

SEM 0564 - DESENHO TÉCNICO MECÂNICO I

Notas de Aulas v.2023

Aula 04 – Vistas auxiliares, omissão de corte e simplificações

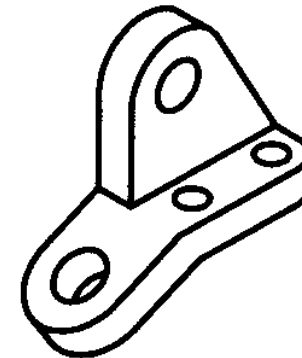
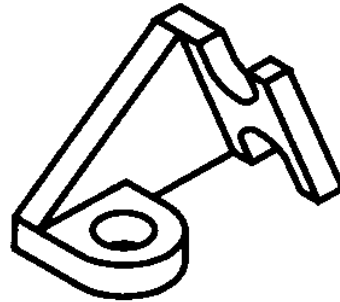
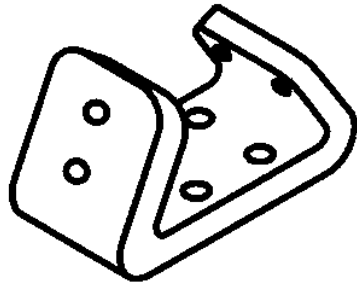
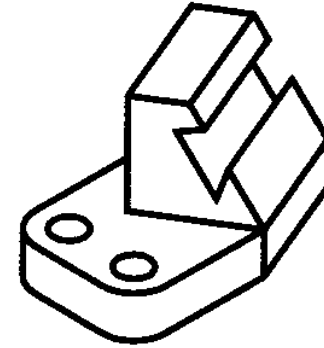
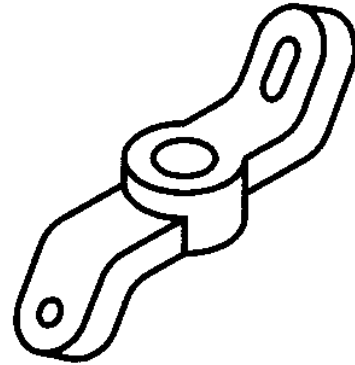
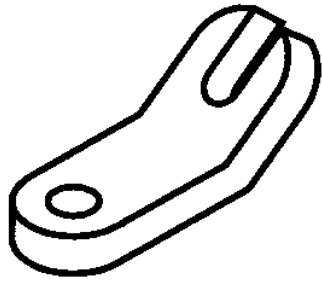
Prof. Assoc. Carlos Alberto Fortulan

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

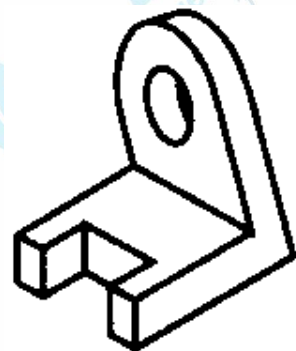
Vistas Auxiliares

 ou projeção ortogonal especial

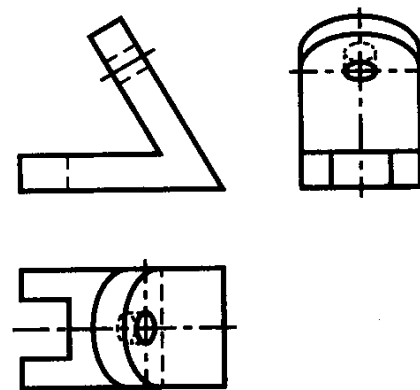
Linhas inclinadas e planos oblíquos não aparecem com suas dimensões reais em nenhum dos planos normais, aparecem deformadas. Nestes casos aplica-se a vista auxiliar que são representações em planos auxiliares.



Vistas auxiliares

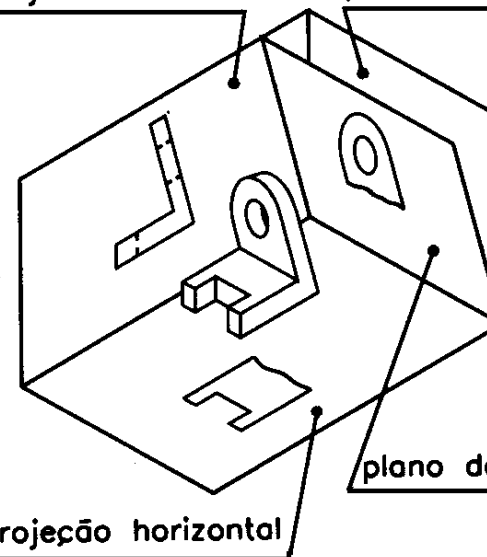


Projeção ortogonal
Projeção em plano auxiliar



plano de projeção vertical

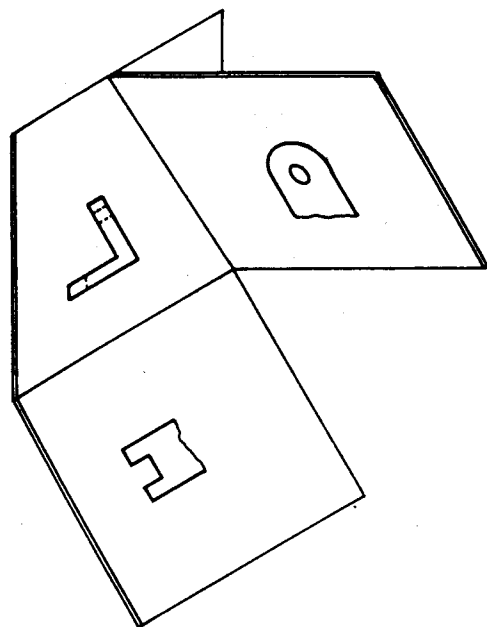
plano de projeção lateral



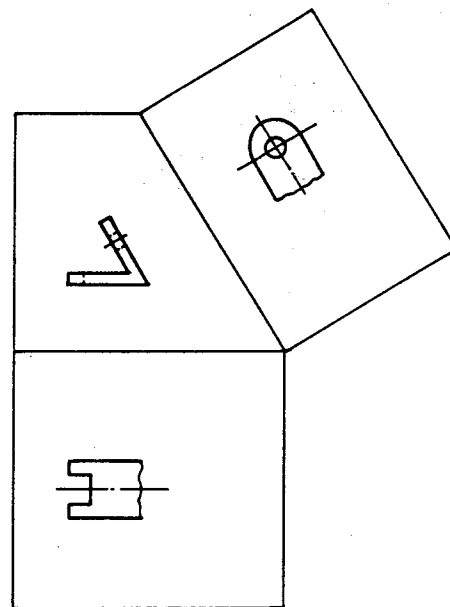
plano de projeção horizontal

plano de projeção auxiliar

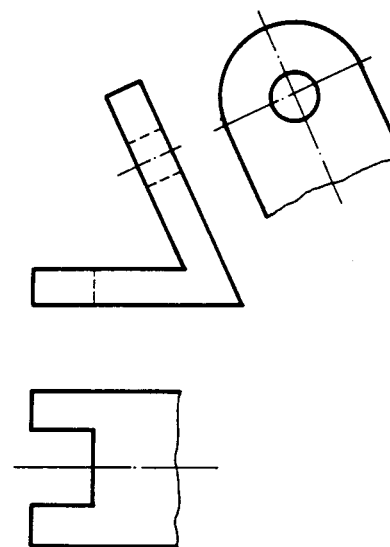
Rebatimento do plano auxiliar



Planos

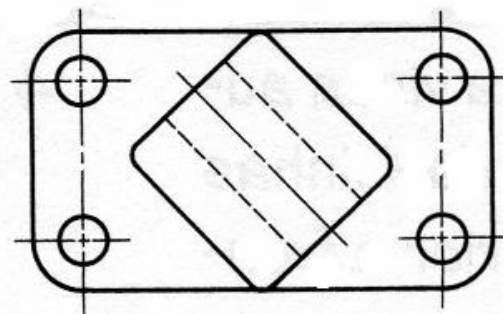
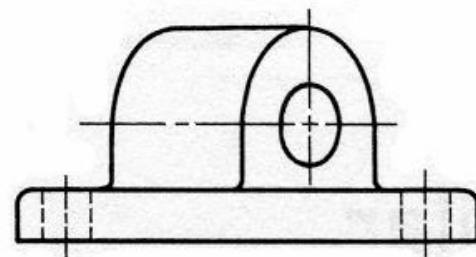
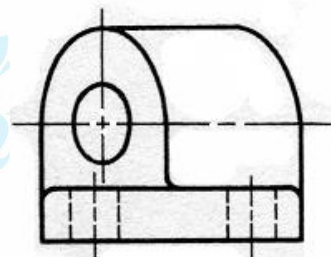
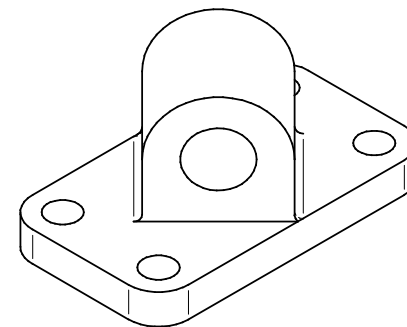
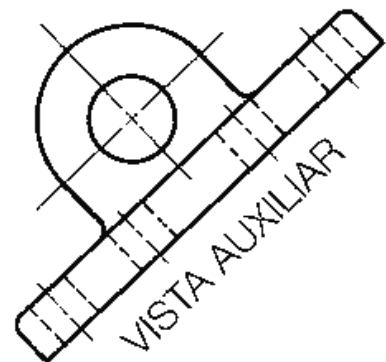


Rebatimento

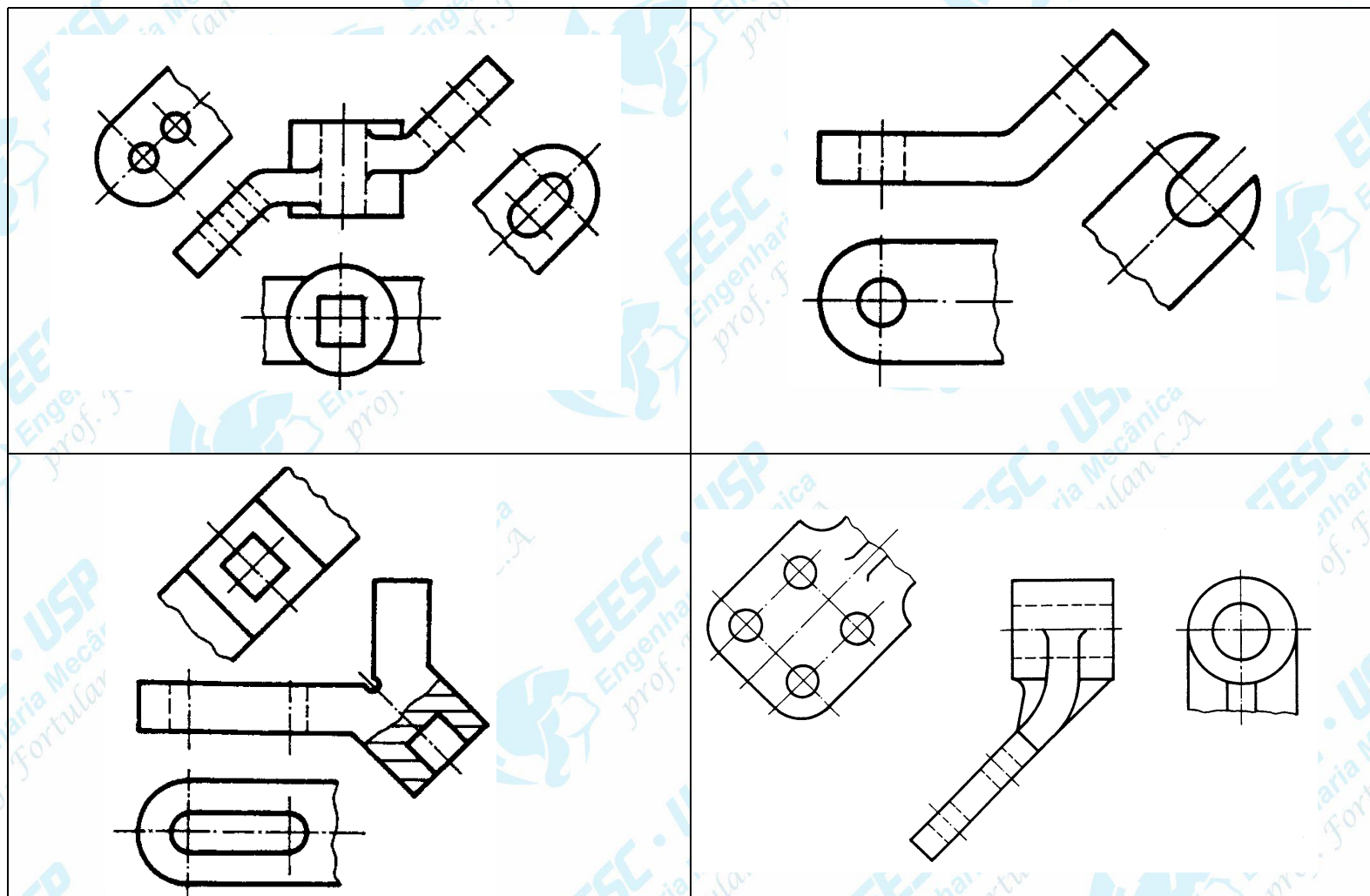


Resultado

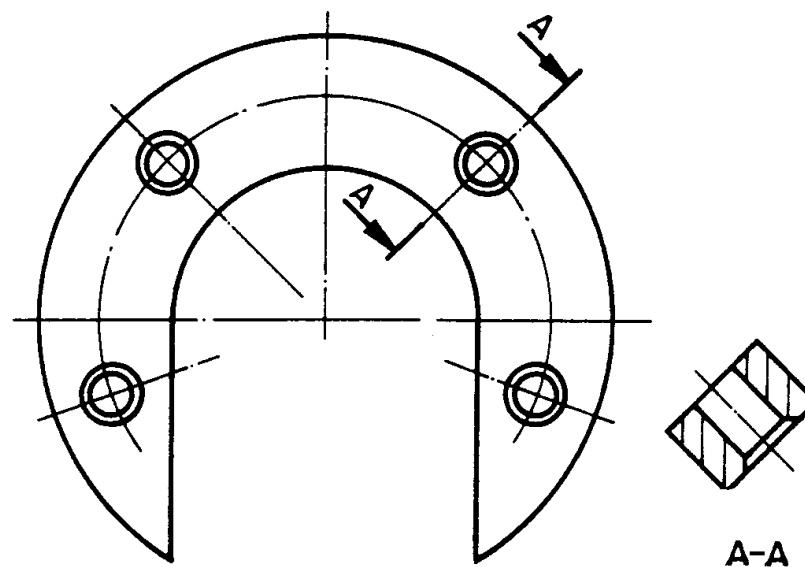
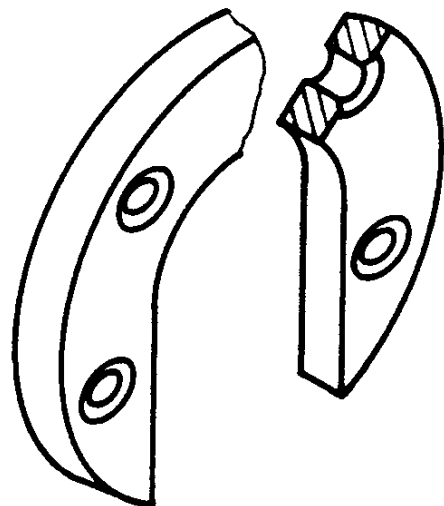
Exemplo

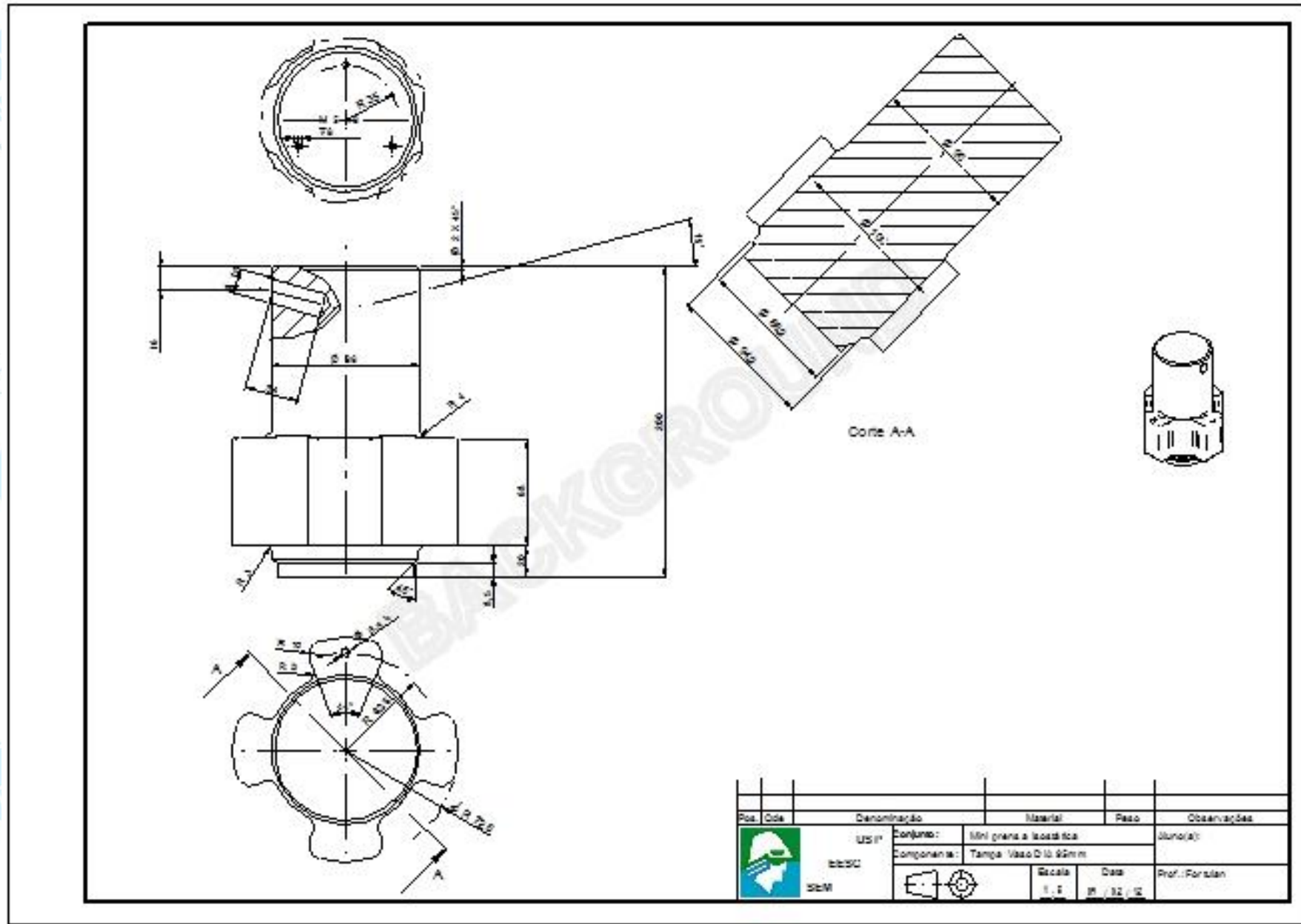


Exemplos



Seção em vista auxiliar - Fora da vista com indicação

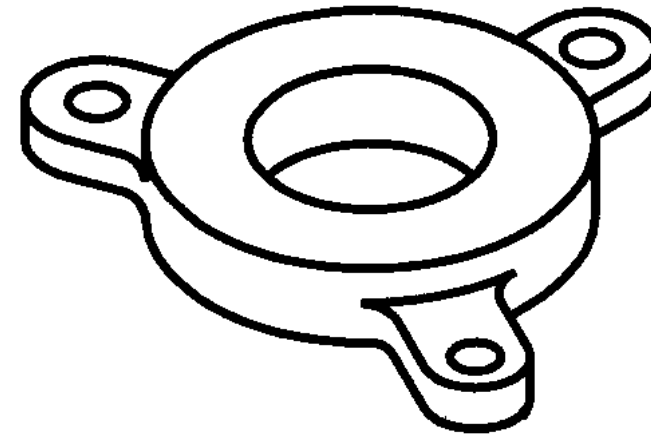
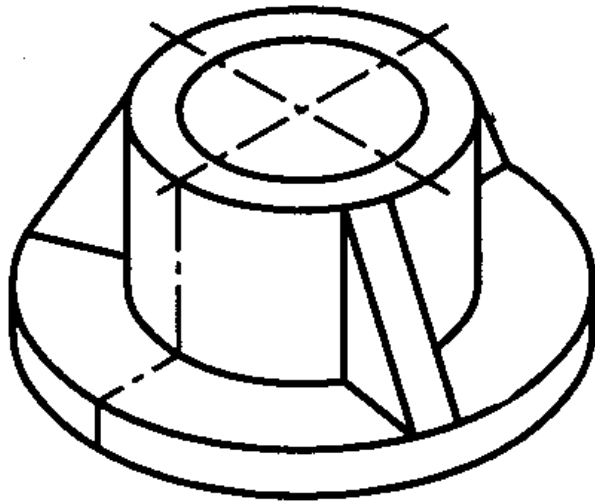




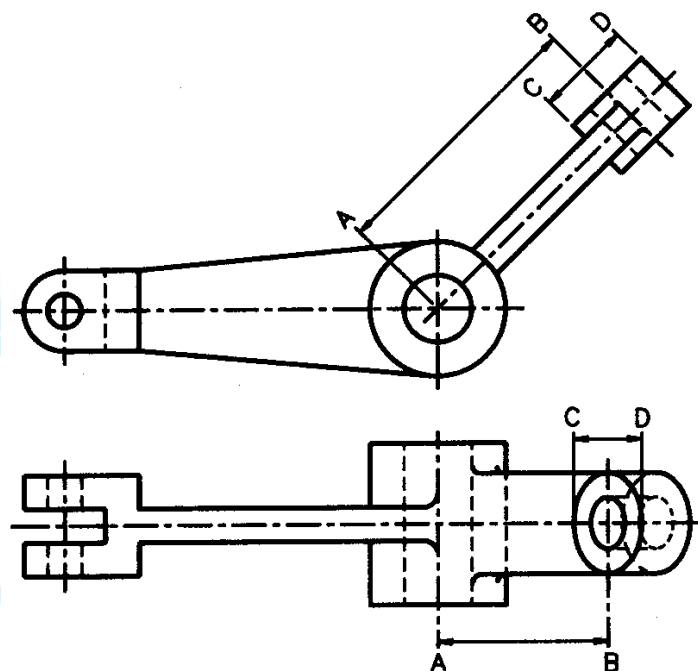
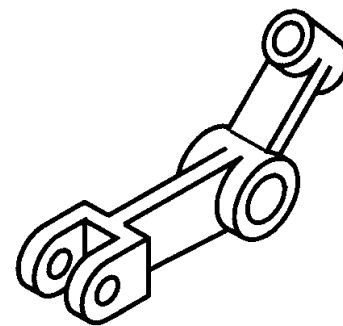
Pos.	Cód.	Denominação	MATERIAL	Peso	Observações
		USP	Conjunto:	Mini greis a laserica	Unid(a):
		16350	Componente:	Tampa Vaso D=16 22mm	
		52M	Escala	Data	Prof.: Fortulan
			1:1	25/02/23	

Projeção com rotação

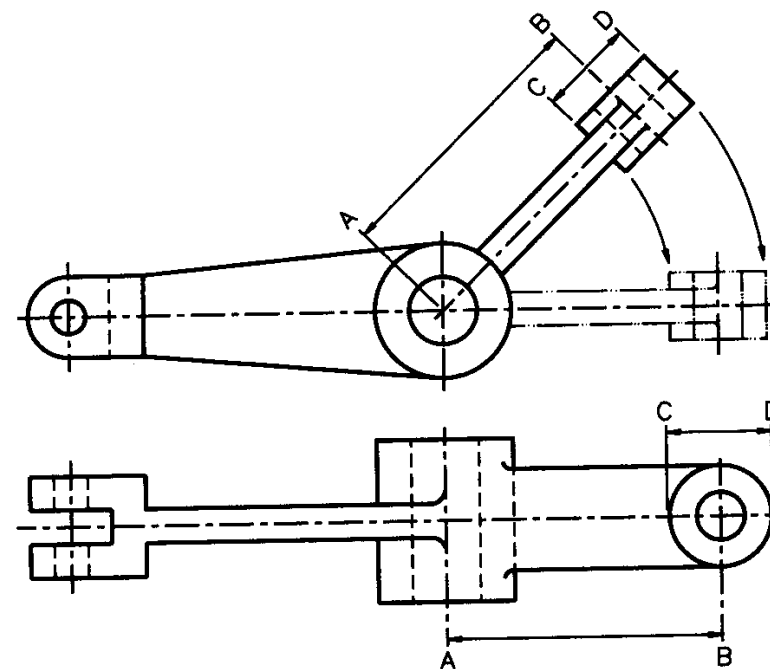
Peças que contêm partes ou elementos oblíquos, por convenção, são representadas pela rotação dessas partes sobre o eixo principal. Evita-se assim a deformação e o encurtamento delas na projeção ortogonal normal.



Projeção com rotação: exemplo

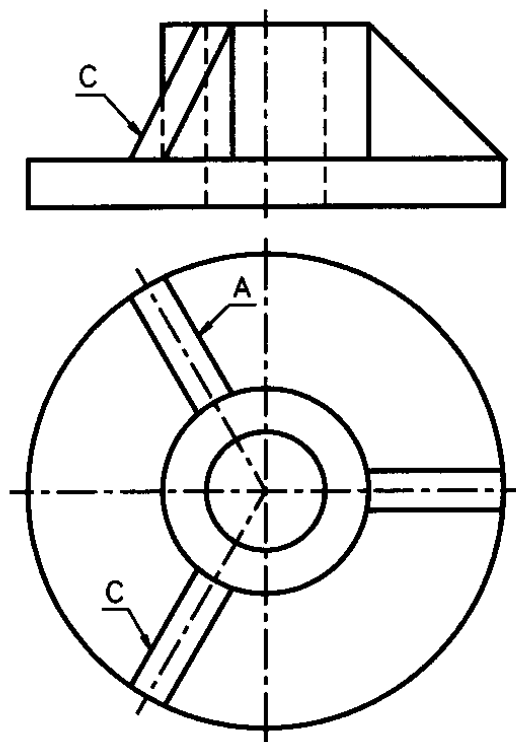
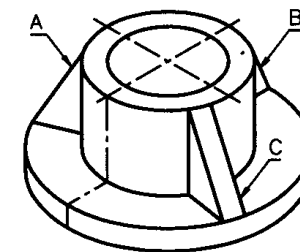


Normal: *inadequado*

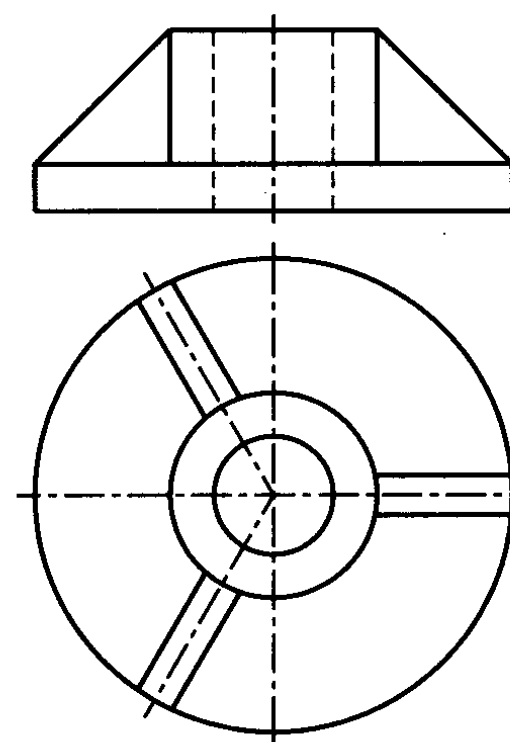


com Rotação

Projeção com rotação: exemplo



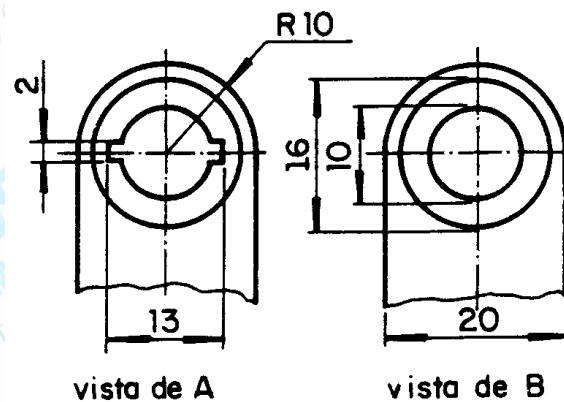
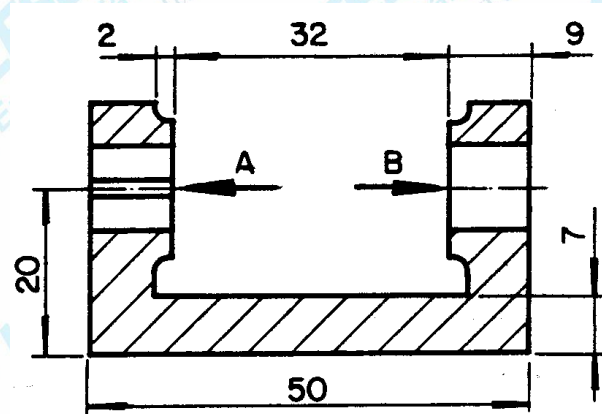
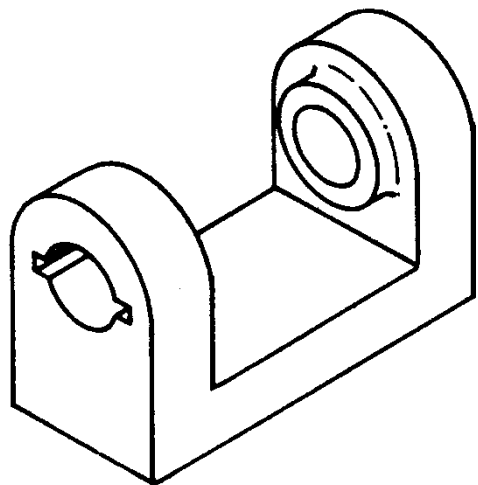
Normal: *inadequado*



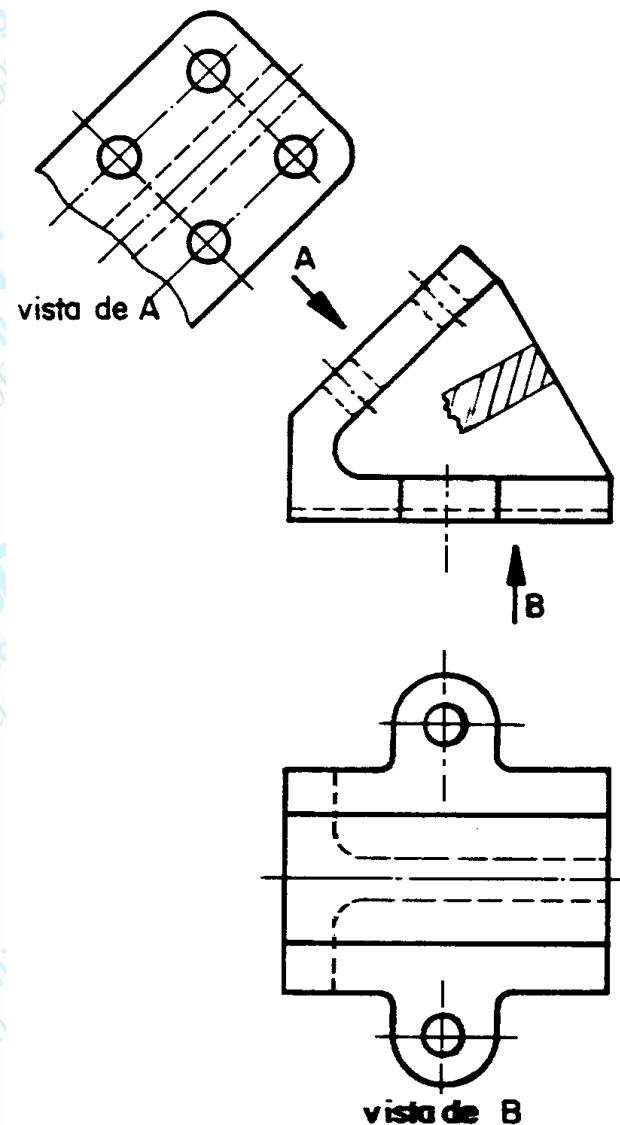
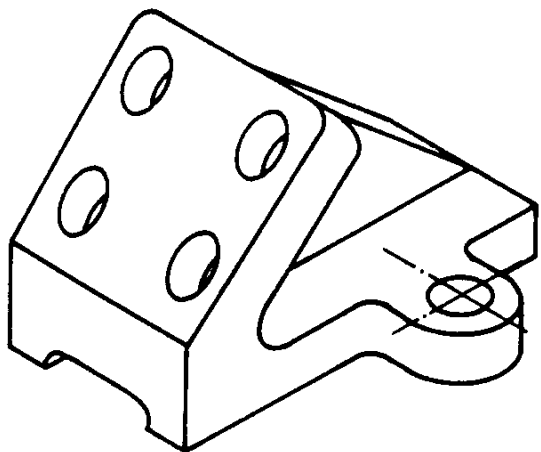
com Rotação

Vistas Especiais

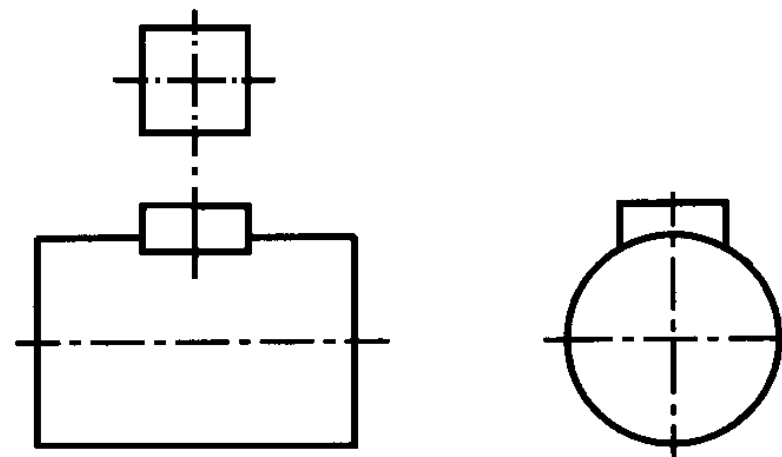
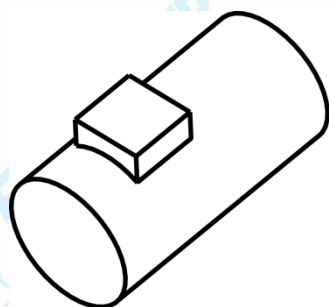
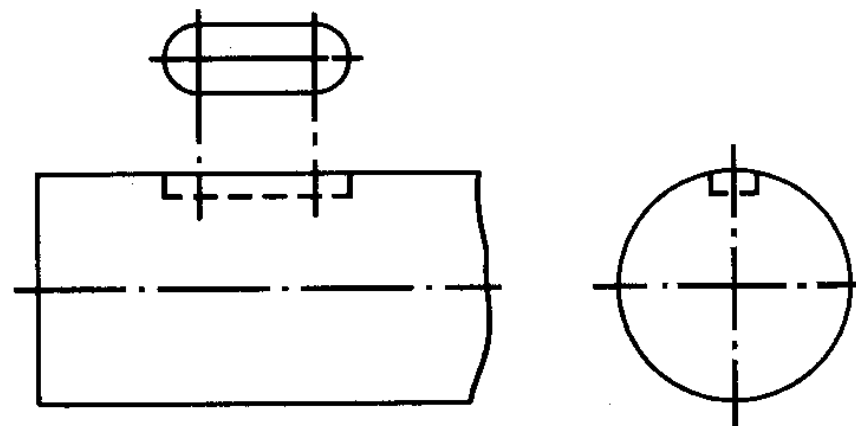
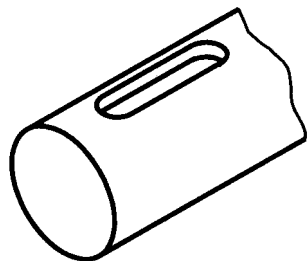
São projeções especiais representadas conforme a posição do observador. São indicadas por setas e letras.



Vistas especiais

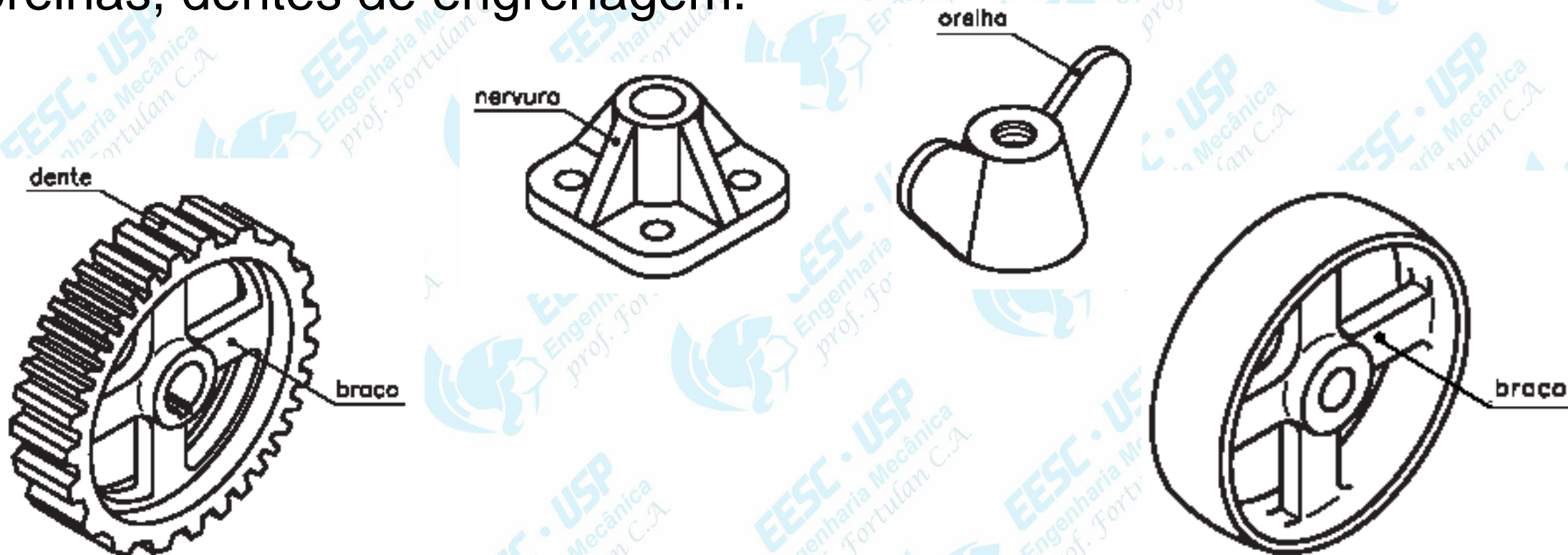


Vistas localizadas

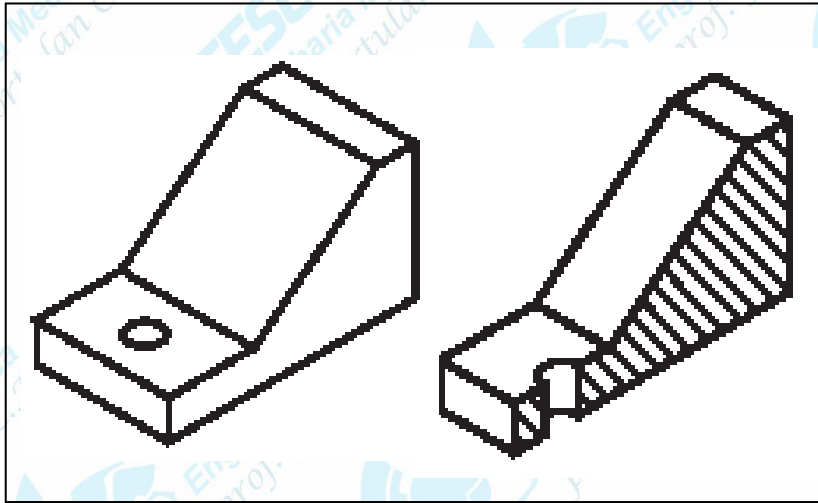


Omissão de corte

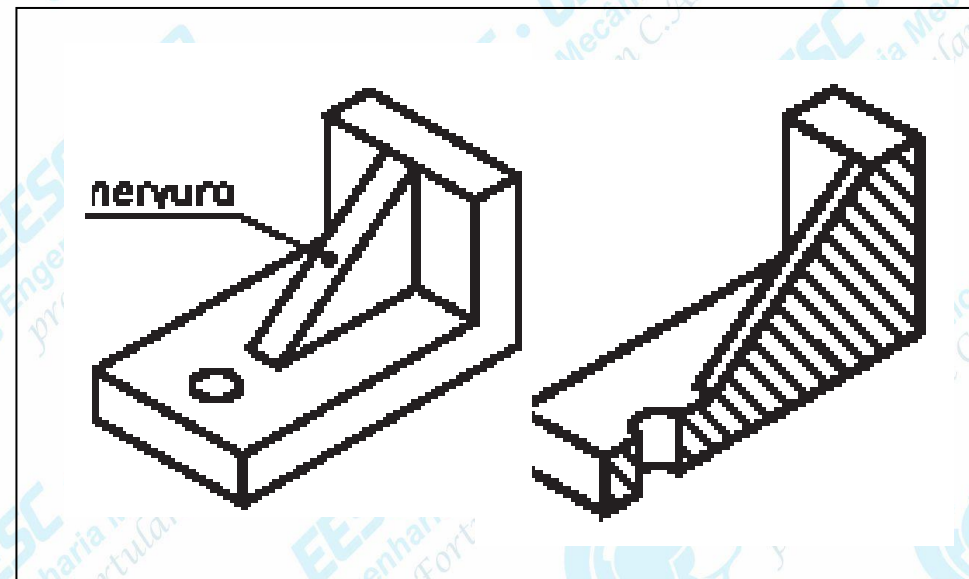
Recurso utilizado para garantir a leitura de peça especiais quando representada em corte. É representada pela ausência de hachuras e é usada para destacar certos detalhes em corte como: nervuras, braços, orelhas, dentes de engrenagem.



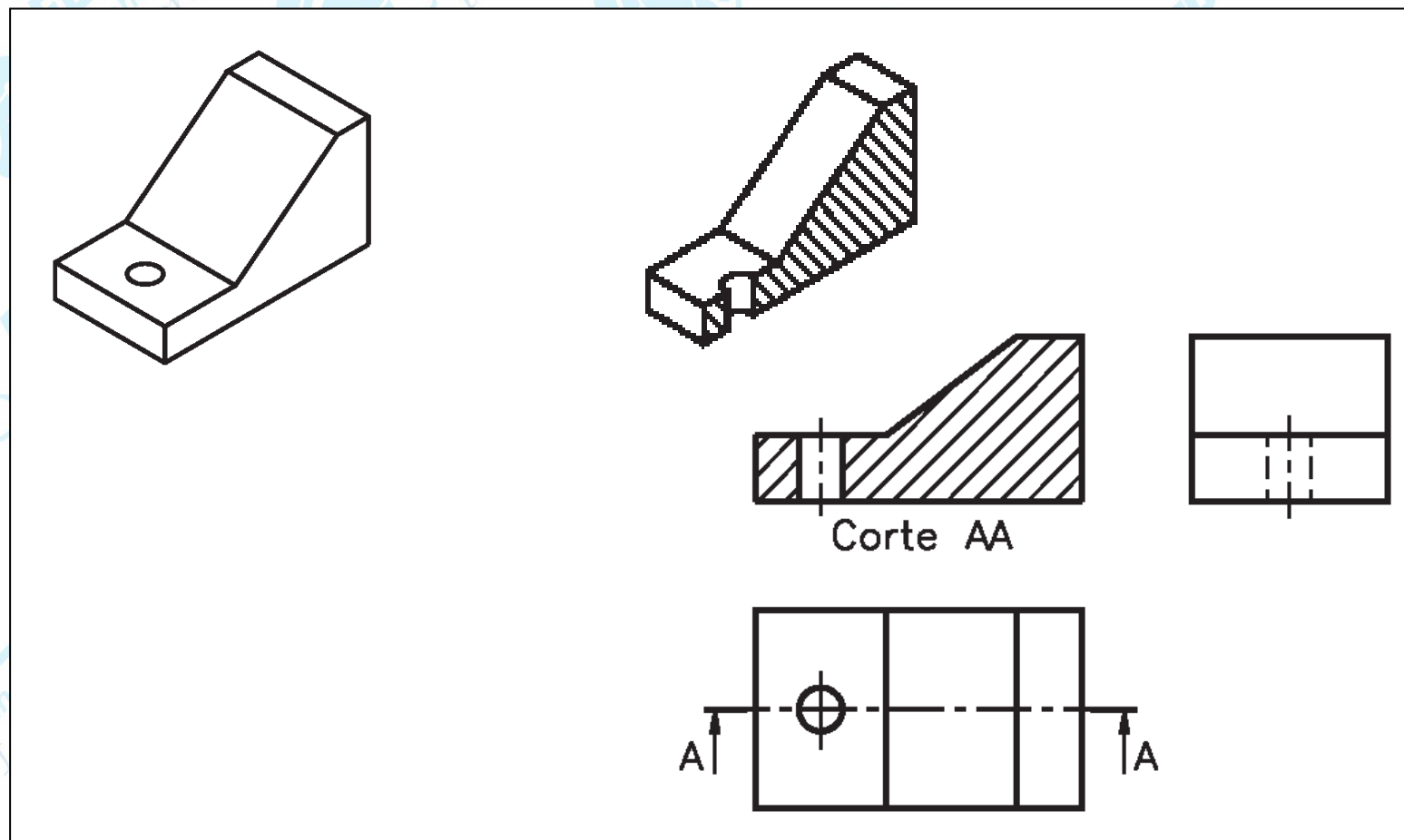
Sem omissão de corte



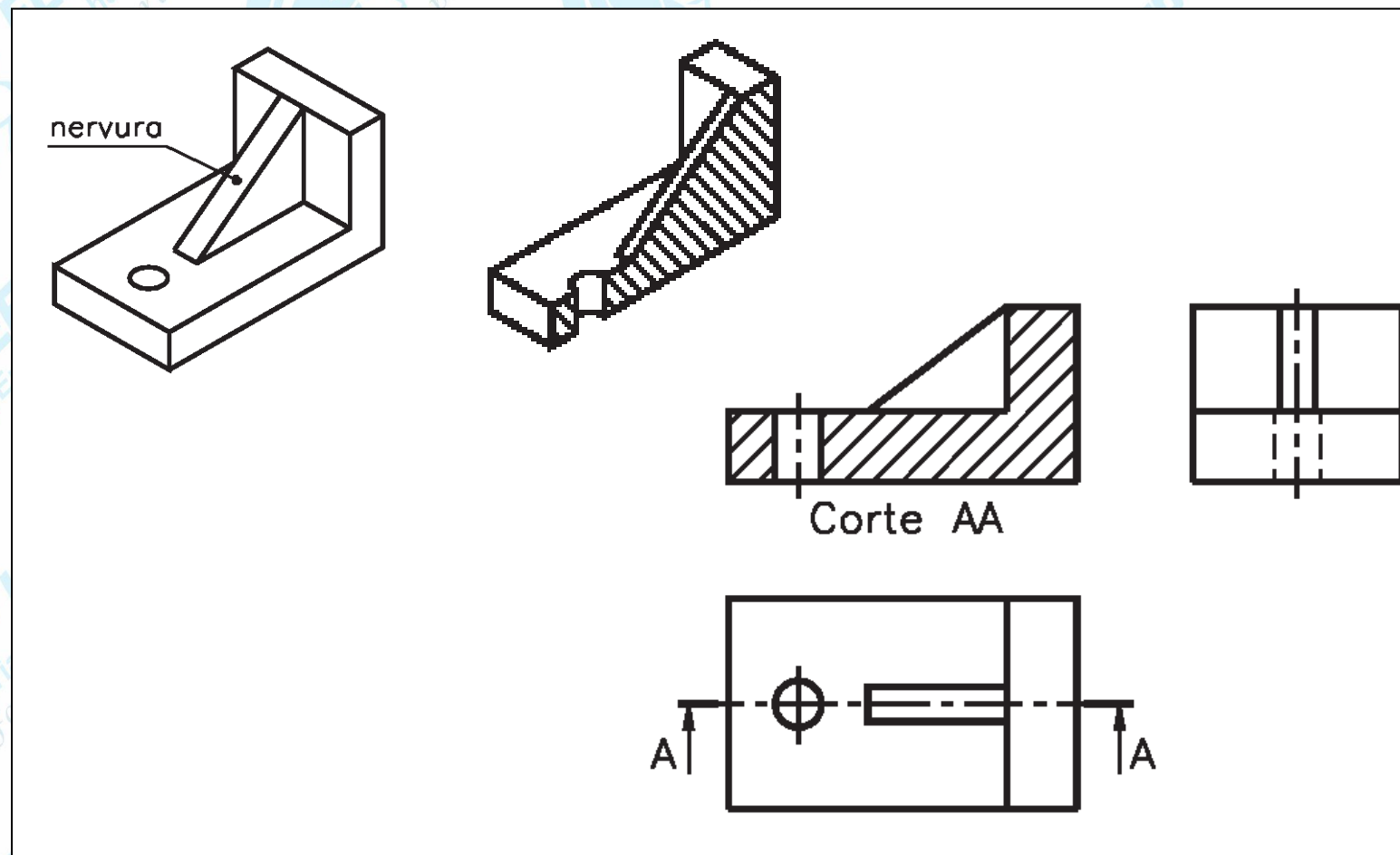
Com omissão de corte - nervura



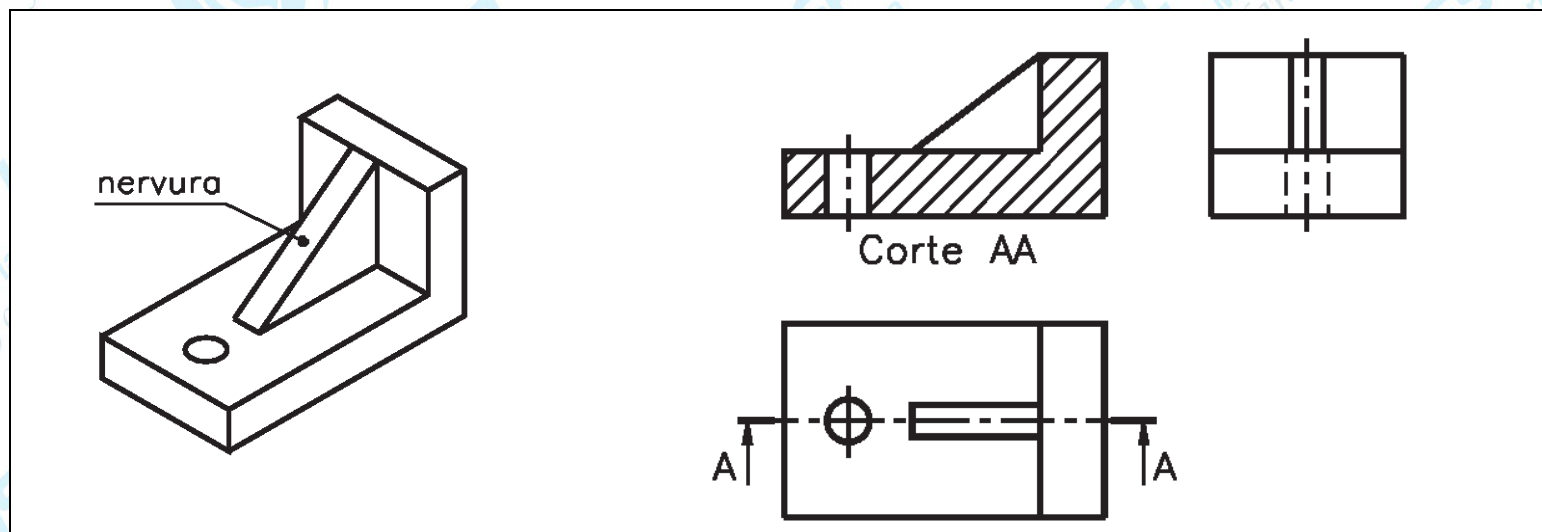
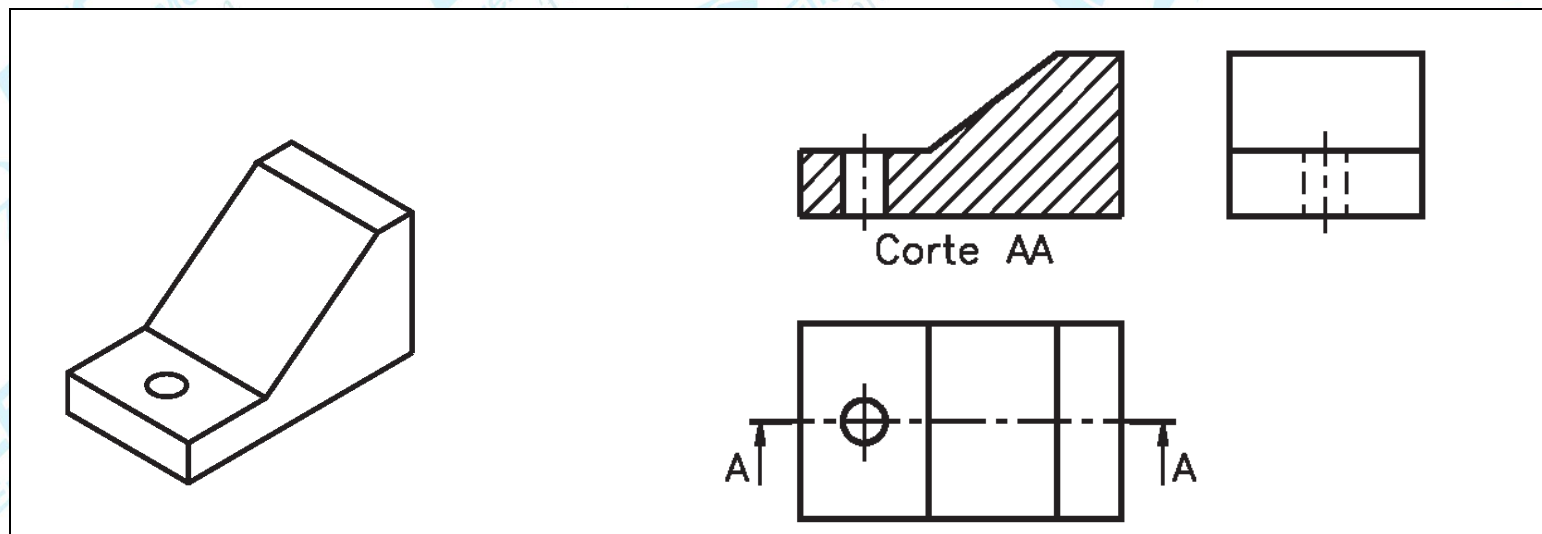
Sem omissão de corte



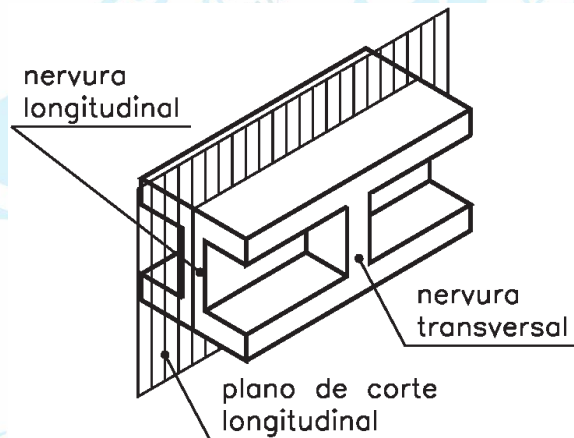
Omissão de corte - nervura



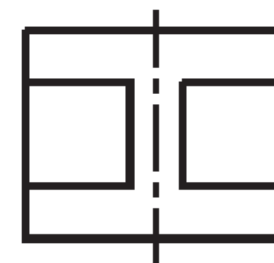
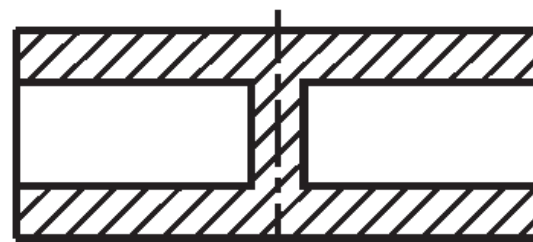
Omissão de corte - nervura



Omissão de corte - nervuras



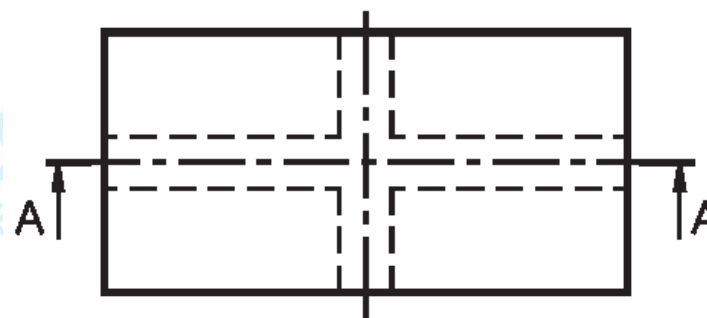
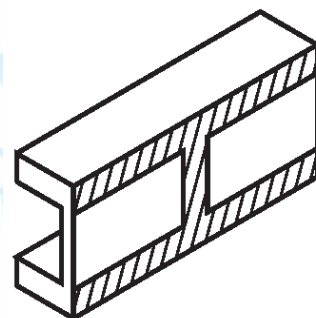
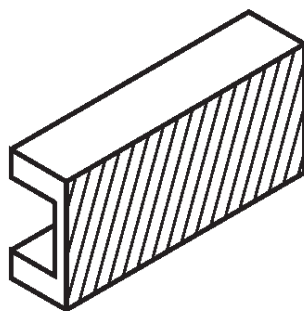
Projeção ortogonal



Corte AA

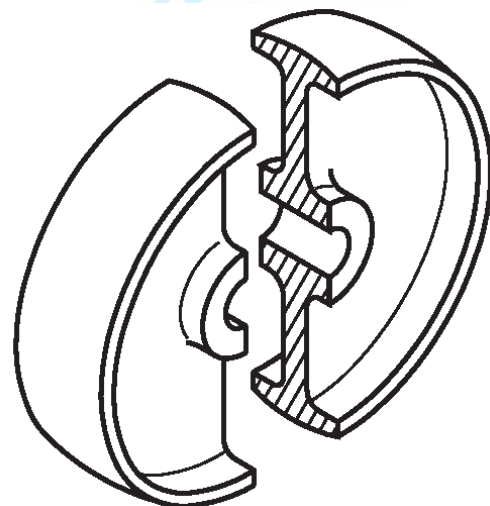
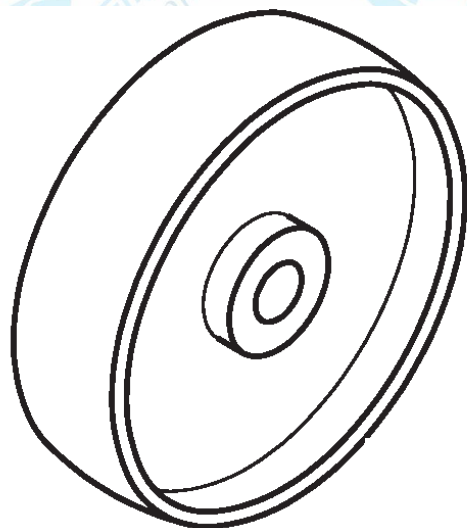
Sem omissão (errado)

Com omissão (correto)

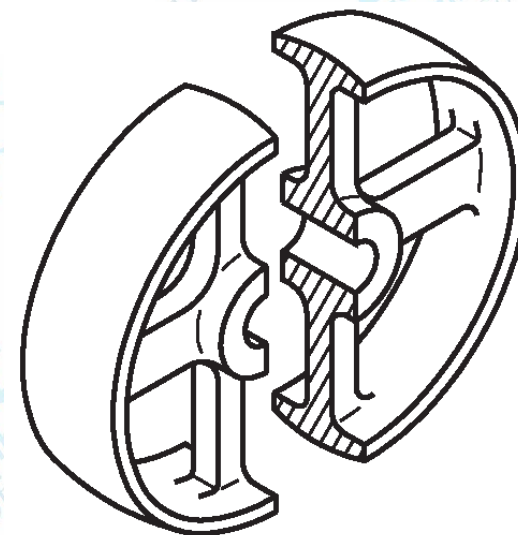
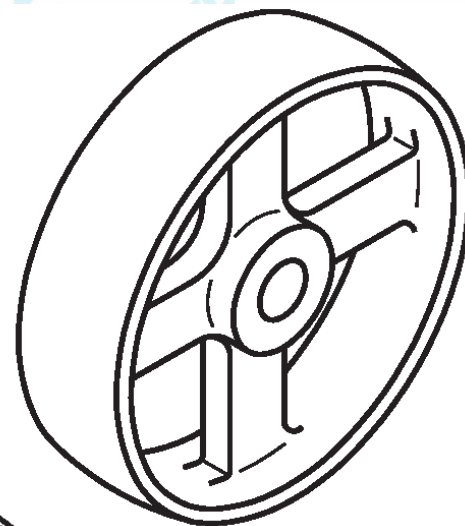


Omissão de corte - braços

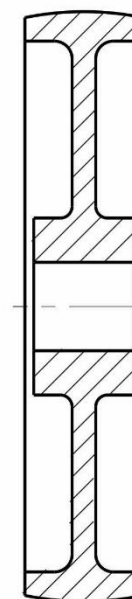
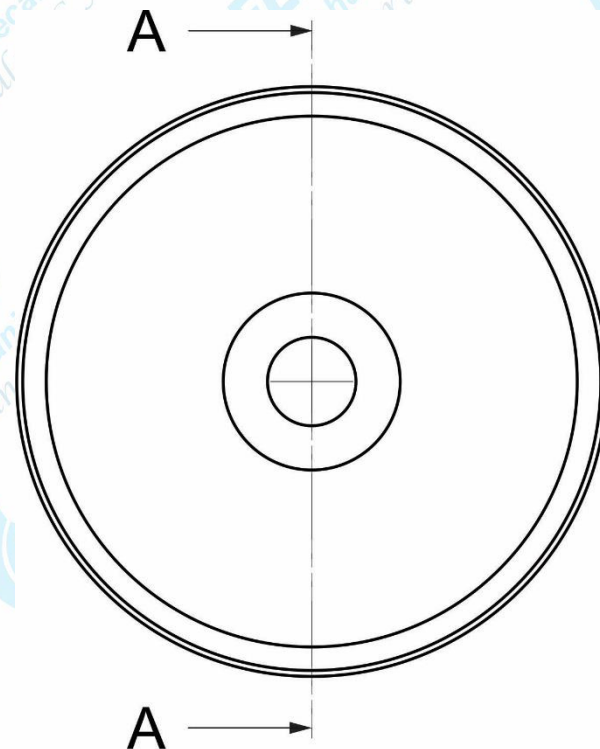
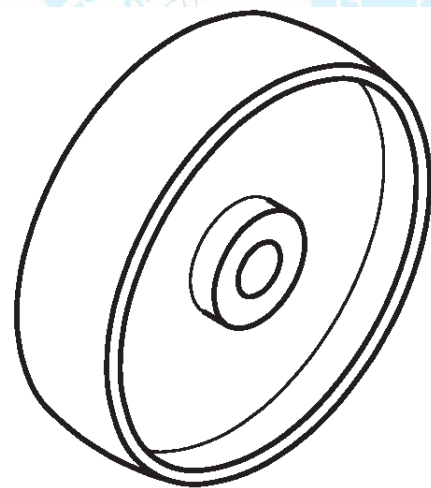
Polia de disco



Polia com braço

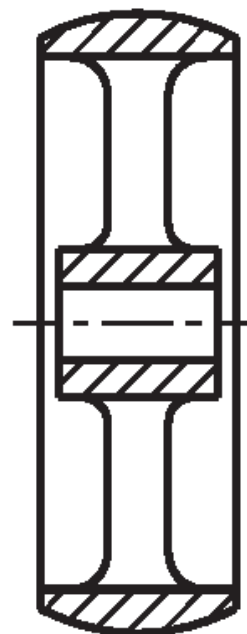
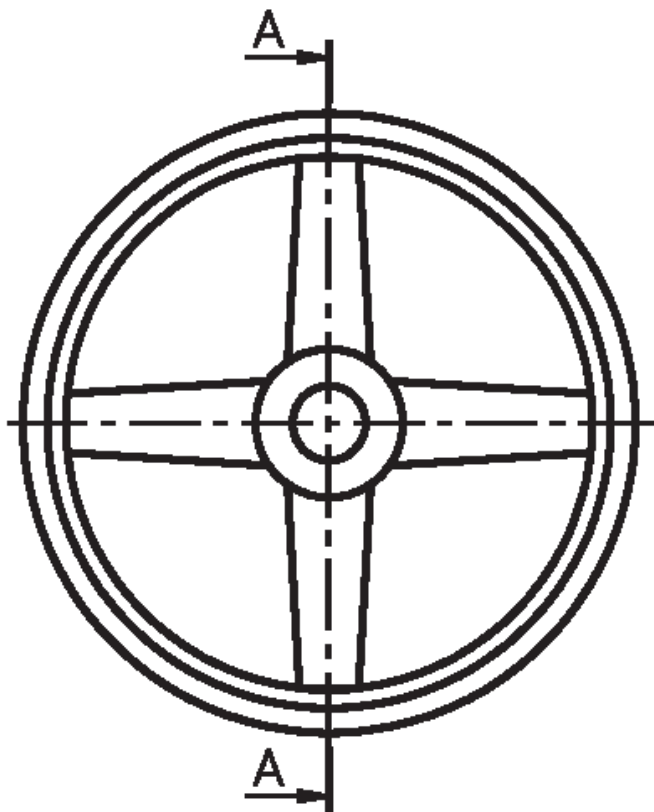
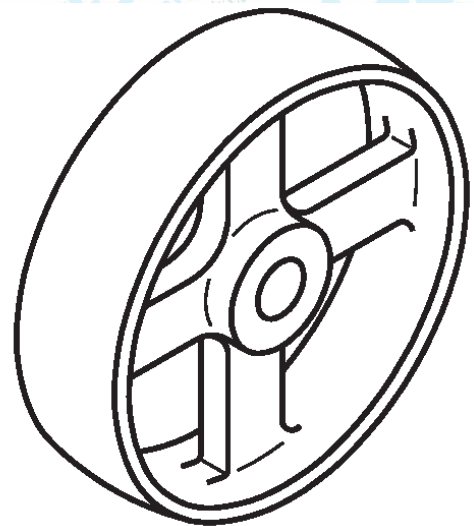


Polia disco - Representação sem omissão de corte



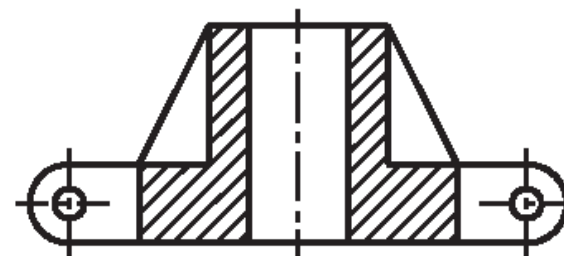
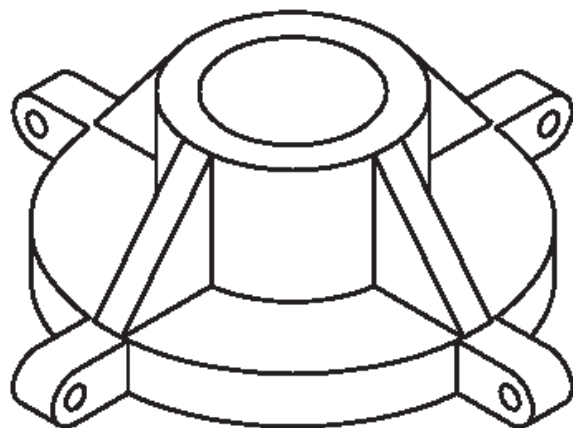
Corte A-A

Braços – Representação com omissão de corte

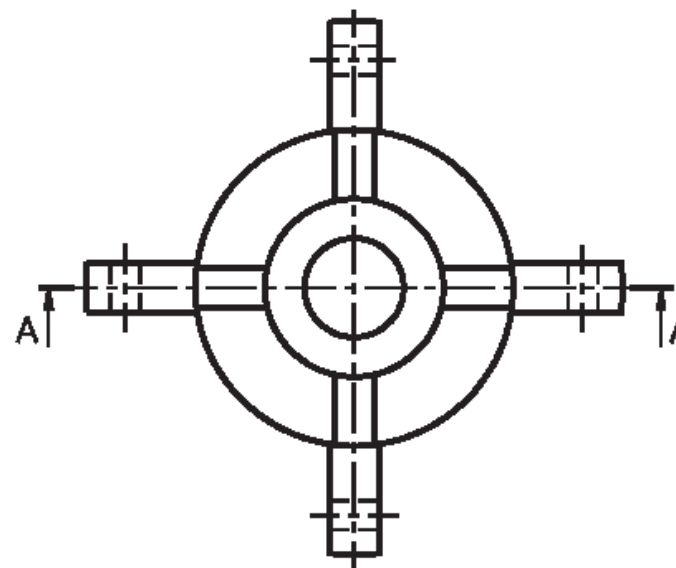


Corte AA

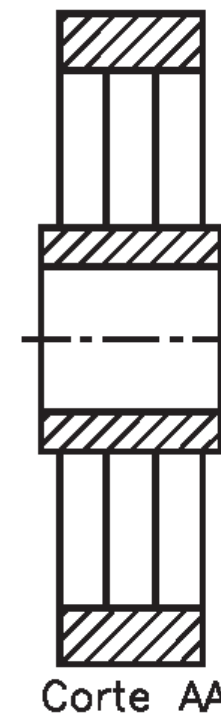
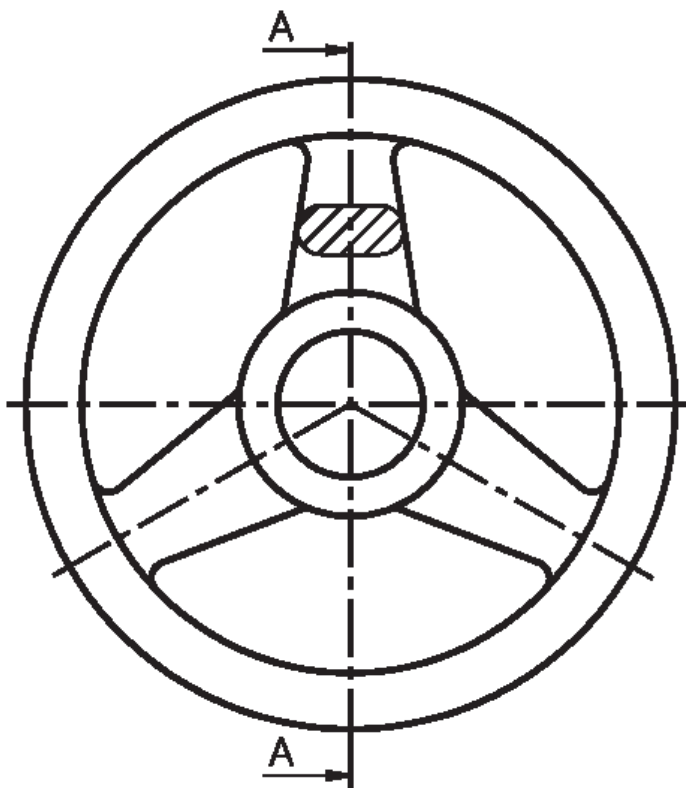
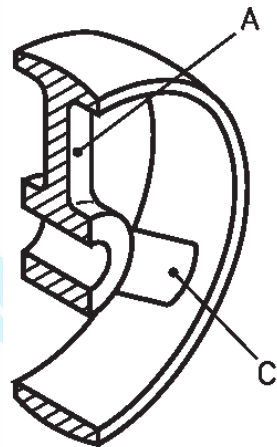
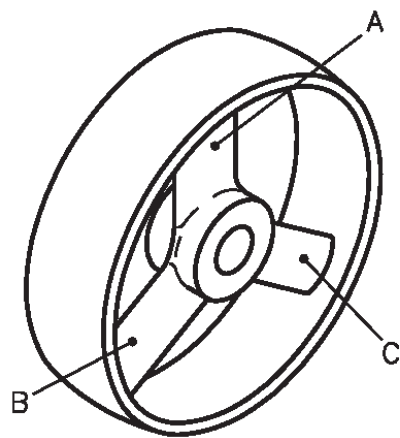
Omissão de corte – nervura e orelha



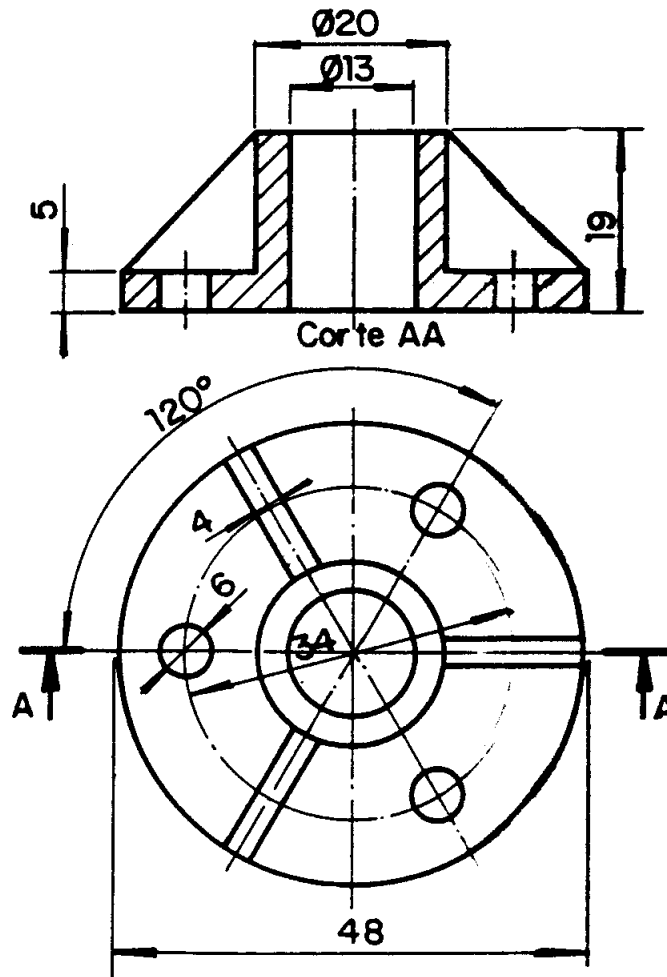
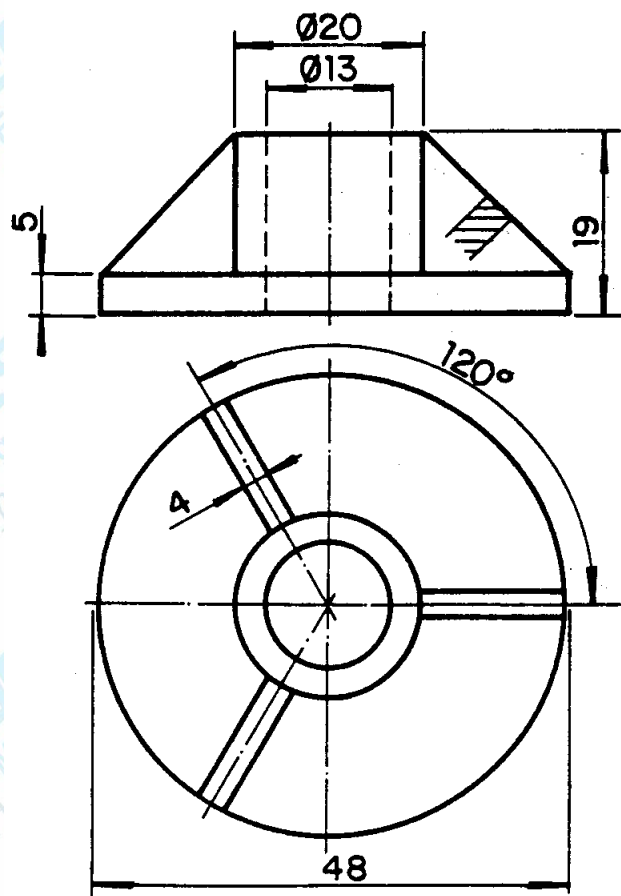
Corte AA



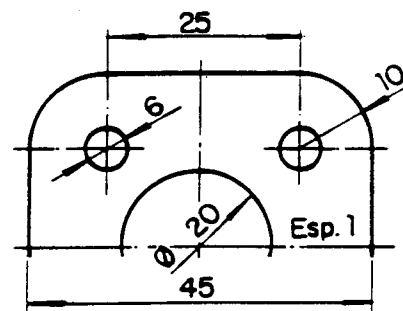
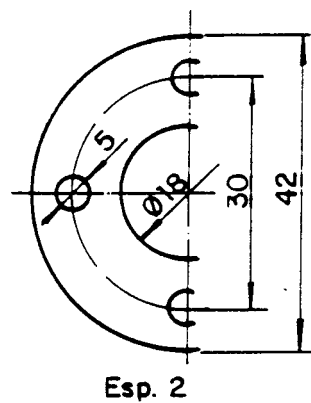
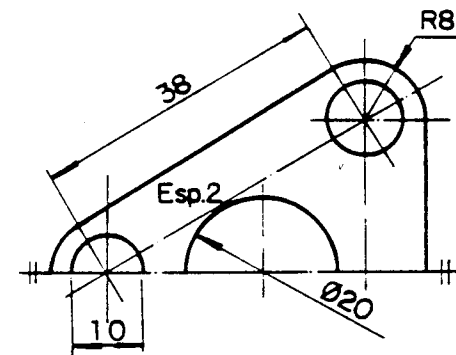
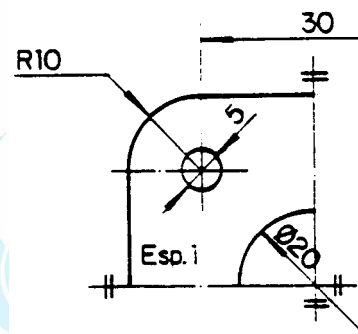
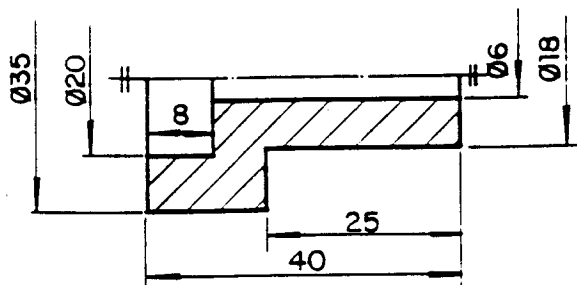
Omissão de corte e rotação



Omissão de corte e rotação

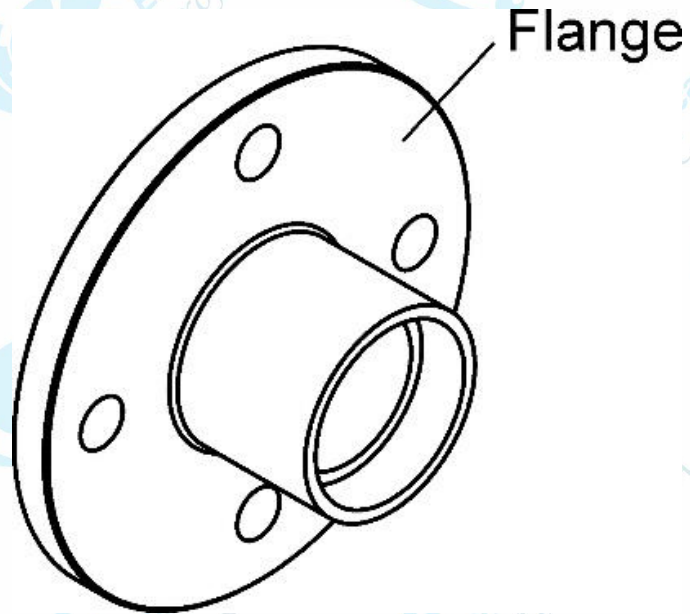


Meio-corte representação simplificada de peças simétricas



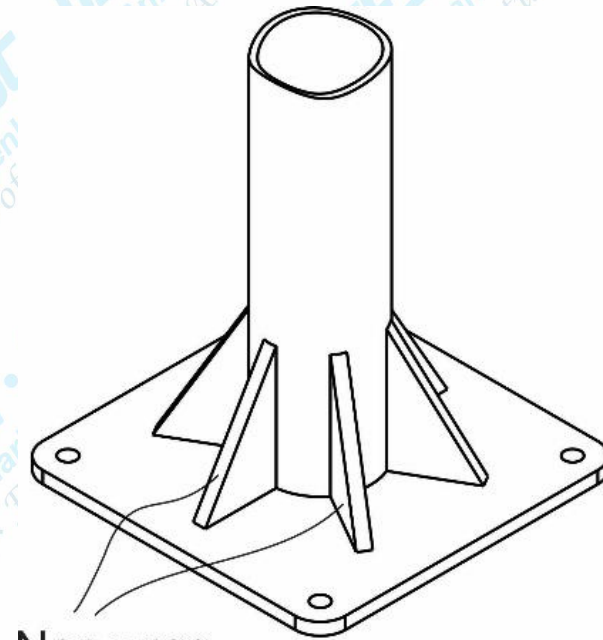
Elementos de Máquinas – glossário

Flange

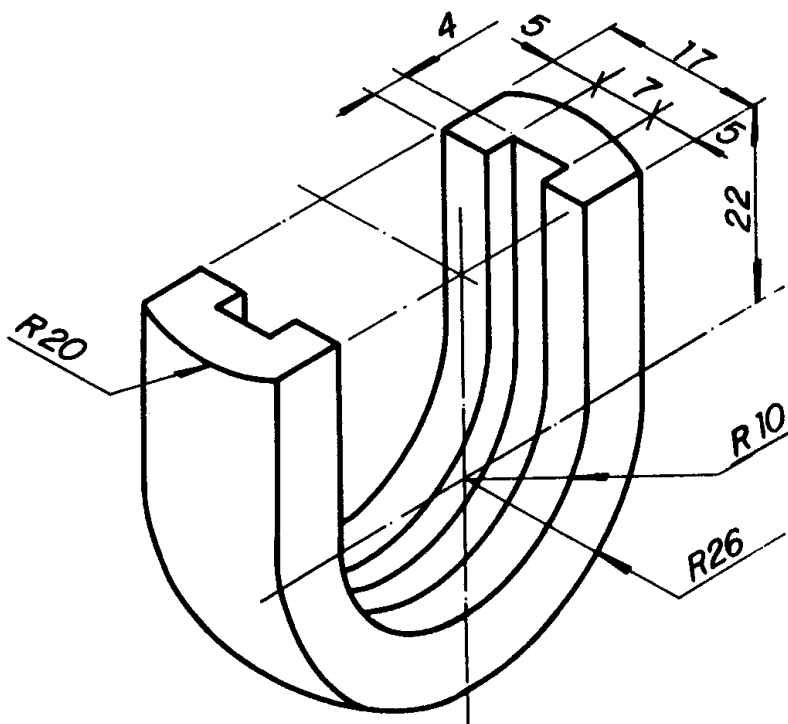


Aba relativamente fina em torno de uma peça normalmente empregada para montagem e fixação.

Nervura



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



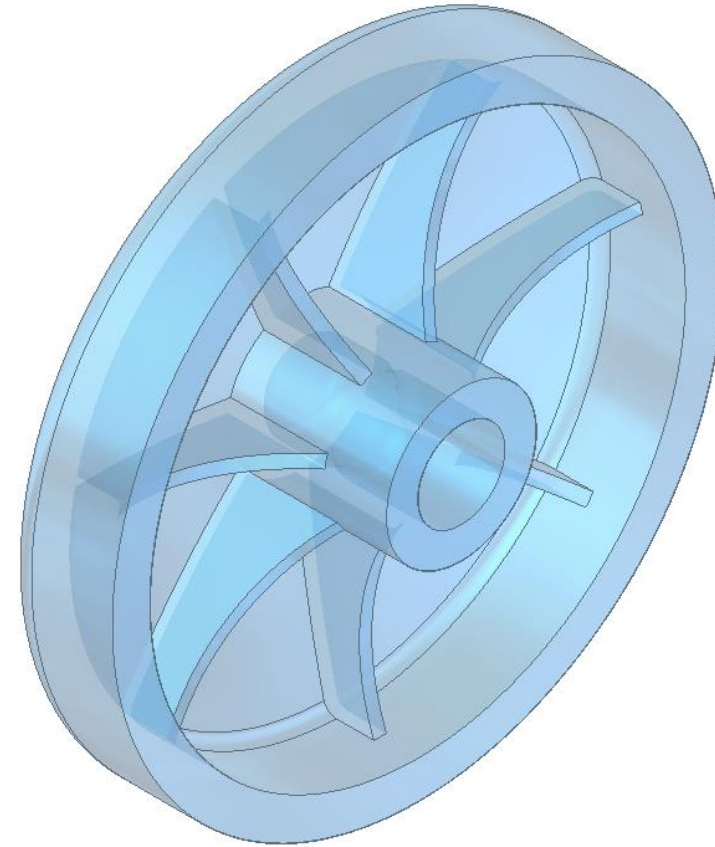
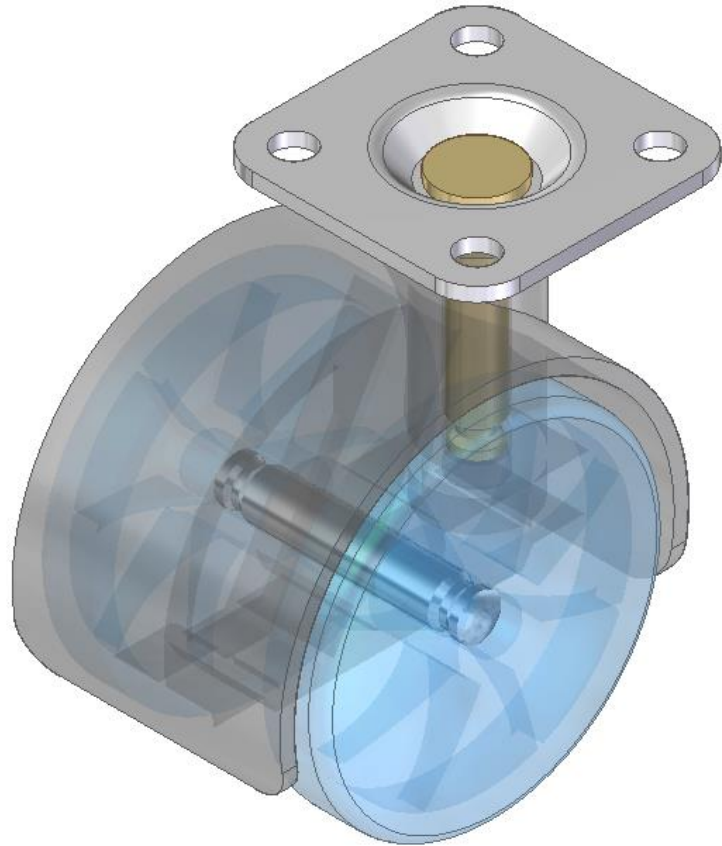
Nome: _____

Nº _____ Turma _____

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



Ex 4.02. Considere o escorredor de arroz ao lado, desenhe as projeções convenientes. O ângulo é de 30° 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 e lateral esquerda em corte total. Dimensões aproximadas: $\varnothing_e = 50\text{mm}$, $\varnothing_{\text{furo}} = 7\text{mm}$, largura total 15mm , largura da banda de rodagem $= 7\text{mm}$, espessura geral $= 2\text{mm}$, espessura das nervuras $= 1\text{mm}$.