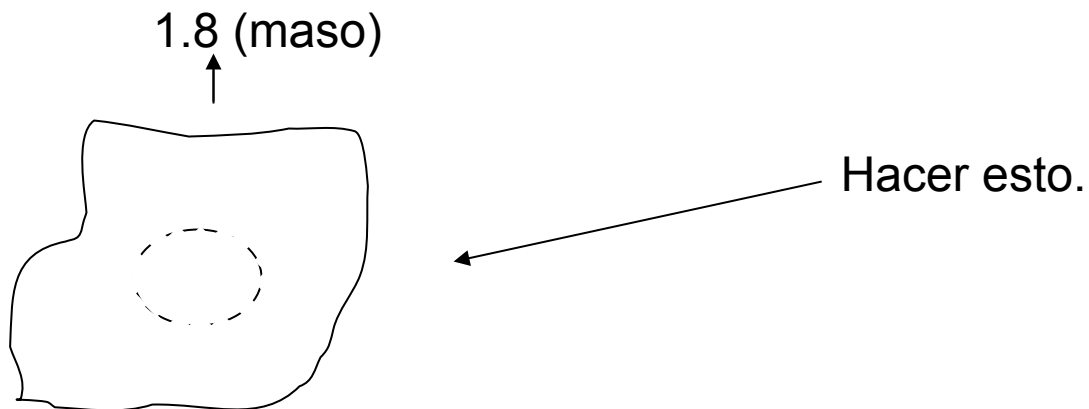


Dibujo Técnico

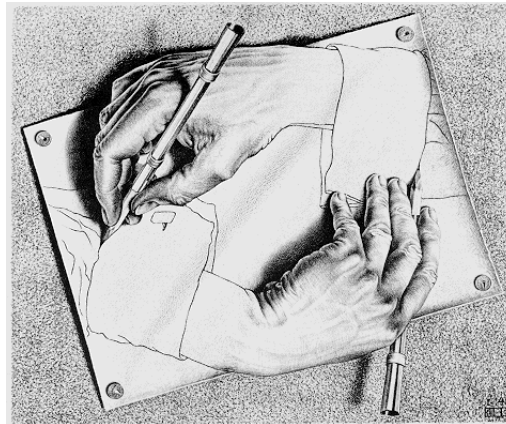
introducción

- Requisitos
 - Definir las piezas a construir
 - Respetar la normas
 - *Minimizar la confusión*



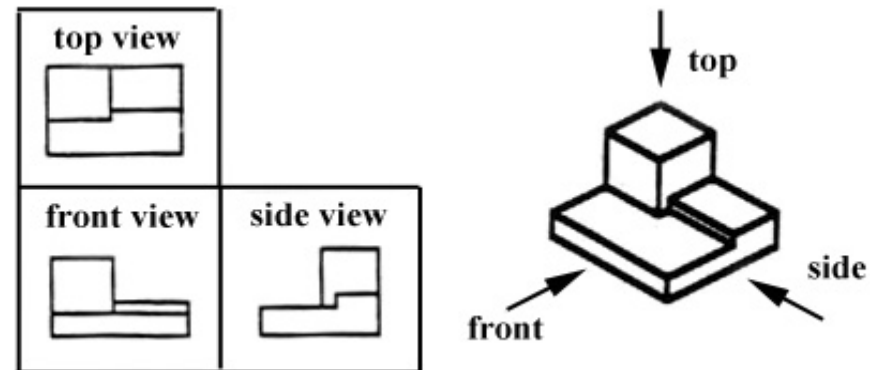
Problemas

- El mundo es 3D
- El papel es 2D
- (soy malísimo dibujando)



Soluciones

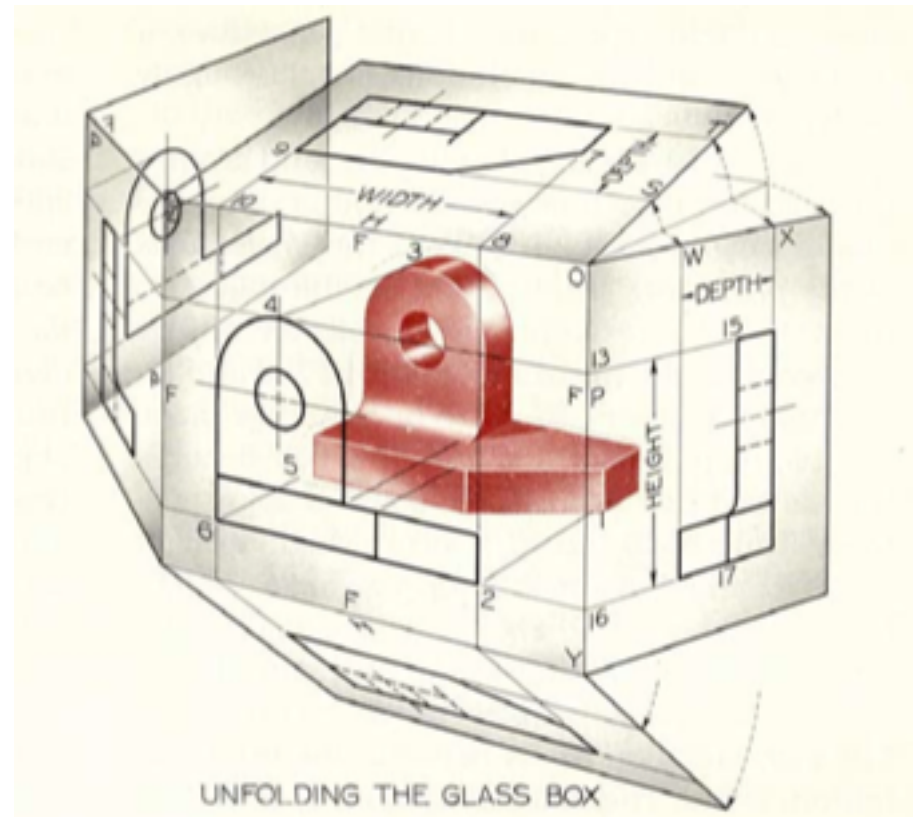
- Los objetos 3D se pueden representar en 2D
 - Proyección Ortográfica
 - Proyección Isométrica



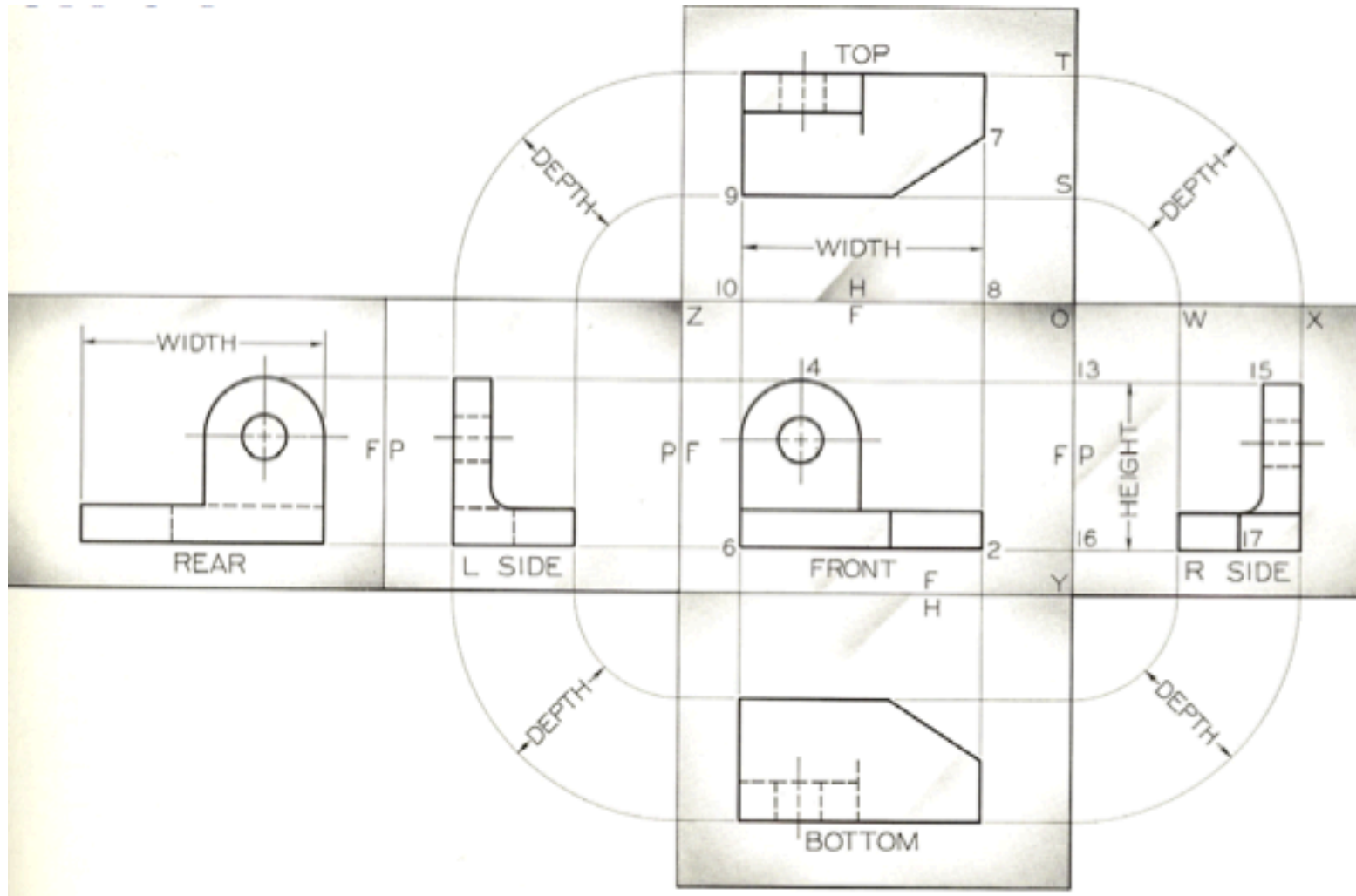
- Usar un buen software ayuda
 - Catia, SolidWorks
 - Solid Edge Free 2D Drafting, IronCAD Compose
 - FreeCAD

Proyección ortográfica

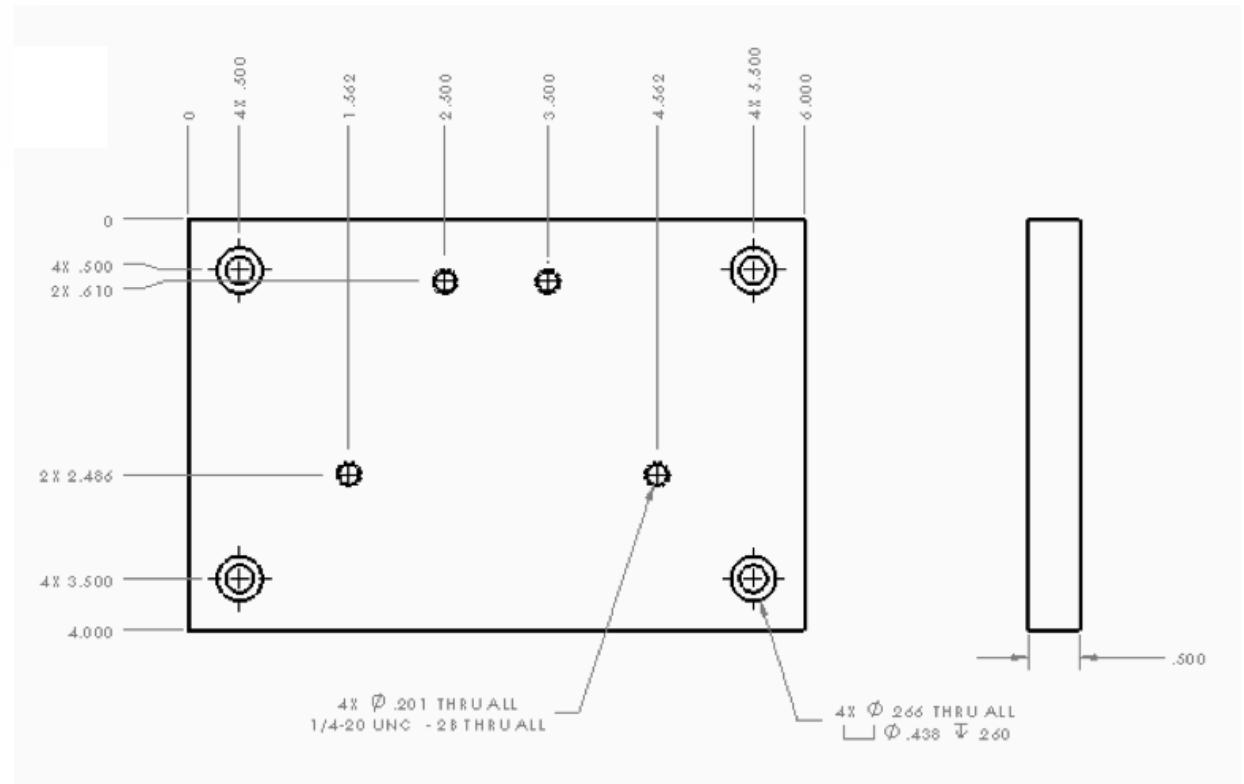
- Múltiples vistas del objeto, rotando 90 grados alrededor del centro

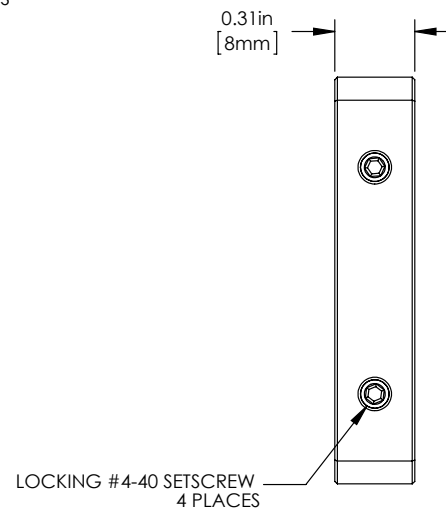
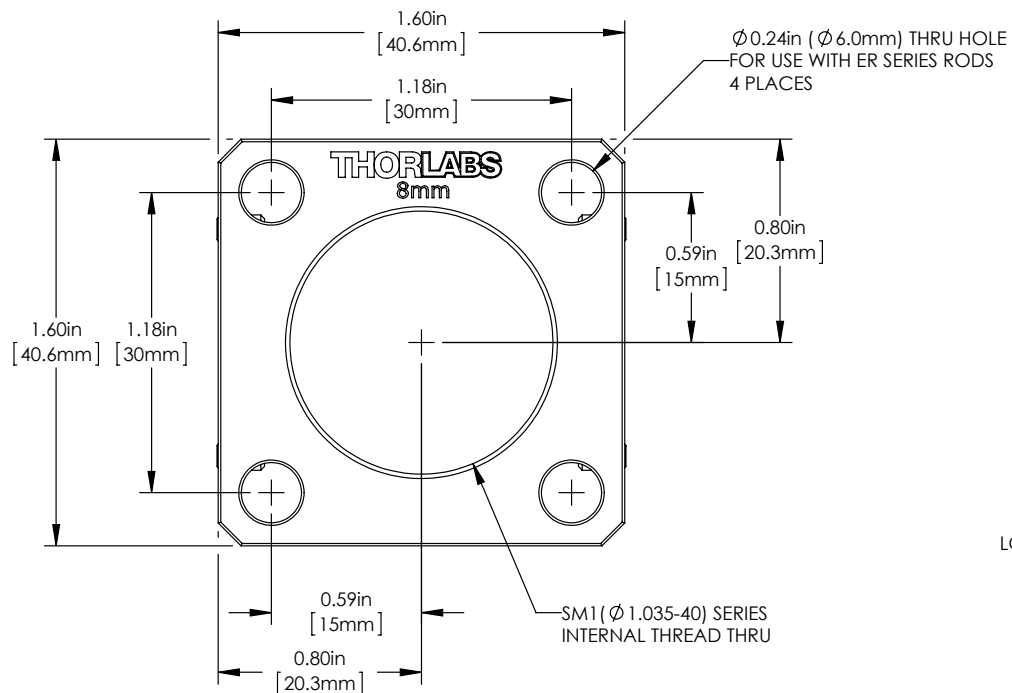


Proyección ortográfica



Proyección ortográfica

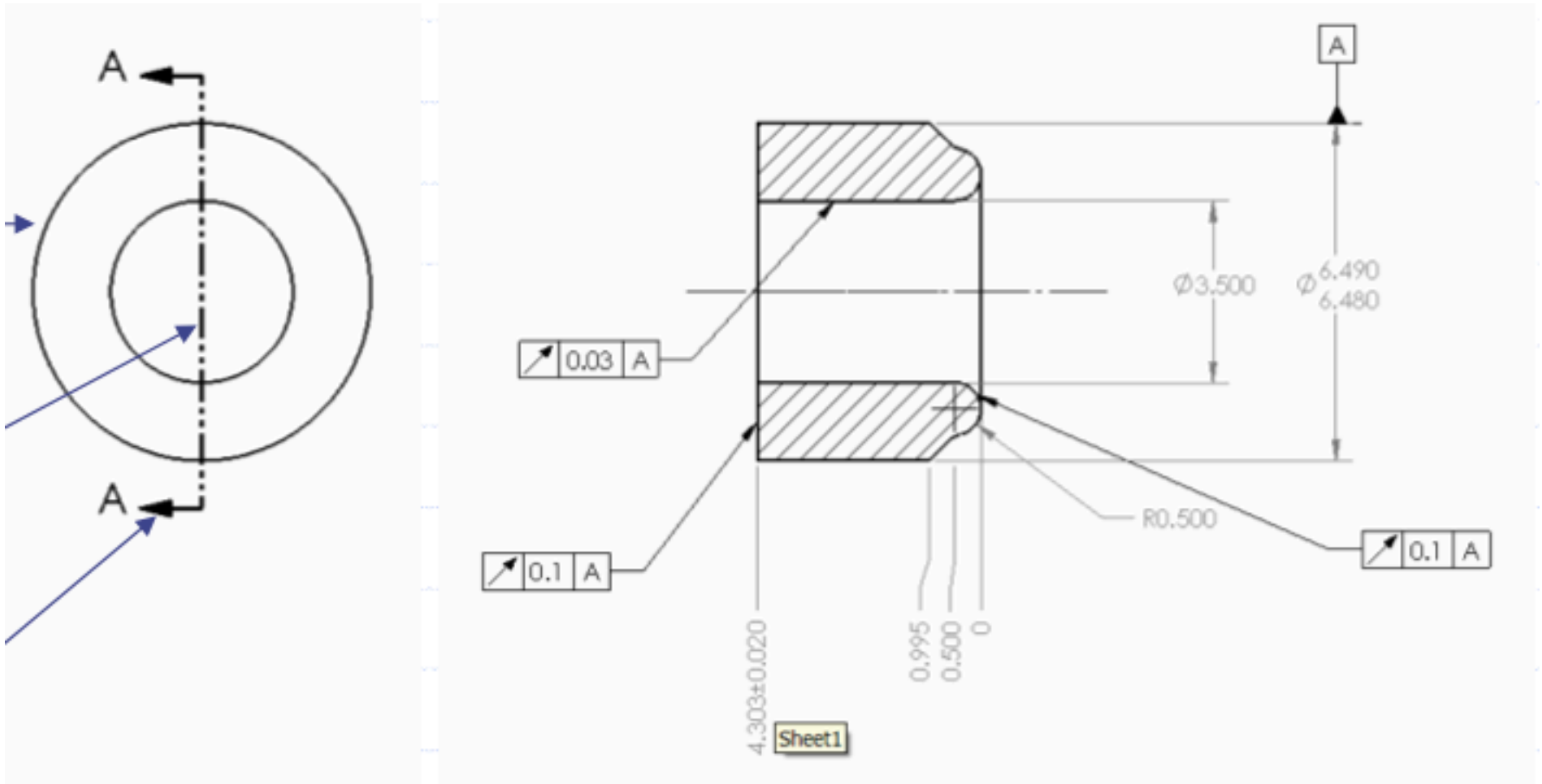




FOR INFORMATION ONLY
NOT FOR MANUFACTURING PURPOSES

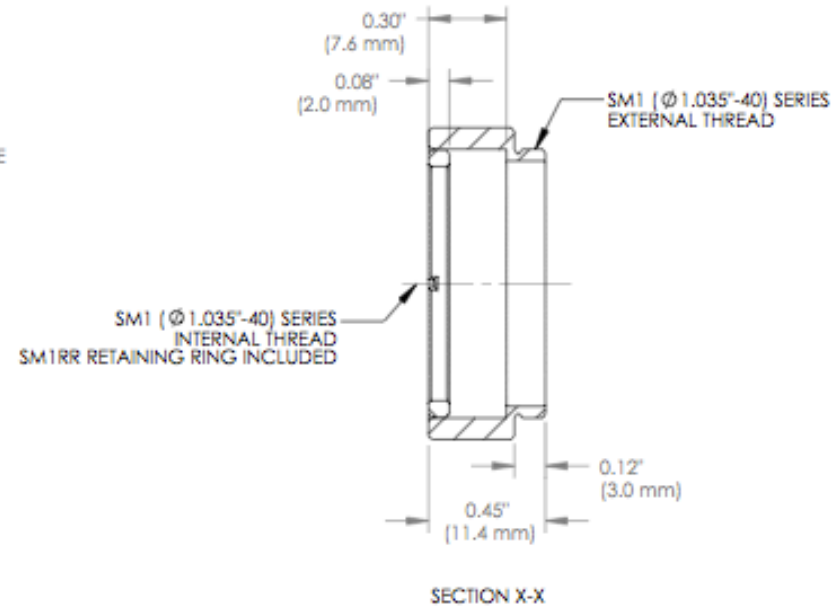
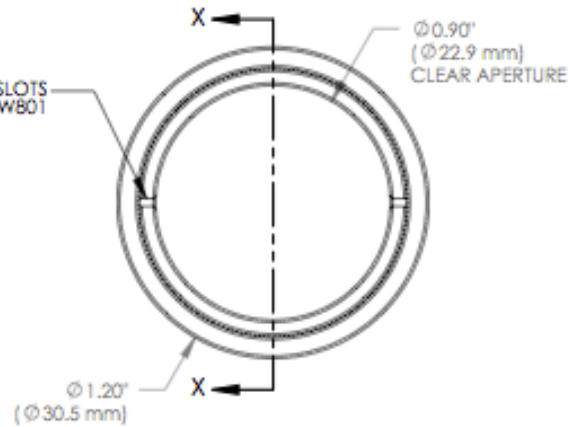
DRAWING PROJECTION				 www.thorlabs.com	
	NAME	DATE	8mm Thick Cage Plate		
DRAWN	PG	10/JUN/11	MATERIAL	REV	
APPROVAL	BM	10/JUN/11	Anodized Aluminum	A	
COPYRIGHT © 2010 BY THORLABS			ITEM #	APPROX WEIGHT	
VALUES IN PARENTHESIS ARE CALCULATED AND MAY CONTAIN ROUND OFF ERRORS			CP8S	0.02 kg	

Proyección ortográfica (vistas internas)





SPANNER WRENCH SLOTS
FOR USE WITH SPW602 & SPW801



THORLABS INC. PO BOX 366
NEWTON NJ

	NAME	DATE
DRAWN	KL	01/16/97
ENG APPR.	AC	01/16/97
MFG APPR.	AC	01/16/97

PROPRIETARY AND CONFIDENTIAL
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THORLABS, INC. ANY REPRODUCTION
IN PART OR AS A WHOLE WITHOUT
THE WRITTEN PERMISSION OF
THORLABS, INC. IS PROHIBITED.

TITLE
SM1 LENS TUBE, 0.30" DEEP

MATERIAL
ALUMINUM

SIZE
A

REV
B

SCALE: 3:2

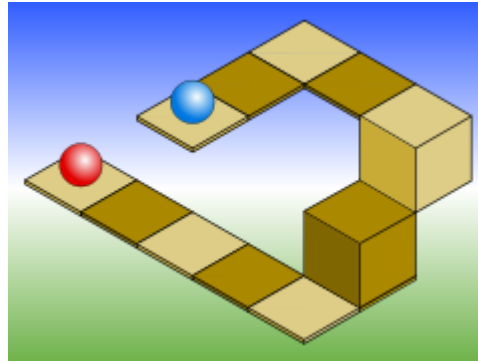
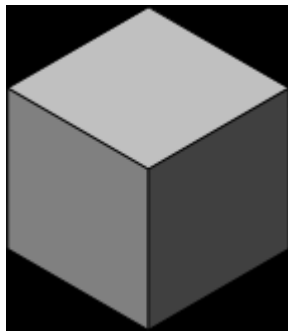
SHEET 1 OF 1

DRAWING #
0823-E01

PART #
SM1L03

Proyección isométrica

- Vista del objeto desde una esquina (sin perspectiva)
- Puede traer algunos problemas

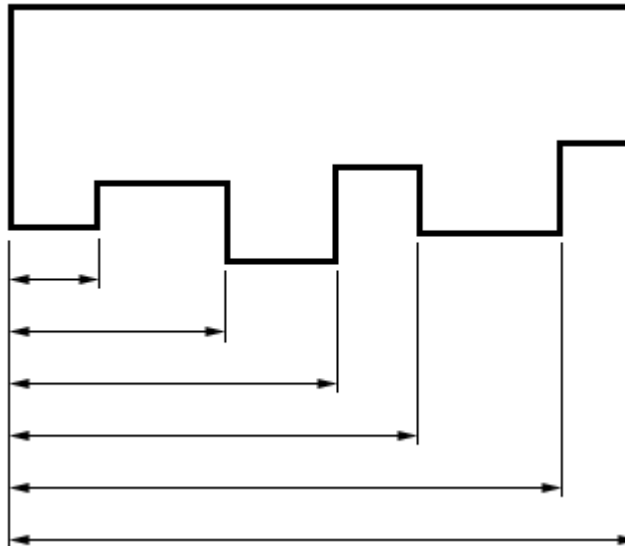


Dimensionado

- Junto con el plano, debe proveer suficiente información para poder maquinar la pieza.

Tipos de Dimensionado

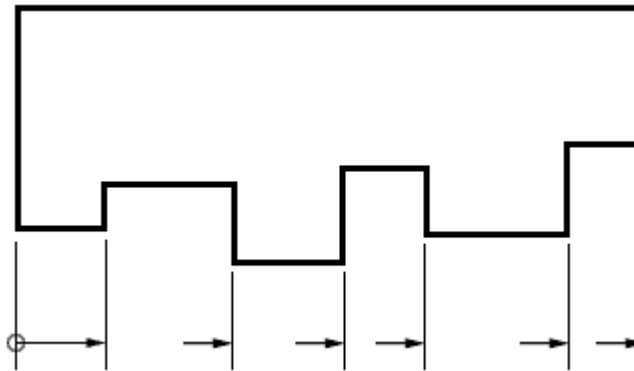
- Paralelo



- Múltiples dimensiones saliendo de una misma línea de proyección

Tips de Dimensionado

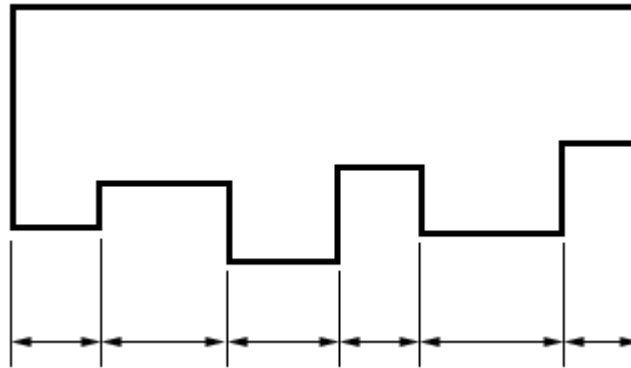
- Superimposed Running Dimensions



- Origen común indicado por un círculo

Tipos de Dimensionado

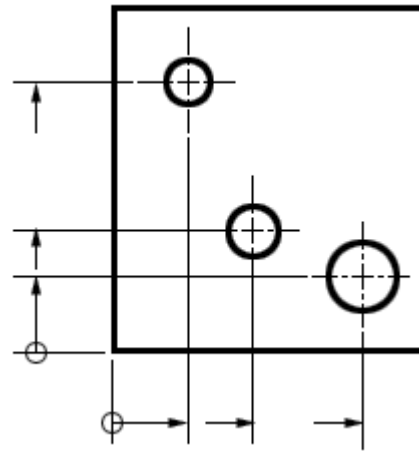
- En cadena



- Solo debe usarse si la función del objeto no se ve afectada por la acumulación de tolerancias

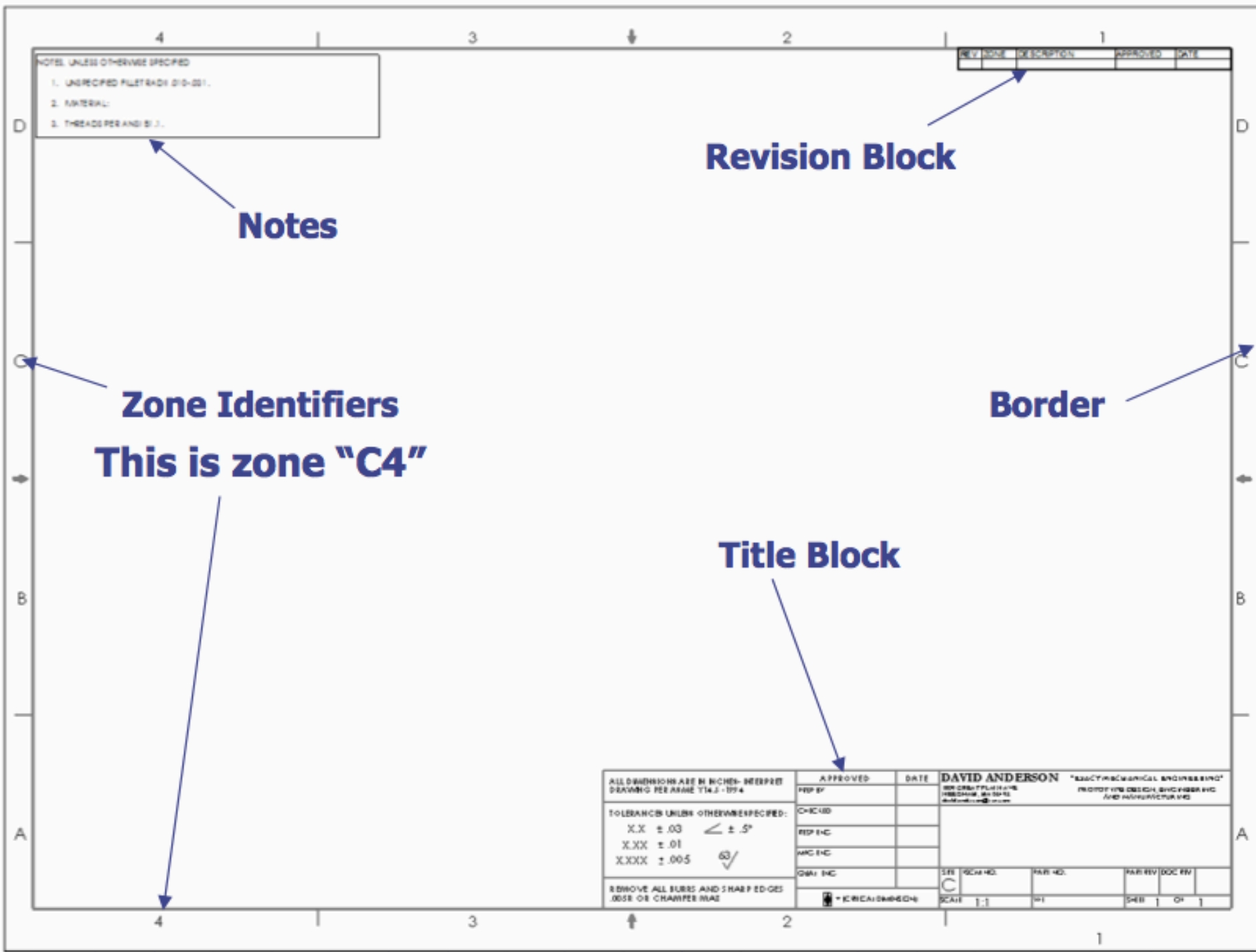
Tipos de dimensionado

- Sistema cartesiano



Tipos de linea

- *Visible* - Sólidas usadas para mostrar bordes vistos desde un ángulo.
- *Invisibles* – líneas punteadas cortas que pueden ser usadas para mostrar bordes que no se ven desde el punto de vista representado
- Centrales – líneas punteadas largas y cortas para mostrar ejes de elementos circulares.



NOTES, UNLESS OTHERWISE SPECIFIED
 1. UNSPECIFIED FILET RADI 0.10-0.01.
 2. MATERIAL:
 3. THREADS PER ANSI J.

REV	NO	DESCRIPTION	APPROVED	DATE

Notes

Revision Block

Zone Identifiers
This is zone "C4"

Border

Title Block

ALL DIMENSIONS ARE IN INCHES- SEE PART DRAWING PER ASME Y14.5 - 1974 TOLERANCES UNLESS OTHERWISE SPECIFIED: X.X ± .00 $\angle \pm .5^\circ$ X.XX ± .01 X.XXX ± .005 $63/\checkmark$ REMOVE ALL BURRS AND SHARP EDGES (SEE OR CHAMFER MAS)	APPROVED	DATE	DAVID ANDERSON "MECHANICAL ENGINEERING" <small>OR ORIGINATOR OF DESIGN AND INVENTOR</small>	
	DESIGNED		<small>PROTOTYPING DESIGN, ENGINEERING AND MANUFACTURING</small>	
	DRAWN			
	CHECKED			
	DATE	REV	DOC NO.	REV
		1	001	1

8 7

NOTES, UNLESS OTHERWISE SPECIFIED

1. UNSPECIFIED FILLET RADI $\pm .25$ - 0.50 .
2. MATERIAL: 414 SS FULL HARD. FOR EXPEDIENT PURPOSES, PART COULD BE MACHINED FROM 414 1/2 HARD ROUND AVAILABLE FROM FRY STEEL 800-423-6651. IT IS IMPORTANT TO NOTE THAT DURING ASSEMBLY, BRINELLING OF THE PRECISION "VEES" IS LIKELY USING THE SOFTER MATERIAL.
3. THREADS PER ANSI B18.3.1.

D

1

REV	ZONE	DESCRIPTION	APPROVED	DATE

Revision Block

Drawing Notes

TEXT IS ALL CAPS! NO LOWER CASE.

Default Tolerance

Default Surface Finish

Tolerance Block

Engr Info

Company Name

Part #

Part Name

<p>ALL DIMENSIONS ARE IN INCHES- INTERPRET DRAWING PER ASME Y14.5 - 1994</p> <p>TOLERANCES UNLESS OTHERWISE SPECIFIED:</p> <p>X.X ± .03 $\angle \pm .5^\circ$</p> <p>X.XX ± .01</p> <p>X.XXX ± .005 $\sqrt{63}$</p> <p>REMOVE ALL BURRS AND SHARP EDGES .005R OR CHAMFER MAX</p>	APPROVED	DATE	DAVID ANDERSON "MECHANICAL ENGINEERING"		
	REP BY		PROTOTYPING DESIGN, ENGINEERING AND MANUFACTURING		
	CHECKED		WIDGET		
	REP INC				
APR INC					
OWN INC					
↑	2	1	1	1	1

Scale

Part Rev

Hay mucho más para saber.
Miren planos para guiarse.