE DRAWING	SIZE A DWG. NO. 1.4 Portones REV.					
			SCALE:1:50		WEIGHT:		SHEET 1 OF 1	

PROPRIETARY AND CONFIDENTIAL

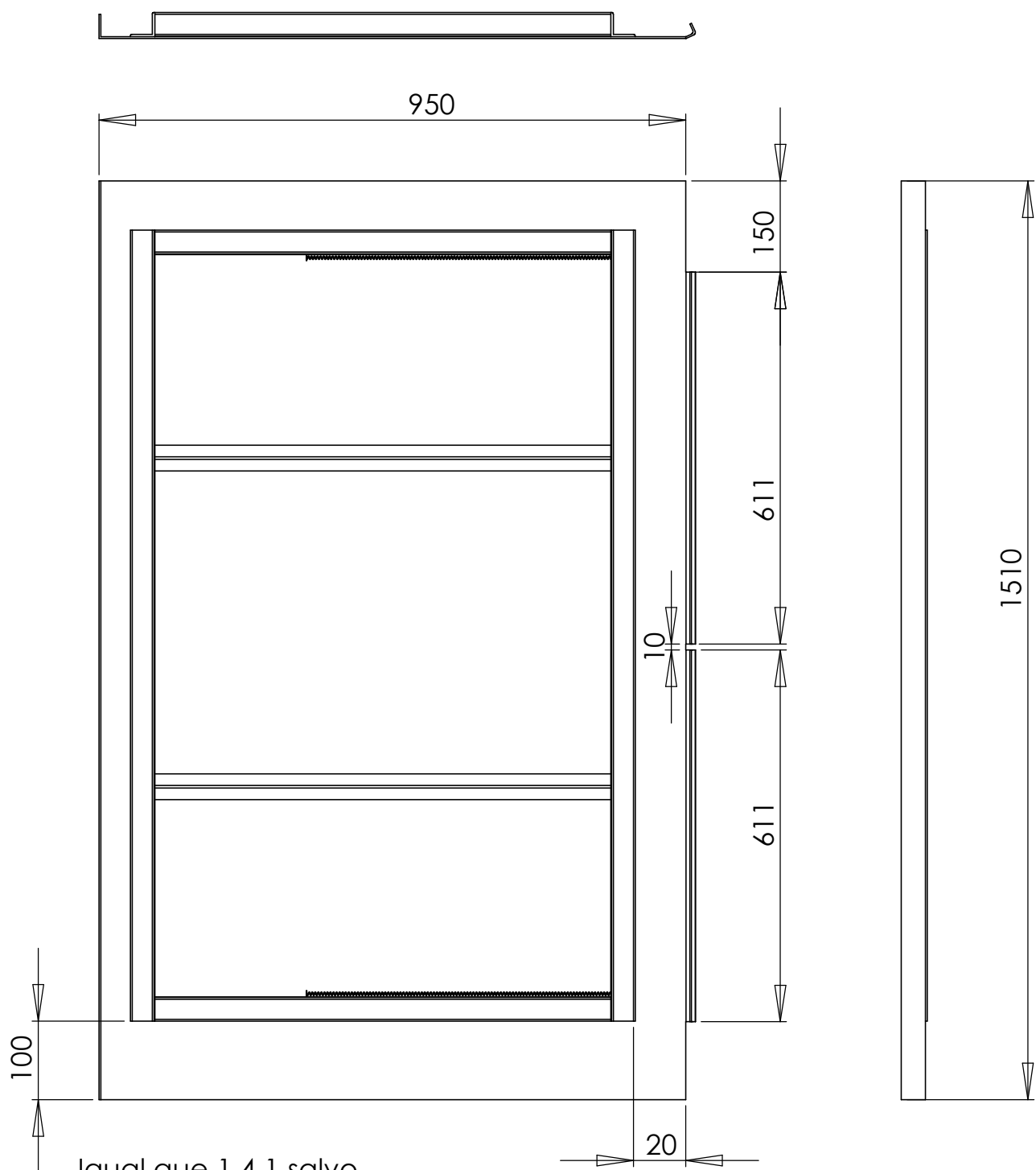
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Chapa de acero de 1,5 mm de base y encima chapa de 1,5 de aluminio antideslizante (remachada)

Nº	CANT.	DESCRIPCIÓN	MATERIAL
1	1	Portón	
2	2	Angular 40x2x1300 en frío	Acero A42B
3	2	Angular 40x2x750 en frío	Acero A 42B
4	2	Angular 30x2x750 en frío	Acero A 42B
5	2	Amortiguador (Soporta 30Kg)	Comercial

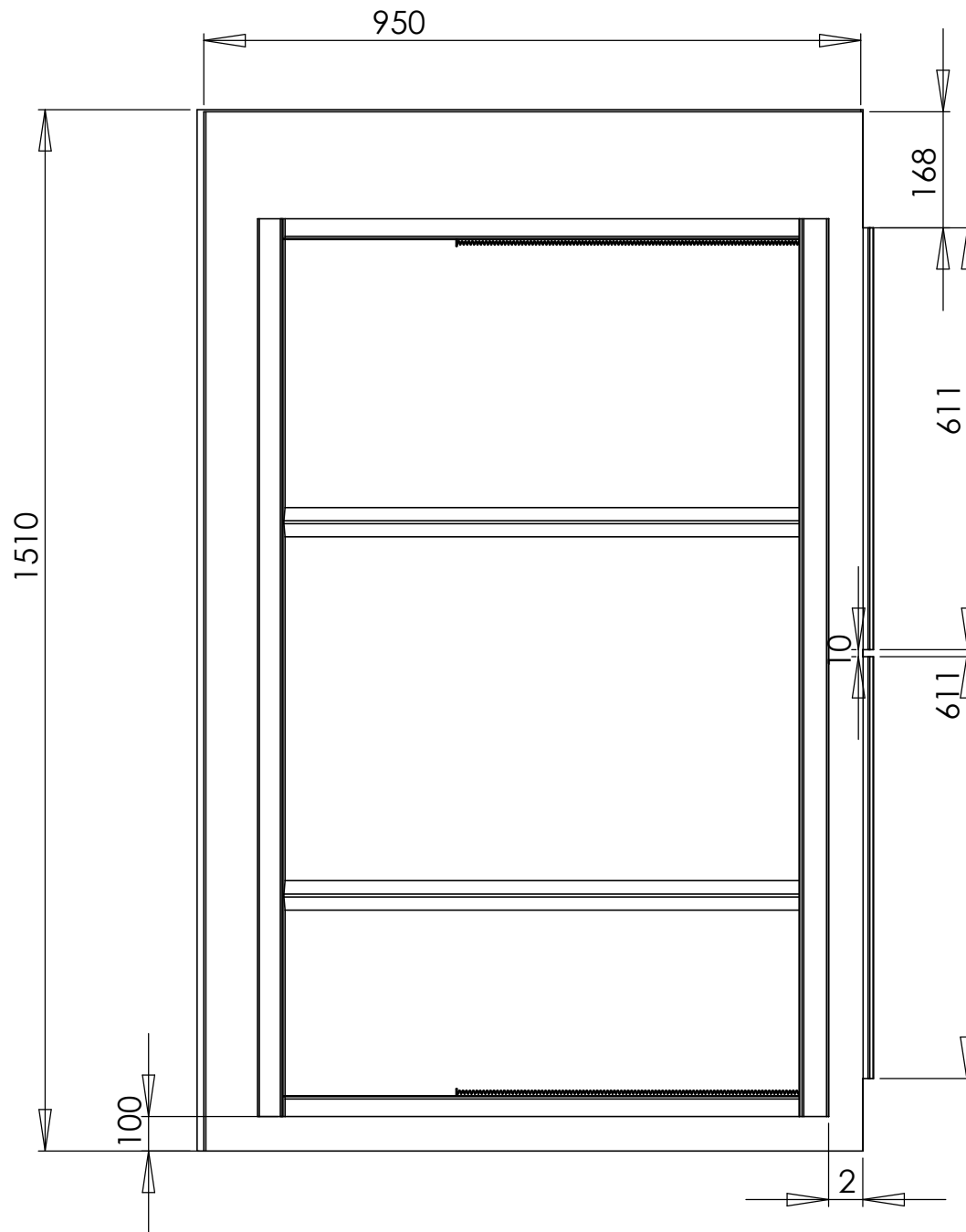
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			CHECKED			
			ENG APPR.			
			MFG APPR.			
		MATERIAL	Q.A.			COMMENTS:
		FINISH				
NEXT ASSY	USED ON					
APPLICATION		DO NOT SCALE DRAWING	SIZE DWG. NO. REV.			
			A 1.4.1 Portón dcho pilar			
			SCALE:1:50 WEIGHT:		SHEET 1 OF 1	



Igual que 1.4.1 salvo
en las cotas marcadas
y sin doblez de la chapa

		DIMENSIONS ARE IN MM TOLERANCES: FRACTIONAL ± ANGULAR: MACH ± BEND ± TWO PLACE DECIMAL ± THREE PLACE DECIMAL ±	NAME	DATE				
			DRAWN	Ocejo				15-08-2010
			CHECKED					
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			MFG APPR.					
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		FINISH	COMMENTS:					
NEXT ASSY	USED ON							
APPLICATION								DO NOT SCALE DRAWING
			SIZE		DWG. NO.		REV.	
			A		1.4.2 Portón izdo rampa			
			SCALE: 1:50		WEIGHT:		SHEET 1 OF 1	

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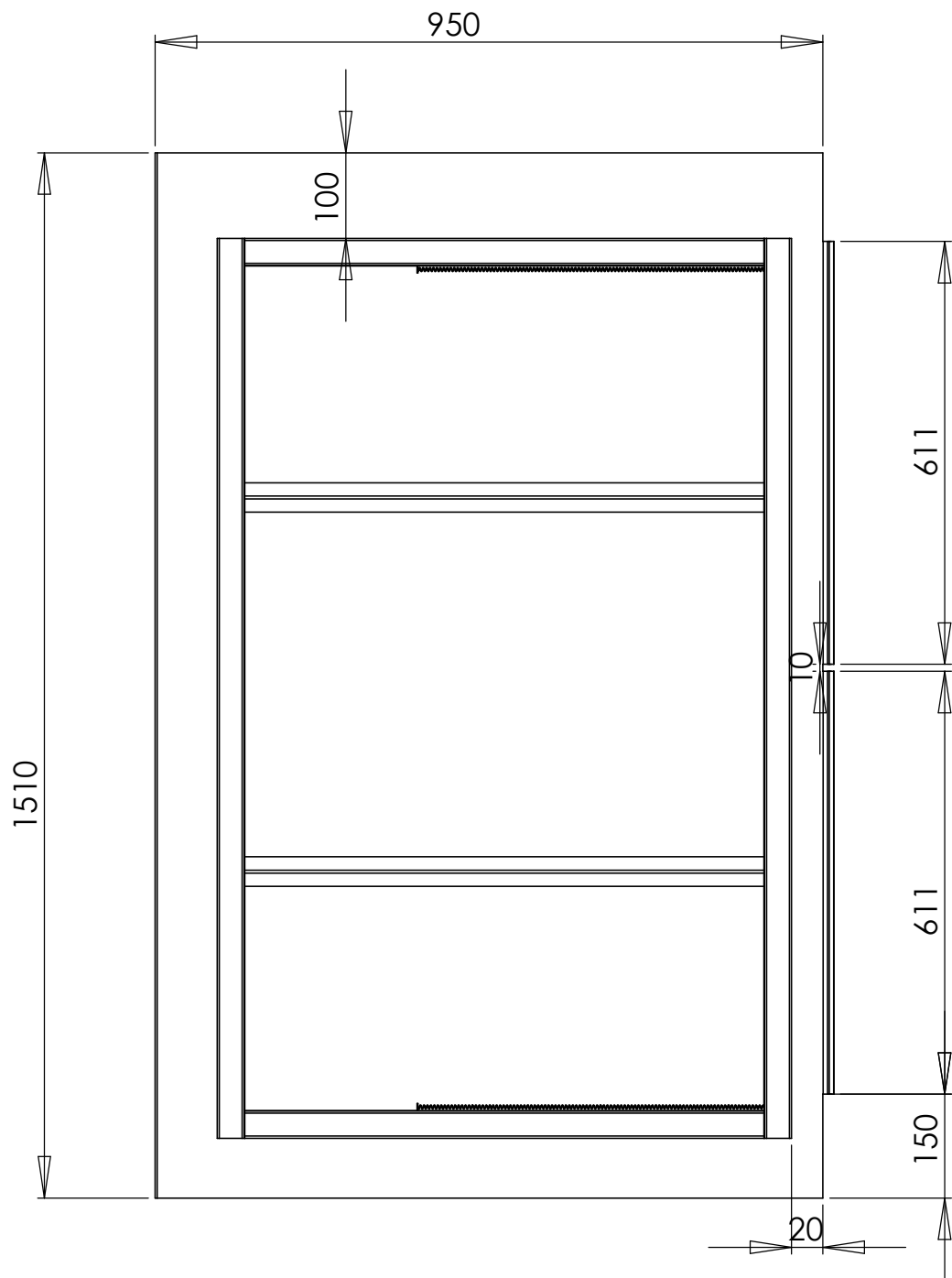


Igual que 1.4.1 salvo
en las cotas marcadas
y con doblez de chapa

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			MFG APPR.					
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		COMMENTS:						
NEXT ASSY	USED ON				FINISH			
APPLICATION					DO NOT SCALE DRAWING			
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		SCALE:1:50		WEIGHT:		SHEET 1 OF 1		

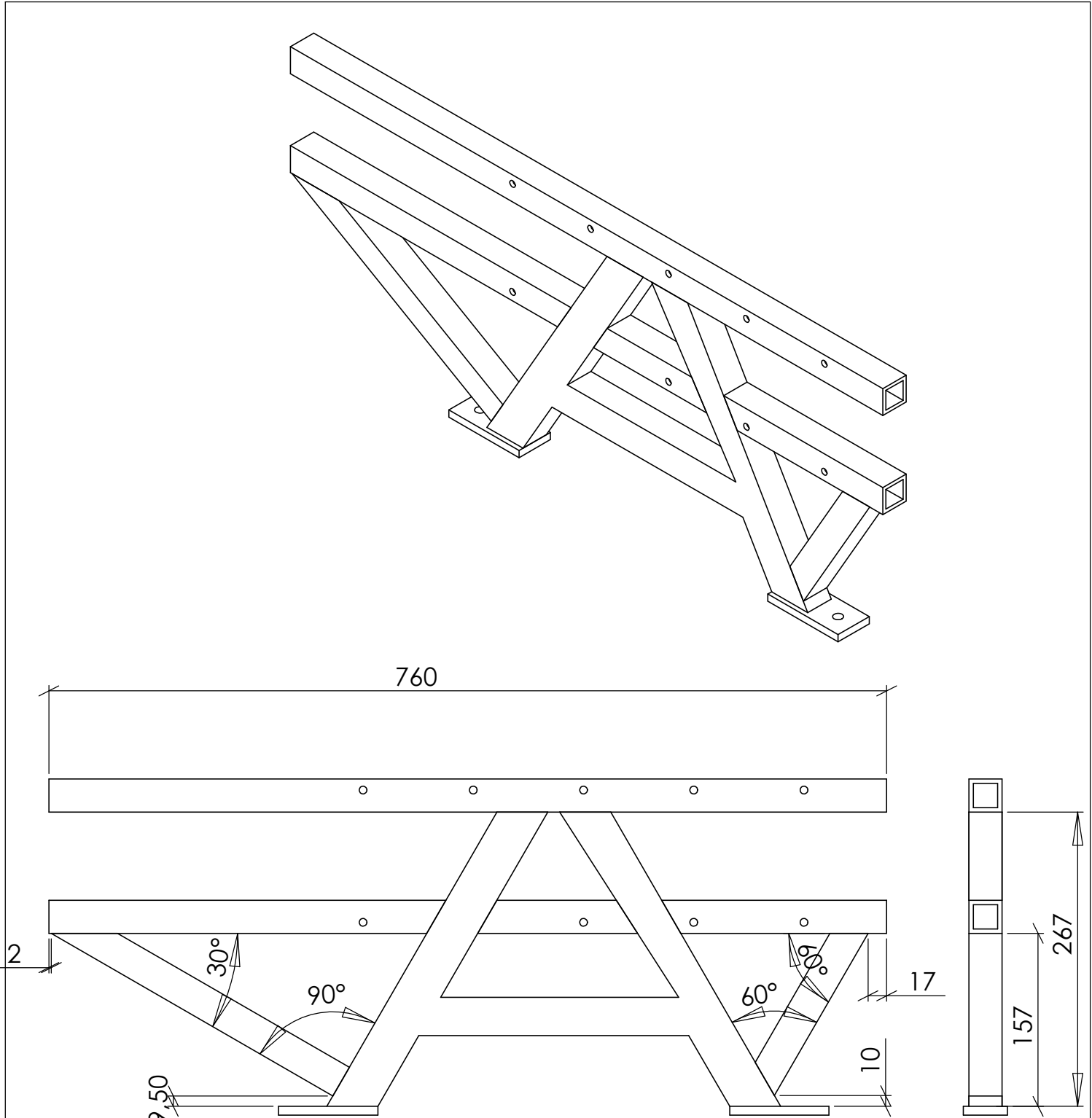
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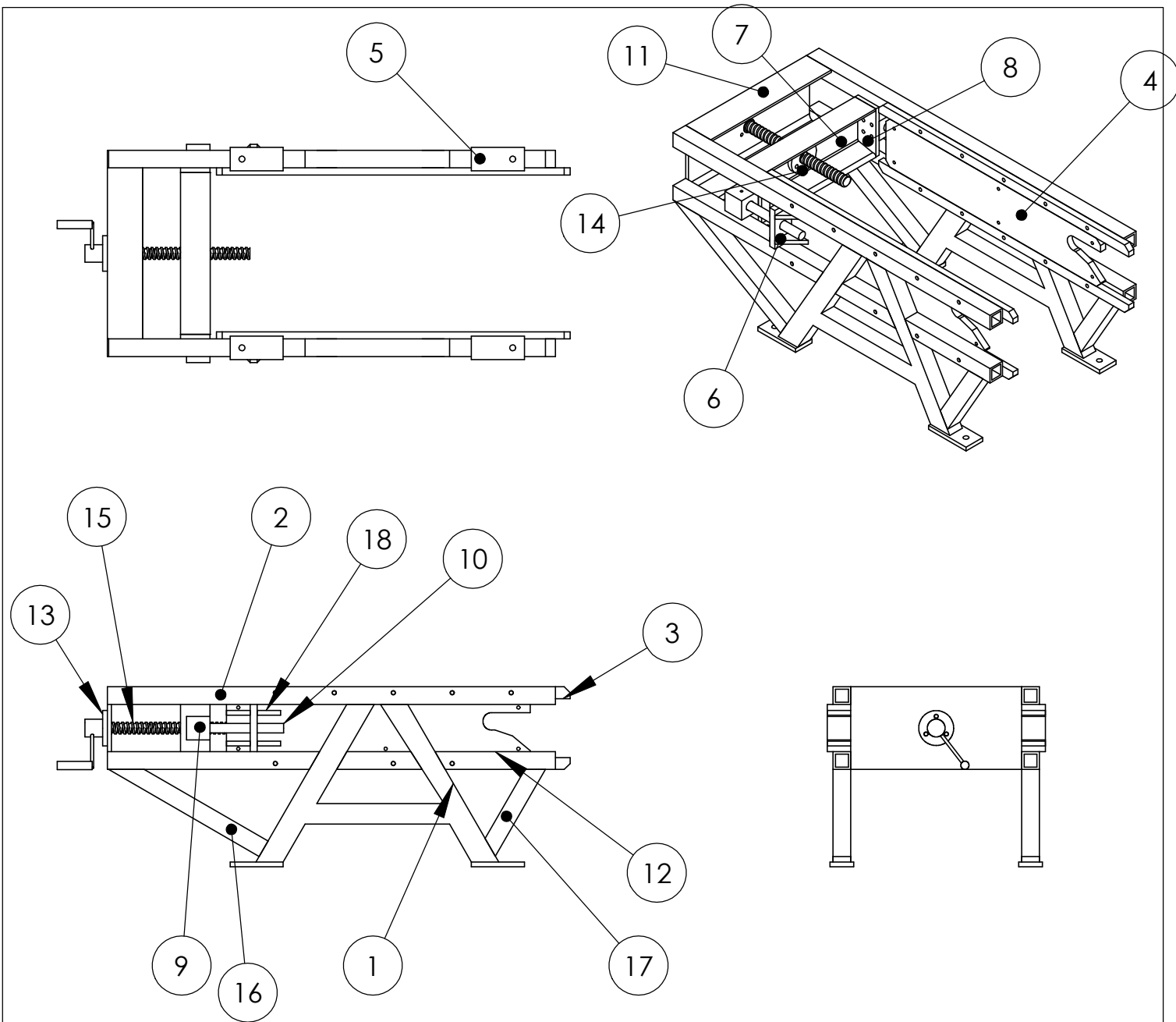
Igual que 1.4.1 salvo
en las cotas marcadas
y sin doblez de la chapa

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			CHECKED					
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			MFG APPR.					
			Q.A.					
		MATERIAL	COMMENTS:			SIZE DWG. NO. REV. A 1.4.4 Portón dcho rampa		
		FINISH						
NEXT ASSY	USED ON		SCALE:1:50 WEIGHT: SHEET 1 OF 1					
APPLICATION		DO NOT SCALE DRAWING						



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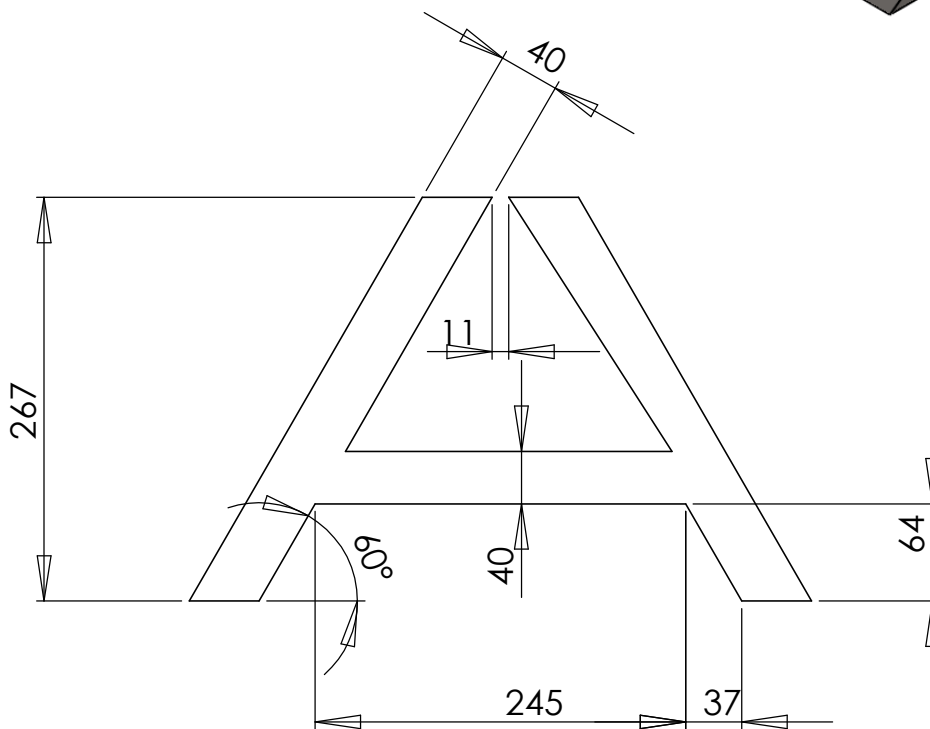
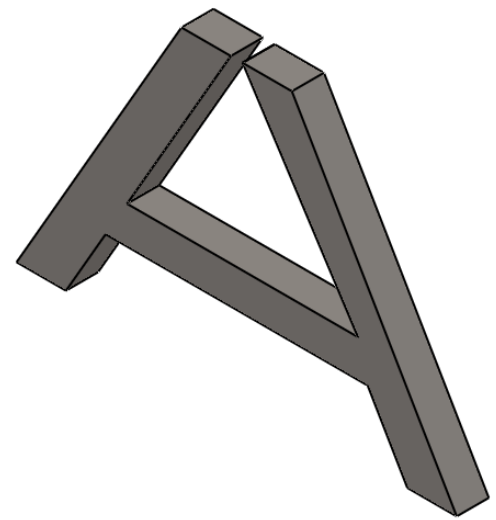
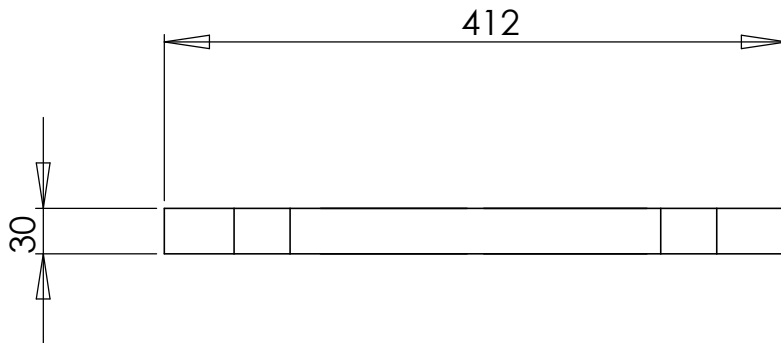
SIZE	DWG. NO.		REV.
A	1.5.0.1 Colocación		
SCALE:1:10			SHEET 1 OF 1



Nº	CANT.	DESCRIPCIÓN	MATERIAL
1	2	Soporte H hueco de espesor 2 (Ver plano 1.5.1)	Acero F-1110
2	2	Tubo Superior 30x30x3 (Ver plano 1.5.2))	Acero F-1100
3	4	Pletina guía (Ver plano 1.5.3)	Acero F-1100
4	2	Enganche guía trasero (Ver plano 1.5.4)	Acero F-1110
5	4	Pletina 90x40x8 (Ver plano 1.5.5)	Acero F-1110
6	2	Pletina (Ver plano 1.5.6)	Acero F-1100
7	1	Perfil CPN100x274 (Ver plano 1.5.7)	Acero A42B
8	2	Pletina lateral (Ver plano 1.5.8)	Acero F-1100
9	2	Taco (Ver plano 1.5.9)	Acero F-1100
10	2	Guía Varilla (Ver plano 1.5.10)	Acero F-1100
11	1	Perfil CPN140 (Ver plano 1.5.11))	Acero A 42B
12	2	Tubo Inferior 30x30x3 (Ver plano 1.5.12)	Acero F-1100
13	1	Guía husillo perfil 140 (Ver plano 1.5.13)	Acero F-1100
14	1	Guía husillo perfil 100 (Ver plano 1.5.14))	Acero F-1100
15	1	Husillo (Ver plano 1.5.15)	
16	2	Tubo lateral largo (Ver plano 1.5.16)	Acero F-1100
17	2	Tubo lateral corto (Ver plano 1.5.17)	Acero F-1100
18	8	Cartabón 40x40x8 (Ver plano 1.5.18)	Acero F-1100

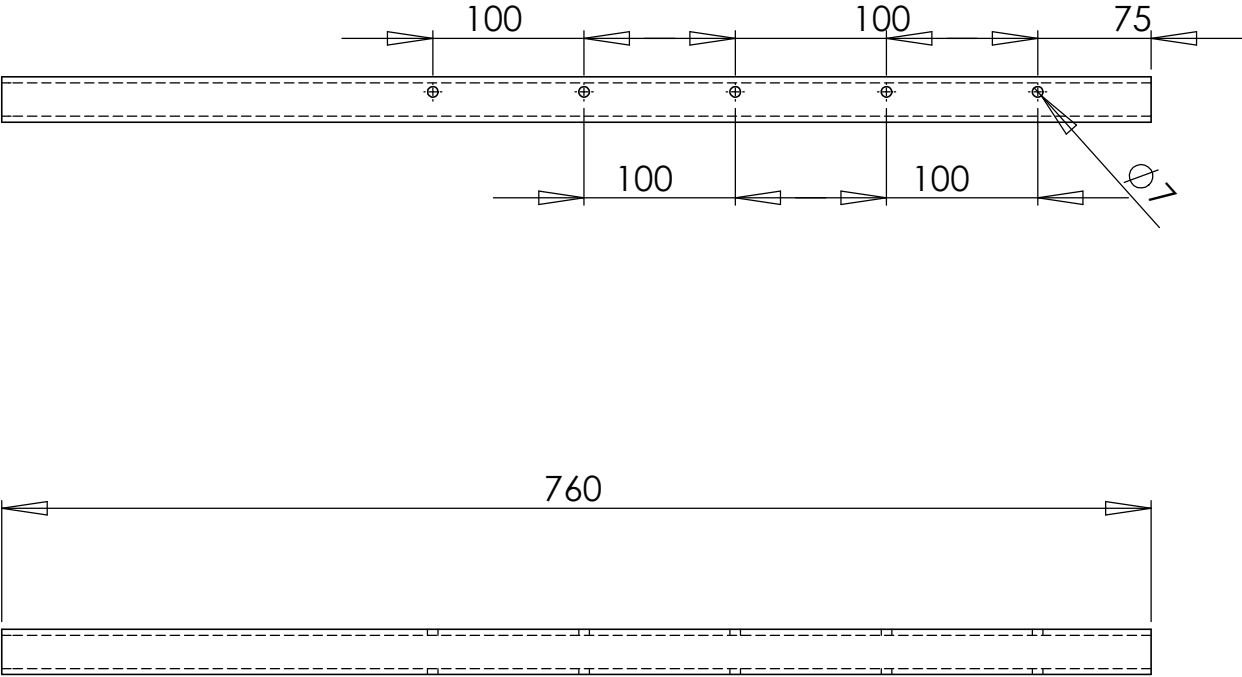
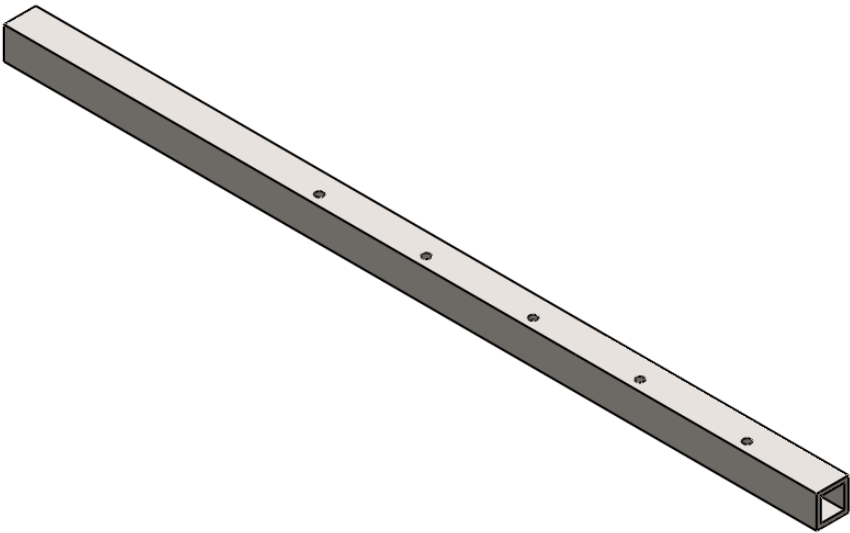
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		MATERIAL	Q.A.					
		COMMENTS:						
NEXT ASSY	USED ON	FINISH						
APPLICATION		DO NOT SCALE DRAWING						
						SIZE	DWG. NO.	REV.
						A	1.5 Enganche trasero	
						SCALE:1:20	WEIGHT:	SHEET 1 OF 1

SIZE	DWG. NO.	REV.
A	1.5 Enganche trasero	
SCALE: 1:20	WEIGHT:	SHEET 1 OF 1



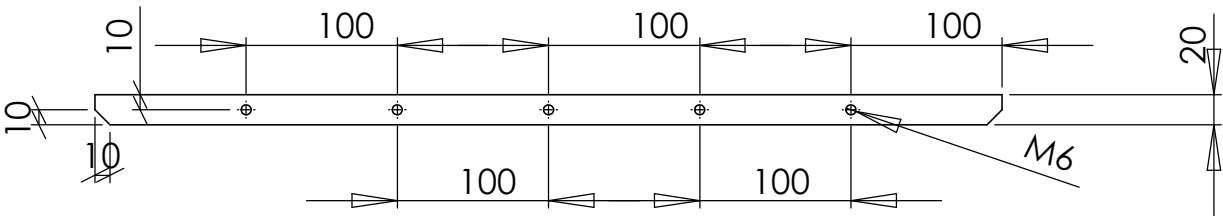
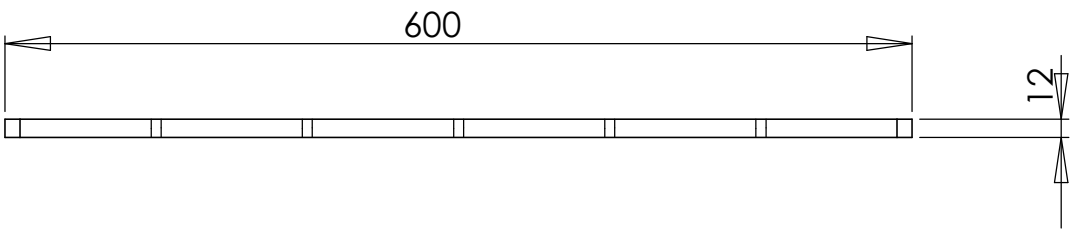
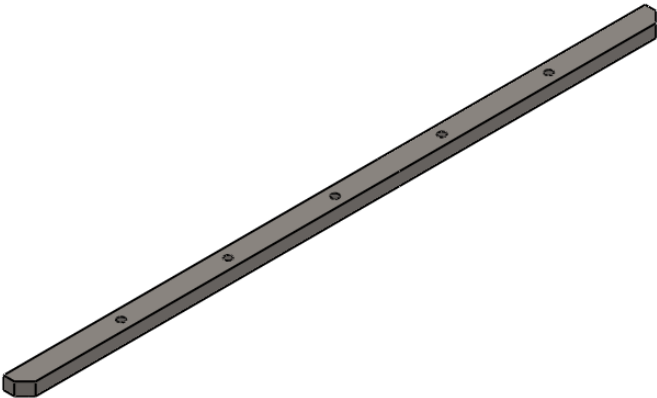
Dos piezas iguales

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				DRAWN			
				CHECKED			
				ENG APPR.			
			MATERIAL FINISH	MFG APPR.			COMMENTS: SCALE: 1:5 DWG. NO. 1.5.1 Soporte 40x30 espesor 2 REV. SHEET 1 OF 1
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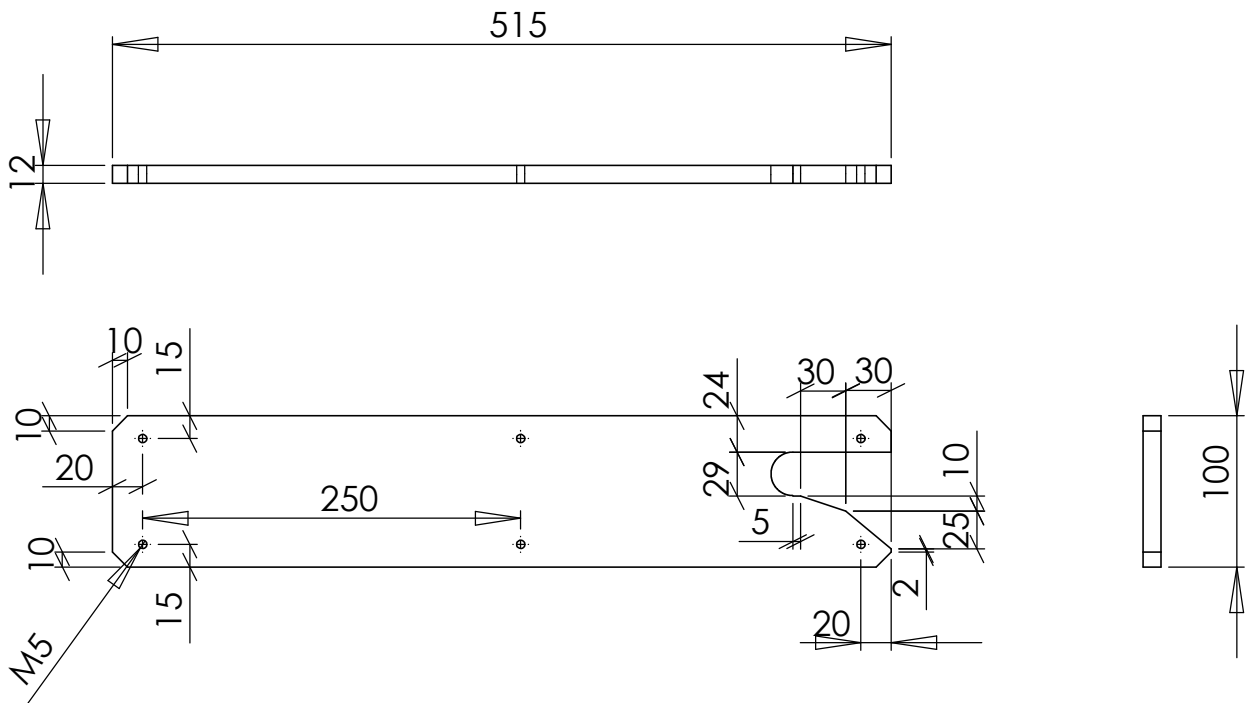
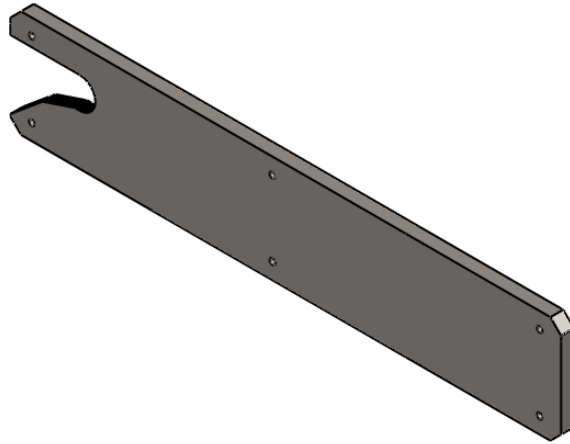
Dos piezas iguales

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			COMMENTS:						
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APPLICATION		DO NOT SCALE DRAWING							
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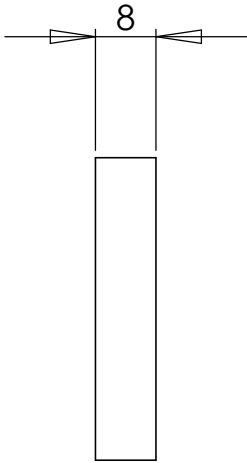
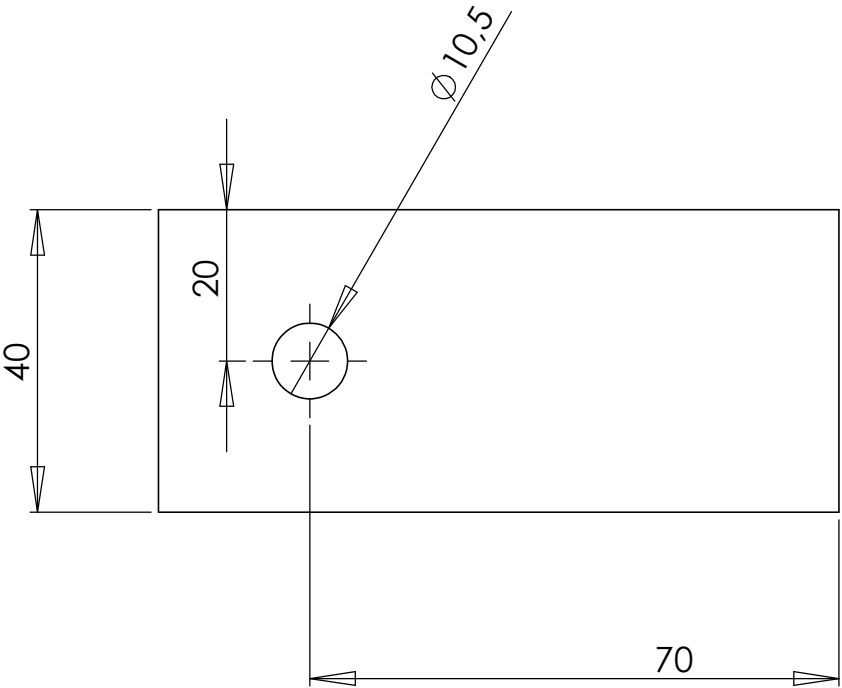
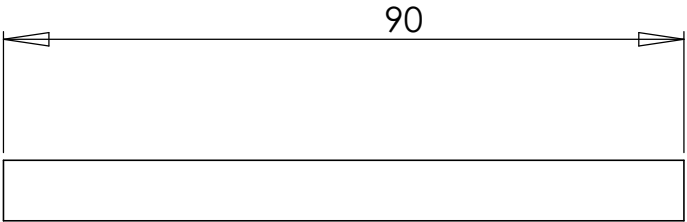
Cuatro piezas iguales

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				CHECKED					
				ENG APPR.					
				MFG APPR.					
			Q.A.			COMMENTS:			
	NEXT ASSY	USED ON	FINISH						
	APPLICATION		DO NOT SCALE DRAWING		SIZE		DWG. NO.		REV.
					A		1.5.3 Pletina guía		
					SCALE:1:10		WEIGHT:		SHEET 1 OF 1



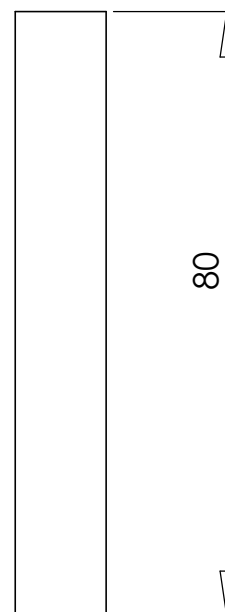
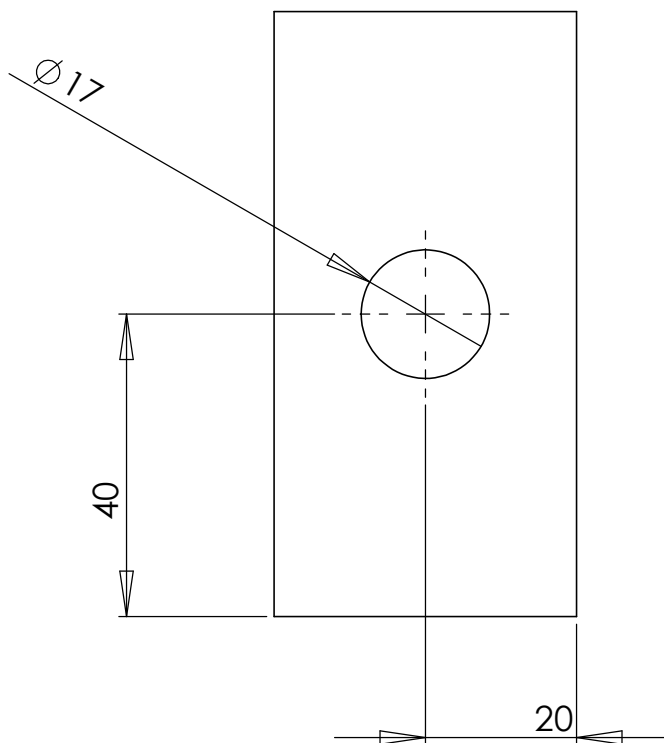
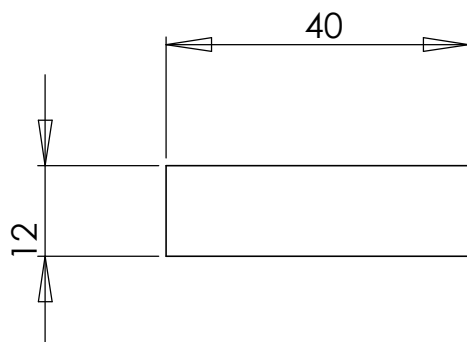
Dos piezas iguales

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				Q.A.					
				COMMENTS:					
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	APPLICATION		DO NOT SCALE DRAWING				SCALE: 1:5	WEIGHT:	SHEET 1 OF 1



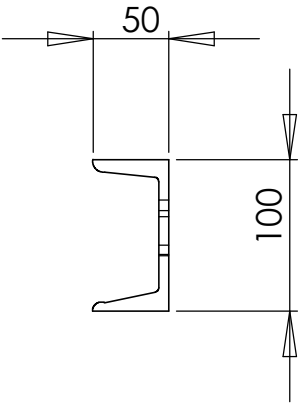
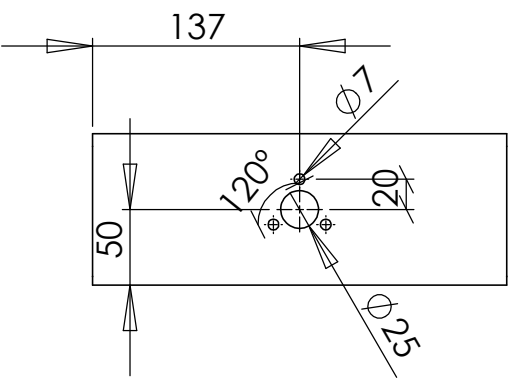
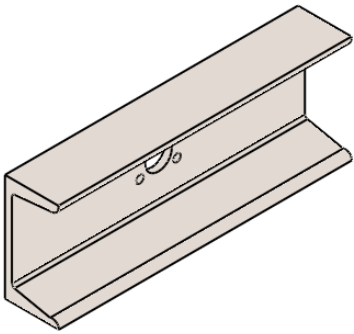
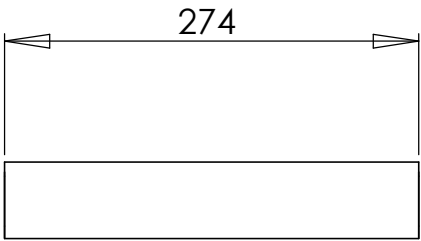
Cuatro piezas iguales

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				MFG APPR.						
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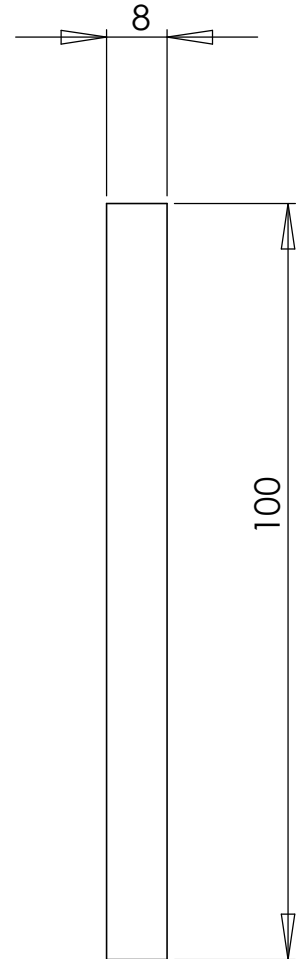
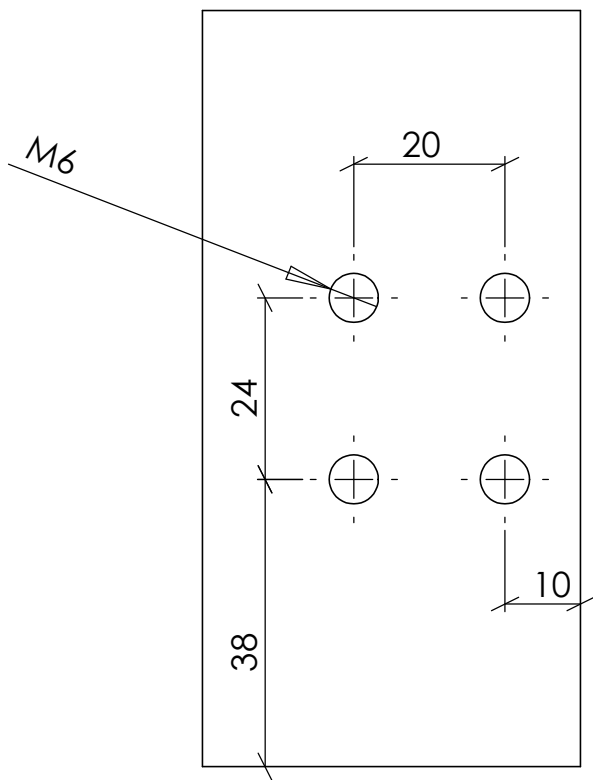
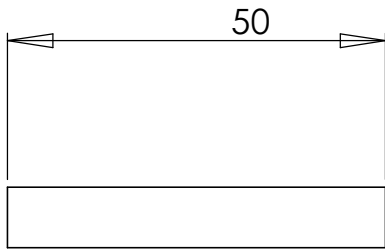


Dos pletinas iguales

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				CHECKED					
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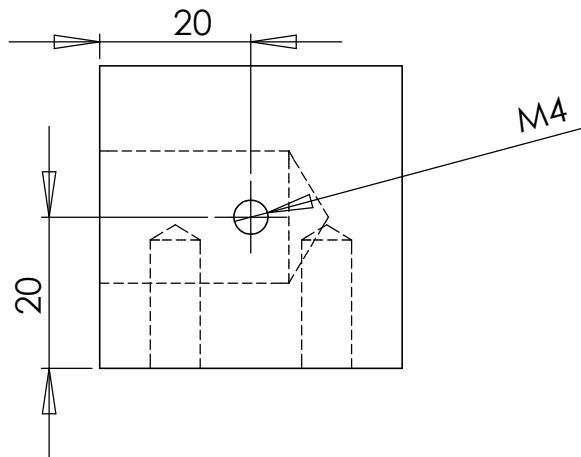
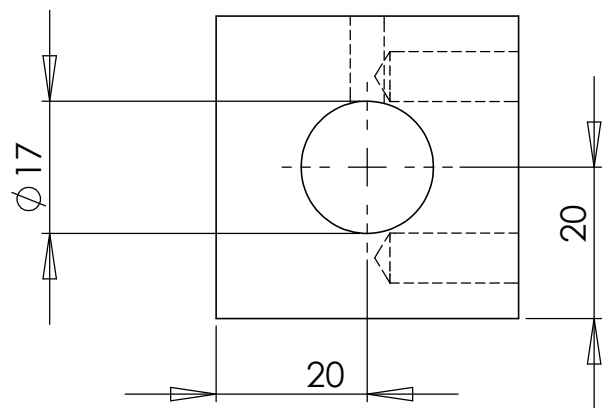
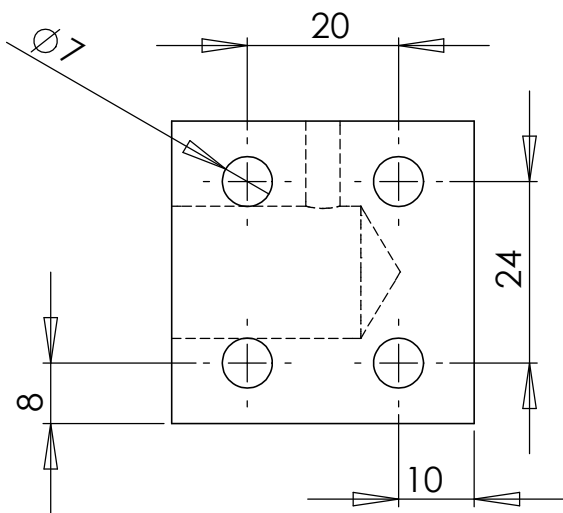
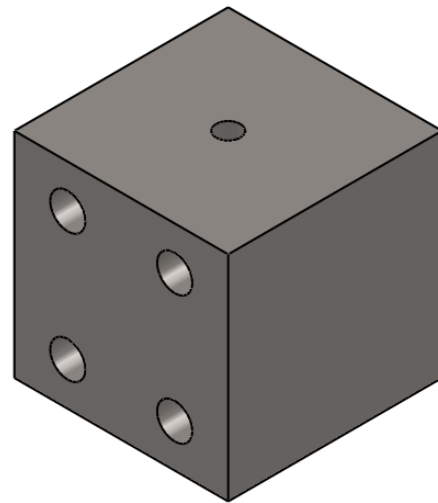
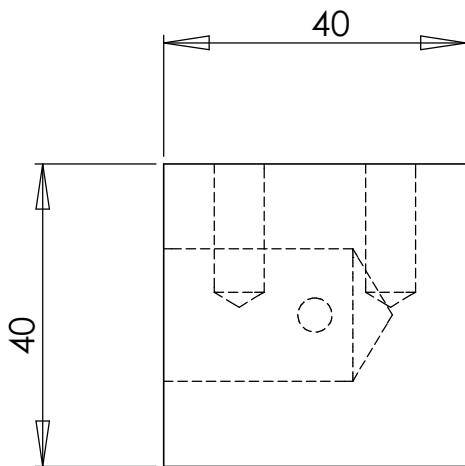


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				MFG APPR.							
			MATERIAL	Q.A.			COMMENTS:				
	NEXT ASSY	USED ON	FINISH								
	APPLICATION		DO NOT SCALE DRAWING								
				SIZE	DWG. NO.			REV.			
				A	1.5.7 Perfil CPN 100						
				SCALE:1:5	WEIGHT:			SHEET 1 OF 1			



Dos piezas iguales

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	NEXT ASSY	USED ON		FINISH								
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					SCALE:1:1					WEIGHT:		SHEET 1 OF 1

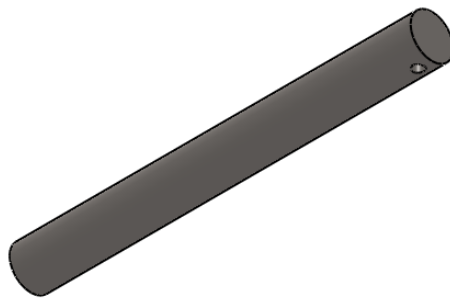
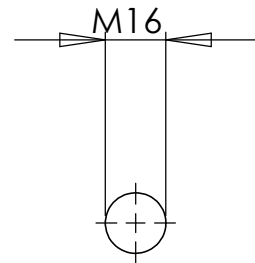
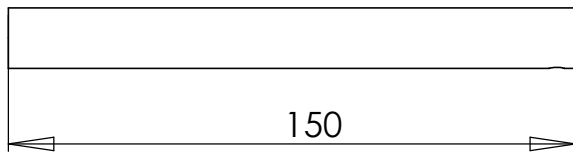
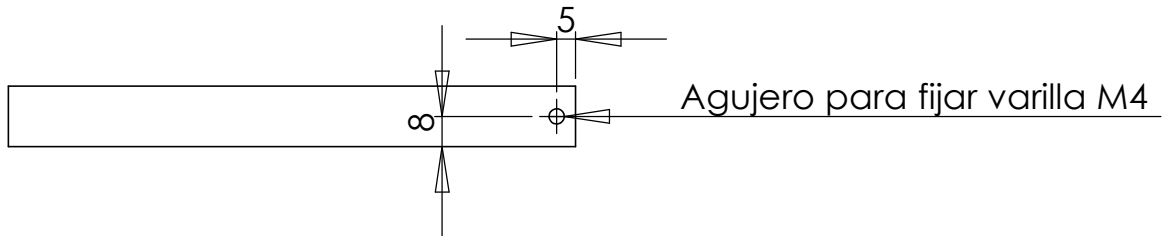


Dos piezas, una la dibujada y otra igual pero simetrica

PROPRIETARY AND CONFIDENTIAL

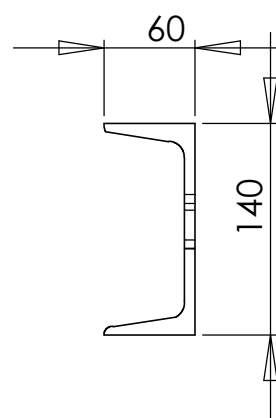
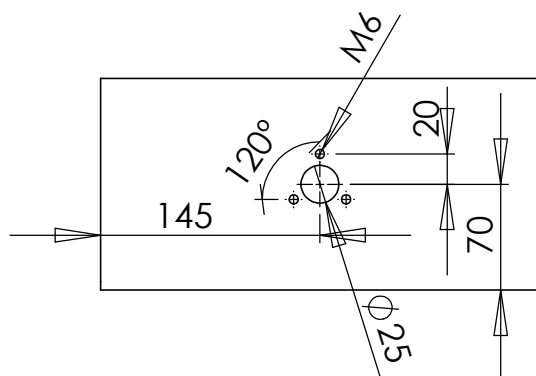
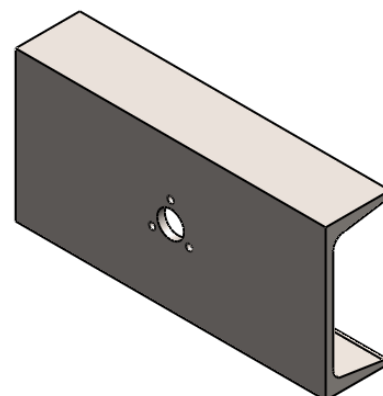
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		DIMENSIONS ARE IN MM TOLERANCES: FRACTIONAL $\pm$ ANGULAR: MACH $\pm$ BEND $\pm$ TWO PLACE DECIMAL $\pm$ THREE PLACE DECIMAL $\pm$		NAME	DATE	
			DRAWN			
			CHECKED			
			ENG APPR.			
			MFG APPR.			
		MATERIAL	Q.A.			COMMENTS:
		FINISH				
NEXT ASSY	USED ON					
APPLICATION		DO NOT SCALE DRAWING				
			SIZE	DWG. NO.	REV.	
			A	1.5.9 Taco		
			SCALE:1:1	WEIGHT:	SHEET 1 OF 1	

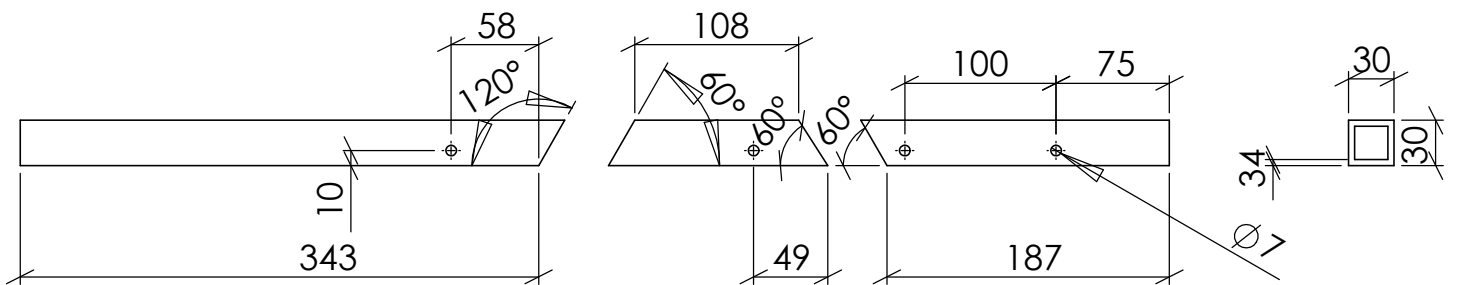
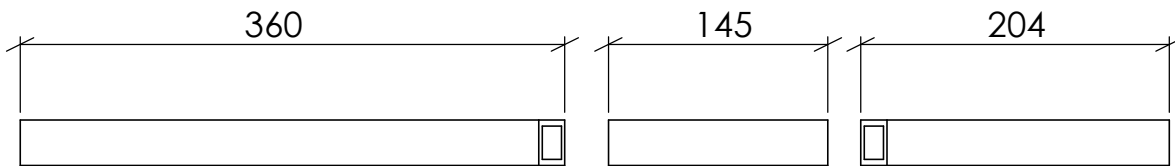
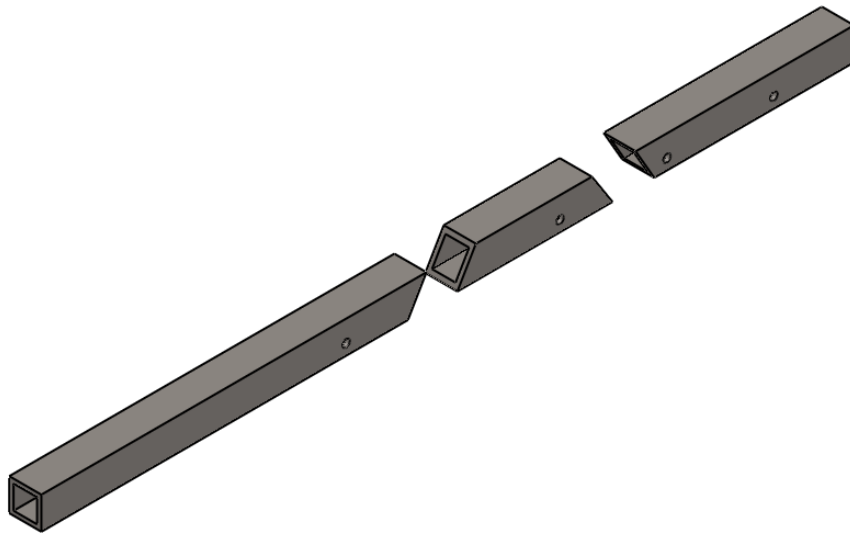


Dos piezas iguales

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				CHECKED					
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				MFG APPR.					
				Q.A.					
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		NEXT ASSY	USED ON	FINISH					
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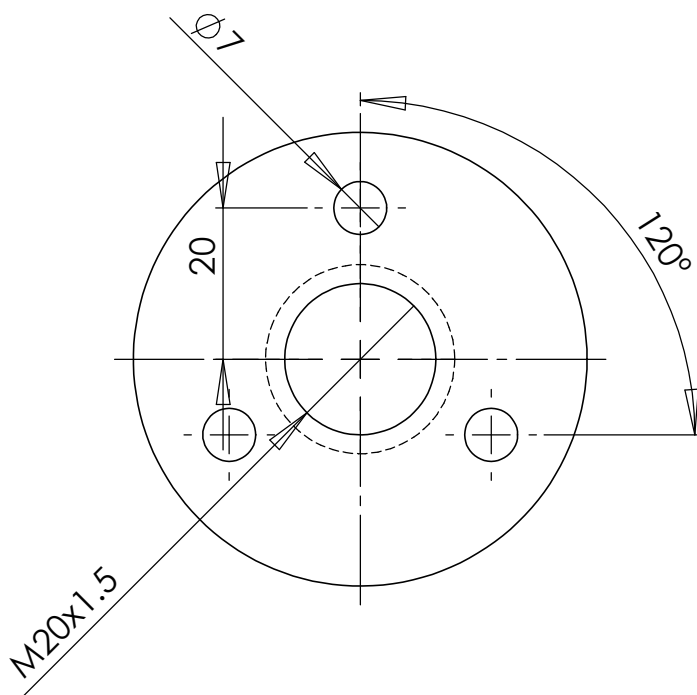
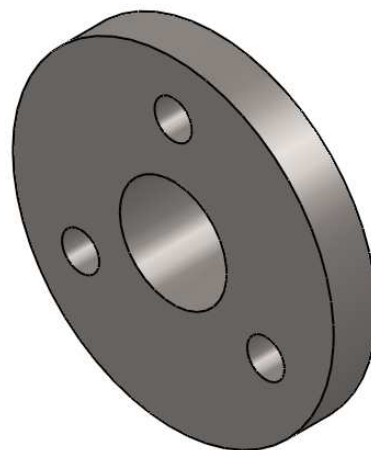
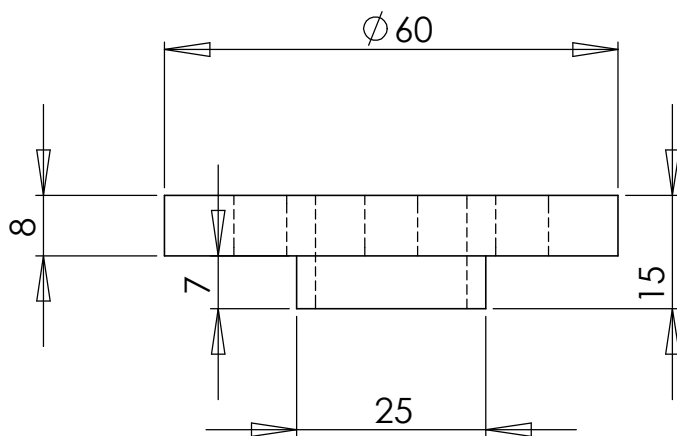


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			ENG APPR.			
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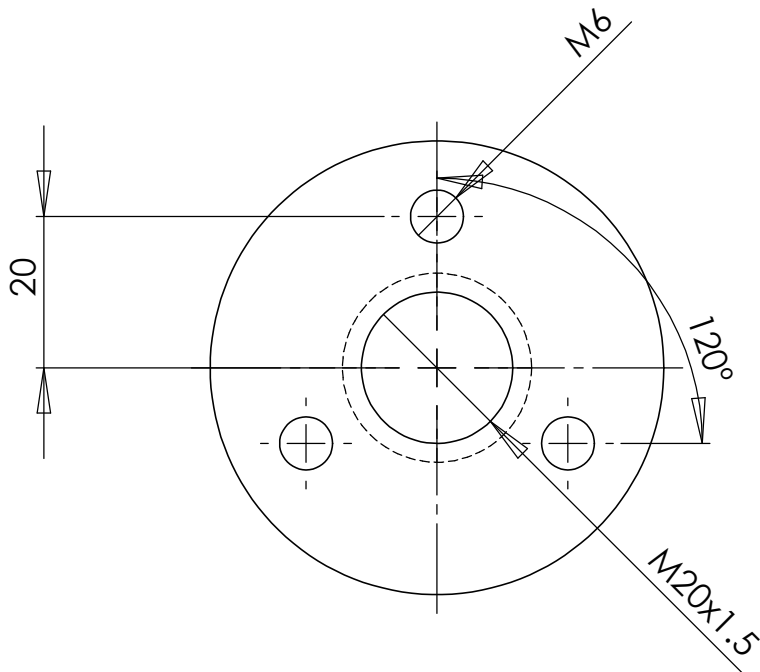
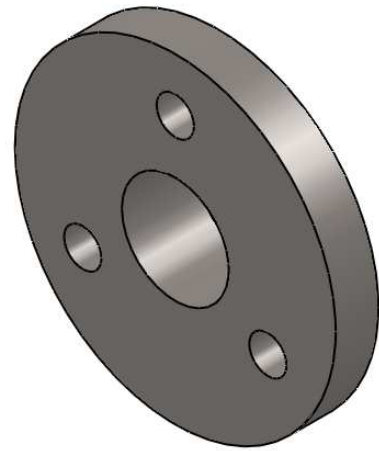
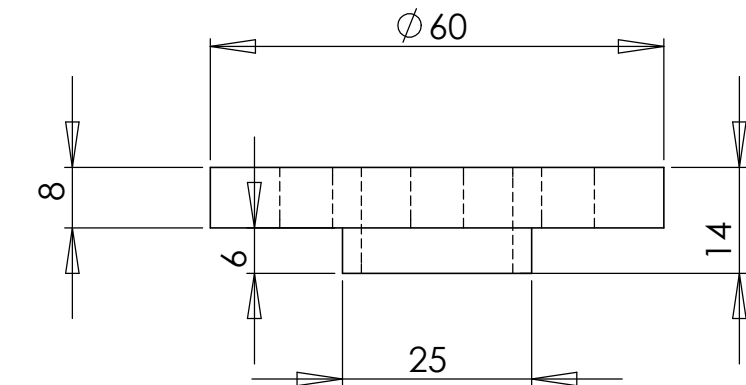


Dos piezas iguales

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			CHECKED					
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			MFG APPR.					
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NEXT ASSY	USED ON							
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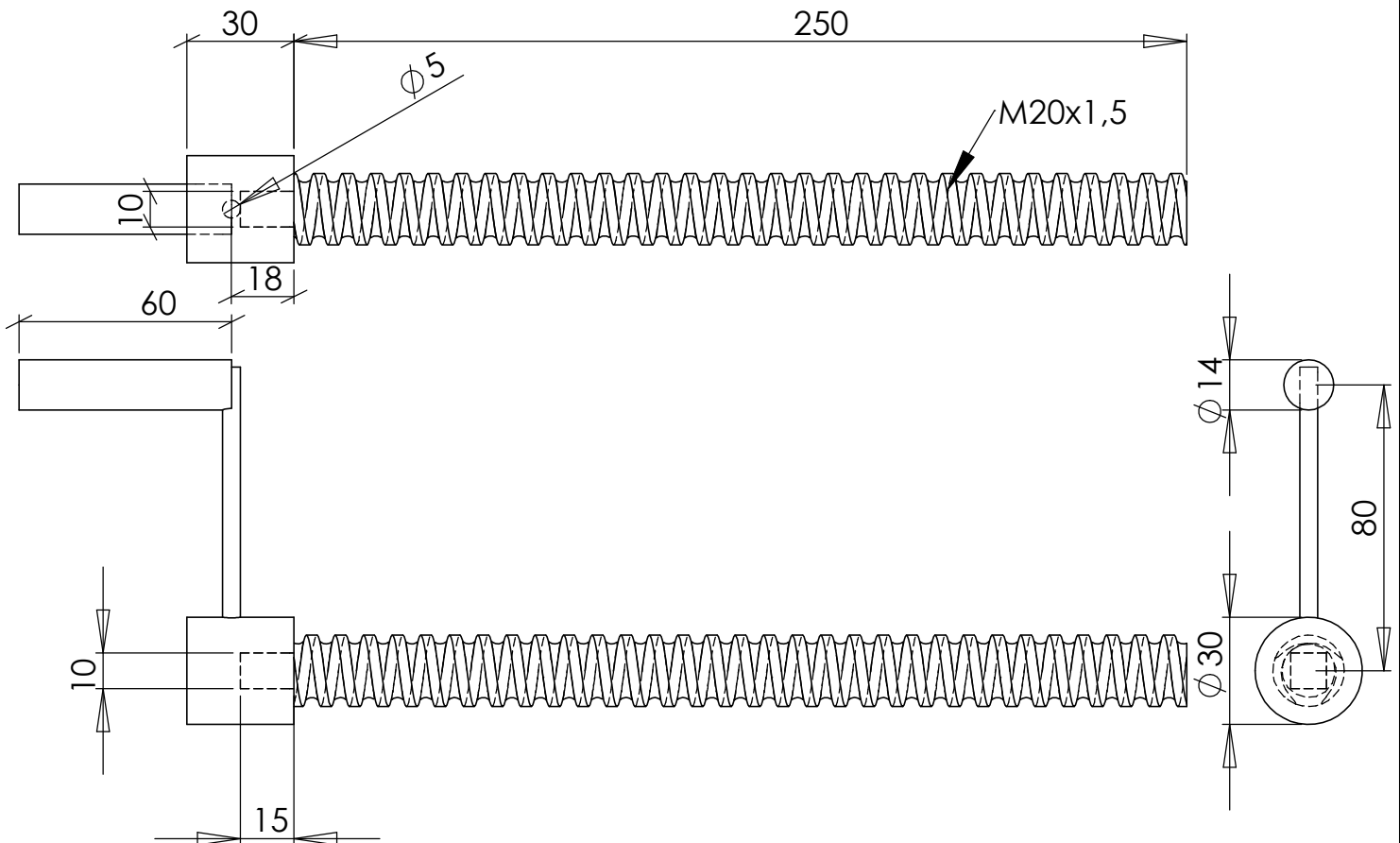
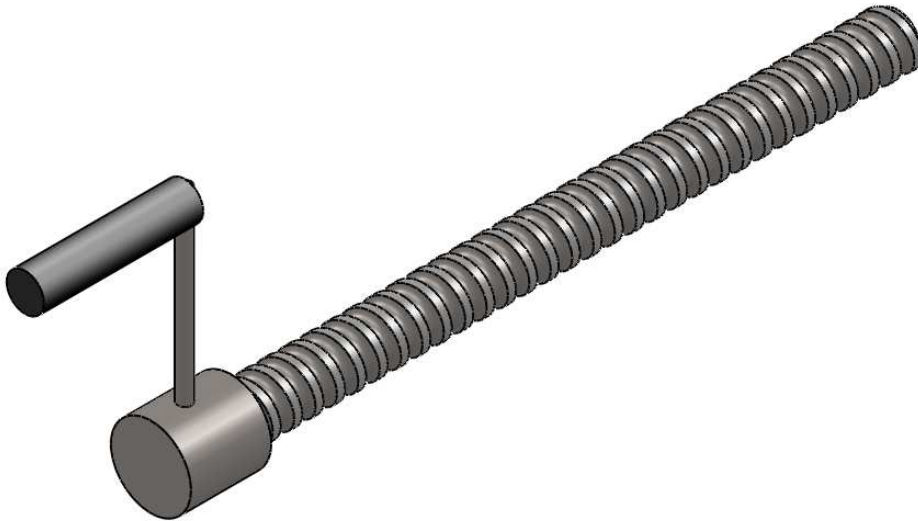
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			MFG APPR.					
		MATERIAL	Q.A.			SIZE A DWG. NO. 1.5.13 Guía husillo REV.		
		FINISH	COMMENTS:					
NEXT ASSY	USED ON							
APPLICATION		DO NOT SCALE DRAWING						
			SCALE: 1:1	WEIGHT:		SHEET 1 OF 1		



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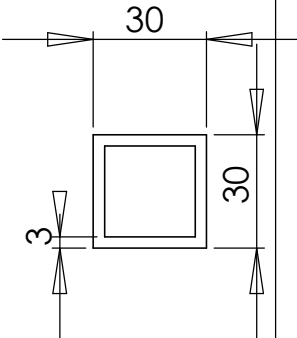
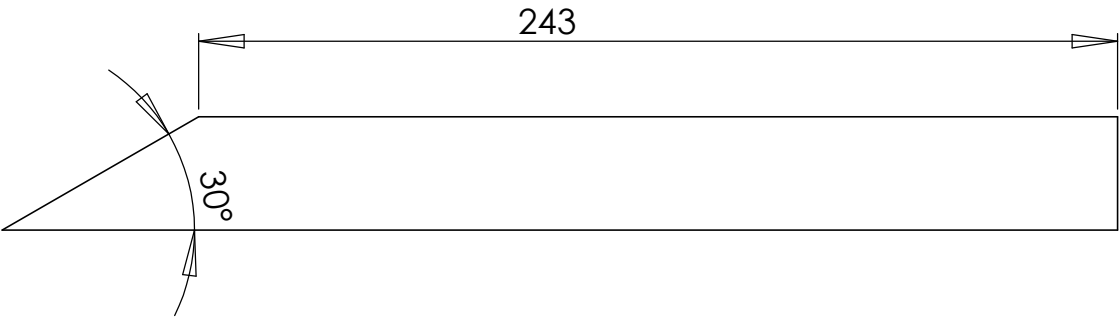
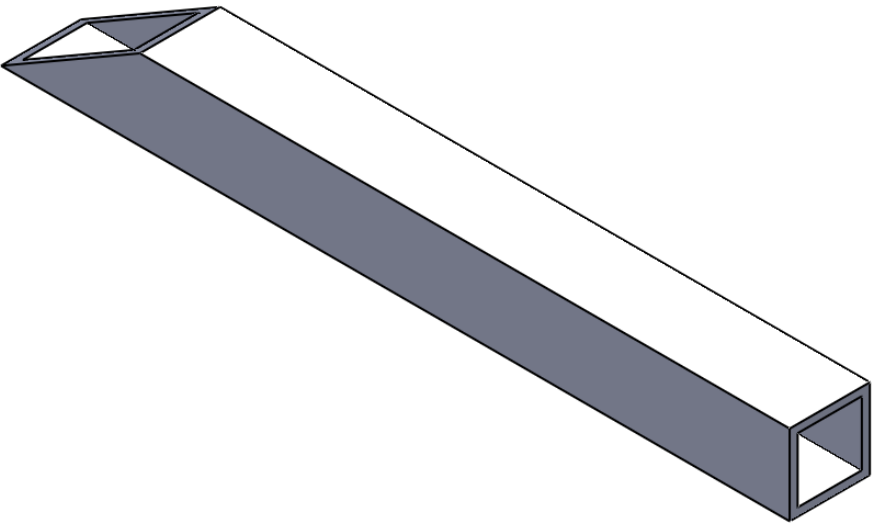
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NEXT ASSY	USED ON							
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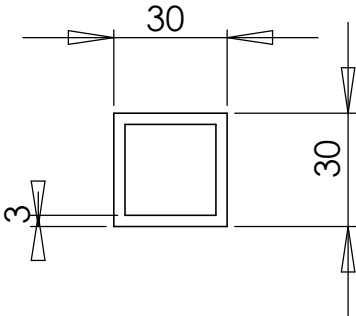
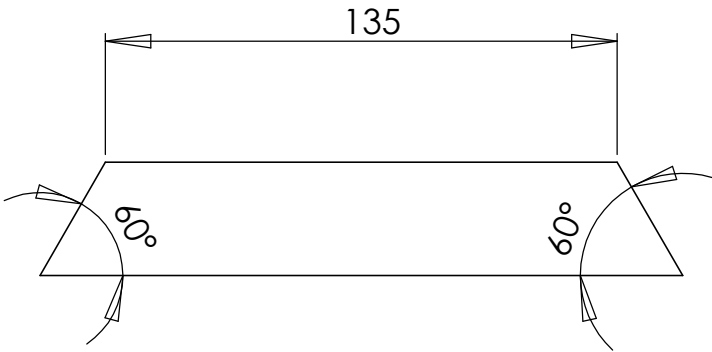
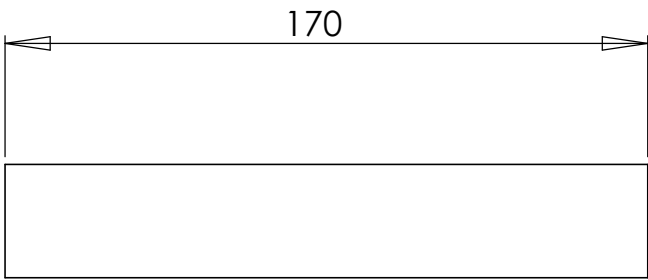
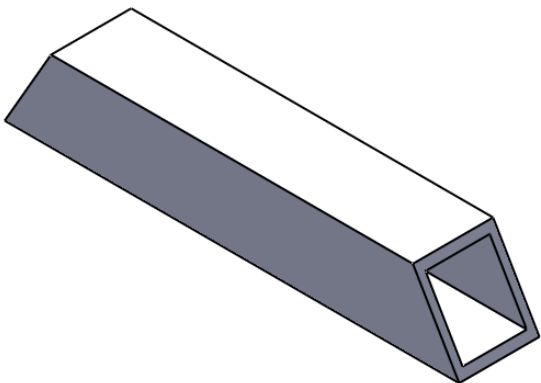
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		DIMENSIONS ARE IN MM TOLERANCES: FRACTIONAL ± ANGULAR: MACH ± BEND ± TWO PLACE DECIMAL ± THREE PLACE DECIMAL ±		NAME	DATE			
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			MFG APPR.					
		MATERIAL	Q.A.			COMMENTS:		
NEXT ASSY	USED ON	FINISH						
APPLICATION		DO NOT SCALE DRAWING						
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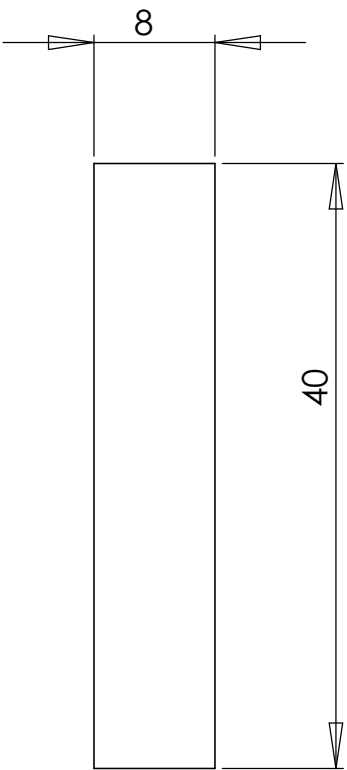
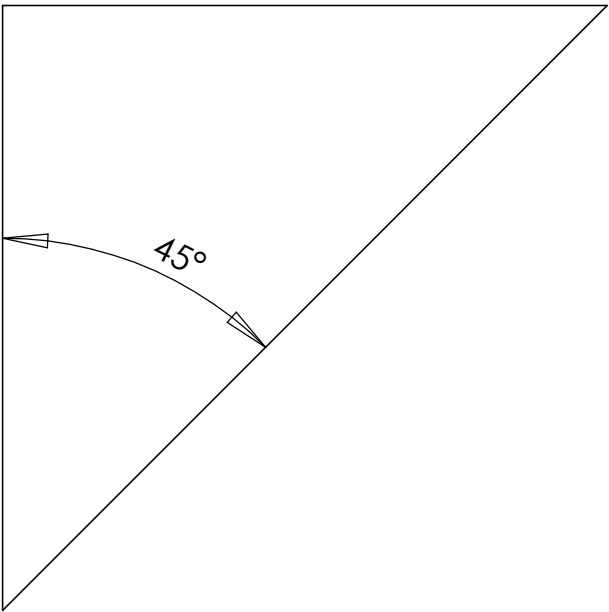
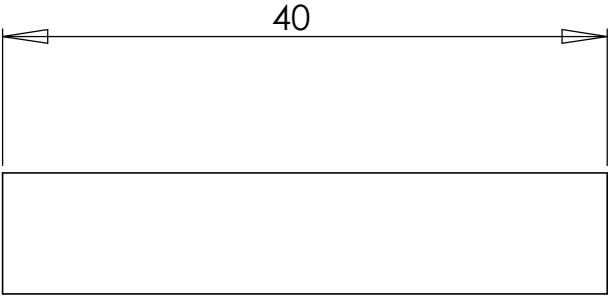
Dos piezas iguales

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				ENG APPR.					
				MFG APPR.					
			MATERIAL	Q.A.			COMMENTS:		
	NEXT ASSY	USED ON	FINISH						
	APPLICATION		DO NOT SCALE DRAWING		SIZE		DWG. NO.		REV.
					A		1.5.16 Tubo lateral largo		
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Dos piezas iguales

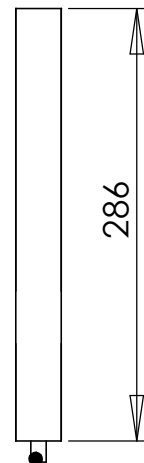
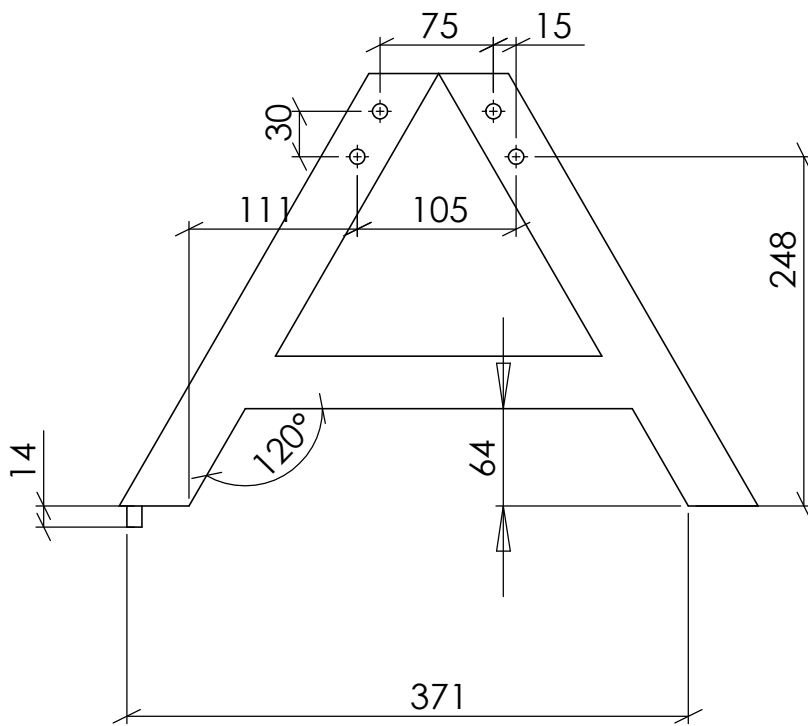
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				CHECKED					
				ENG APPR.					
			MATERIAL	MFG APPR.					
				Q.A.					
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				SCALE:1:2		WEIGHT:		SHEET 1 OF 1	



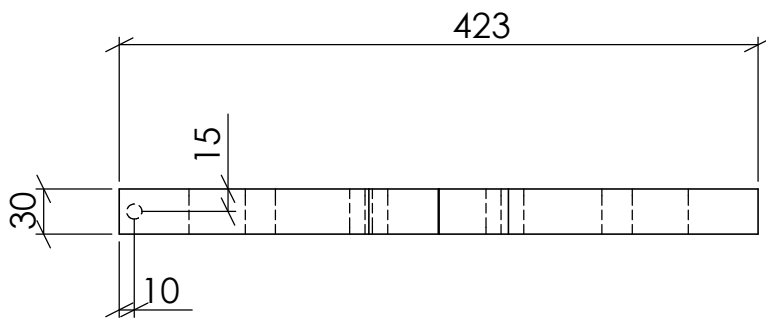
Ocho piezas iguales

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		DIMENSIONS ARE IN MM TOLERANCES: FRACTIONAL ± ANGULAR: MACH ± BEND ± TWO PLACE DECIMAL ± THREE PLACE DECIMAL ±		NAME	DATE						
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			CHECKED								
			ENG APPR.								
			MFG APPR.								
		MATERIAL	Q.A.			COMMENTS:					
		FINISH									
NEXT ASSY	USED ON										
APPLICATION		DO NOT SCALE DRAWING				SIZE	DWG. NO.	REV.			
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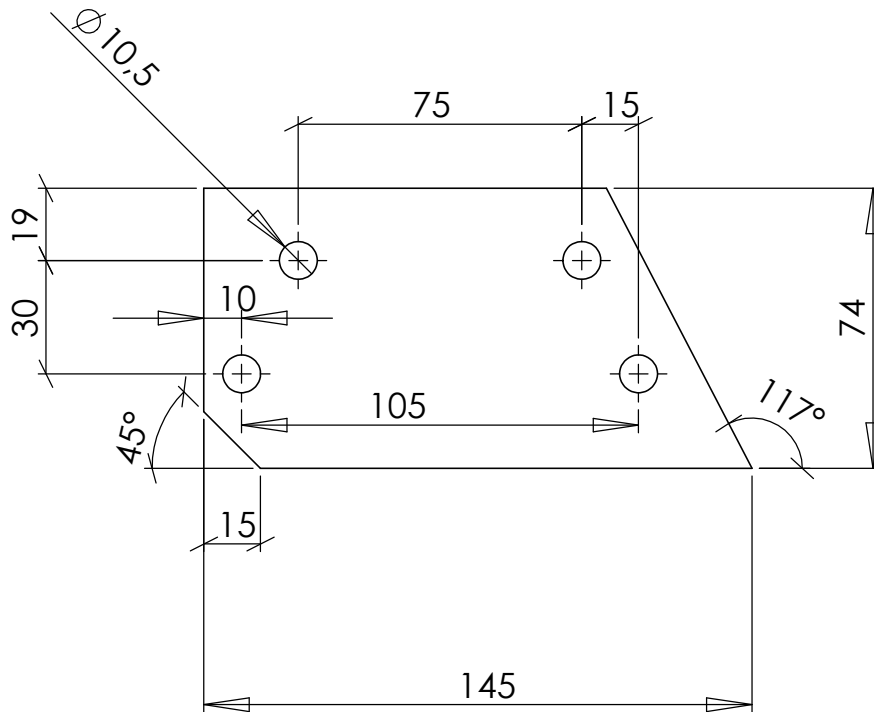
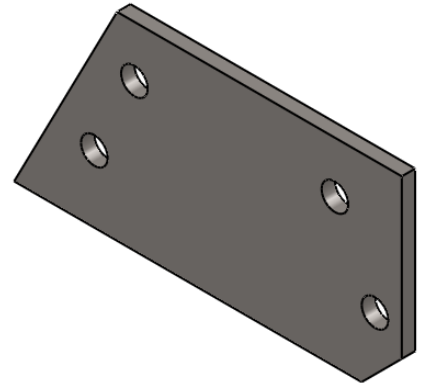
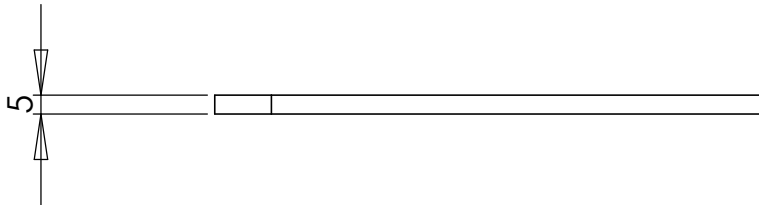


Bulón Diam 10



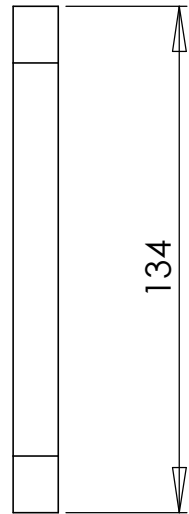
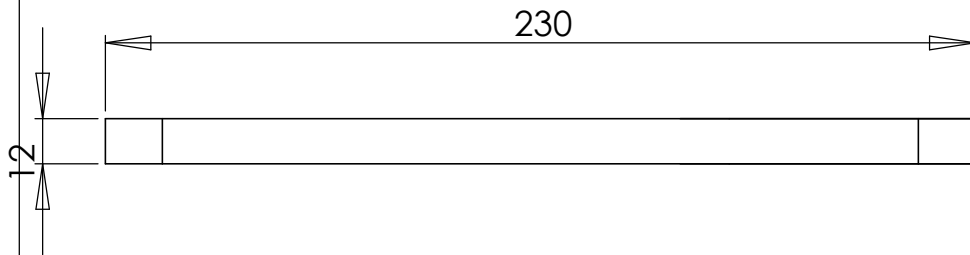
Dos soportes iguales

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			CHECKED					
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			Q.A.					
		MATERIAL	COMMENTS:		SIZE A DWG. NO. 1.6.1 Soporte H hueco 2 mm REV.			
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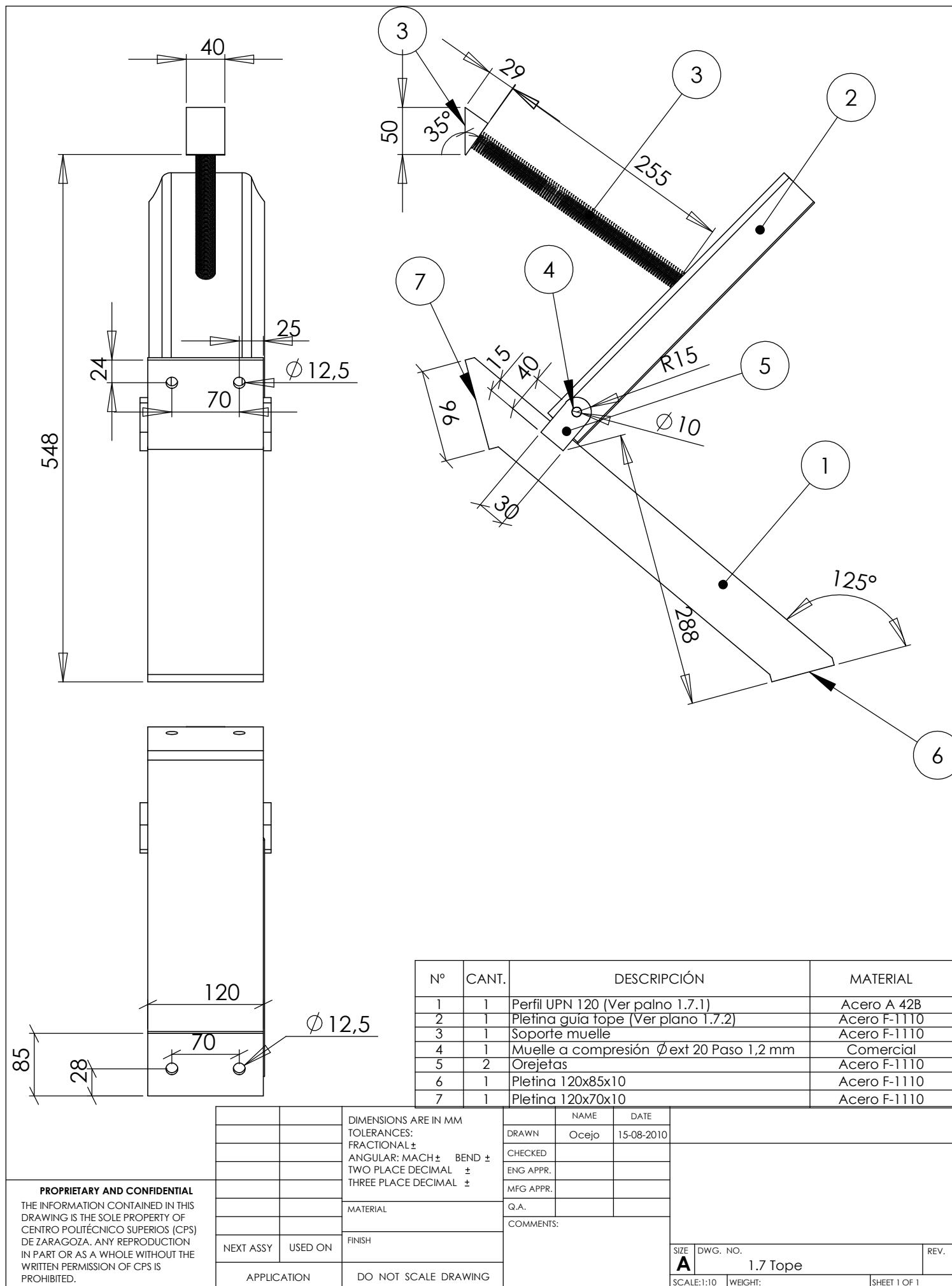
Dos piezas iguales

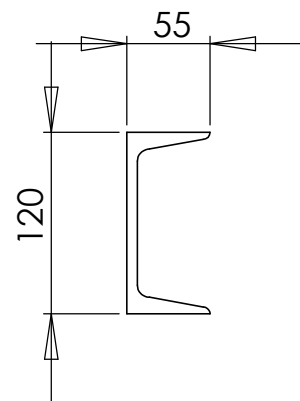
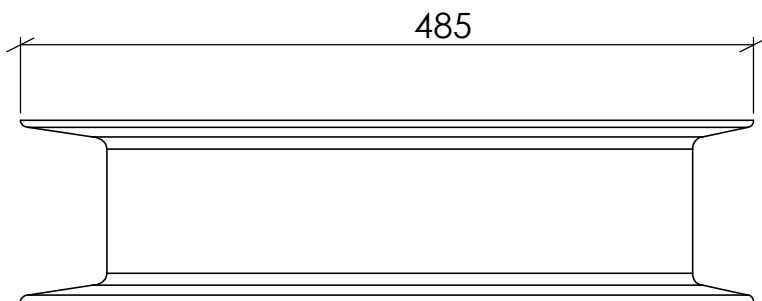
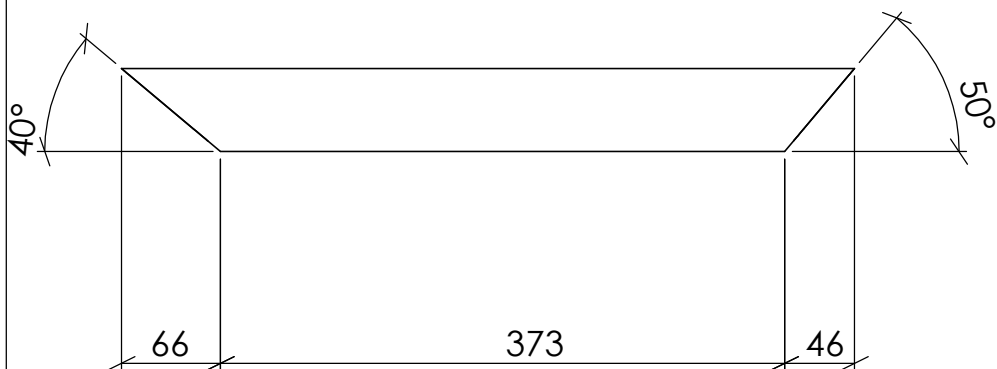
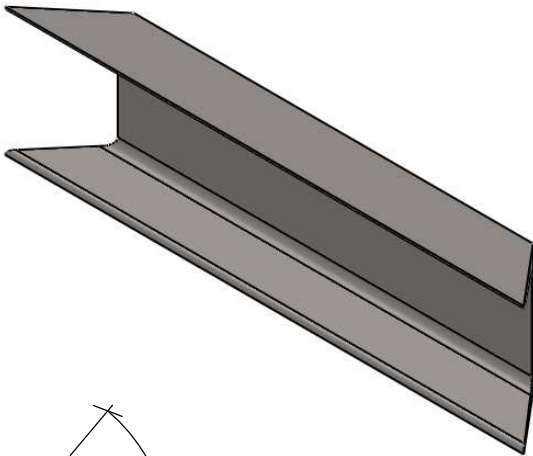
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			ENG APPR.					
			MFG APPR.					
		MATERIAL	Q.A.					
			COMMENTS:					
NEXT ASSY	USED ON	FINISH				SIZE	DWG. NO.	REV.
APPLICATION		DO NOT SCALE DRAWING				A	1.6.3 Suplemento 5 mm	
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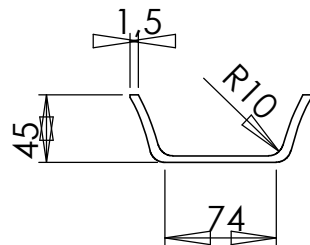
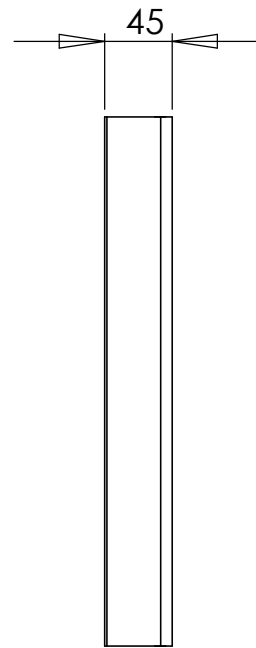
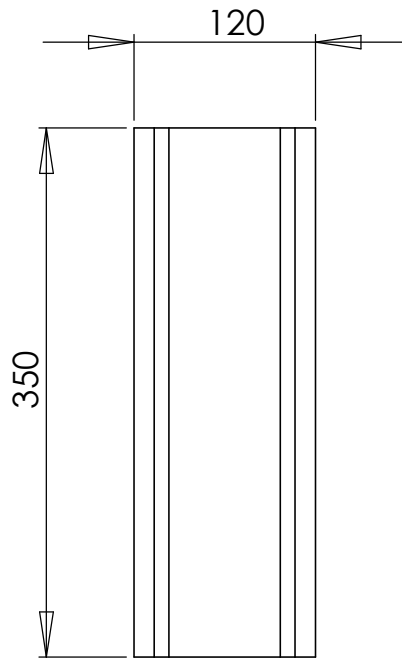
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		FINISH	COMMENTS:						
NEXT ASSY	USED ON								
APPLICATION		DO NOT SCALE DRAWING	SCALE: 1:5		SHEET 1 OF 1				

SIZE A	DWG. NO. 1.6.4 Enganche delantero	REV.
SCALE: 1:5	SHEET 1 OF 1	

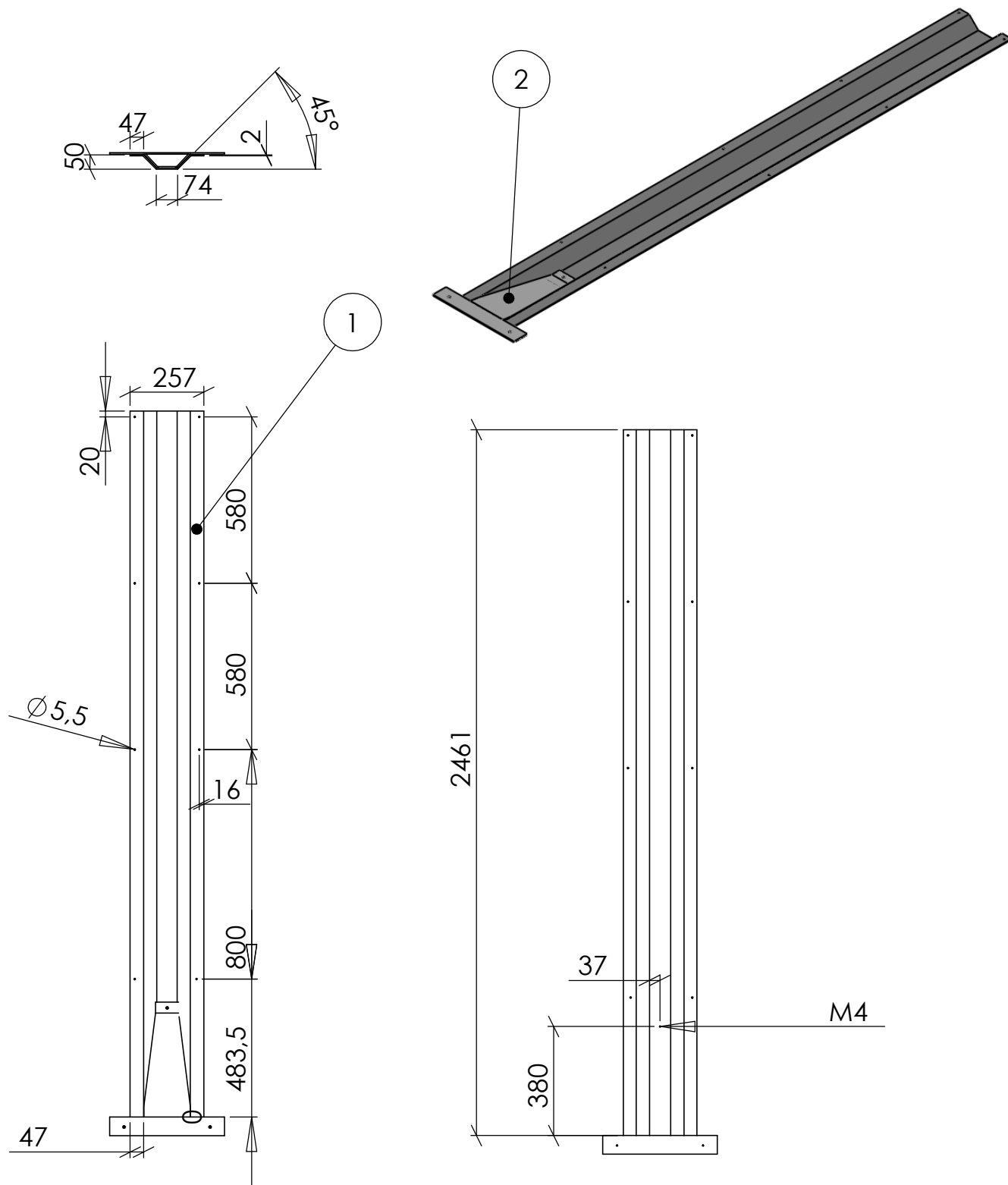




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		SIZE	DWG. NO.		REV.				
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			MFG APPR.					
		MATERIAL	Q.A.					
		FINISH	COMMENTS:					
NEXT ASSY	USED ON							
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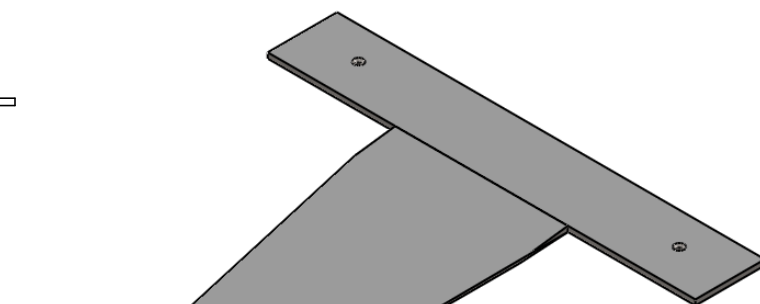
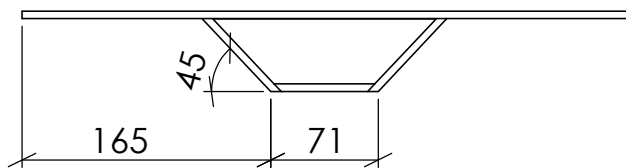


Nº	DESCRIPCIÓN	CANT.	MATERIAL
1	Carril chapa 2 mm	1	Acero F-1110
2	Rampa (Ver plano 1.8.2)	1	Aluminio

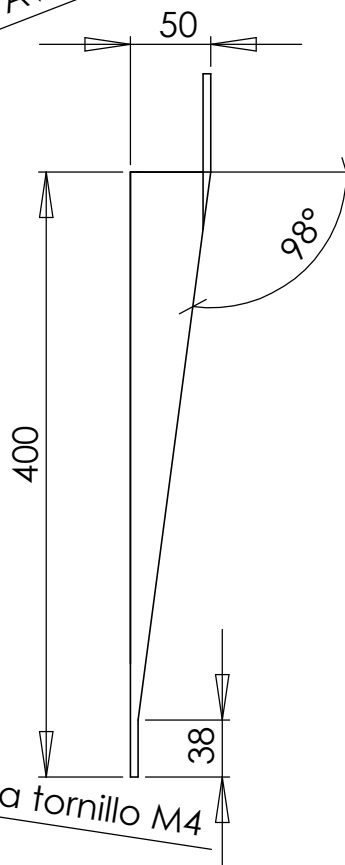
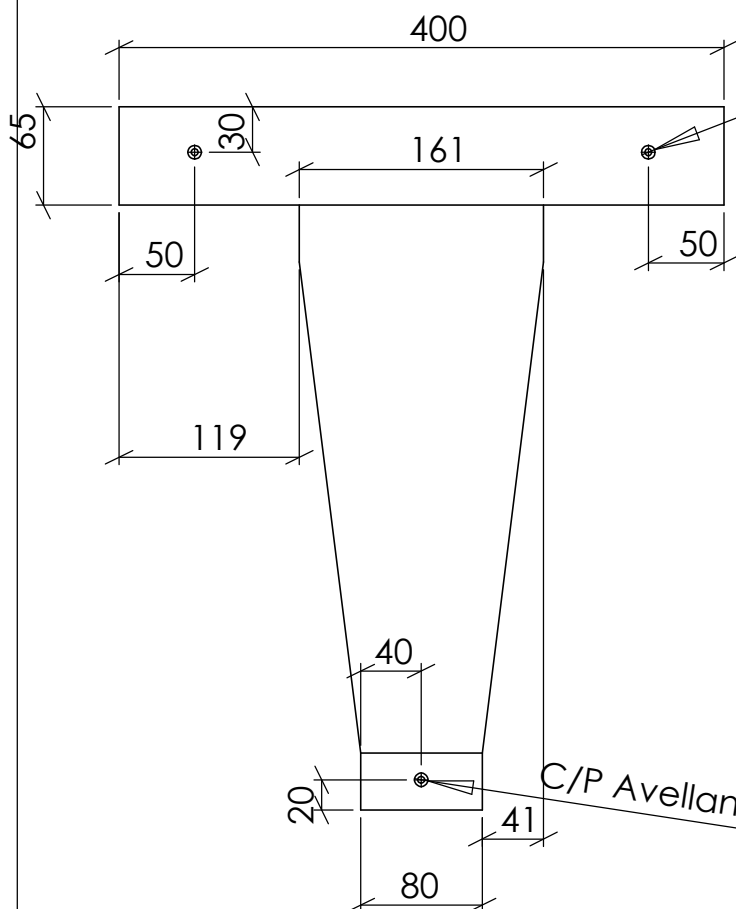
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			ENG APPR.						
			MFG APPR.						
			Q.A.						
			COMMENTS:						
NEXT ASSY	USED ON								
APPLICATION							SIZE	DWG. NO.	REV.
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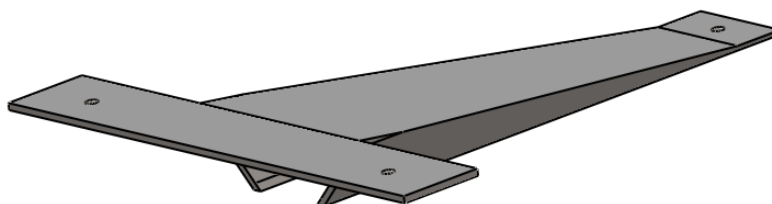
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C/P Avellanada para tornillo M4



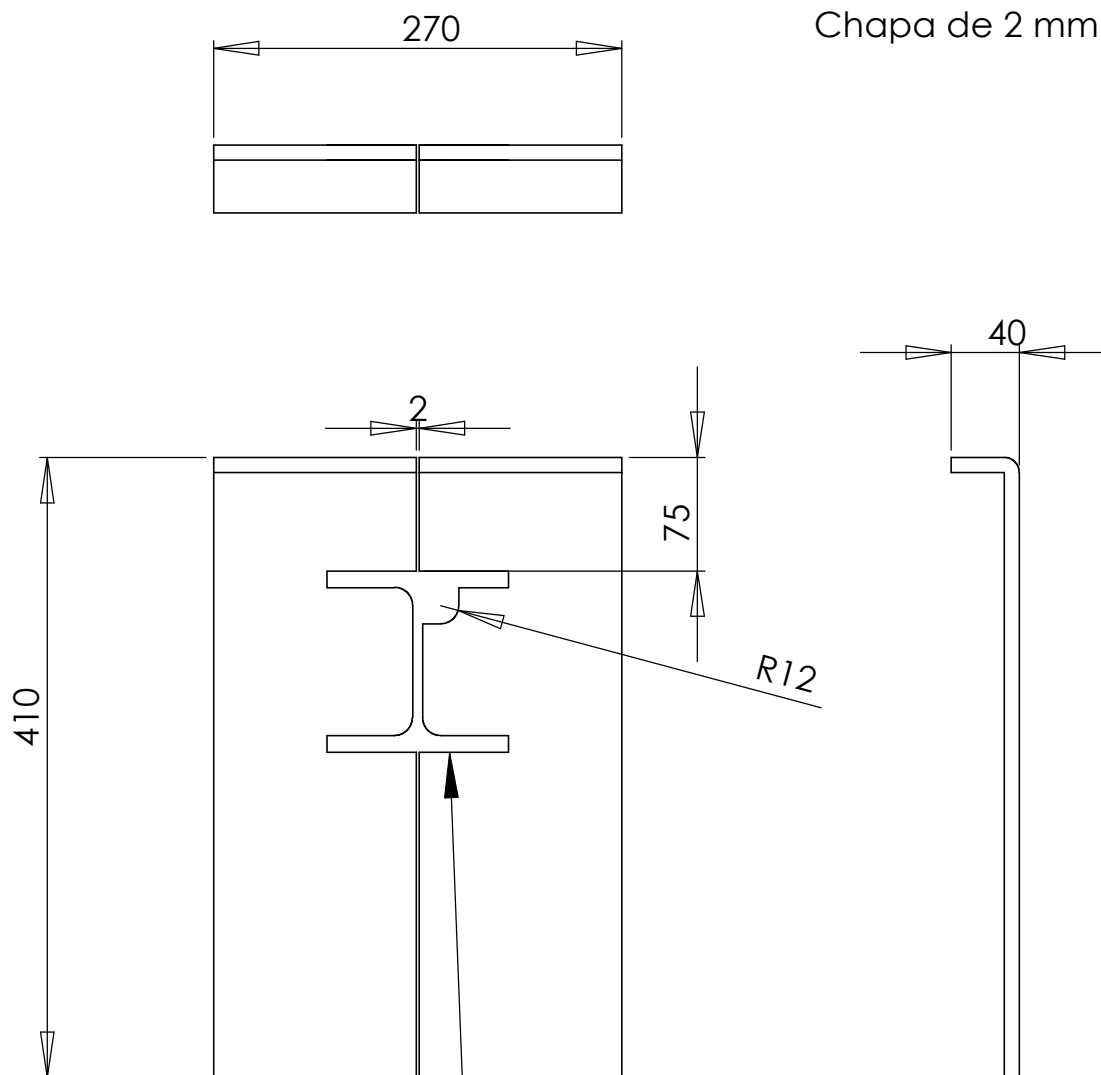
C/P Avellanada para tornillo M4



Chapa de aluminio 2 mm con la parte superior antideslizante (remachada)

		DIMENSIONS ARE IN MM TOLERANCES: FRACTIONAL ± ANGULAR: MACH ± BEND ± TWO PLACE DECIMAL ± THREE PLACE DECIMAL ±		NAME	DATE			
			DRAWN	Ocejo	15-08-2010			
			CHECKED					
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			MFG APPR.					
		MATERIAL	Q.A.					
		FINISH	COMMENTS:					
NEXT ASSY	USED ON							
APPLICATION		DO NOT SCALE DRAWING	SIZE		DWG. NO.		REV.	
			A		1.8.2 Rampa aluminio			
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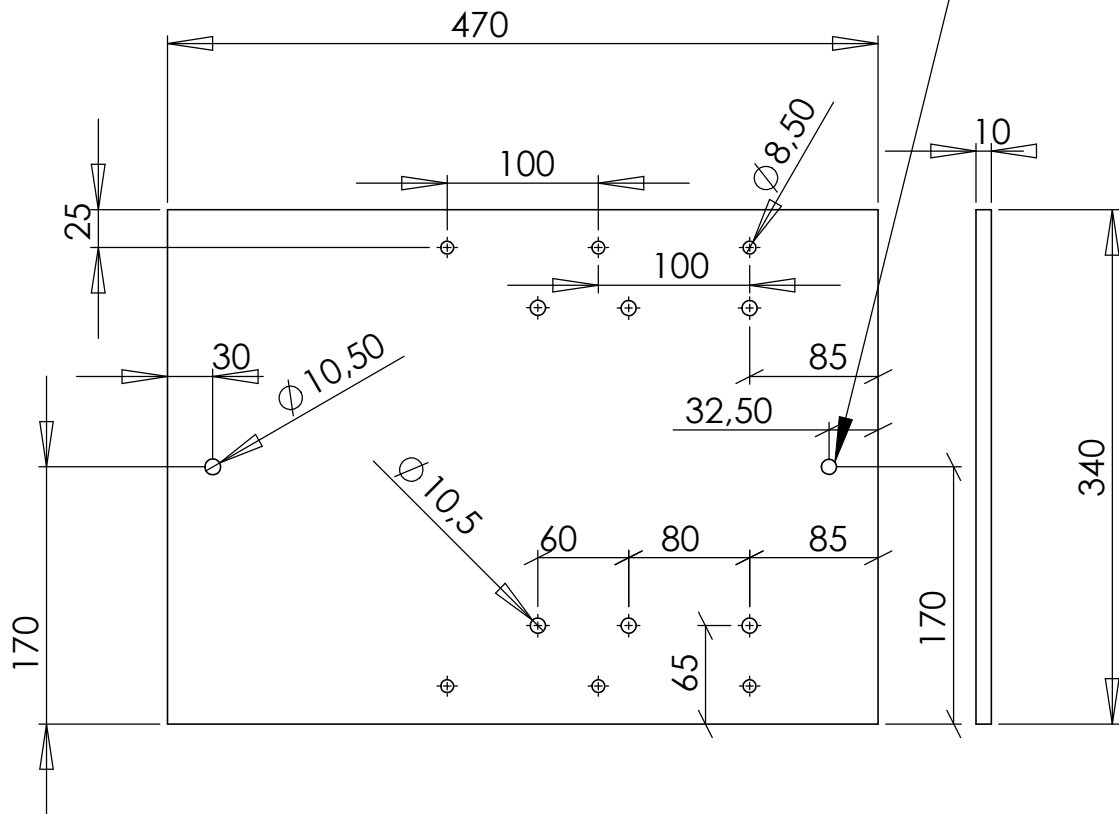


Chapa de 2 mm de acero

Agujero H120 para introducir el pilar más un pequeño agujero para pasar cables

		DIMENSIONS ARE IN MM TOLERANCES: FRACTIONAL ± ANGULAR: MACH ± BEND ± TWO PLACE DECIMAL ± THREE PLACE DECIMAL ±		NAME	DATE					
			DRAWN	Ocejo	15-08-2010					
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		MATERIAL	Q.A.							
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NEXT ASSY	USED ON				A				1.11.1 Anexo 1	
APPLICATION		DO NOT SCALE DRAWING			SCALE: 1:5	WEIGHT:	SHEET 1 OF 1			

Agujero según soporte antivibratorio



Acero F-1110

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				Q.A.					
				COMMENTS:					
	NEXT ASSY	USED ON		FINISH					
	APPLICATION			DO NOT SCALE DRAWING					