

# SEM 0564 - DESENHO TÉCNICO MECÂNICO I

Notas de Aulas v.2018

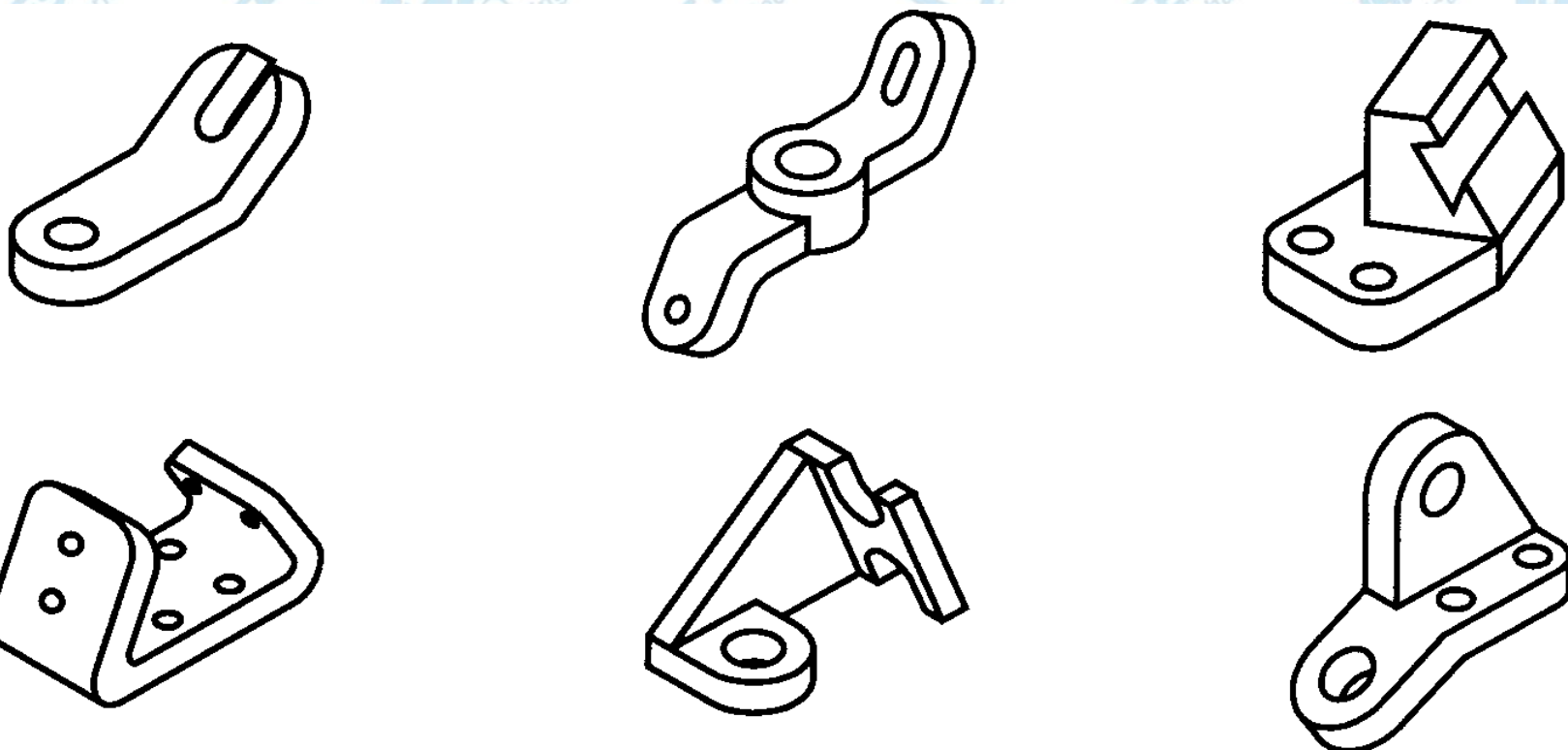
## ***Aula 04 – Vistas auxiliares, omissão de corte e simplificações***

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Departamento de Engenharia Mecânica  
Escola de Engenharia de São Carlos  
Universidade de São Paulo

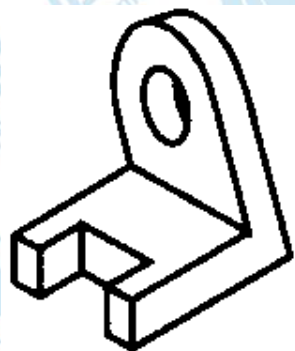
# VISTAS AUXILIARES ou projeção ortogonal especial

Linhas inclinadas e planos oblíquos não aparecem com suas dimensões reais em nenhum dos planos normais, aparecem deformadas. Nestes casos aplica-se a vista auxiliar que são representações em planos auxiliares.



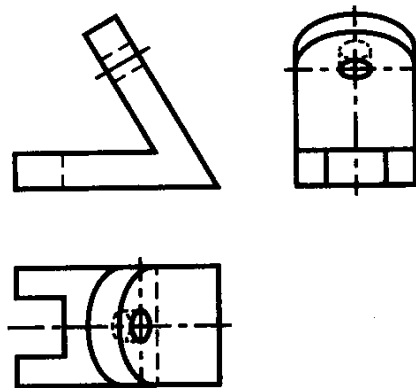


# Vistas auxiliares



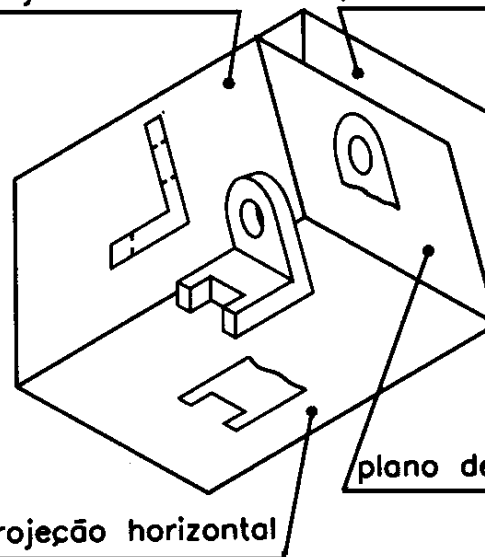
Projeção ortogonal

Projeção em plano auxiliar



plano de projeção vertical

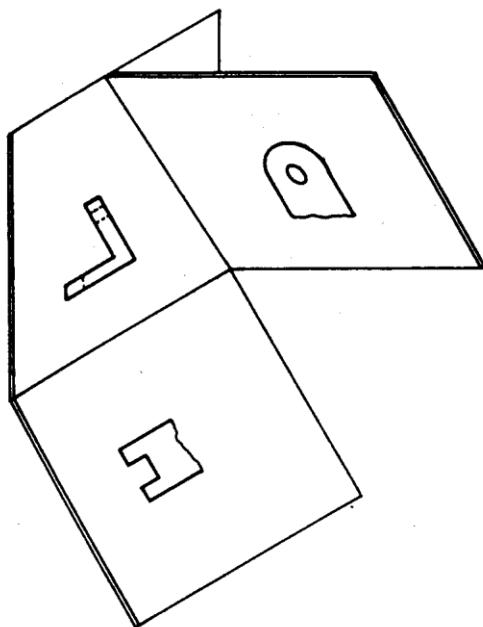
plano de projeção lateral



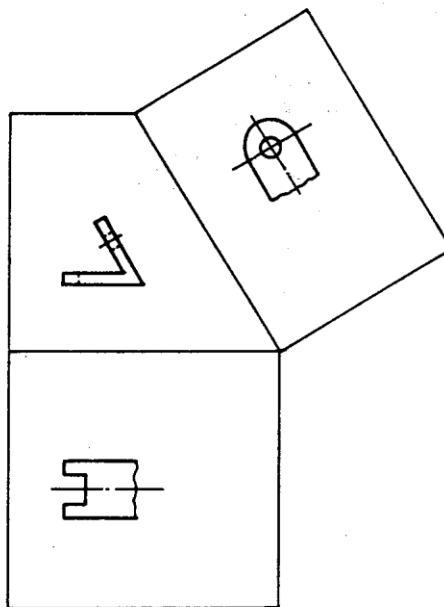
plano de projeção horizontal

plano de projeção auxiliar

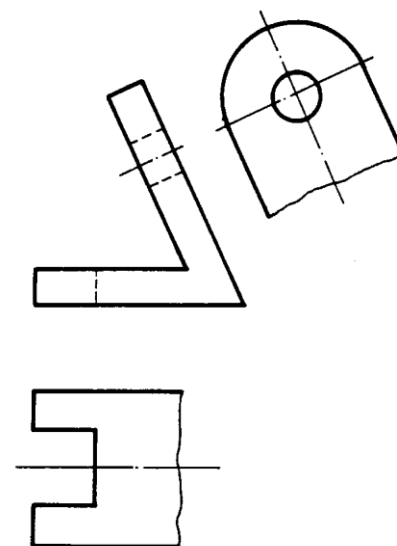
# Rebatimento do plano auxiliar



Planos



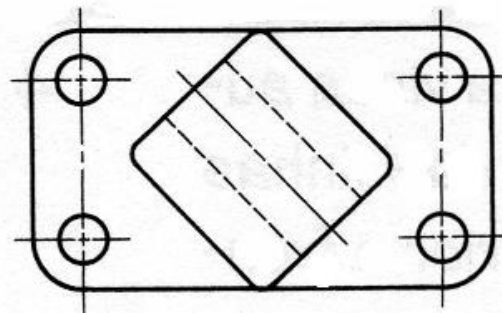
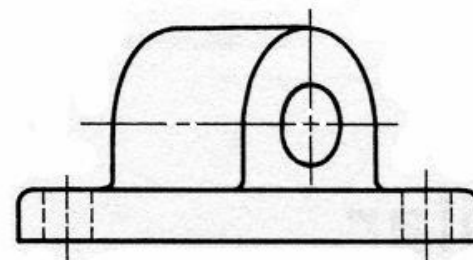
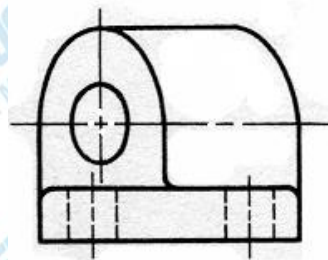
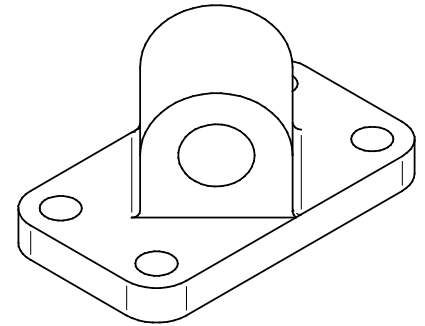
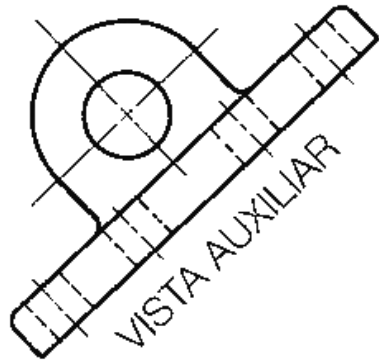
Rebatimento



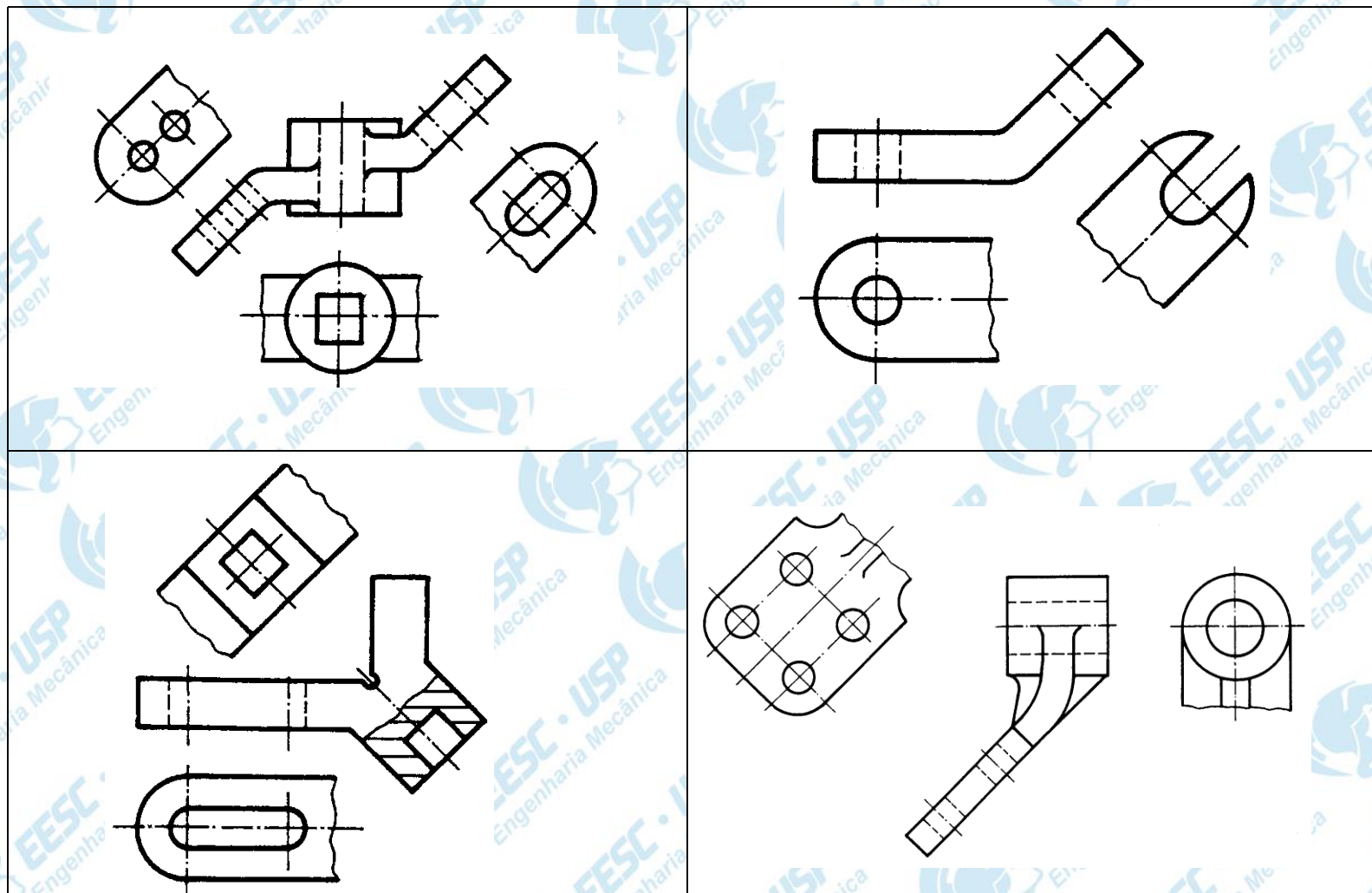
Resultado



# Exemplo

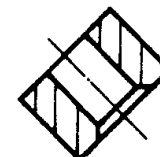
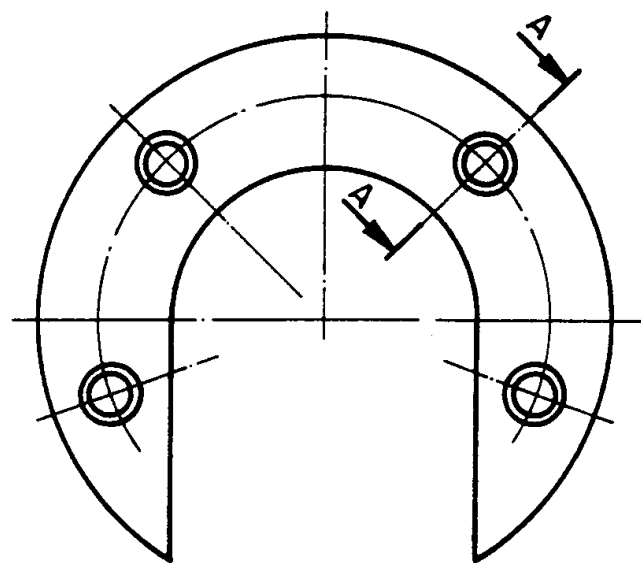
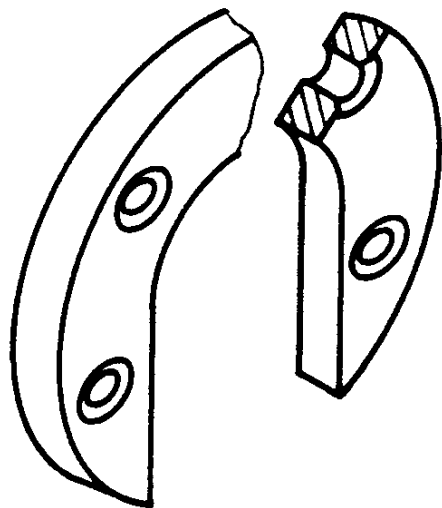


# Exemplos

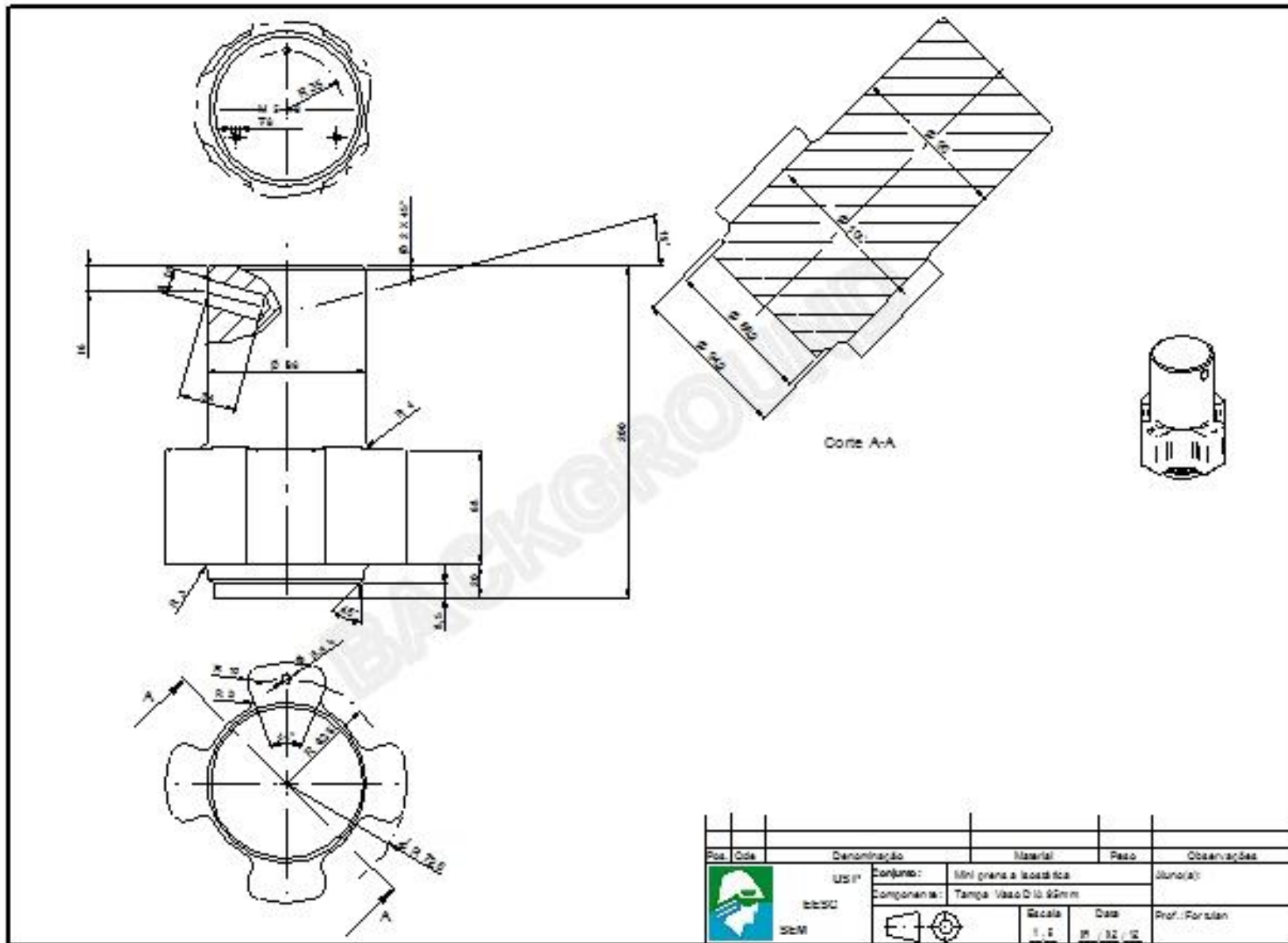




# Seção em vista auxiliar - Fora da vista com indicação



A-A

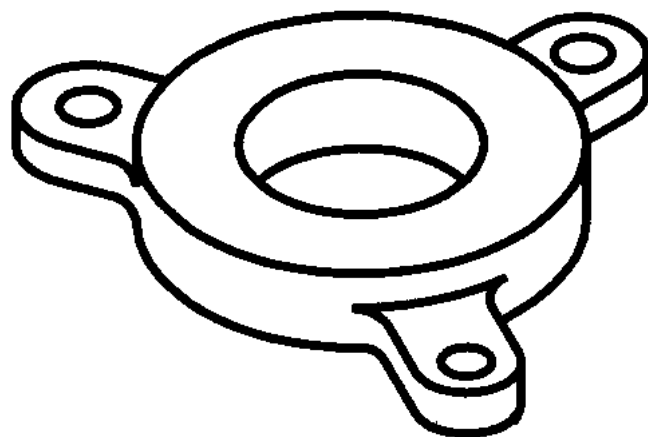
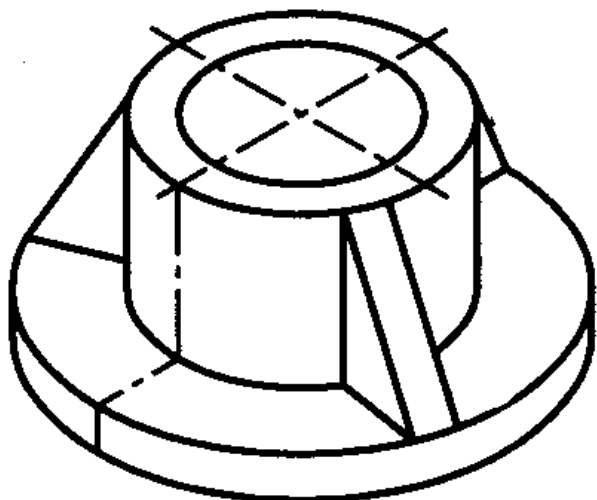


Pos. Code	Denominação	Material	Peso	Observações
	USP	Conjunto: Mini prensa acústica		Unidade(s):
	12345	Componente: Tampa Vaso D=100mm		
	1234	Escala	Data	Prof.: Fortulan
		1:1	25/12/12	

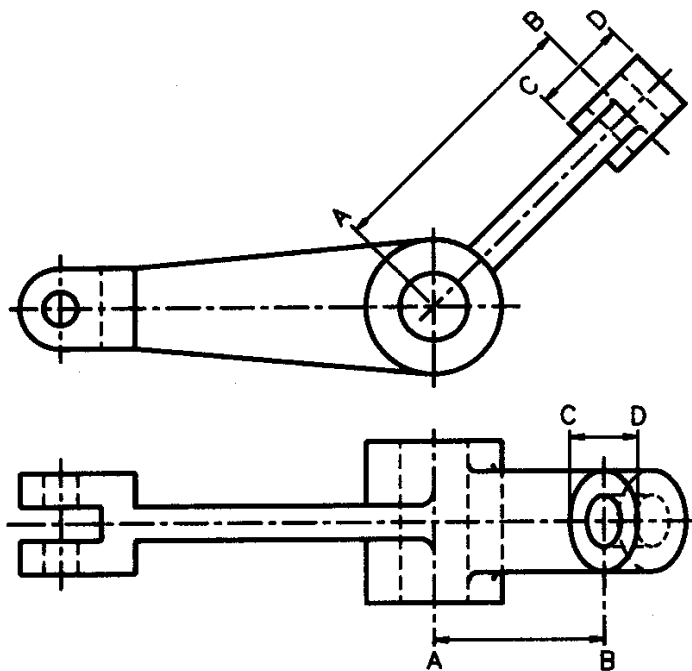
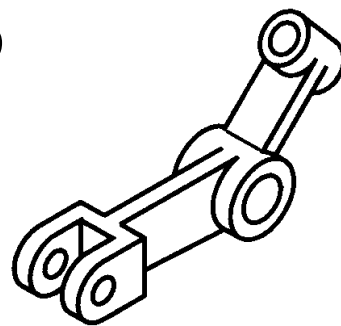


## Projeção com rotação

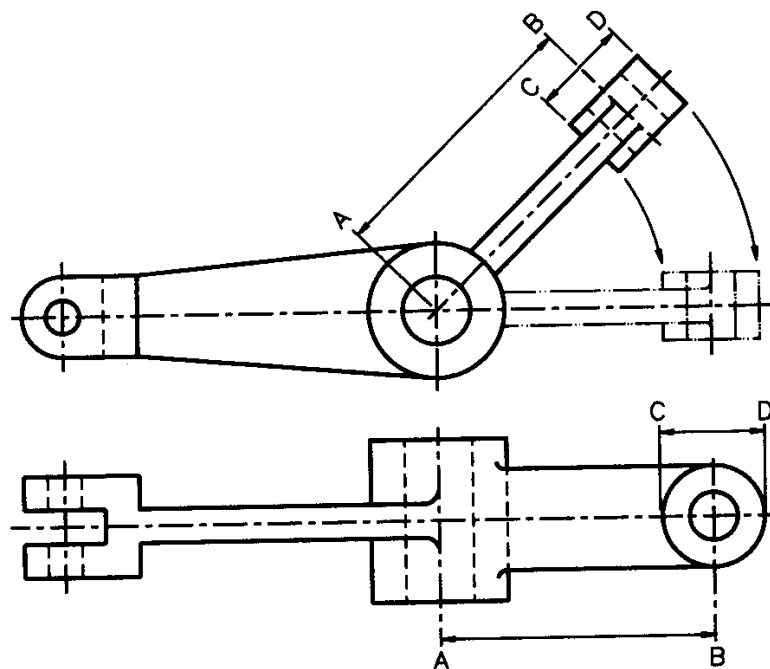
Peças que contém partes ou elementos oblíquos, por convenção, são representadas pela rotação dessas partes sobre o eixo principal. Evita-se assim a deformação e o encurtamento delas na projeção ortogonal normal.



# Projeção com rotação: exemplo



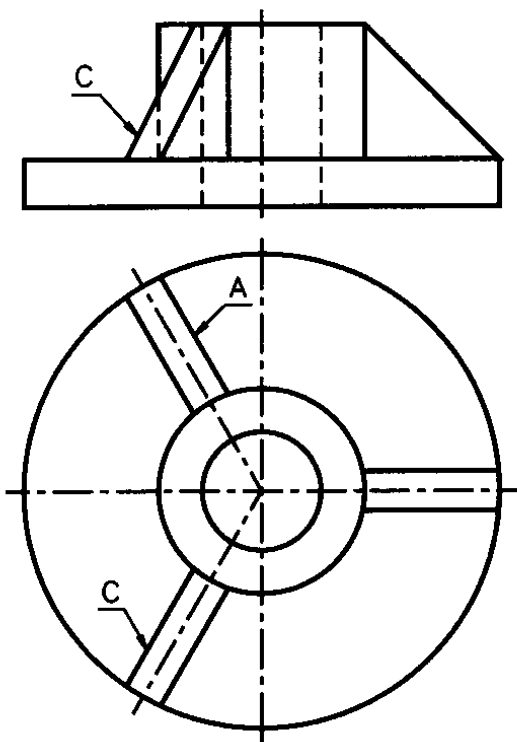
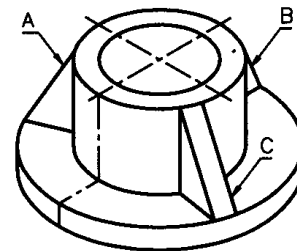
Normal: *inadequado*



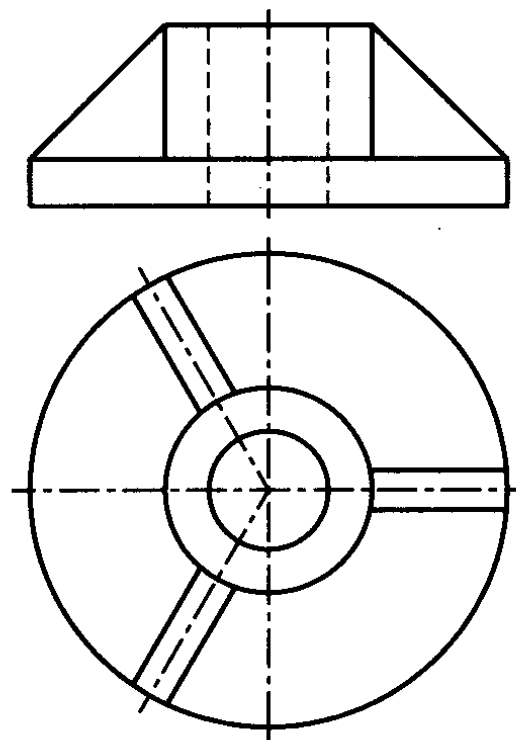
com Rotação



# Projeção com rotação: exemplo



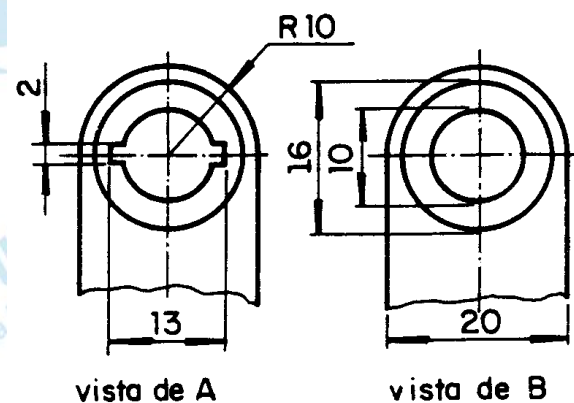
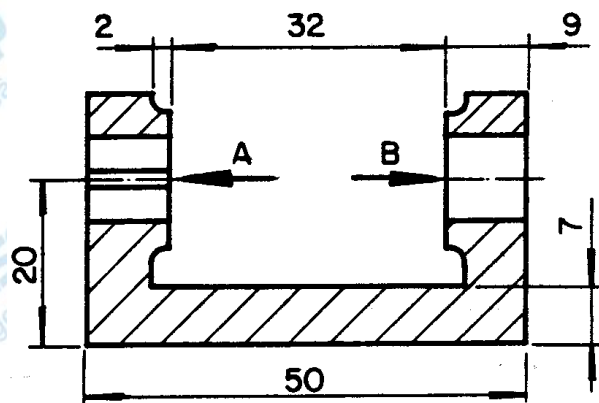
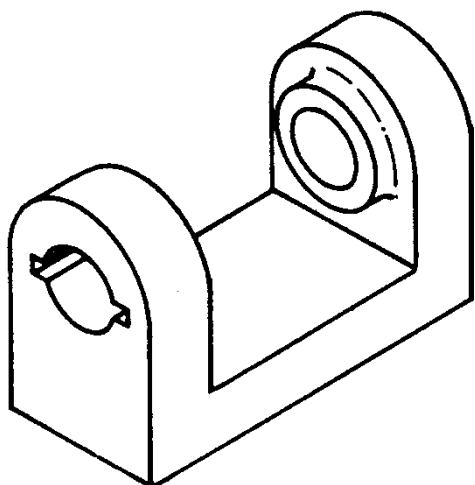
Normal: *inadequado*



com Rotação

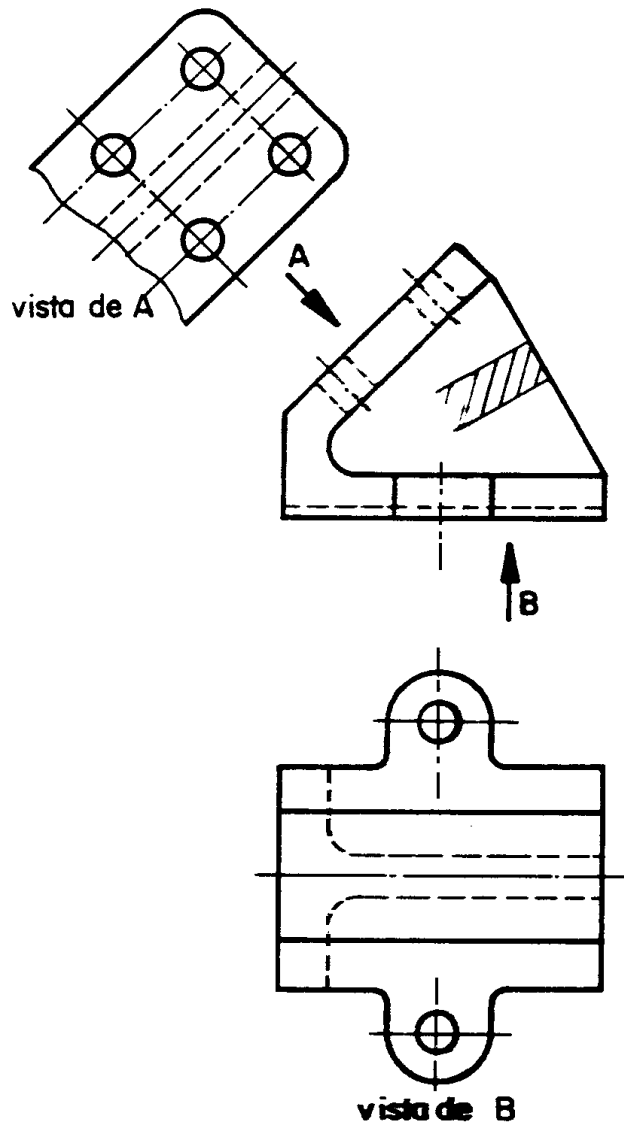
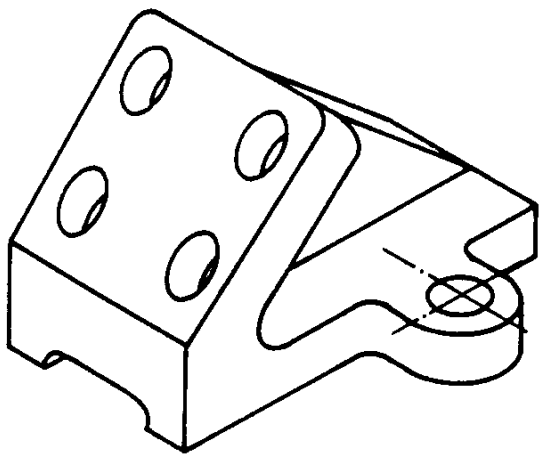
# Vistas Especiais

São projeções especiais representadas conforme a posição do observador. São indicadas por setas e letras.

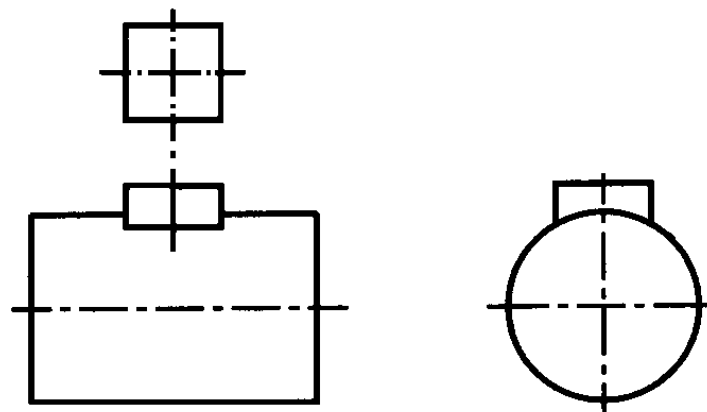
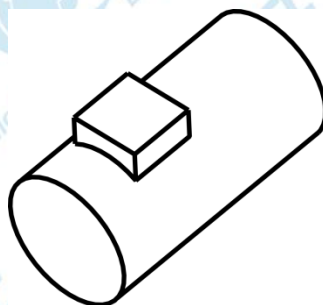
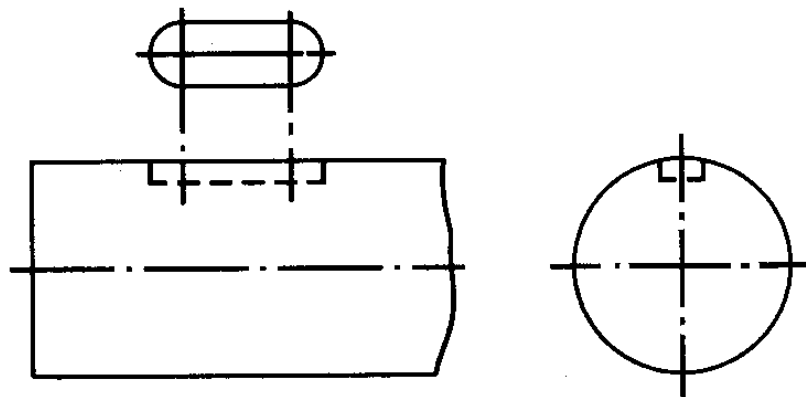
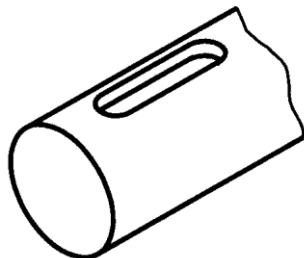




# Vistas especiais



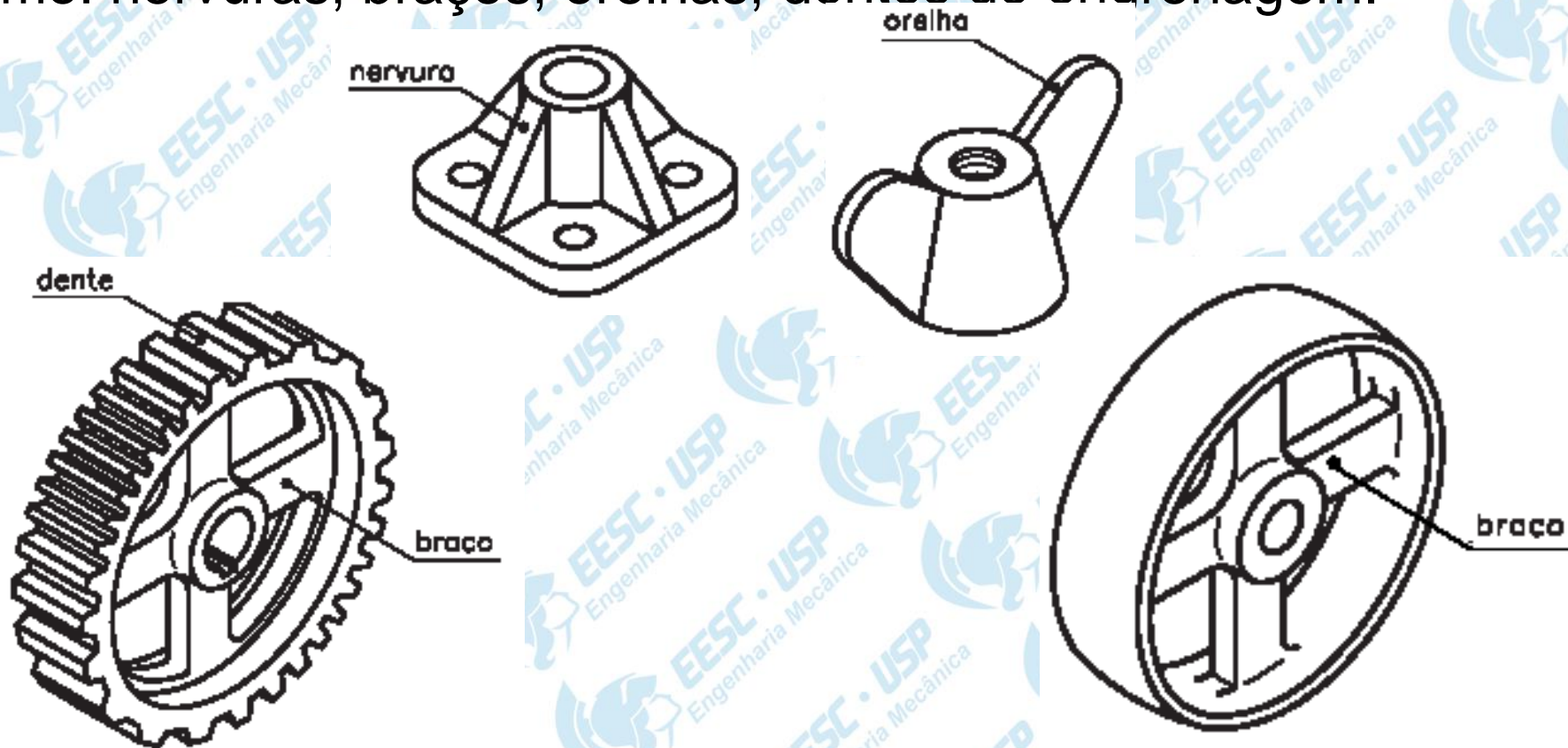
# Vistas localizadas



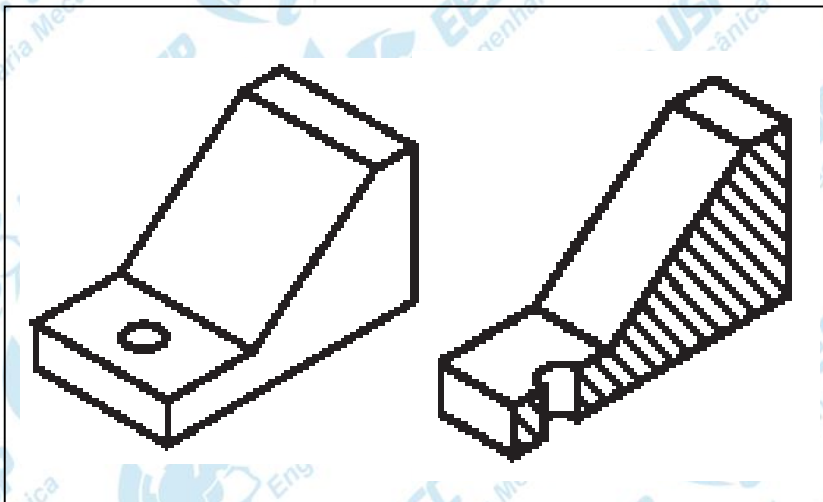


# Omissão de corte

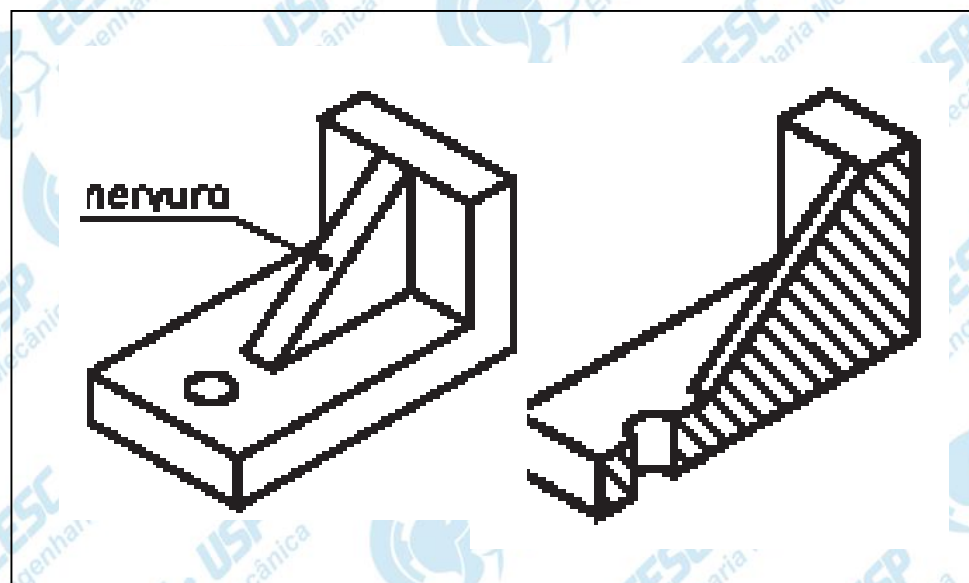
Recurso utilizado para garantir a leitura de peça especiais quando representada em corte. É representada pela ausência de hachuras e é usada para destacar certos detalhes em corte como: nervuras, braços, orelhas, dentes de engrenagem.



# Sem omissão de corte

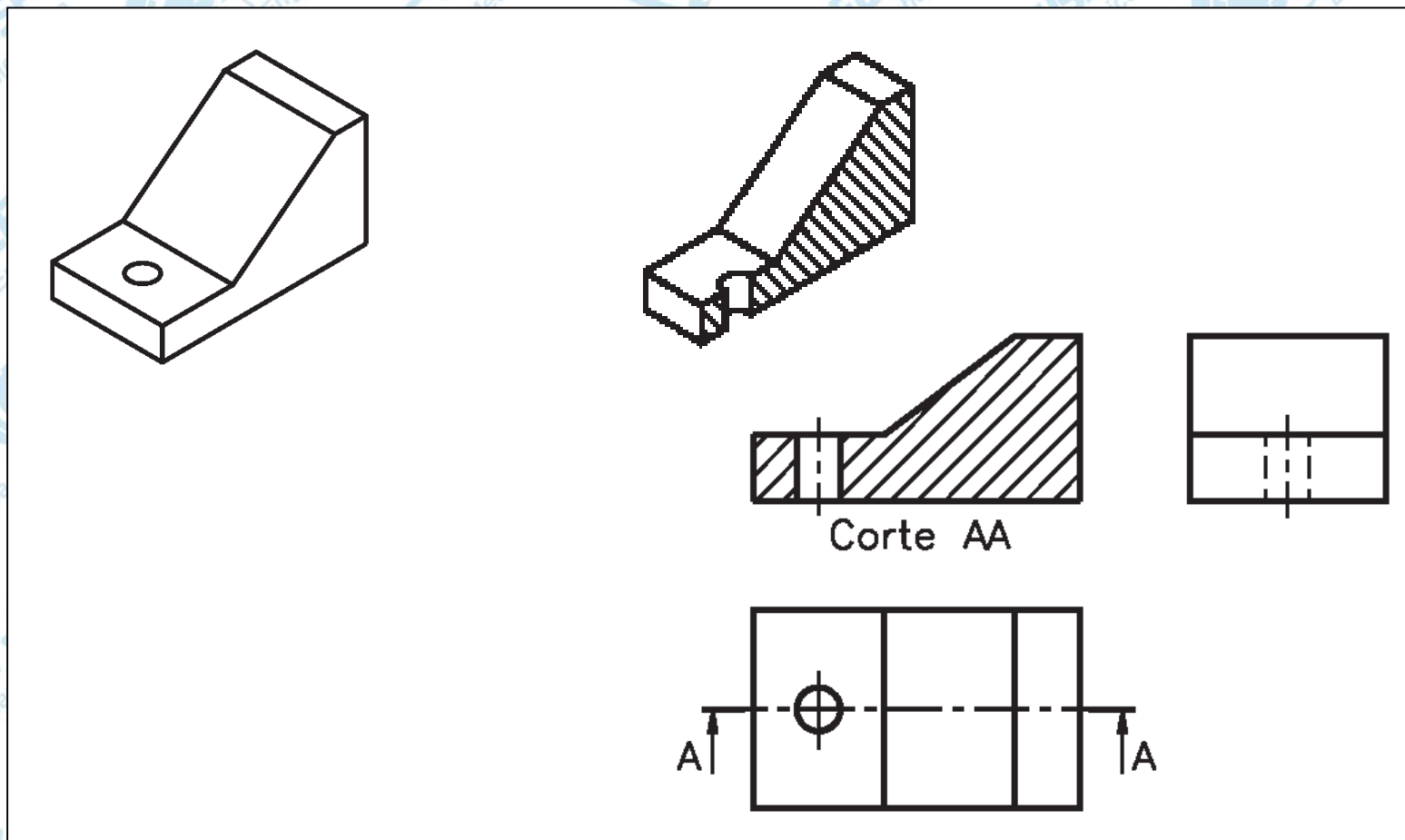


# Com omissão de corte - nervura

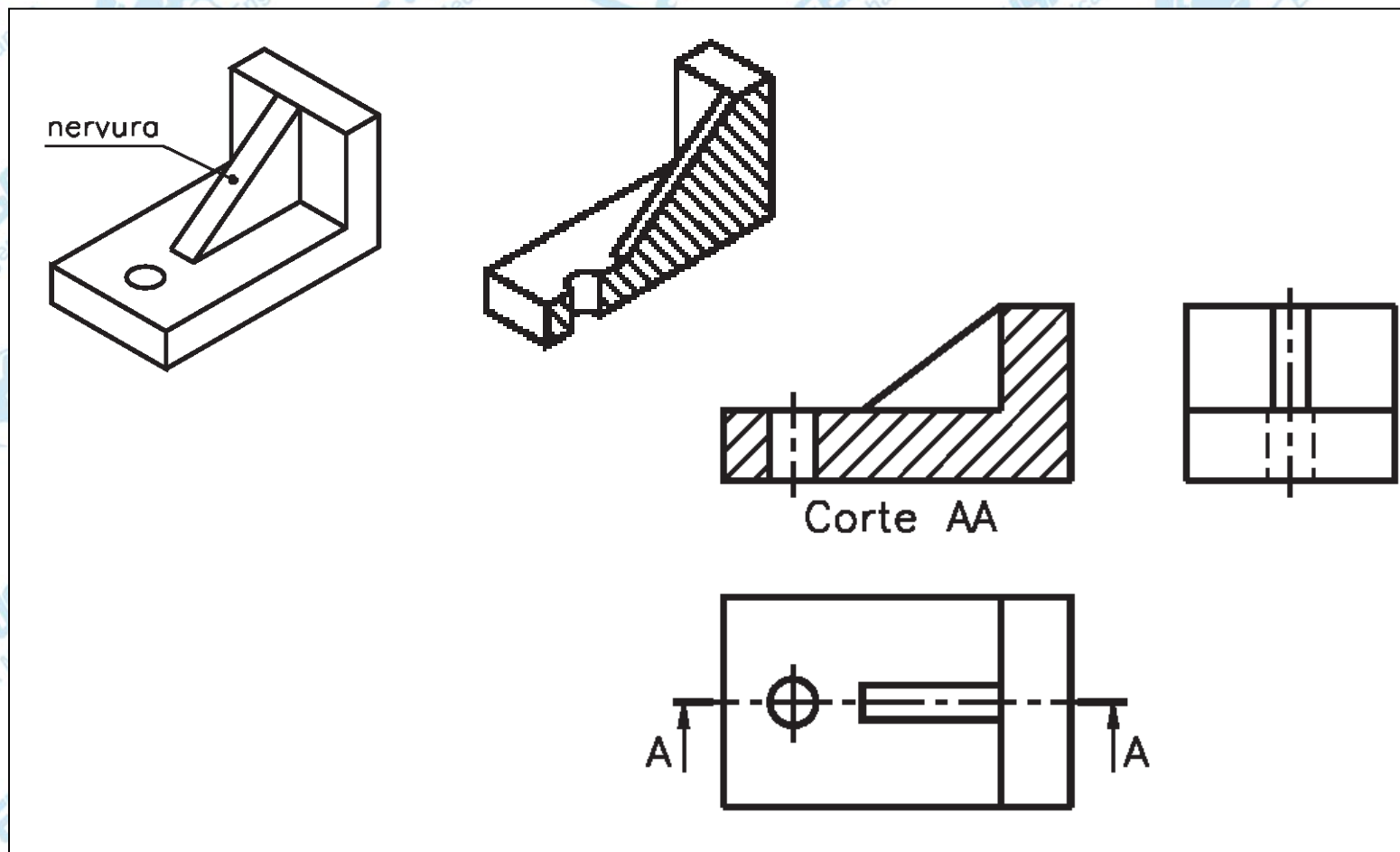




# Sem omissão de corte

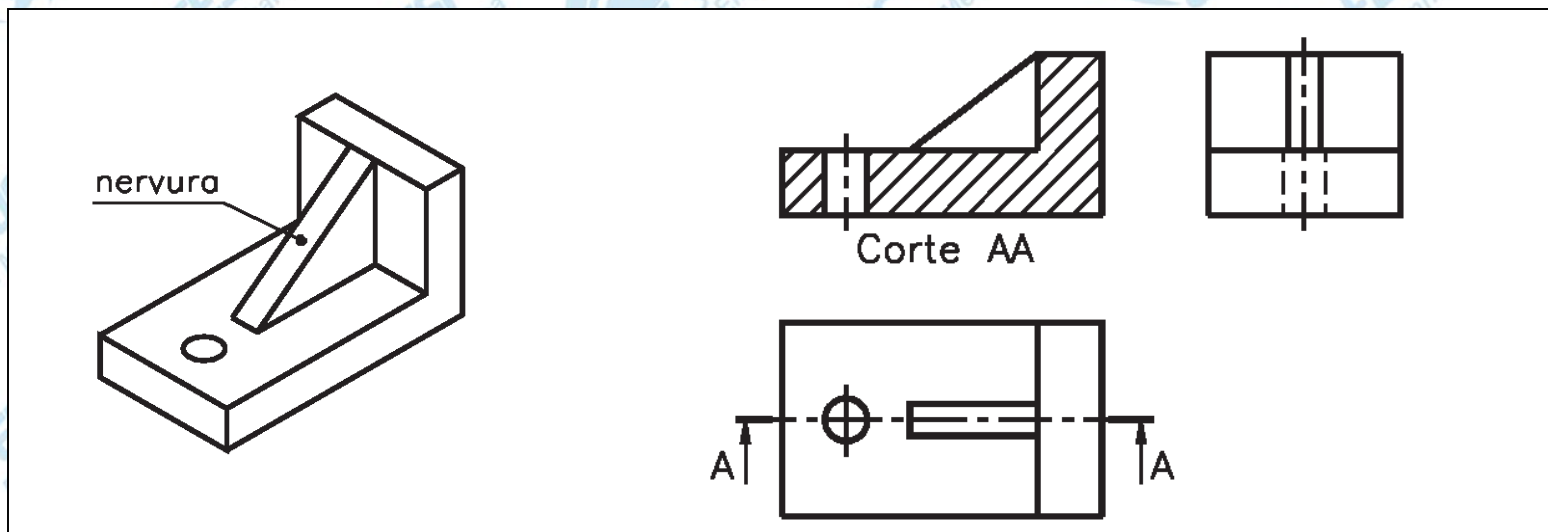
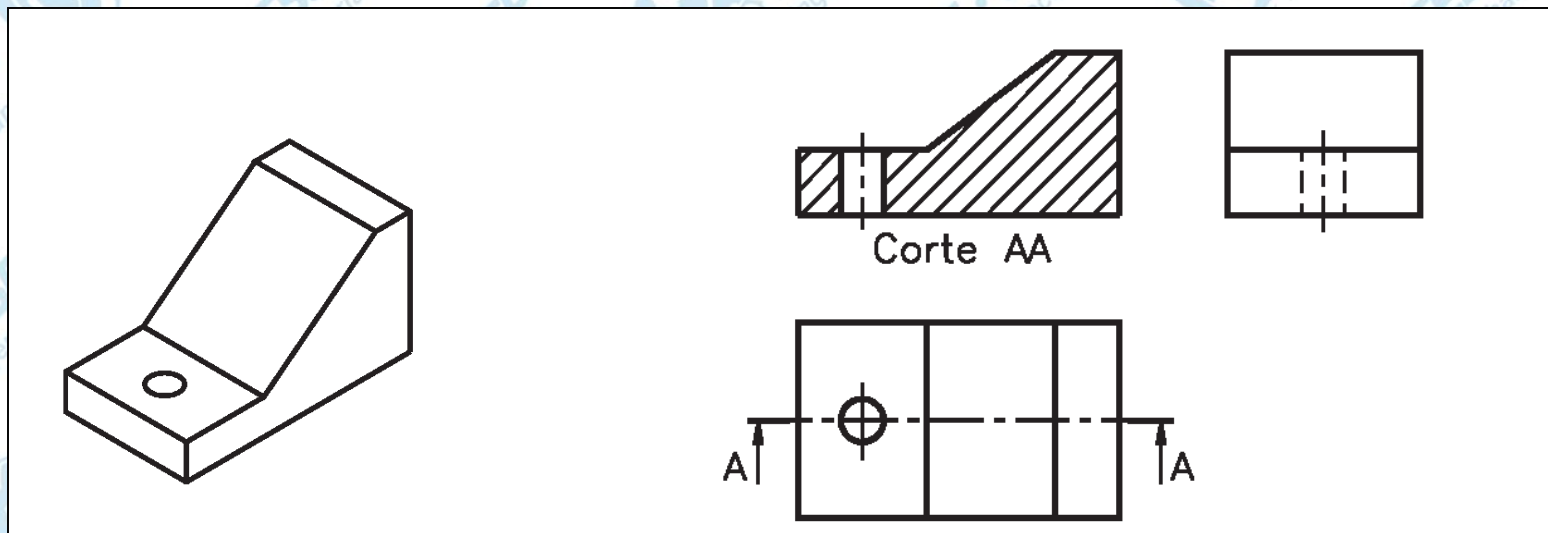


# Omissão de corte - nervura

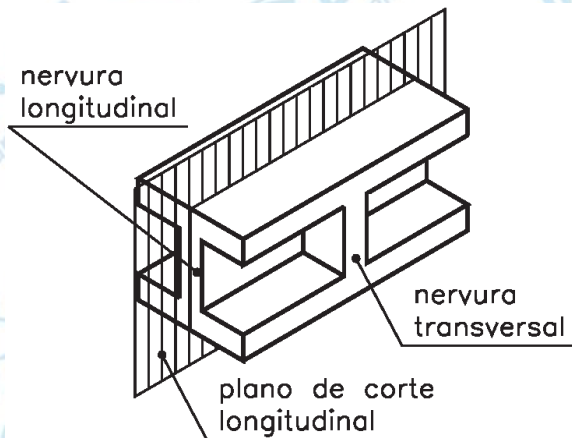




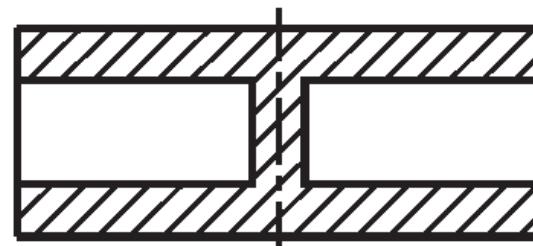
# Omissão de corte - nervura



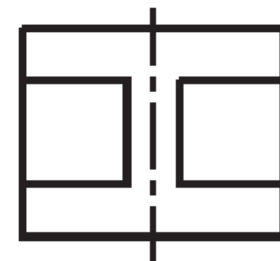
# Omissão de corte - nervuras



Projeção ortogonal

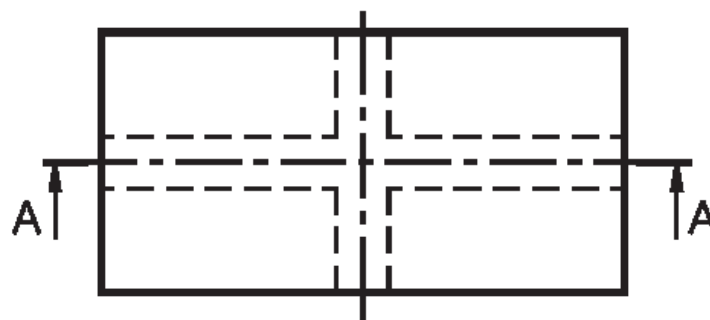
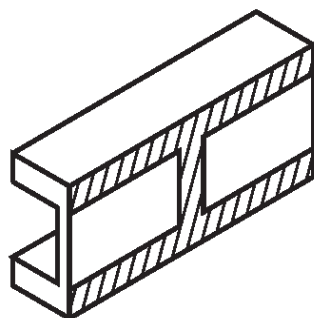
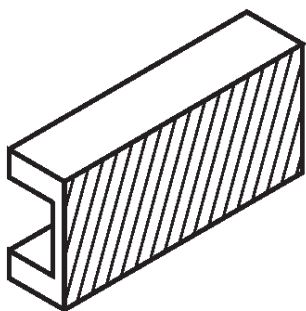


Corte AA



Sem omissão (errado)

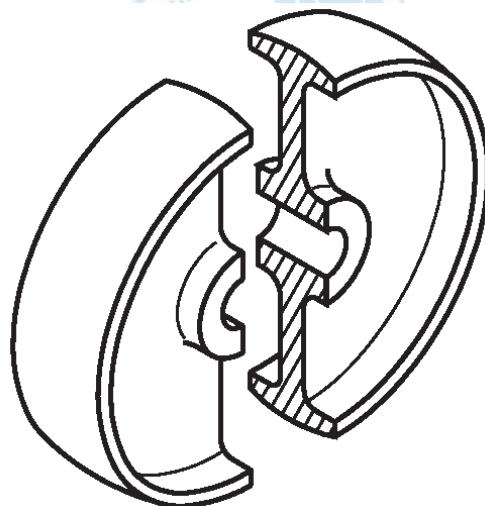
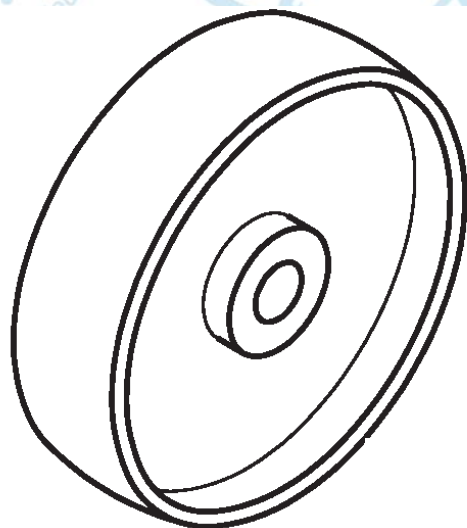
Com omissão (correto)



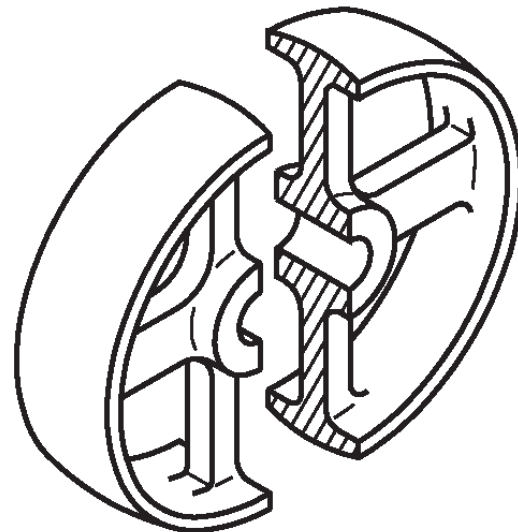
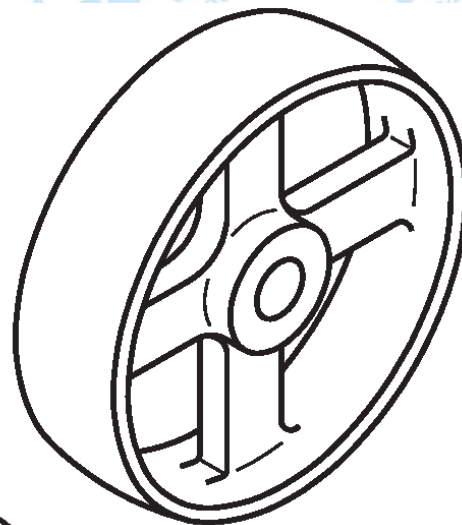


# Omissão de corte - braços

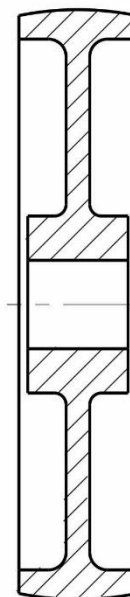
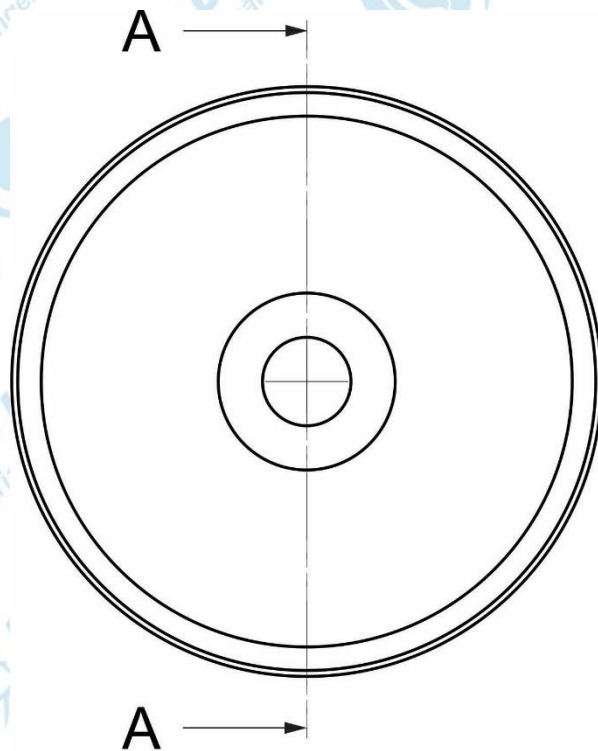
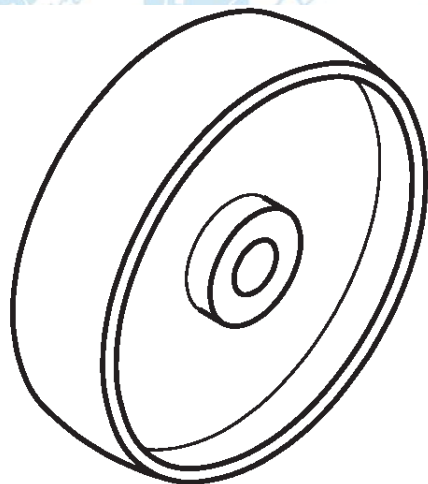
Polia de disco



Polia com braço



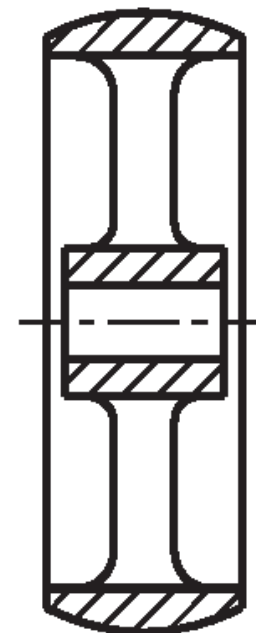
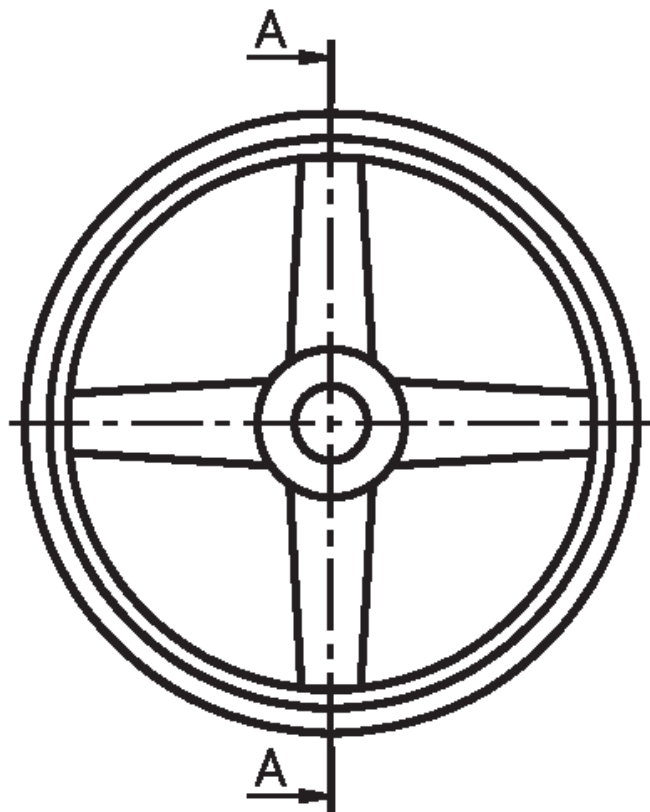
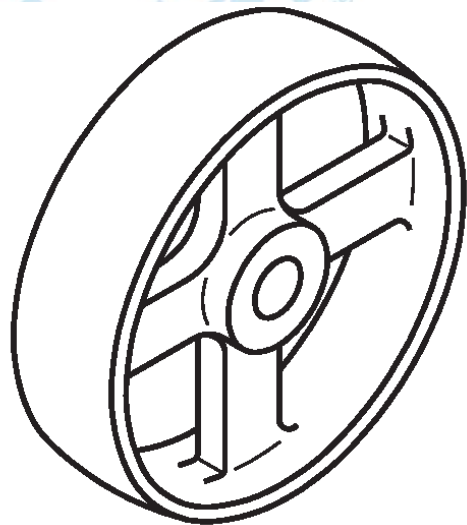
# Polia disco - Representação sem omissão de corte



Corte A-A

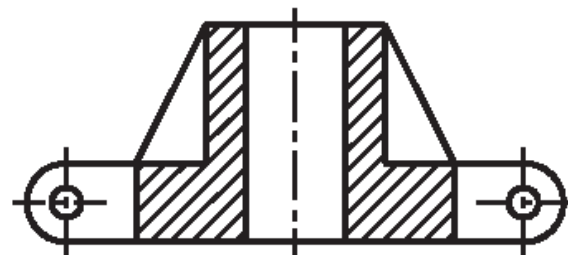
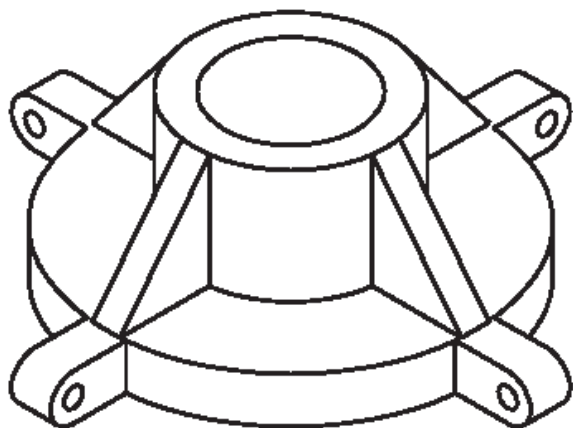


# Braços – Representação com omissão de corte

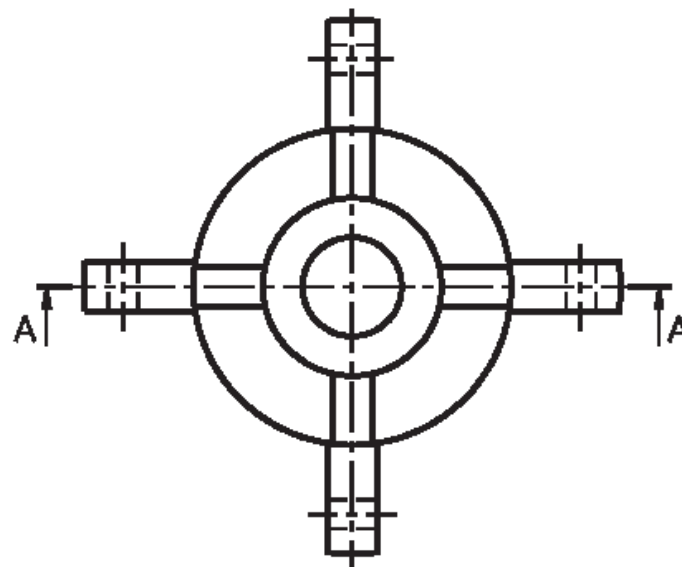


Corte AA

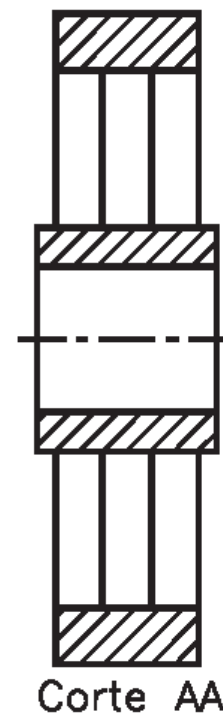
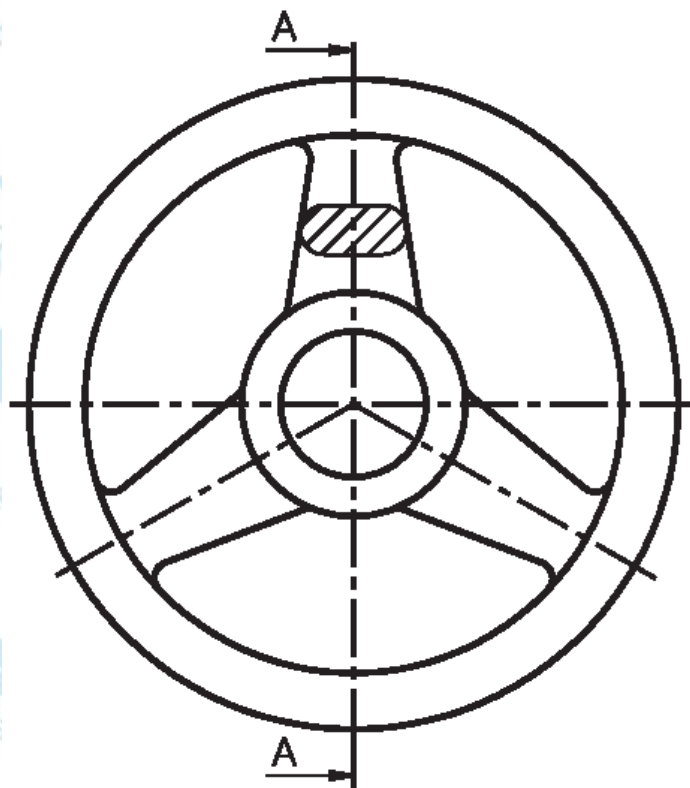
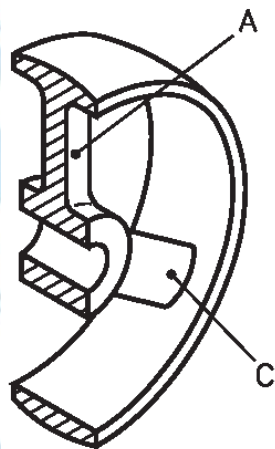
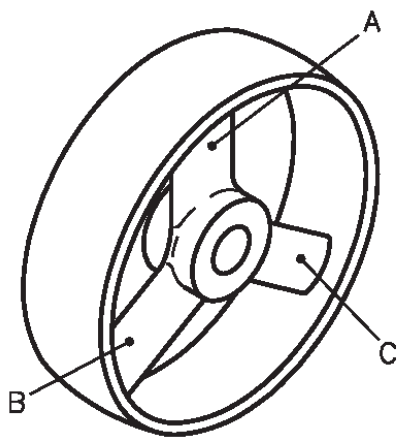
# Omissão de corte – nervura e orelha



Corte AA

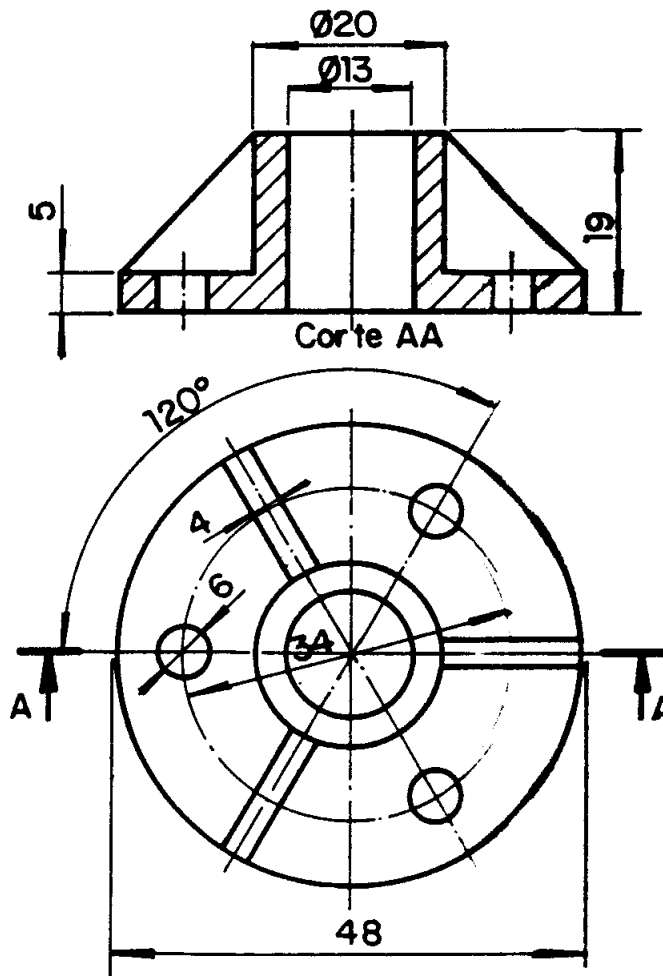
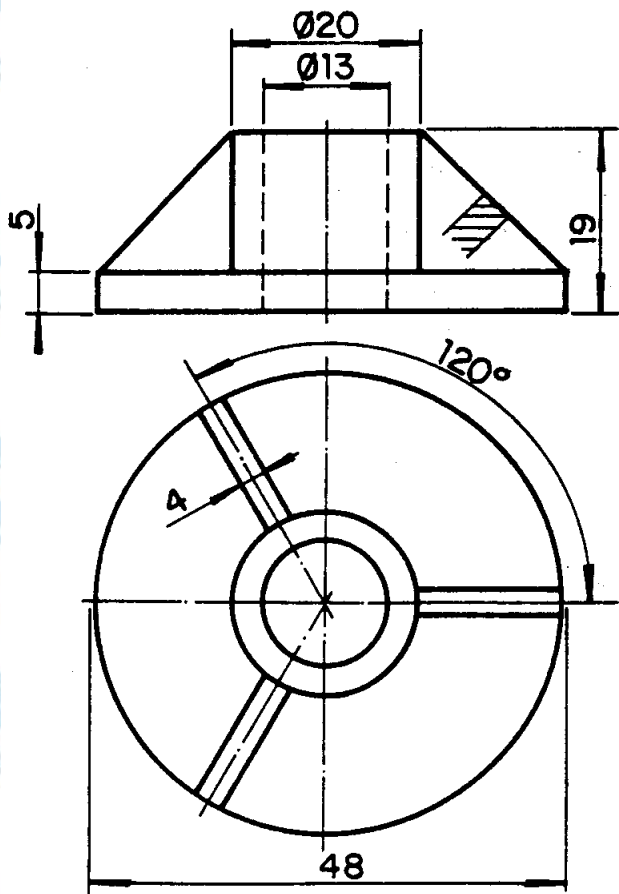


# Omissão de corte e rotação

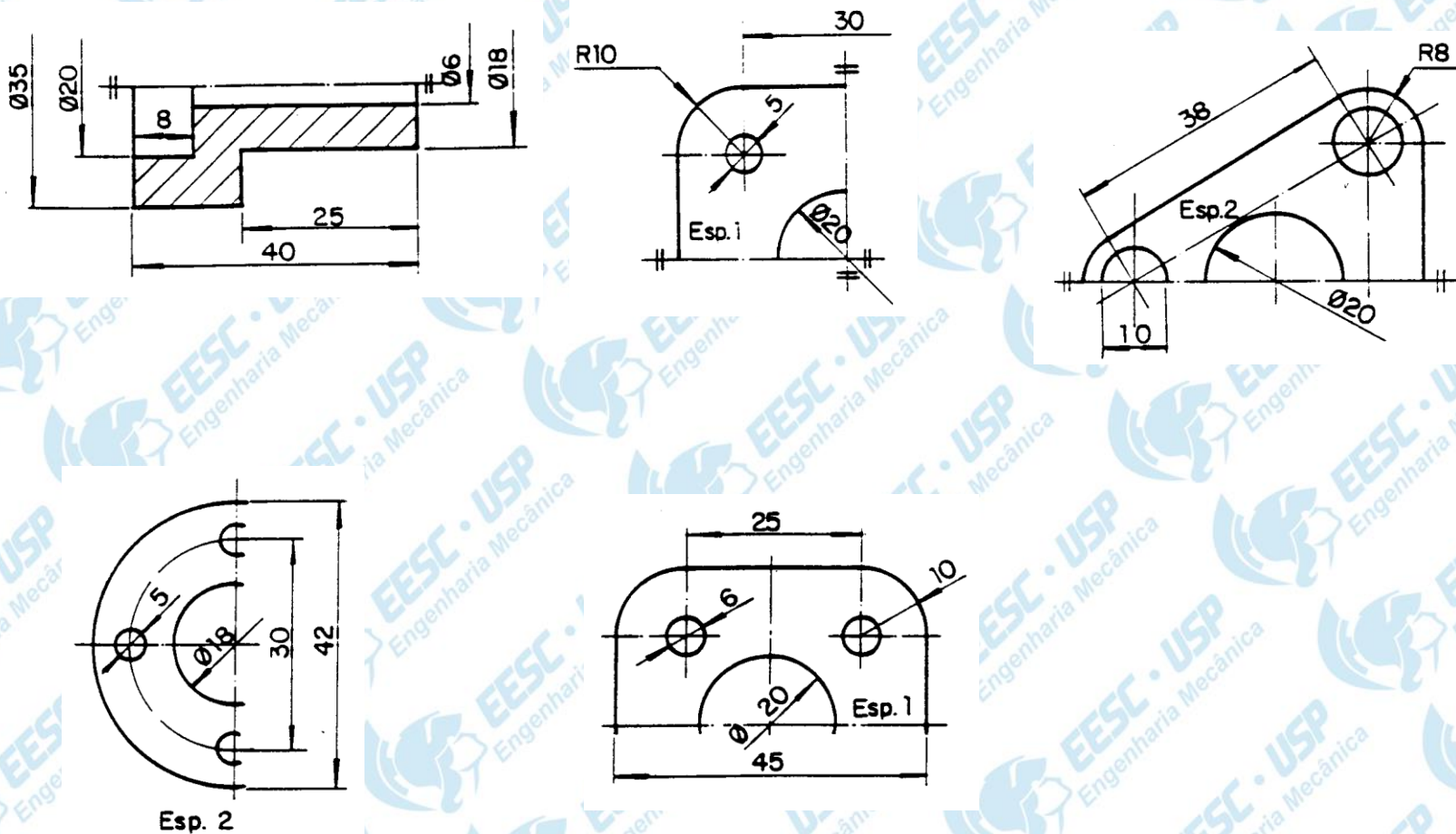




# Omissão de corte e rotação



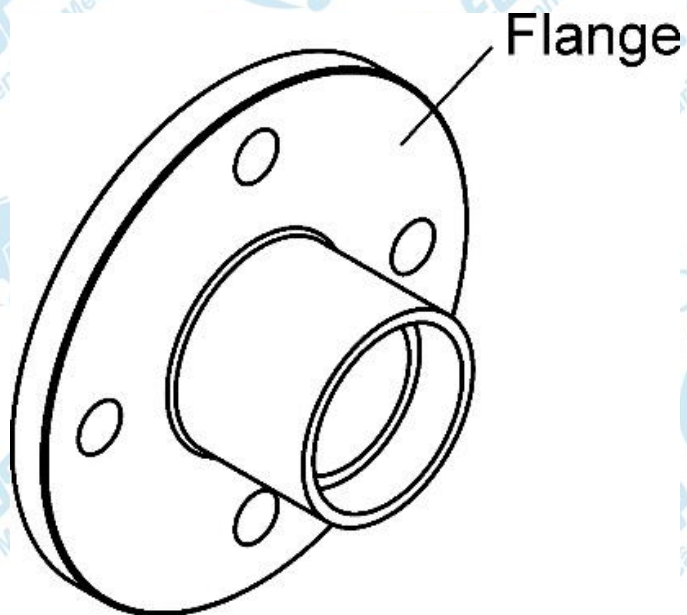
# Meio-corte representação simplificada de peças simétricas





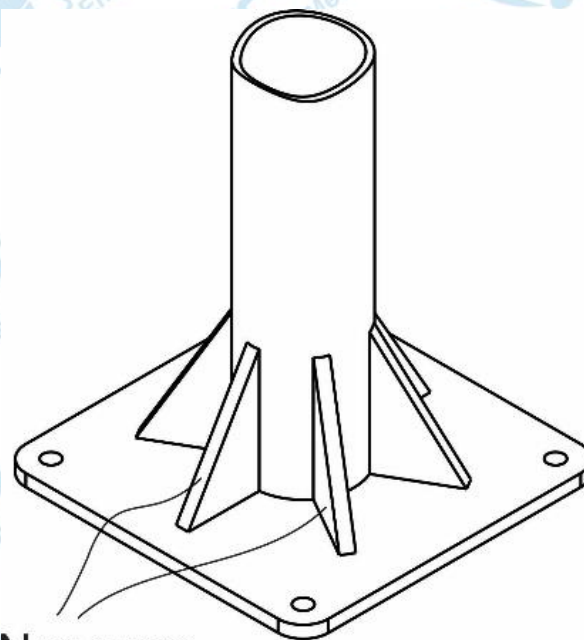
# Elementos de Máquinas – glossário

## Flange



Aba relativamente fina em torno de uma peça normalmente empregada para montagem e fixação.

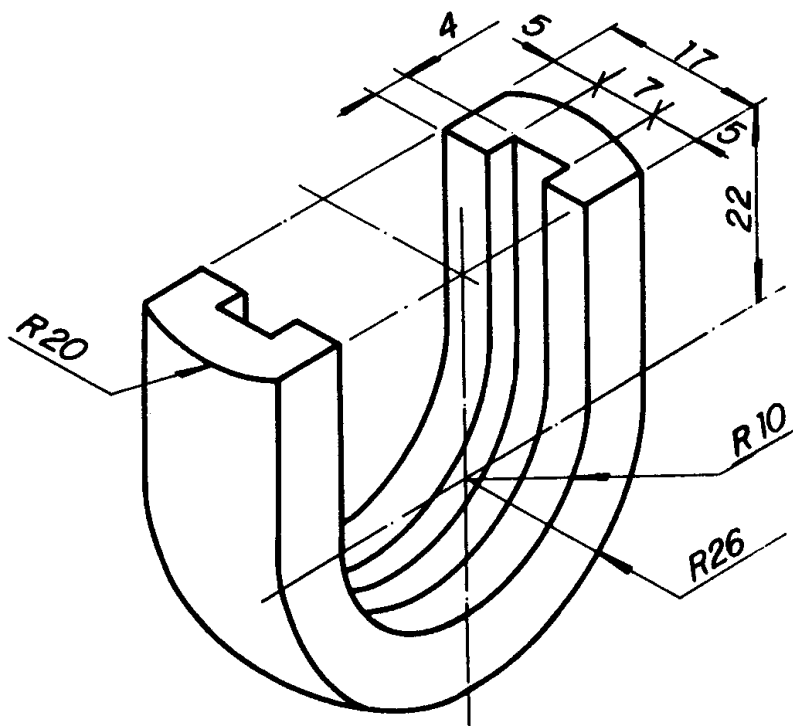
## Nervura



## Nervuras

Saliência, chapa ou filete para conferir maior resistência a uma estrutura mecânica.





Ex. 4.01 – Desenhe a peça em vista frontal e uma seção em vista auxiliar.

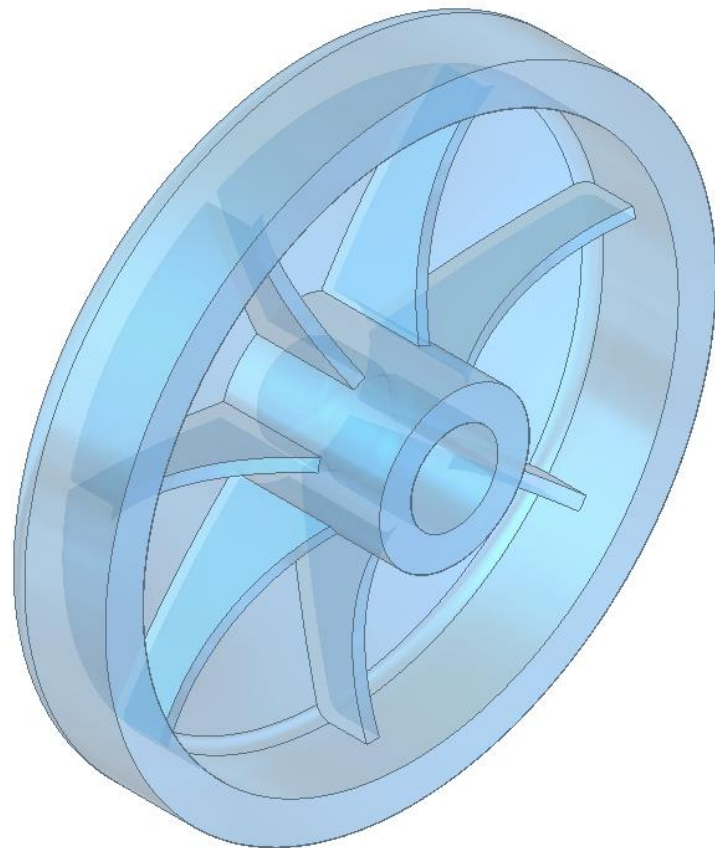
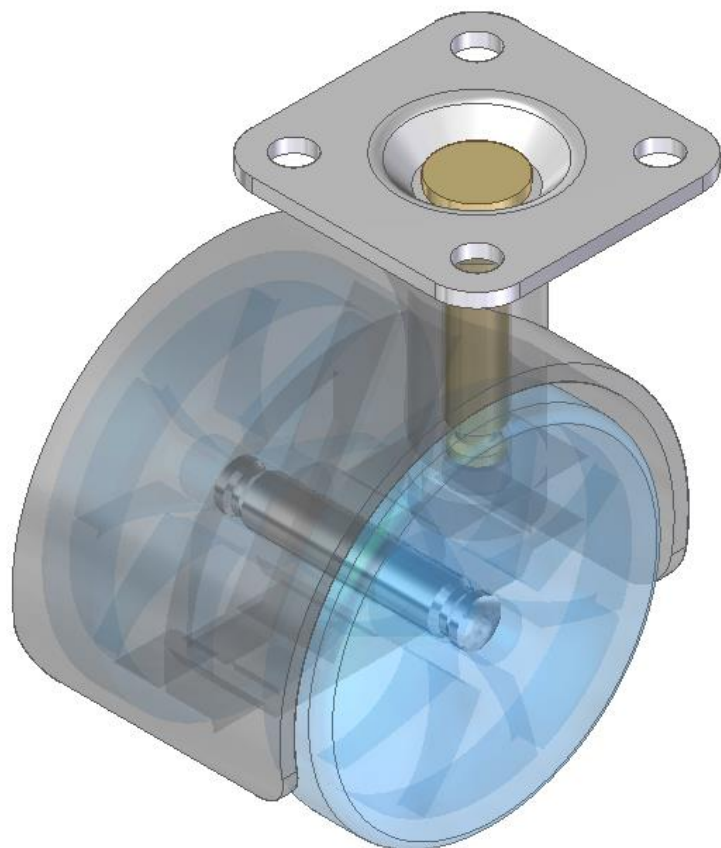
Nome: \_\_\_\_\_

Nº \_\_\_\_\_ Turma \_\_\_\_\_



Ex 4.02. Considere o escorredor de arroz ao lado, desenhe as projeções convenientes. O ângulo é de  $30^\circ$  e a largura do apoio plano é de 32mm.





Ex 4.03. Considere o rodízio de uma cadeira de rodas, observe a roda e faça um desenho com vistas: frontal, superior e lateral esquerda em corte total. Dimensões aproximadas:  $\text{Ø}e= 50\text{mm}$ ,  $\text{Ø}furo= 7\text{mm}$ , largura total  $15\text{mm}$ , largura da banda de rodagem= $7\text{mm}$ , espessura geral= $2\text{mm}$ , espessura das nervuras= $1\text{mm}$ .