

# SEM 0564 - DESENHO TÉCNICO MECÂNICO I

Notas de Aulas v.2017

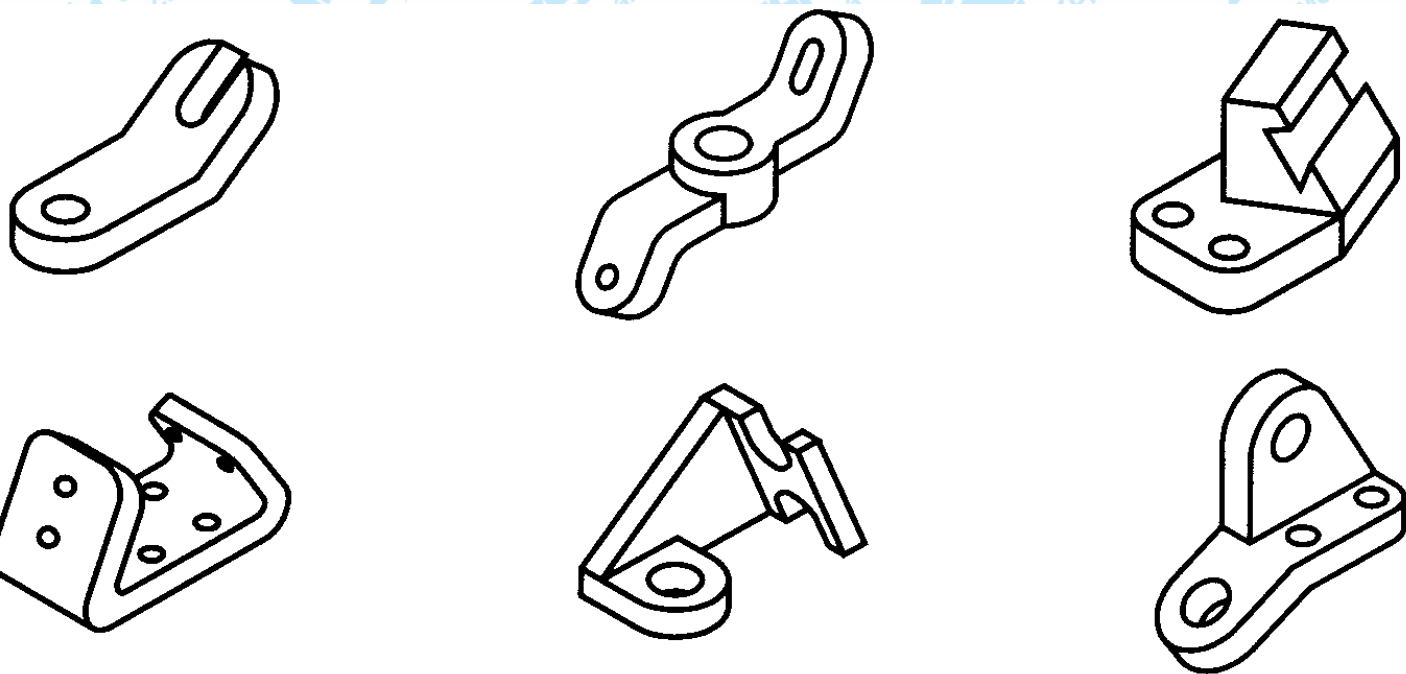
## ***Aula 04 – Vistas auxiliares, omissão de corte e simplificações***

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

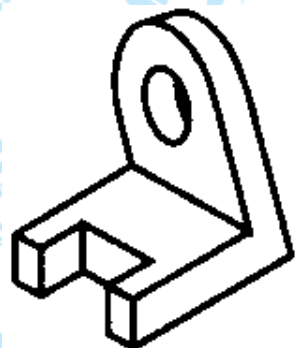
## VISTAS AUXILIARES ou projeção ortogonal especial

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.



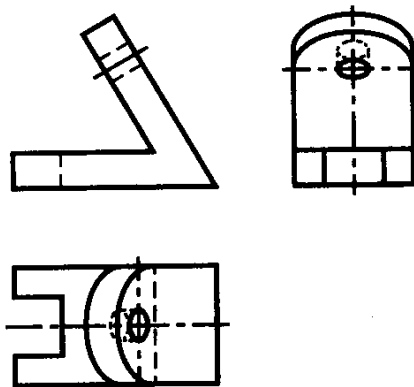
Imagens: Leitura e Interpretação de Desenho Técnico Mecânico. Mecânica. Telecurso 2000

# Vistas auxiliares



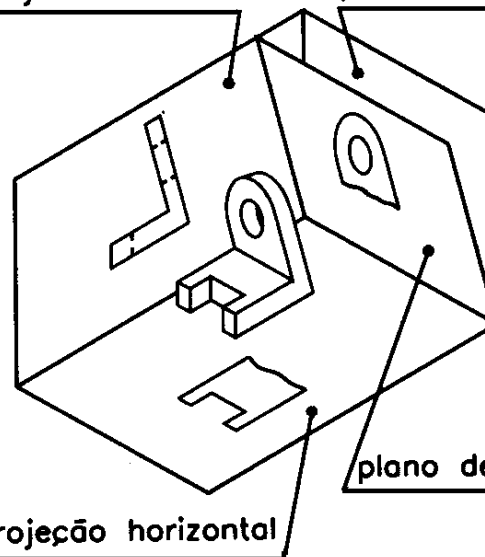
Projeção ortogonal

Projeção em plano auxiliar



plano de projeção vertical

plano de projeção lateral

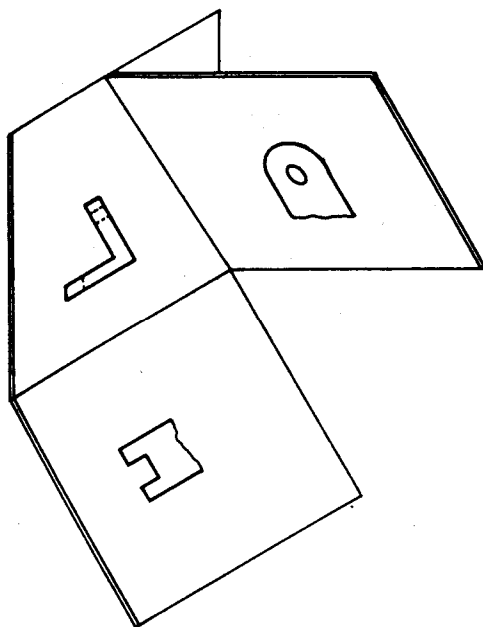


plano de projeção auxiliar

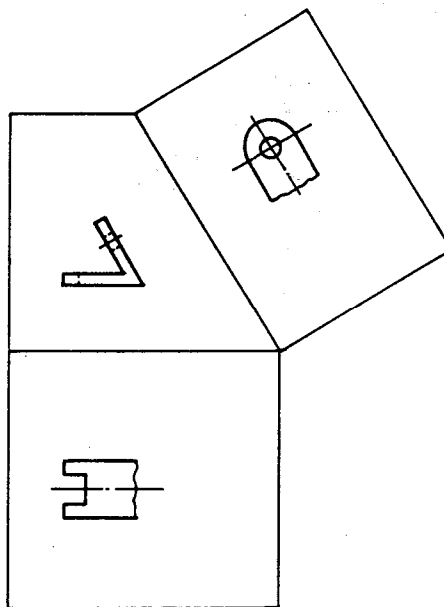
plano de projeção horizontal



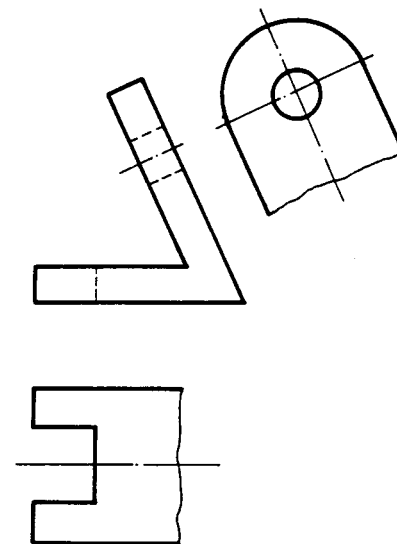
# Rebatimento do plano auxiliar



Planos

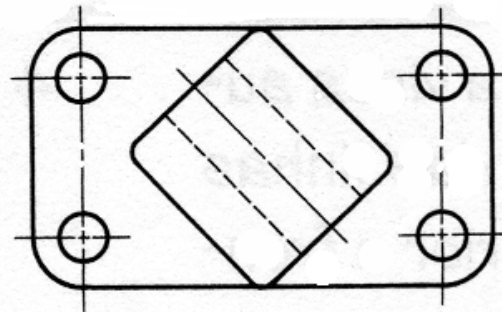
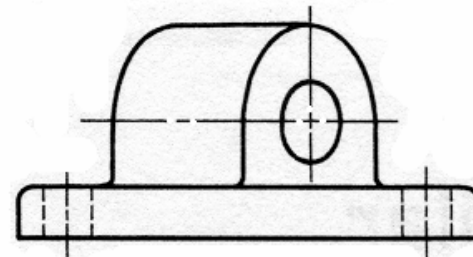
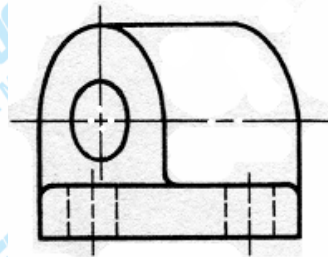
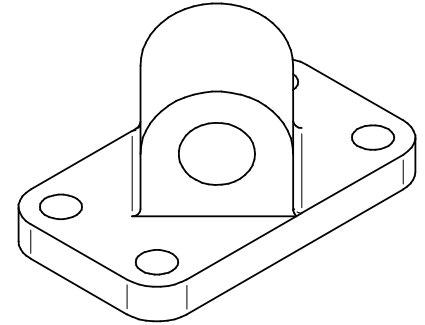
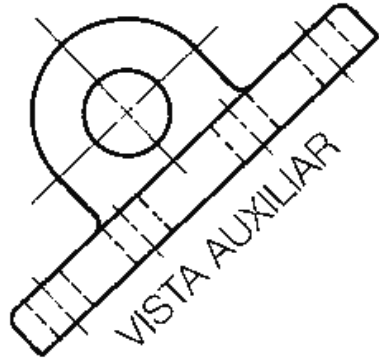


Rebatimento

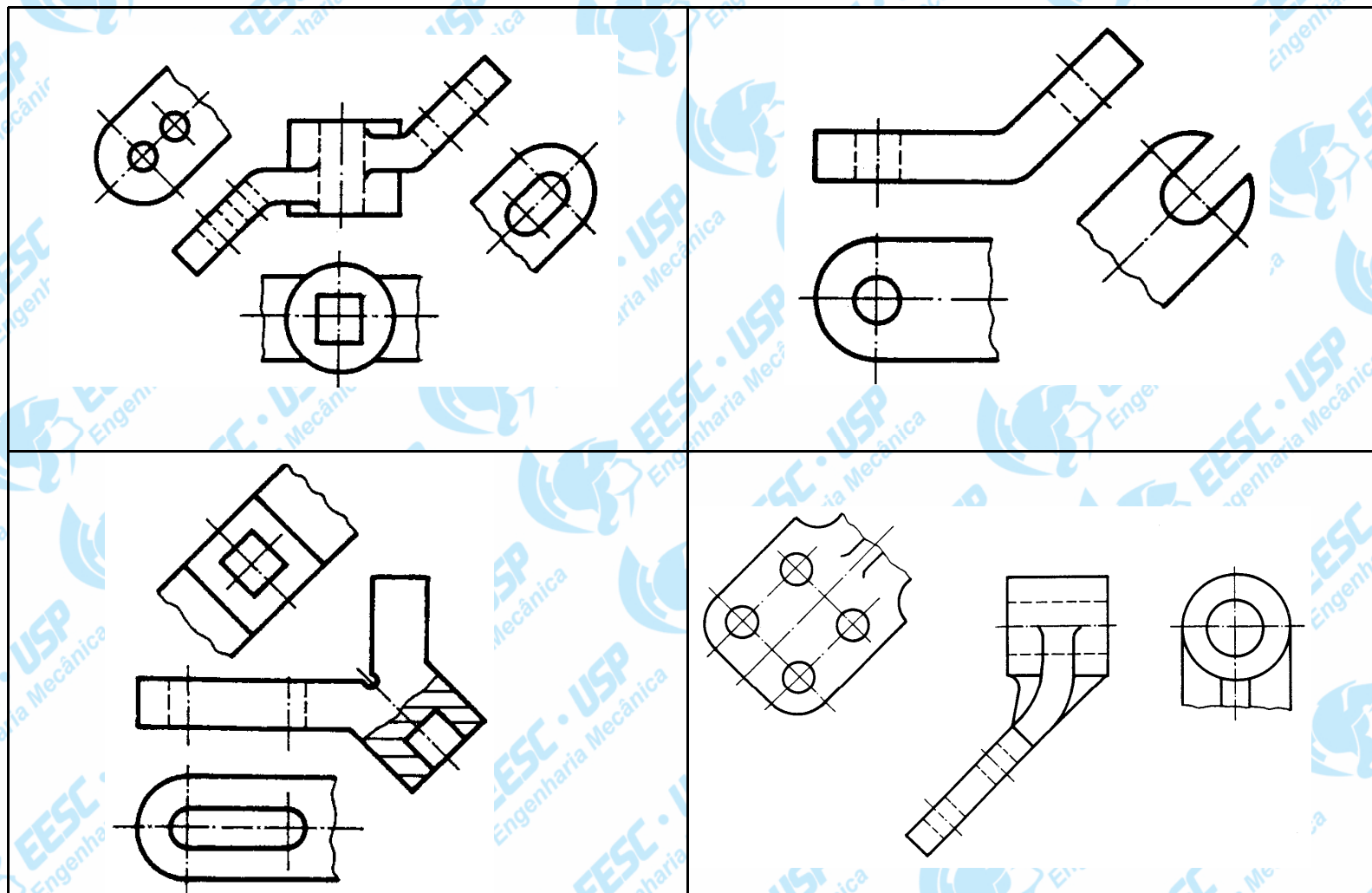


Resultado

# Exemplo

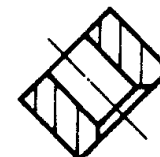
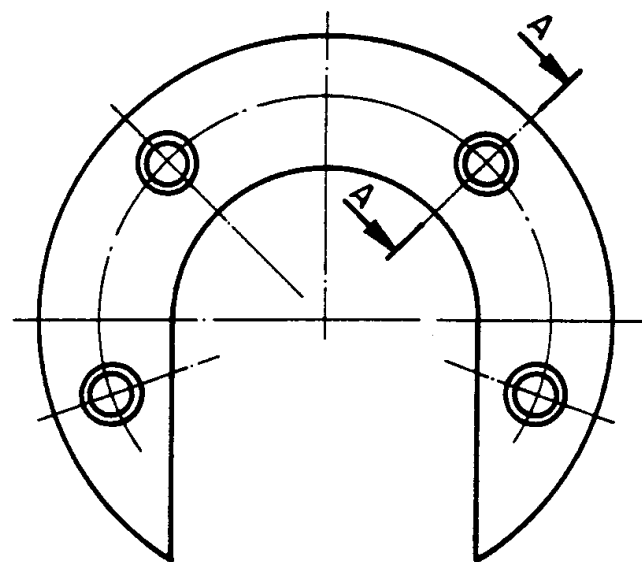
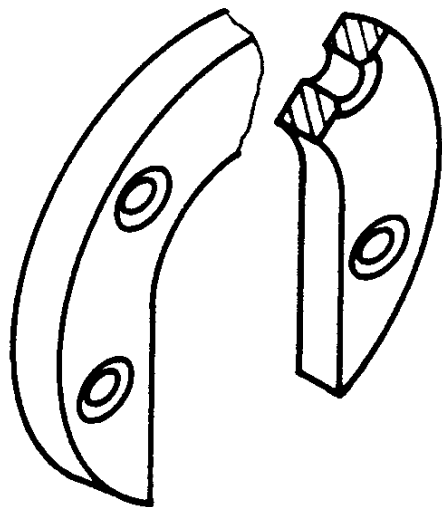


# Exemplos





## Seção em vista auxiliar - Fora da vista com indicação



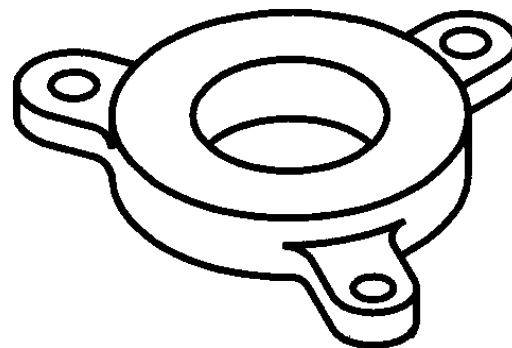
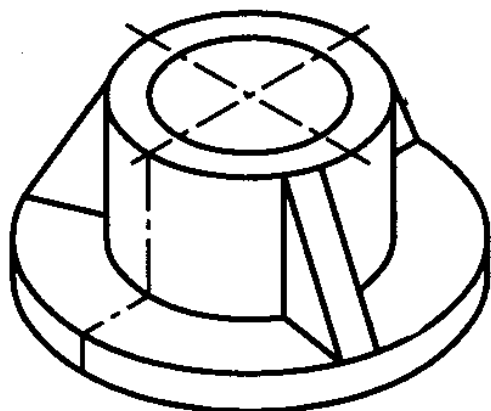
A-A



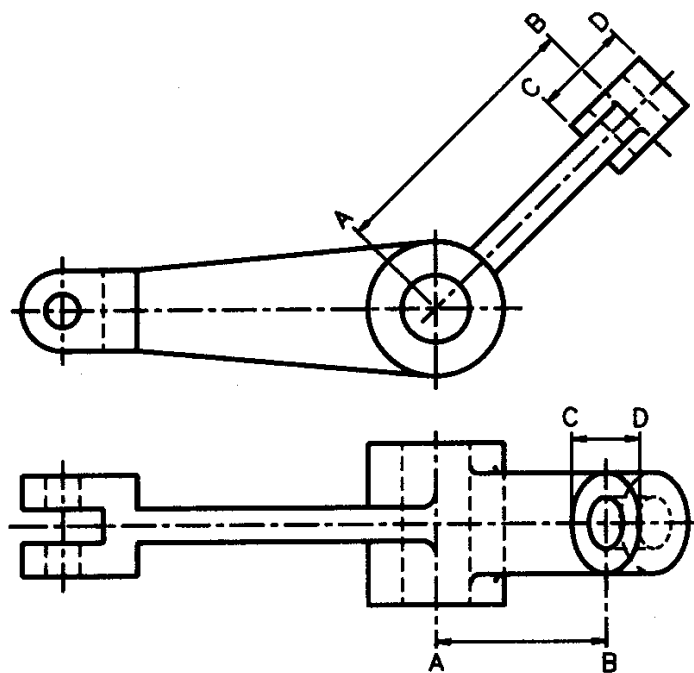
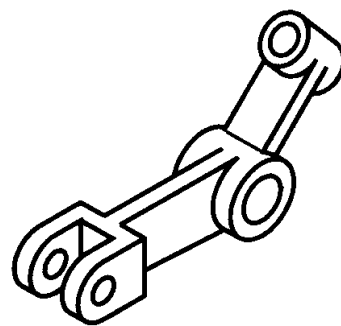


## PROJEÇÃO COM ROTAÇÃO

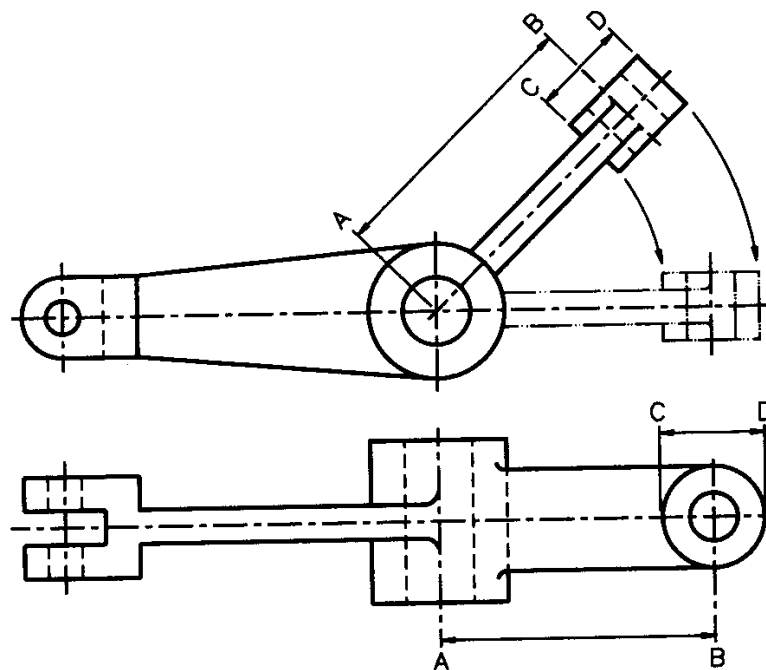
Peças que contêm partes ou elementos oblíquos, por convenção, são representadas pela rotação dessas partes sobre o eixo principal. Evita-se assim a deformação e o encurtamento delas na projeção ortogonal normal.



# Projeção com rotação: exemplo

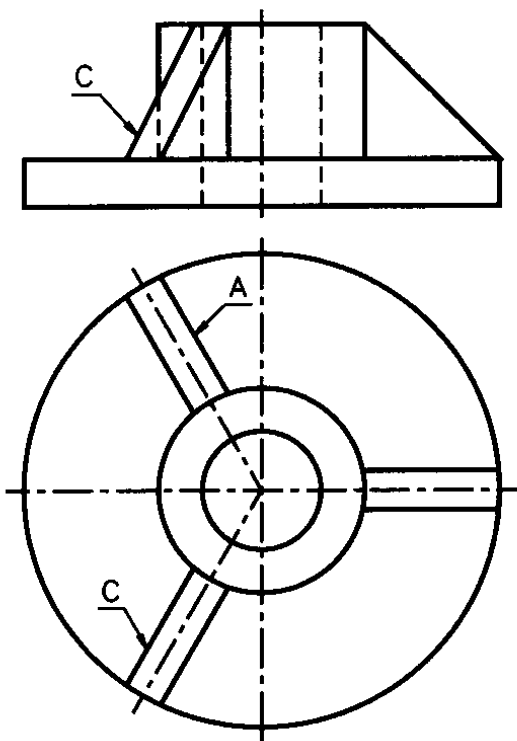
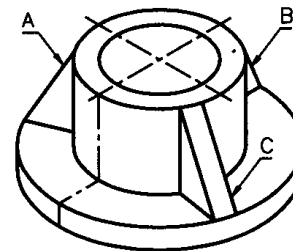


Normal: *inadequado*

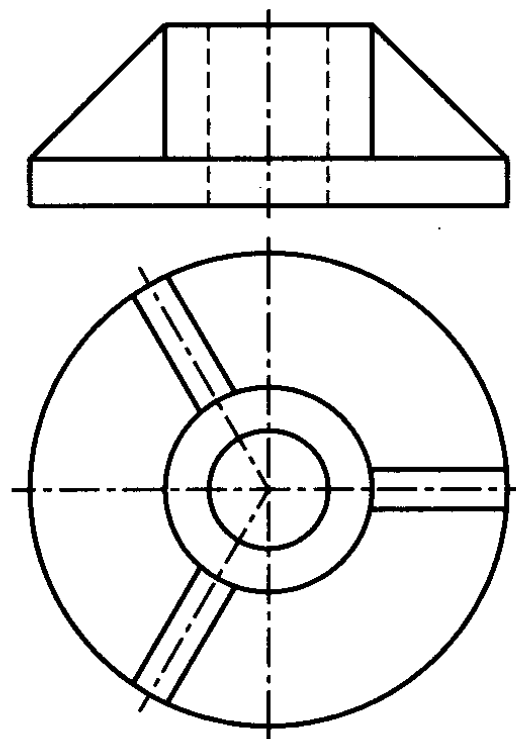


com Rotação

# Projeção com rotação: exemplo



Normal: *inadequado*

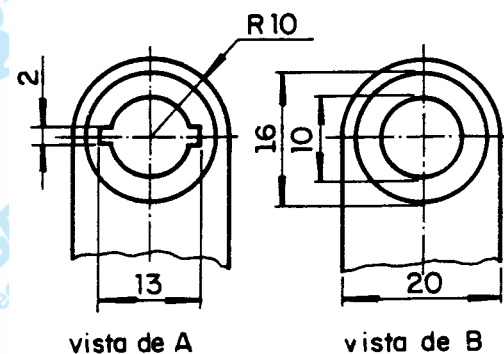
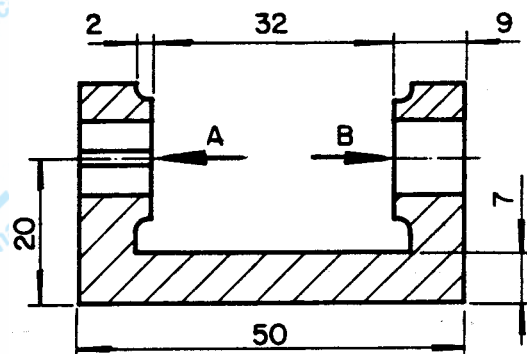
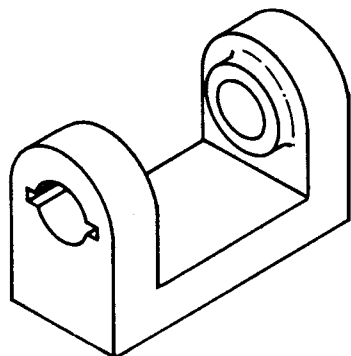


com Rotação

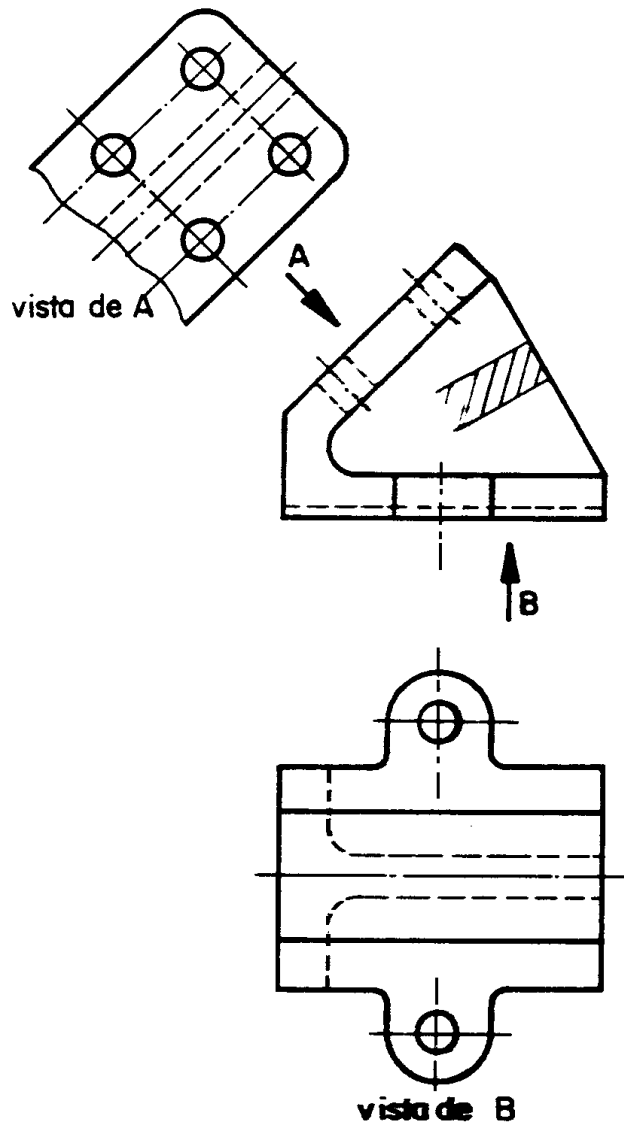
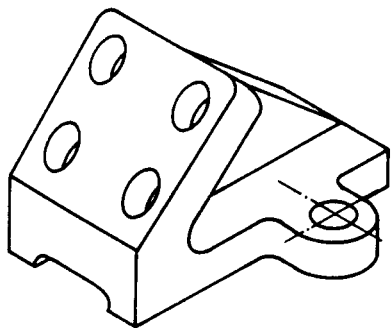


## VISTAS ESPECIAIS

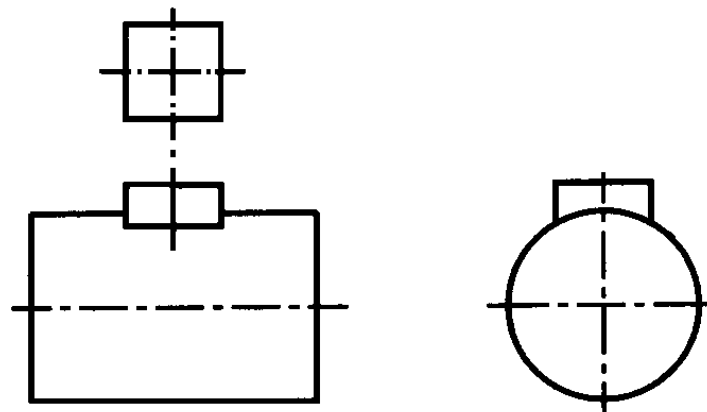
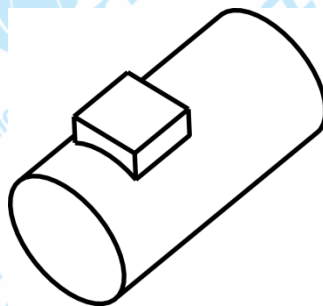
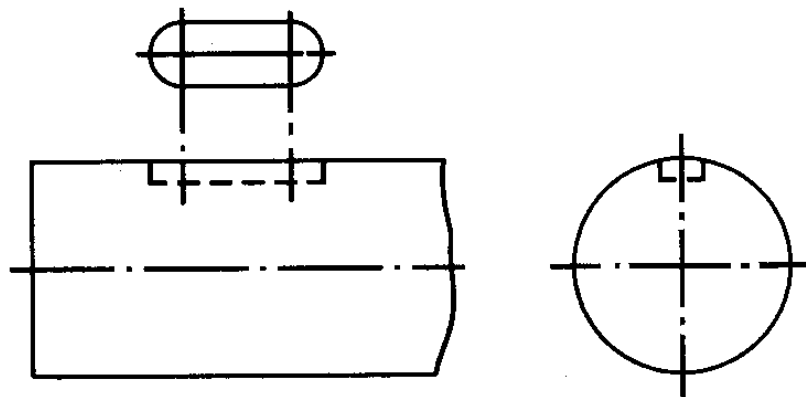
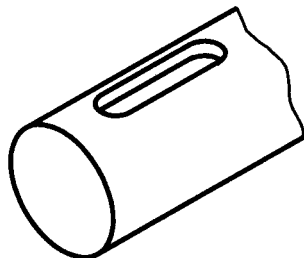
São projeções especiais representadas conforme a posição do observador. São indicadas por setas e letras.



## Vistas especiais



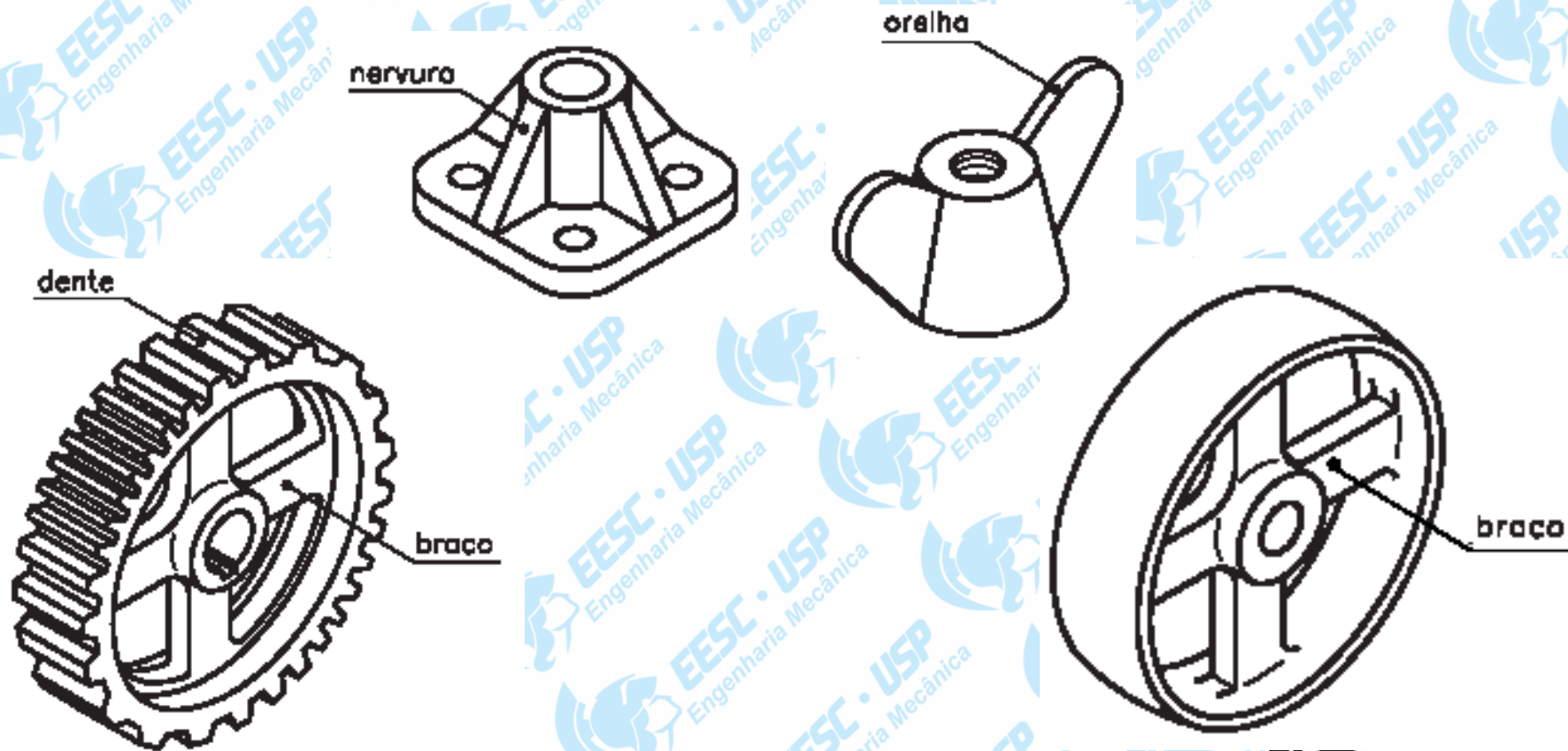
## Vistas localizadas



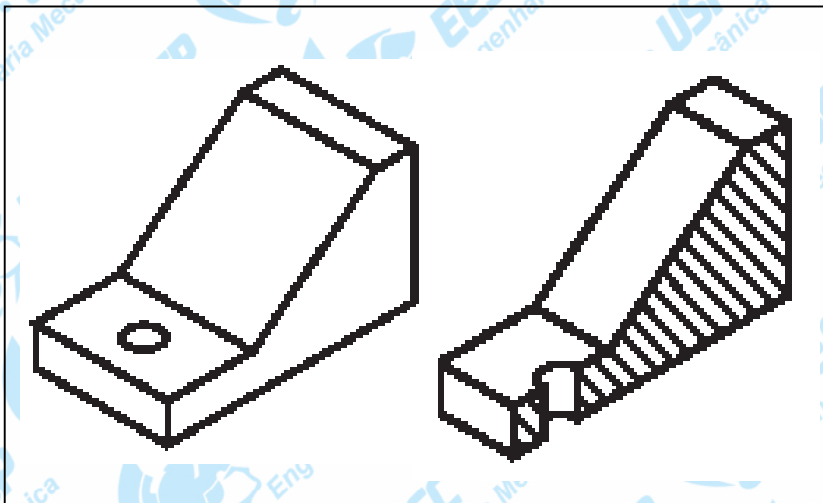


## OMISSÃO DE CORTE

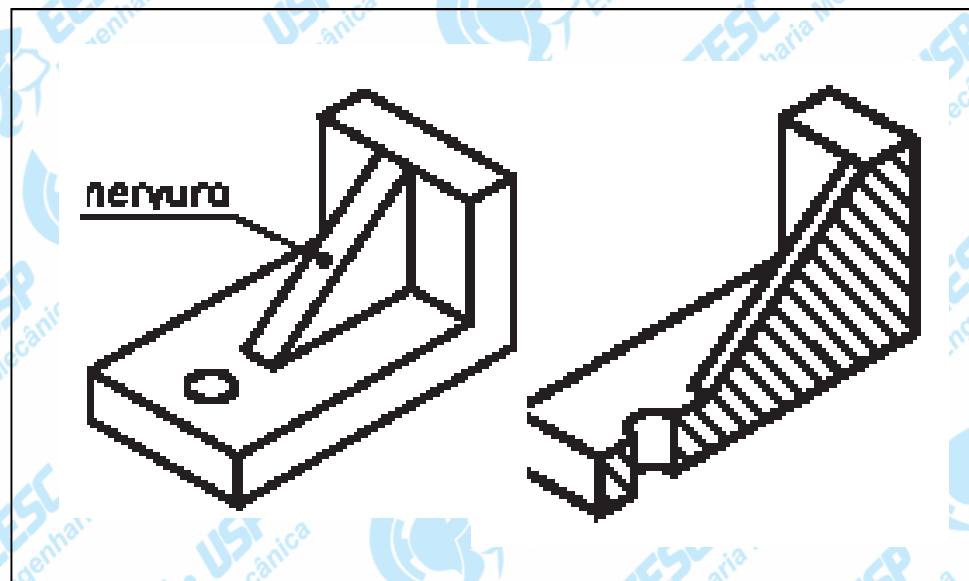
Recurso utilizado para garantir a leitura de peça especiais quando representada em corte. É representada pela ausência de hachuras e é usada para destacar certos detalhes em corte como: nervuras, braços, orelhas, dentes de engrenagem.



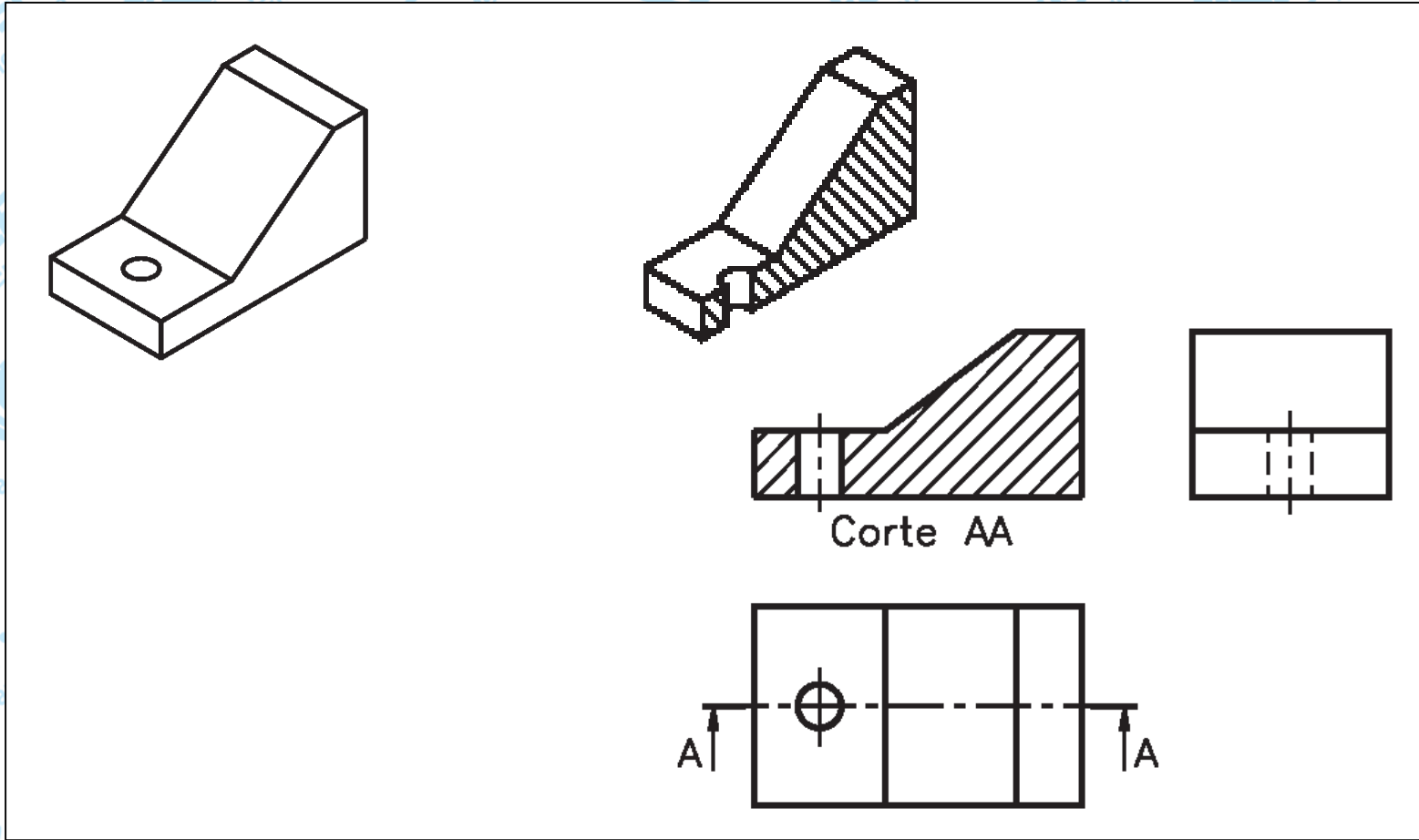
## Sem omissão de corte



## Com omissão de corte - nervura

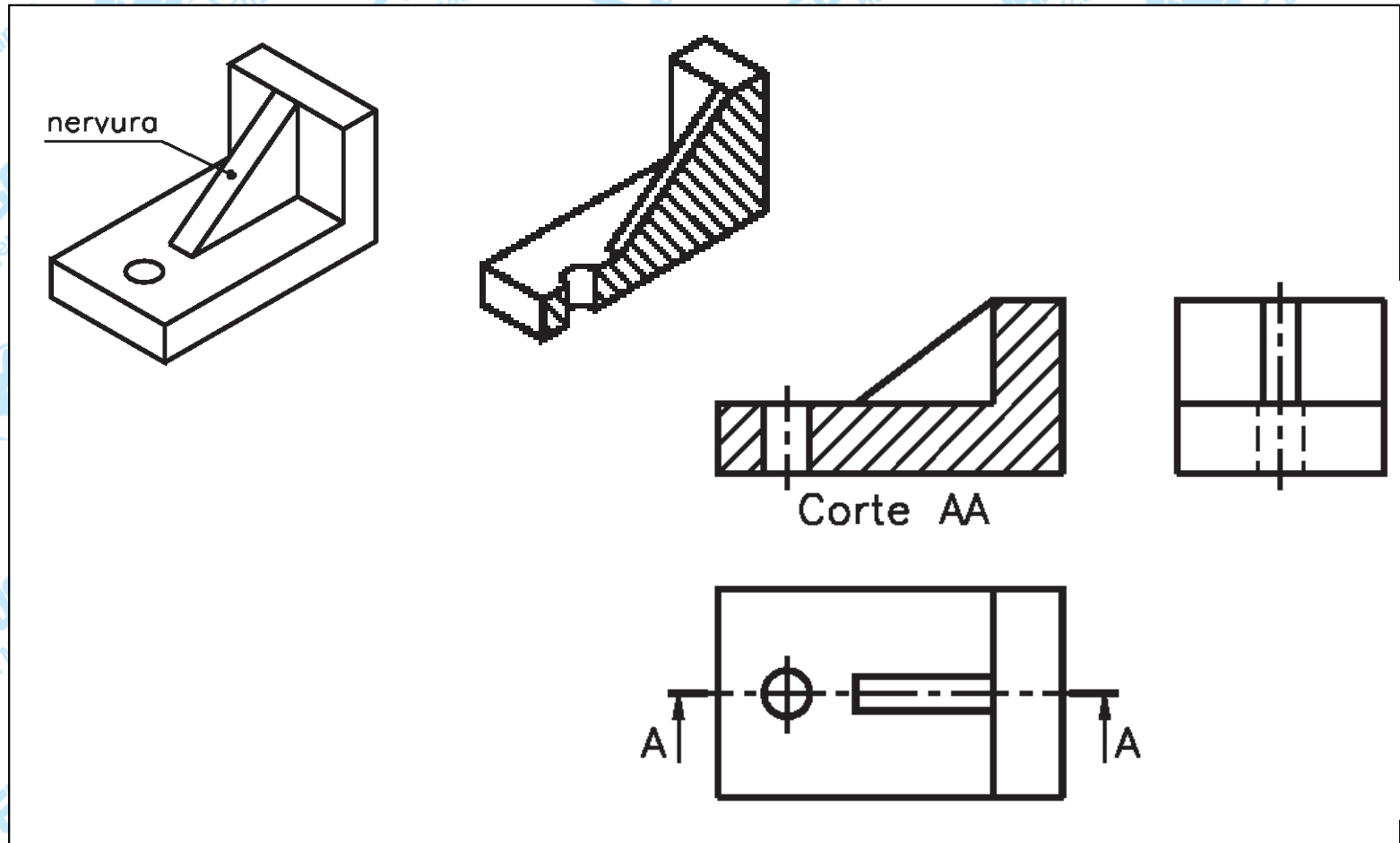


# Sem omissão de corte

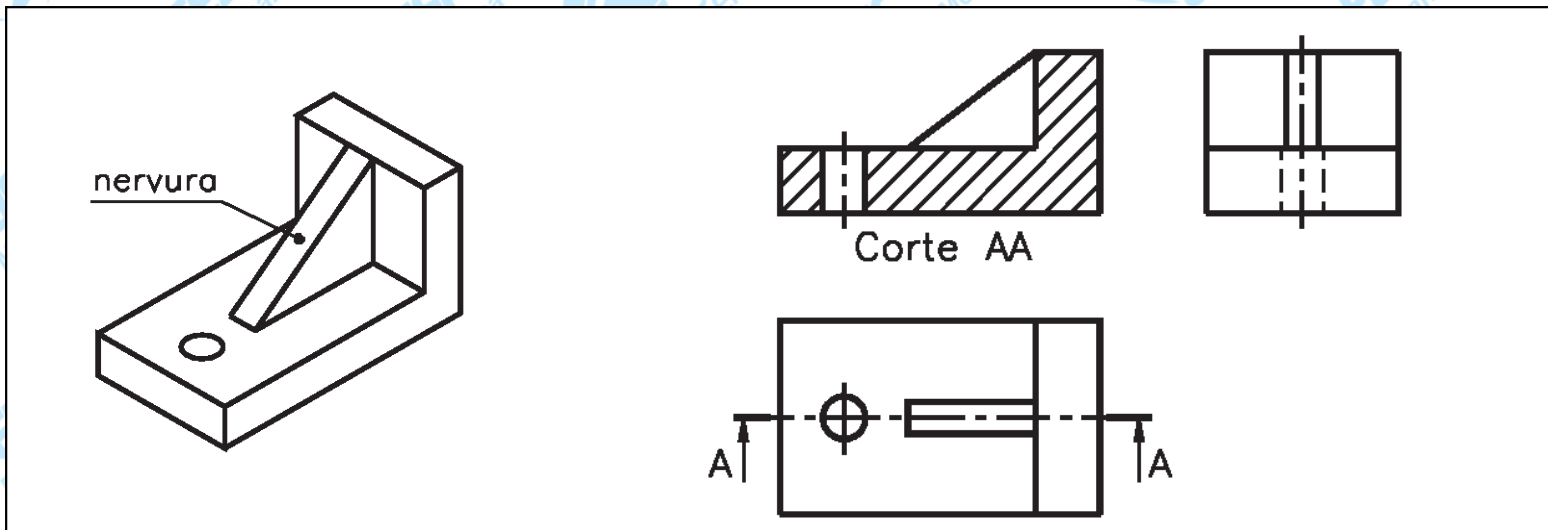
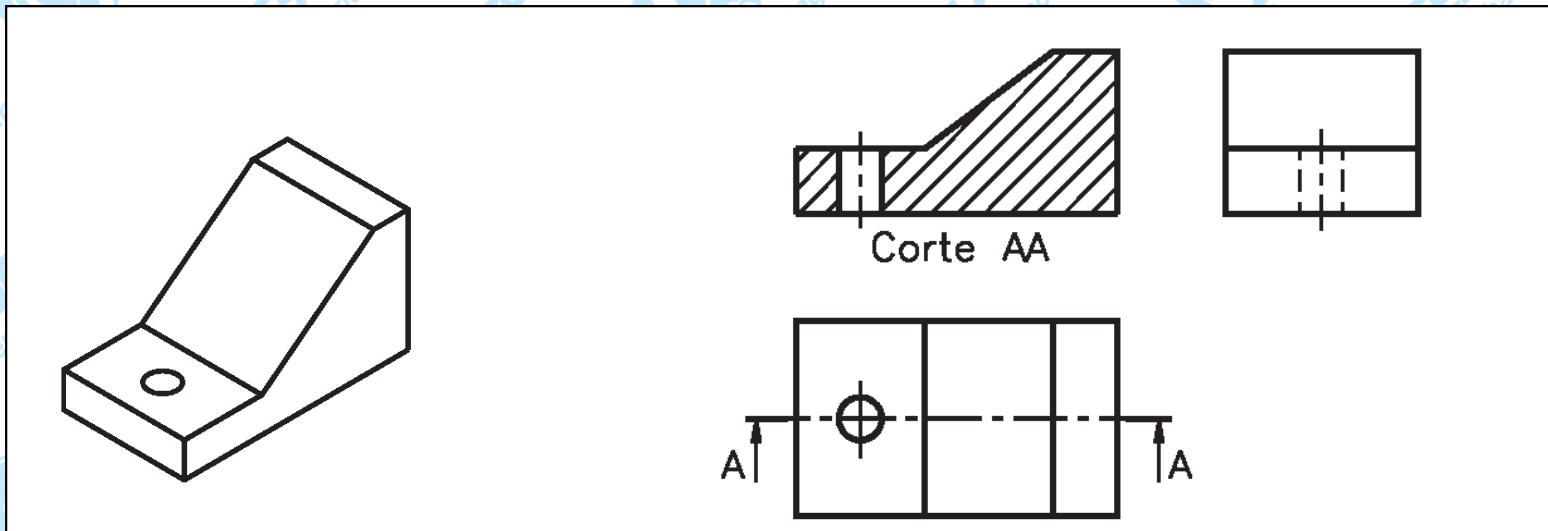




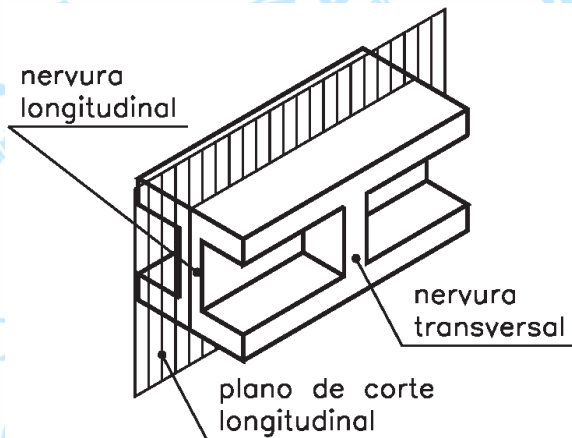
## Omissão de corte - nervura



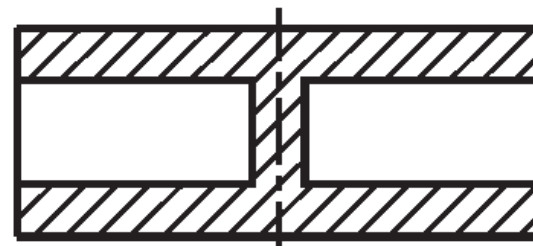
# Omissão de corte - nervura



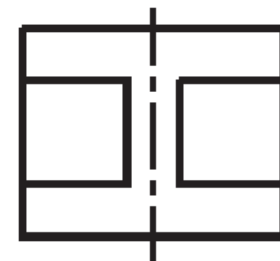
## Omissão de corte - nervuras



Projeção ortogonal

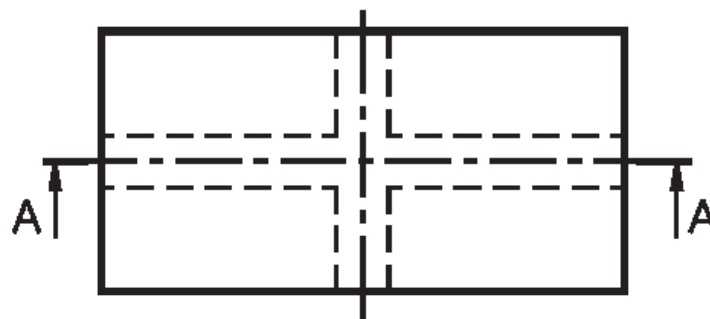
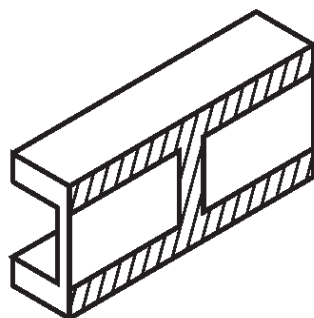
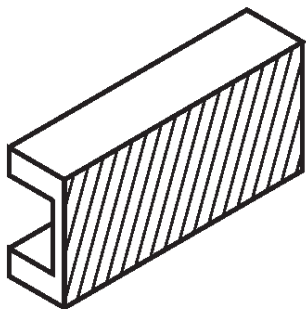


Corte AA



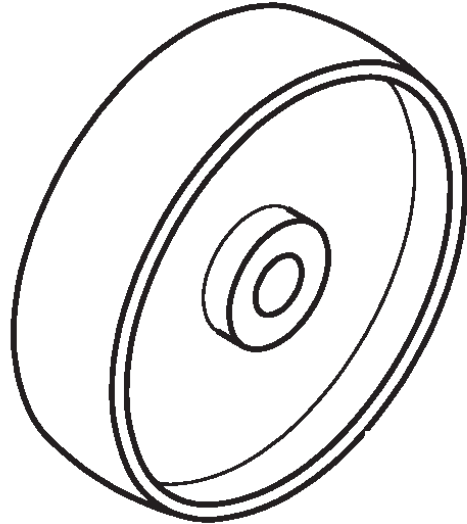
Sem omissão (errado)

Com omissão (correto)

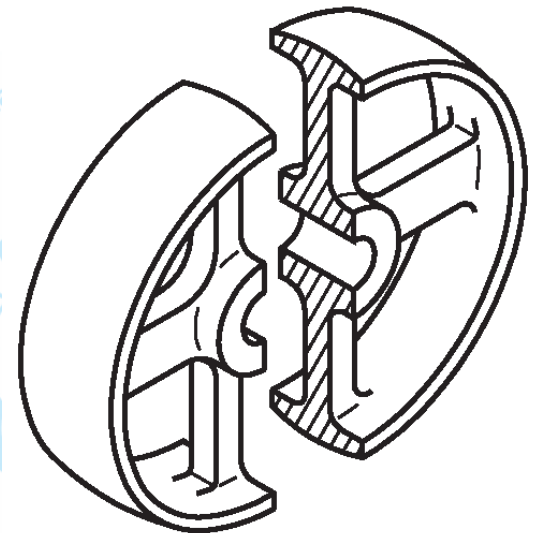
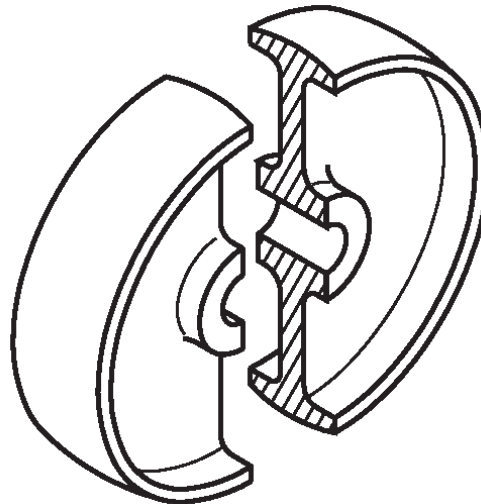
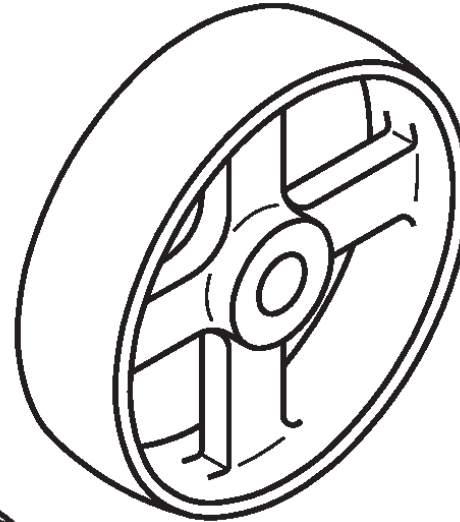


## Omissão de corte - braços

Polia de disco

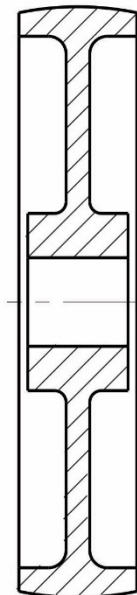
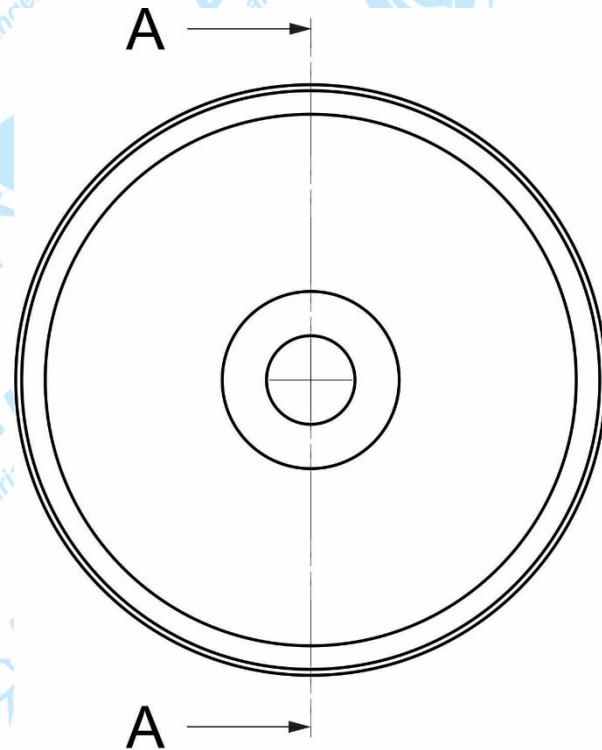
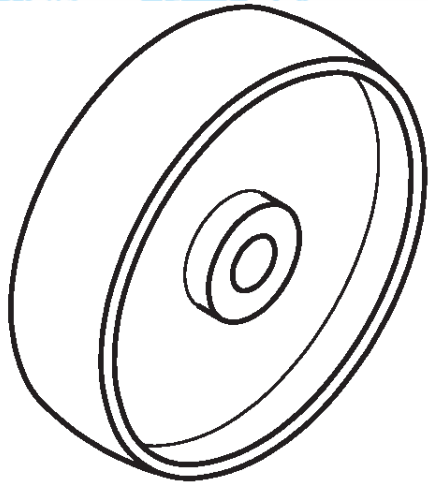


Polia com braço



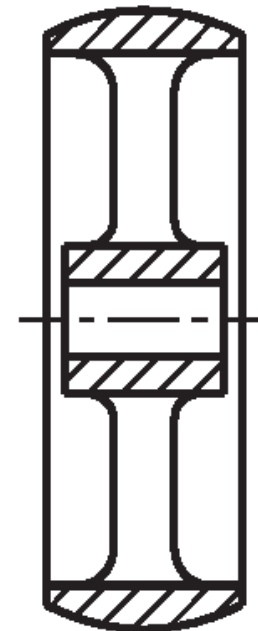
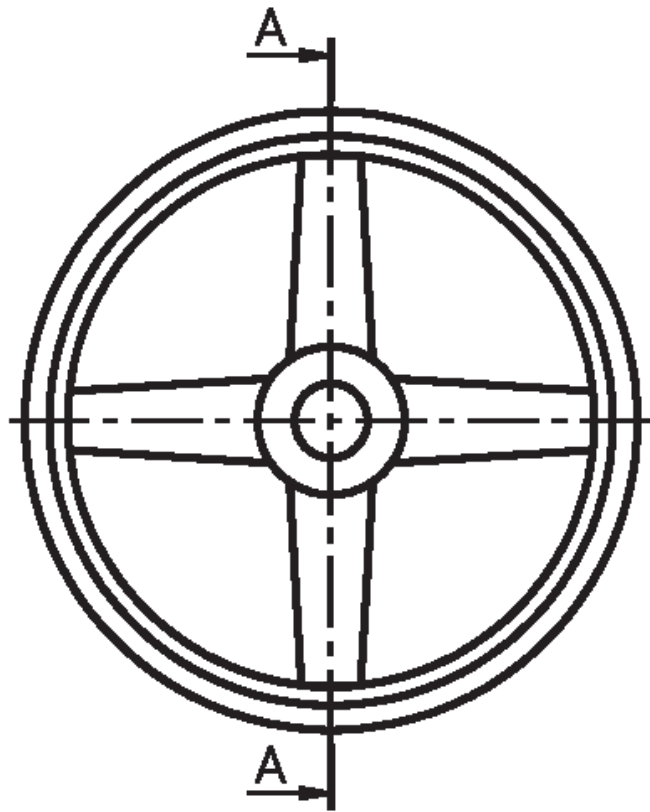
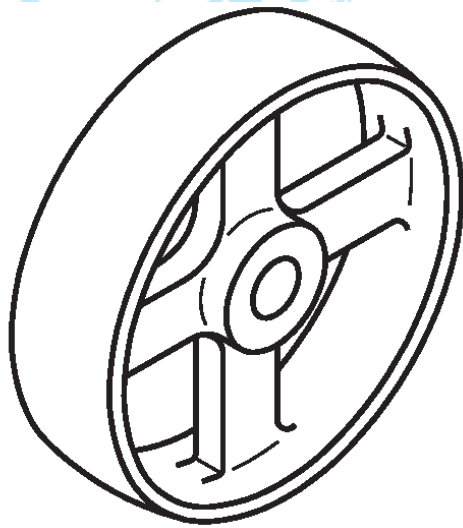


# POLIA DISCO - Representação sem omissão de corte



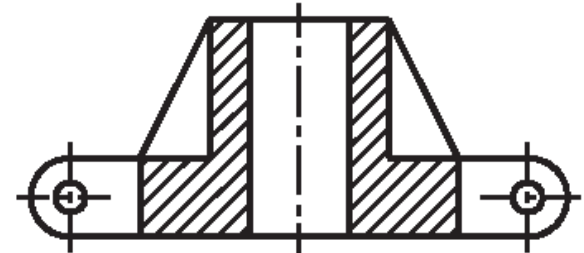
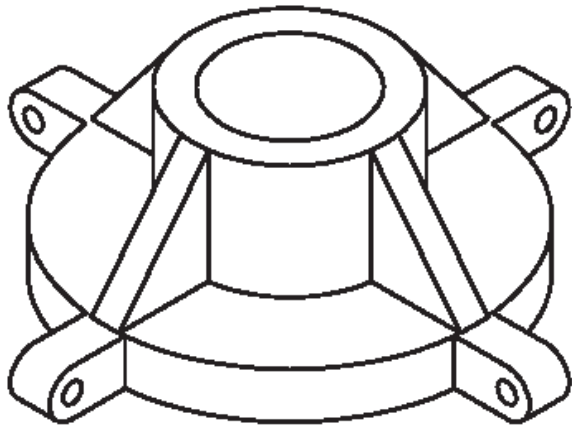
Corte A-A

# BRAÇOS – Representação com omissão de corte

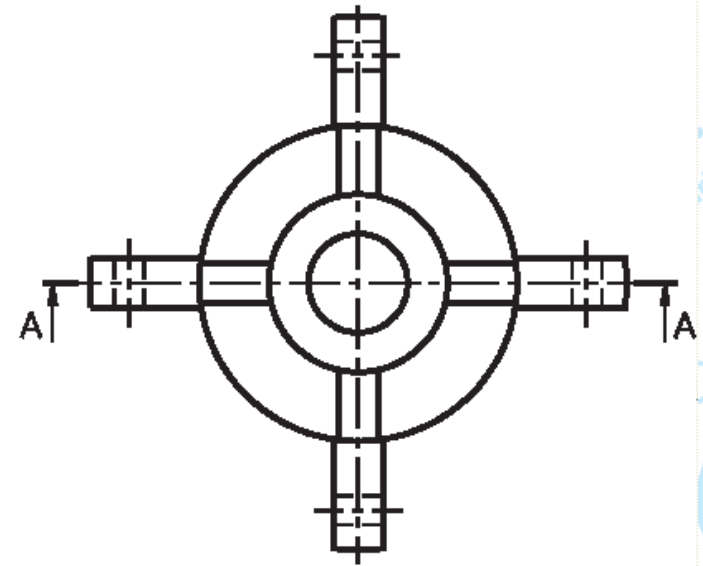


Corte AA

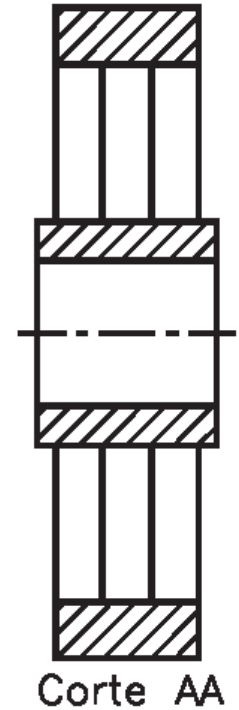
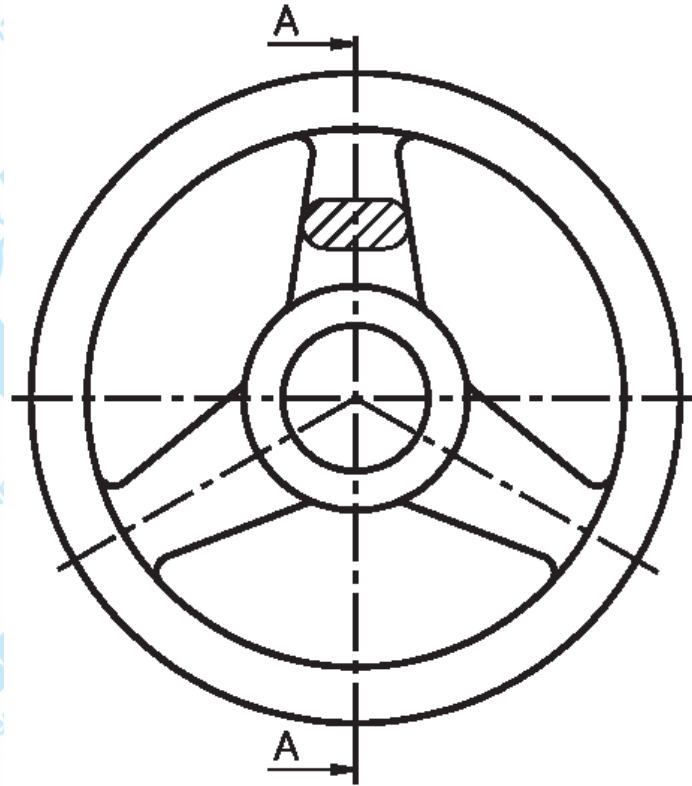
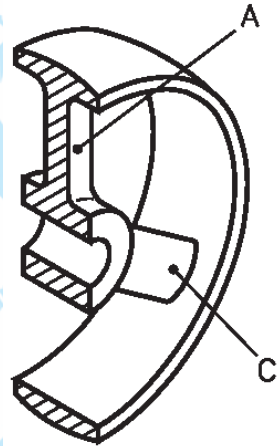
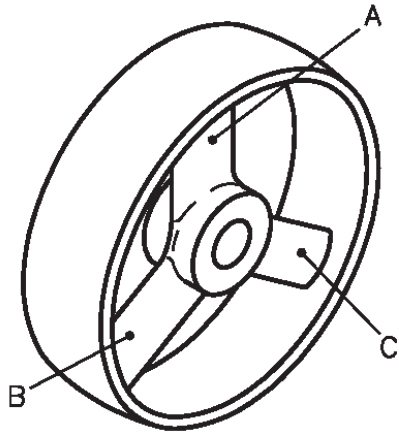
## Omissão de corte – nervura e orelha



Corte AA

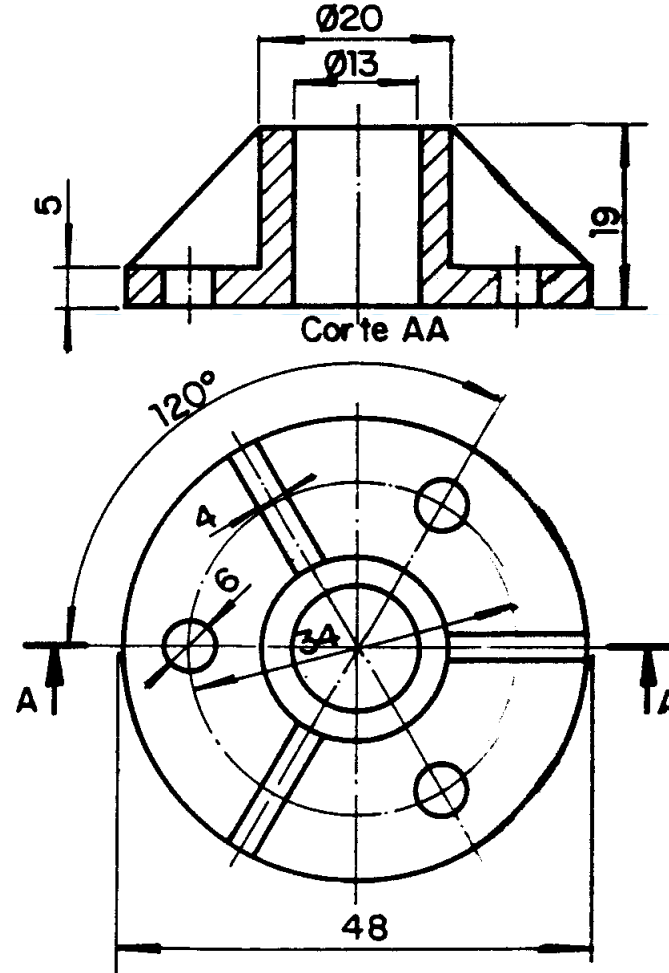
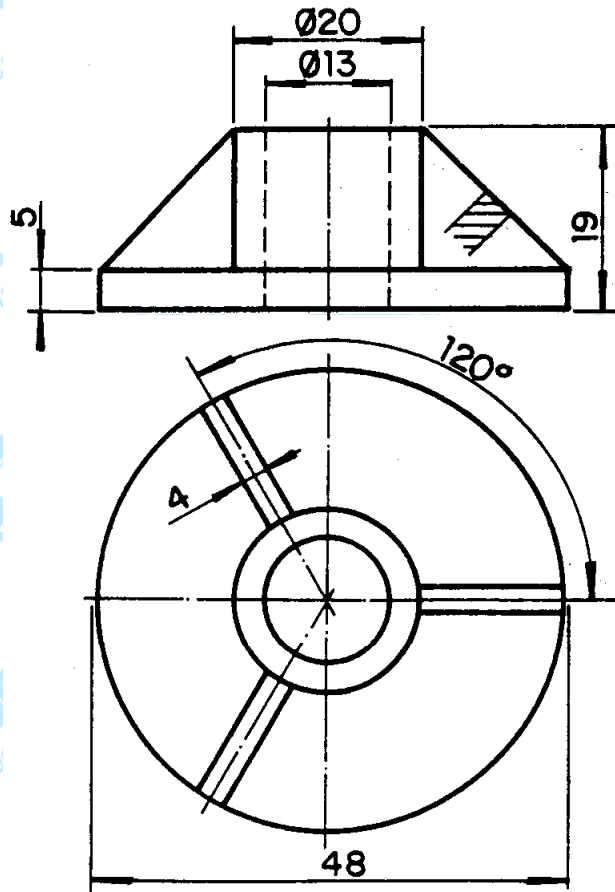


# Omissão de corte e rotação

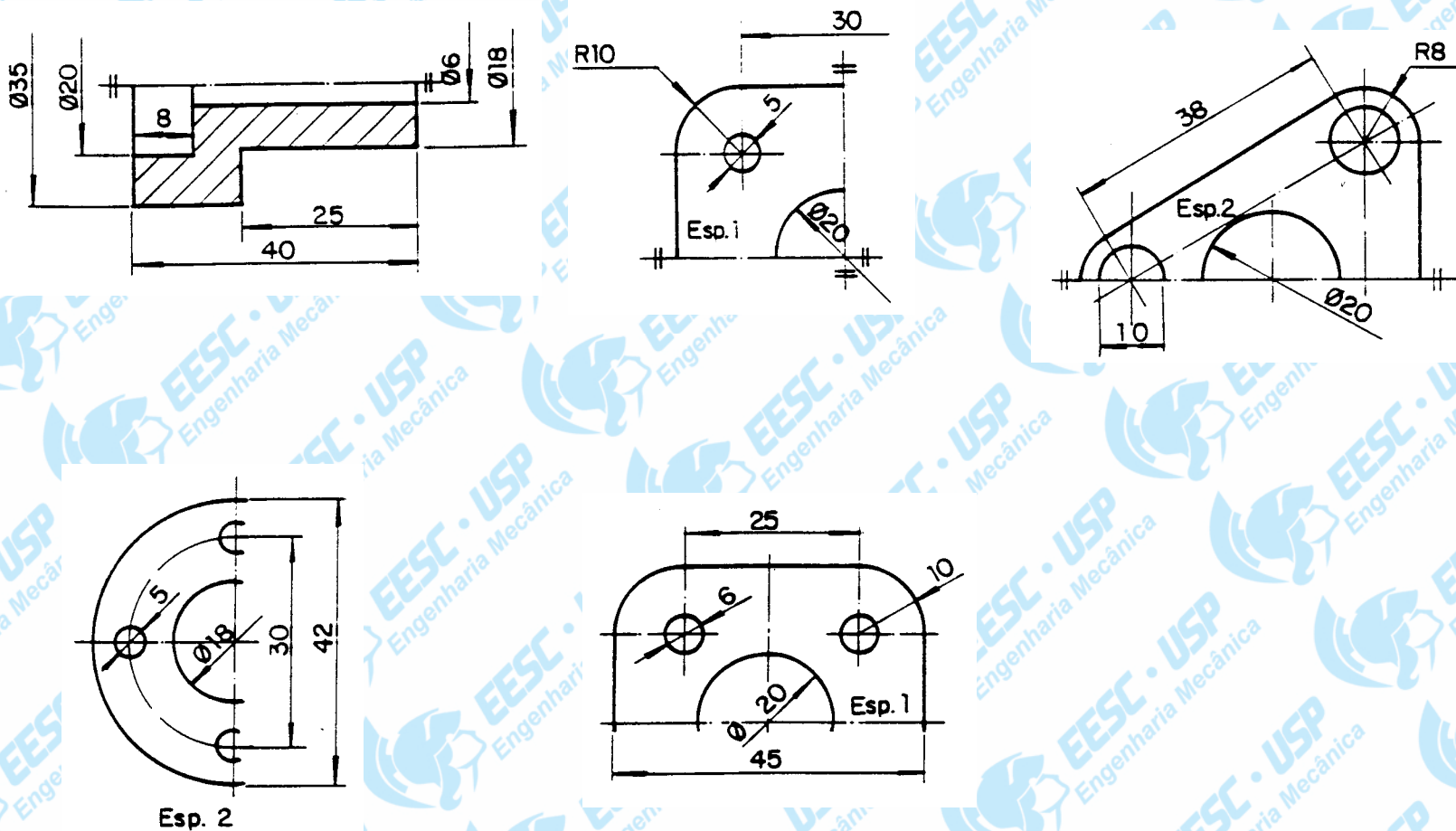




# Omissão de corte e rotação

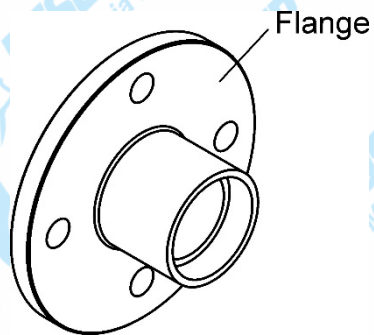


# MEIO-CORTE representação simplificada de peças simétricas



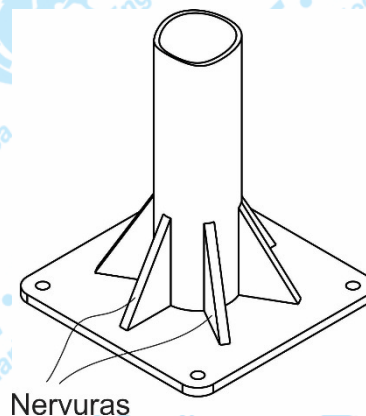
## Elementos de Máquinas – glossário

Flange



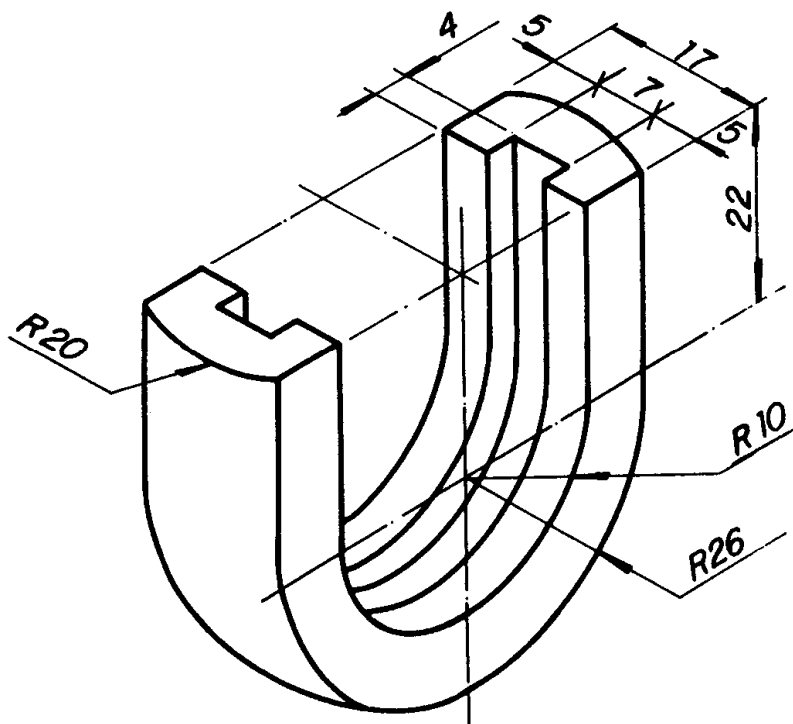
Aba relativamente fina em torno de uma peça normalmente empregada para montagem e fixação.

Nervura



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.

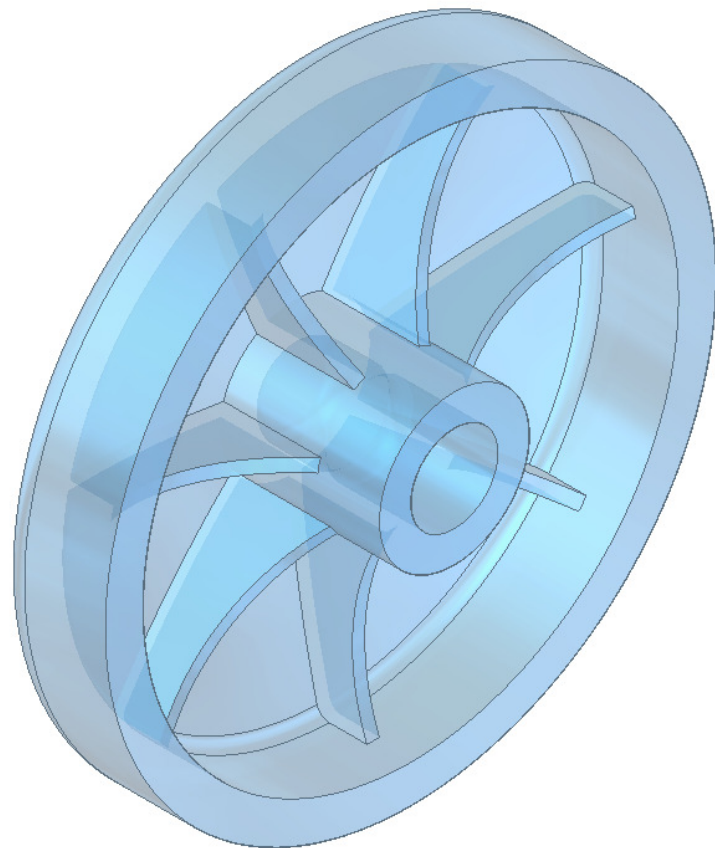
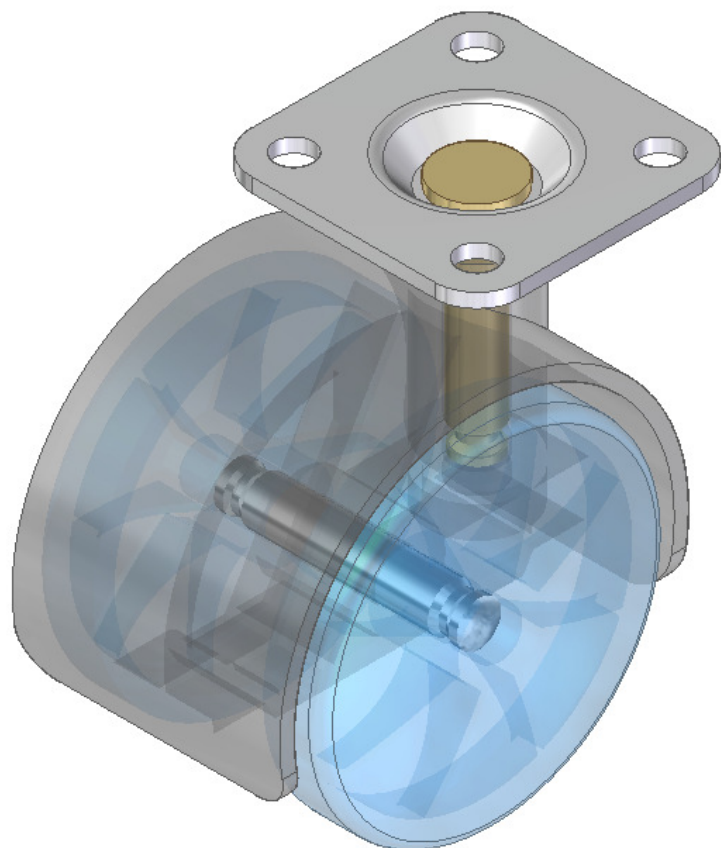
Nome: \_\_\_\_\_

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:  $\varnothing_e = 50\text{mm}$ ,  $\varnothing_{\text{furo}} = 7\text{mm}$ , largura total  $15\text{mm}$ , largura da banda de rodagem =  $7\text{mm}$ , espessura geral =  $2\text{mm}$ , espessura das nervuras =  $1\text{mm}$ .