




IZRADA POPREČNIH PROFILA OS ZA IZRADU ZATVARAČA

(IZRADA ELEMENATA VEZE)

PODELA ELEMENATA VEZE

Elementi od masiva

- Prizmatični **čep** i žljeb
 - **Čep** i prorez
 - P-k-p
 - Ovalni **čep** i žljeb
 - Tupl-rupa
- 
- isti OS

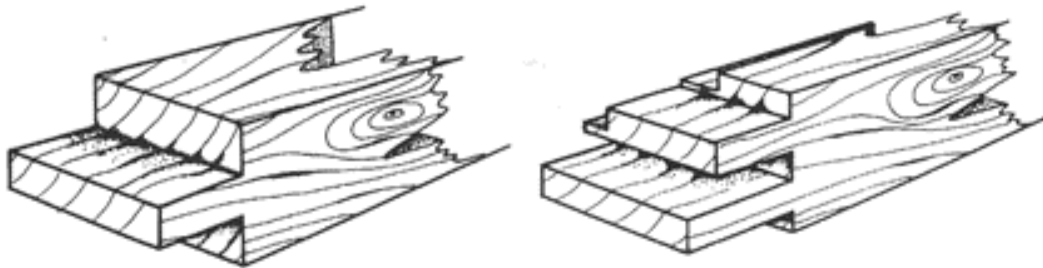
Elementi od ploča

- **Lastin rep**
- Tipl-rupa
- M-d elementi veze

IZRADA PRIZMATIČNIH ČEPOVA I PROREZA

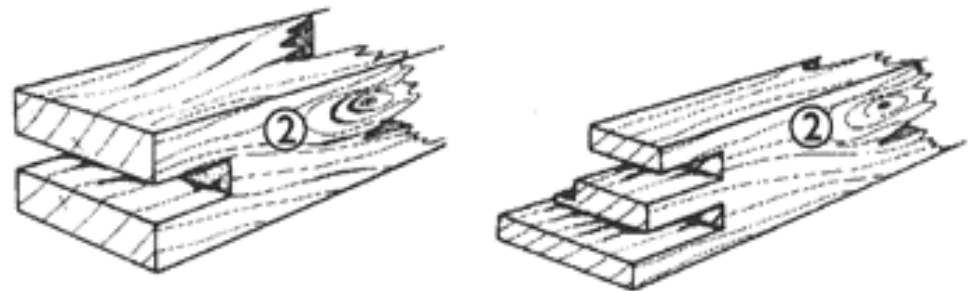
Izrada el.veze na jednom čelu

- Jednostrana čep mašina



Izrada el.veze na oba čela

- Dvostrani profiler



IZRADA PRIZMATIČNIH ČEPOVA I PROREZA, KONTRA PROFILA JEDNOSTRANA ČEP MAŠINA



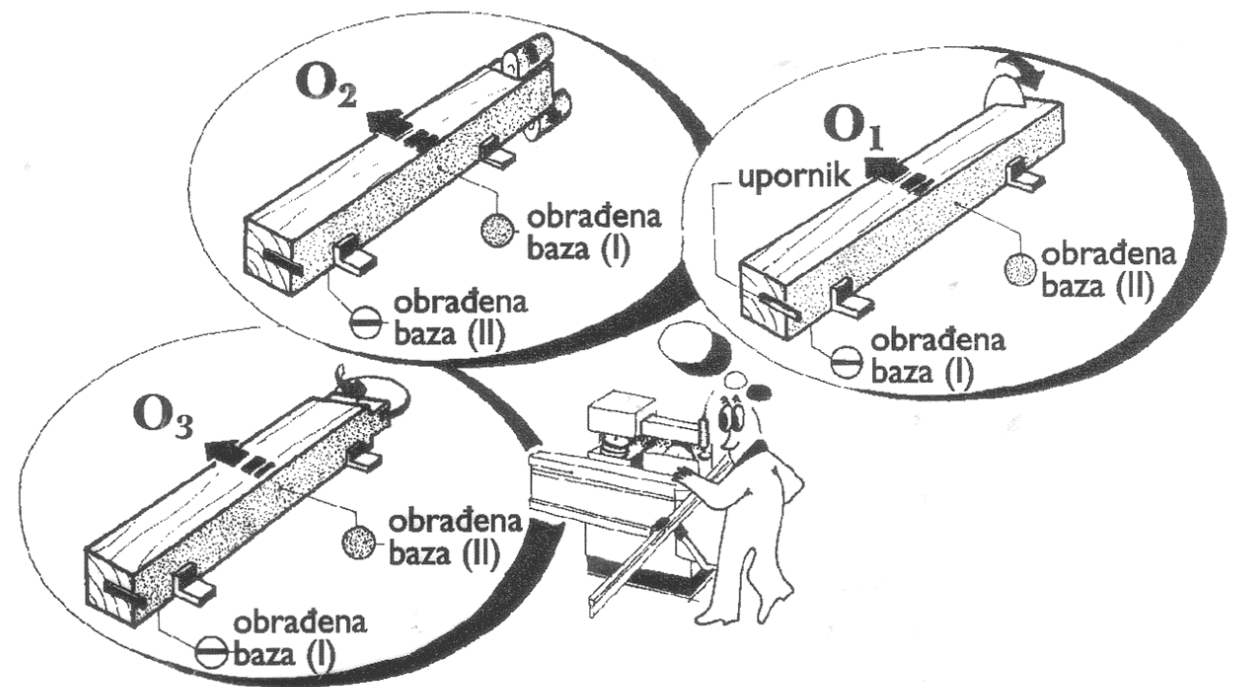
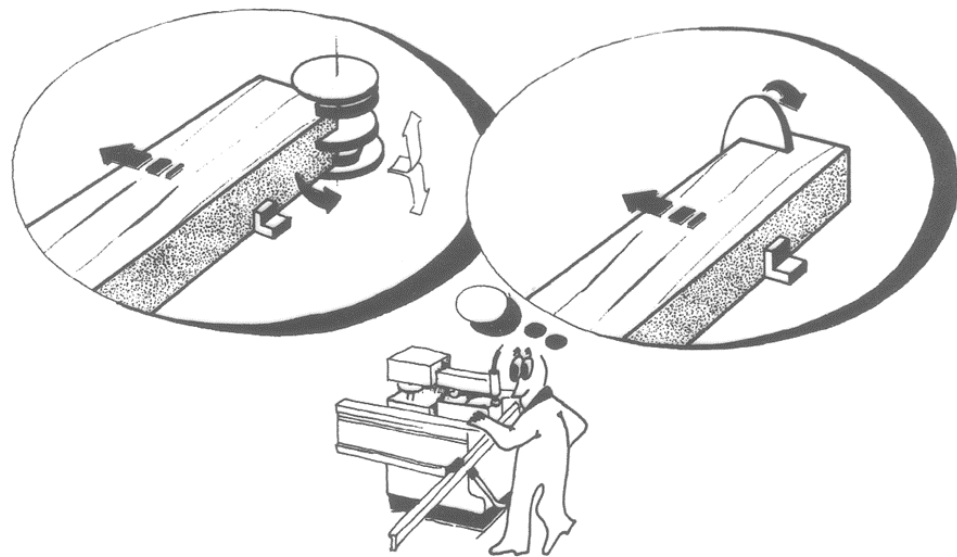
- Posluživanje: 1 radnik
- Br.vretena: 1+1 do 1+5
- $d = 30$ ili 40mm
- $D_{kp} = 300 \div 400\text{mm}$
- $D_{gl} < 350\text{mm}$
- $h_{max} < 200\text{mm}$
- $n_{max} = 9000$ o/min
- $u = 1,8 \div 10$ m/min (ručno/mehanizovano)
- $E = 7,5$ kW (x br.vretena)

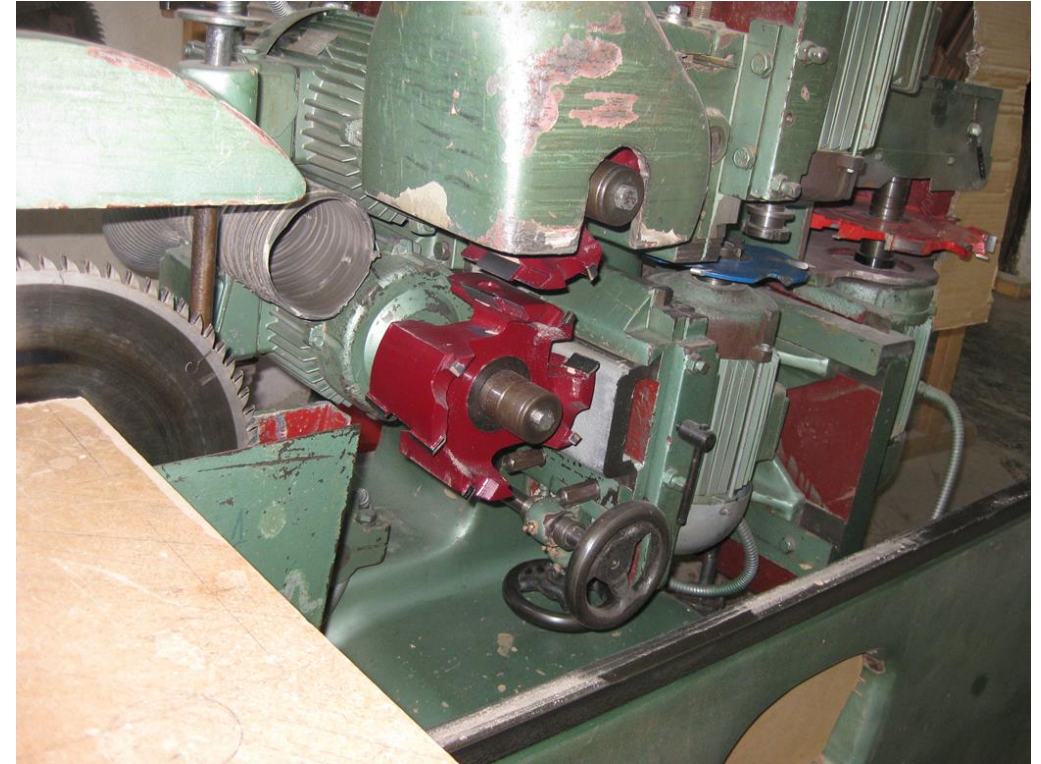


<https://www.youtube.com/watch?v=WpD9rJgcf8A>

IZRADA PRIZMATIČNIH ČEPOVA I PROREZA JEDNOSTRANA ČEP MAŠINA

■ Kombinacije alata





<https://www.youtube.com/watch?v=bekF70UAWKE>

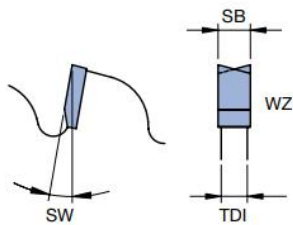
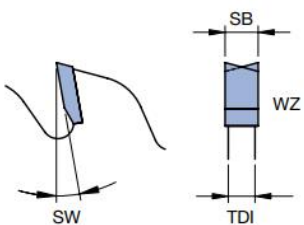
<https://www.youtube.com/watch?v=DK80Zfqanmc>

<https://www.youtube.com/watch?v=QilctWU0Tjc>

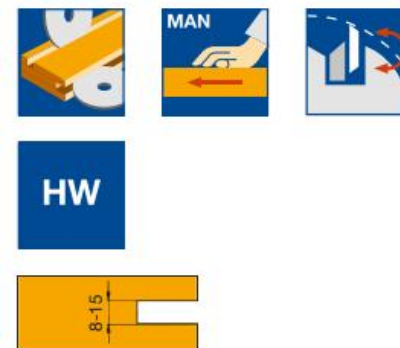
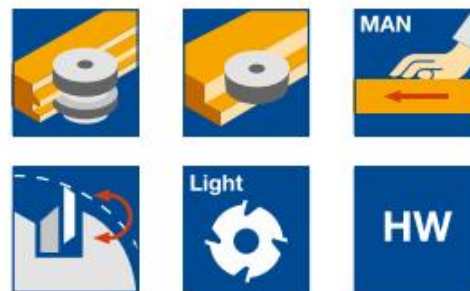
ALATI



Kružne pile

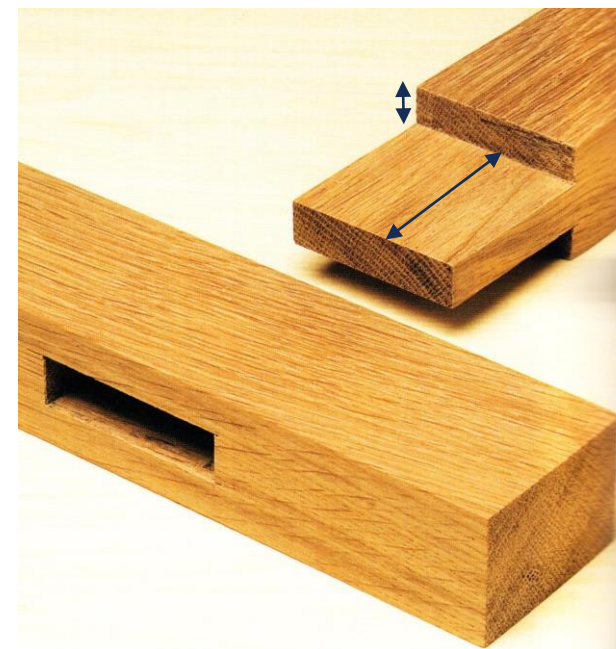


Glodala

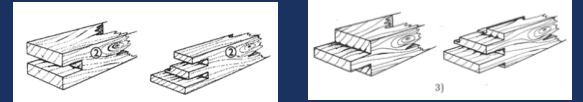


REŽIMI OBRÁDE

alat	D(mm)	a(mm)	n(o/min)	u(m/mim)
k.pila	250÷300	a=d	3.000	5÷10
Glodalo	<200	a=h ramena čepa	6.000	
Glodalo	<350	a=l čepa	3.000	



IZRADA PRIZMATIČNIH ČEPOVA I PROREZA, KONTRA PROFILA DVOSTRANI PROFILER



- Posluživanje: 2 radnika
- Br.vretena: 2+2 do 7+7
- $d = 30 / 40\text{mm}$
- $D_{kp} = 300 \div 350\text{mm}$
- $Div = 250 \div 400\text{mm}$
- $D_{gl} < 350\text{mm}$
- $h_{max} < 200\text{mm}$
- $n_{max} = 9000 \text{ o/min}$
- $u = 8 \div 24 \text{ m/min}$ (mehanizovano)
- $E = 5,5 \text{ kW}$ (x br.vretena)



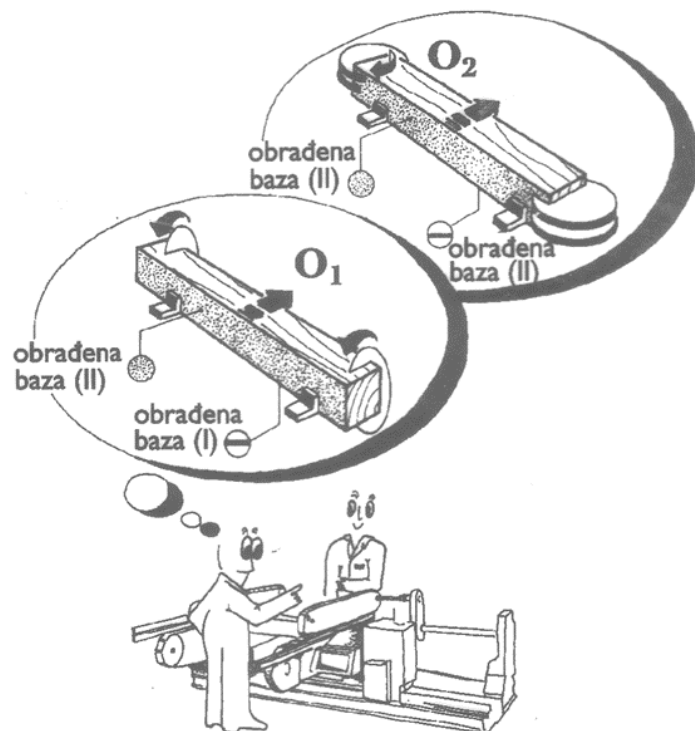
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<https://youtu.be/IG6BdPf9nH4>

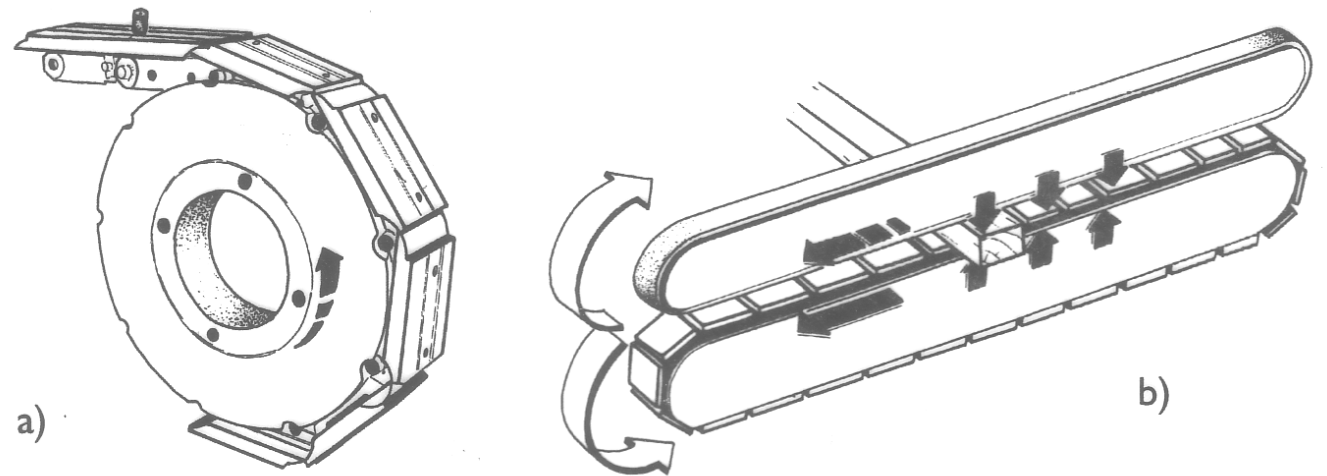
<https://youtu.be/9UwRkIS60FE>

KINEMATIKA

Glavno kretanje

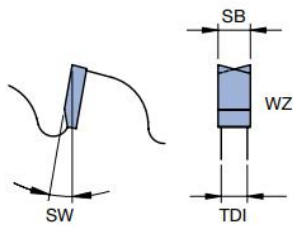
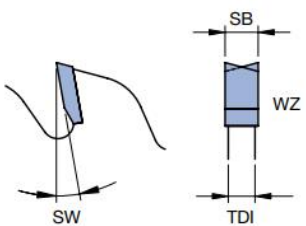


Pomoćno kretanje



ALATI

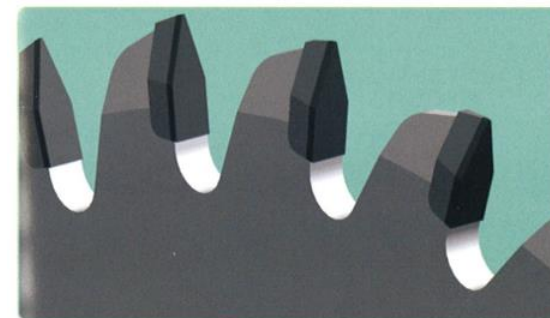
Kružne pile



predrezači

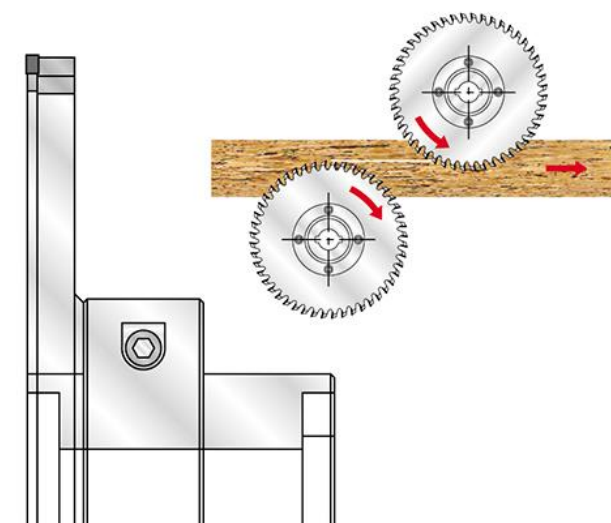
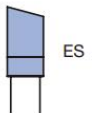


D=125÷200mm
n=12.0000 o/min
b=2,8÷4mm



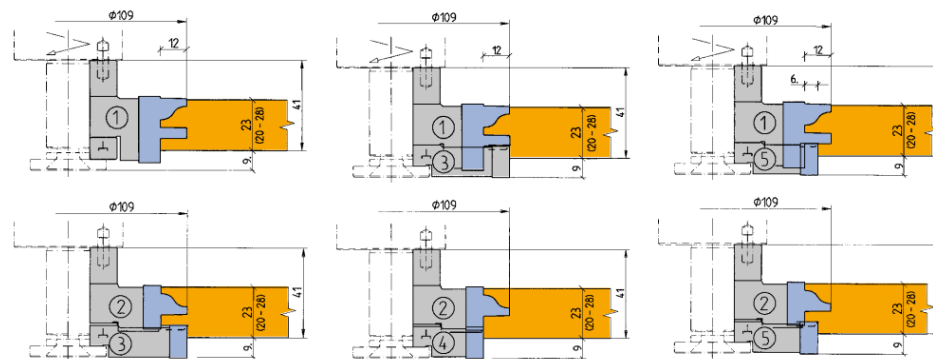
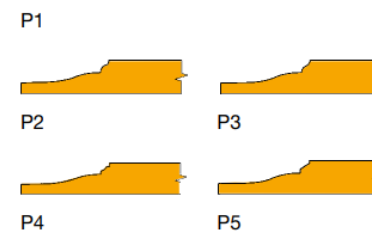
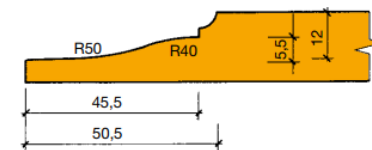
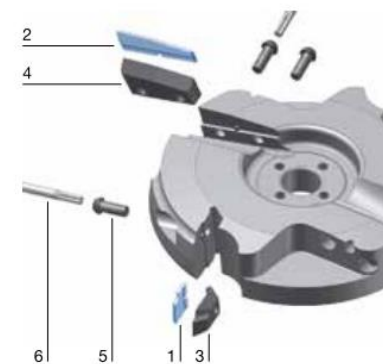
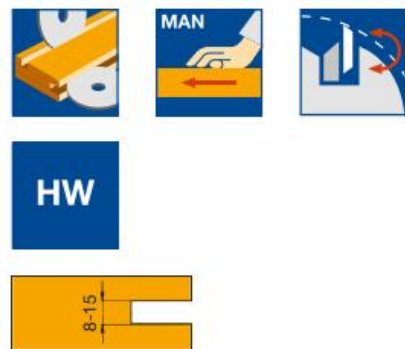
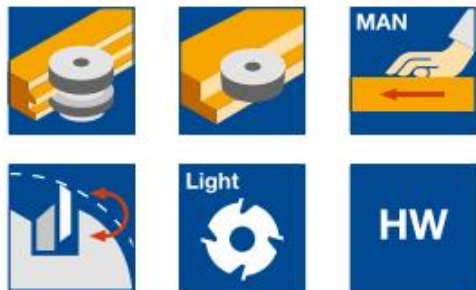
ALATI

iverači



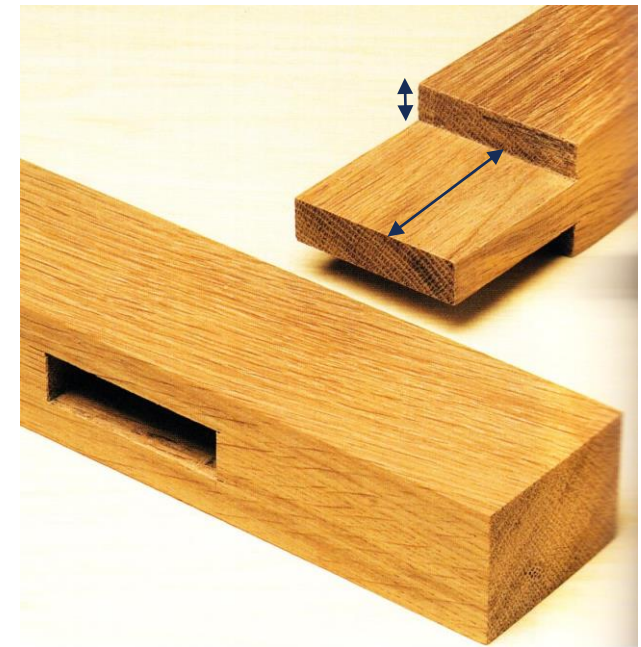
ALATI

Glodala

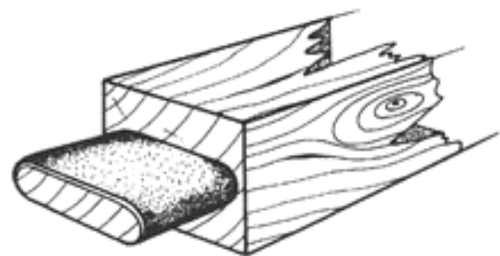


REŽIMI OBRÁDE

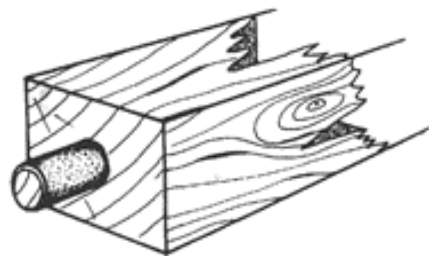
alat	D(mm)	a(mm)	n(o/min)	u(m/mim)
Predrezač	125÷200	<2	12.000	8÷24
iverač	300÷350	a=d	3.000	
k.pila	250÷300	a=d	3.000	
Glodalo	<200	a=h ramena čepa	6.000	
Glodalo	<350	a=l čepa	3.000	



IZRADA OVALNIH I OKRUGLIH ČEPOVA

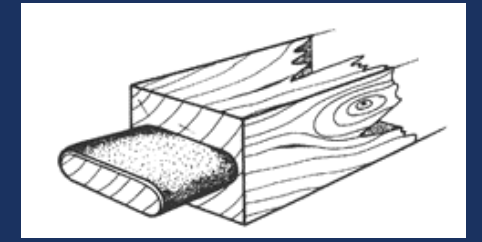


1)



2)

IZRADA OVALNIH ČEPOVA ROTACIONA ČEPARICA



- Posluživanje: 1 radnik
- Br.vretena: 1/2 ili 2/1
- $d = 25\text{mm}$
- $D = 60/80; 60/90; 70/110\text{mm}$
- $n_{\text{max}} = 18.000 \text{ o/min}$
- $u = 1 \div 5 \text{ m/min}$ (mehanizovano)
- $E = 5,5 \text{ kW}$ (x br.vretena)

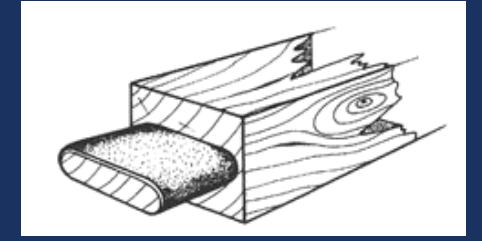


<https://www.youtube.com/watch?v=jzxNxz-ILTM>

<https://youtu.be/qrvSuDqnWBU>

<https://www.youtube.com/watch?v=GK6BqVBNAs8>

IZRADA OVALNIH ČEPOVA ROTACIONA ČEPARICA

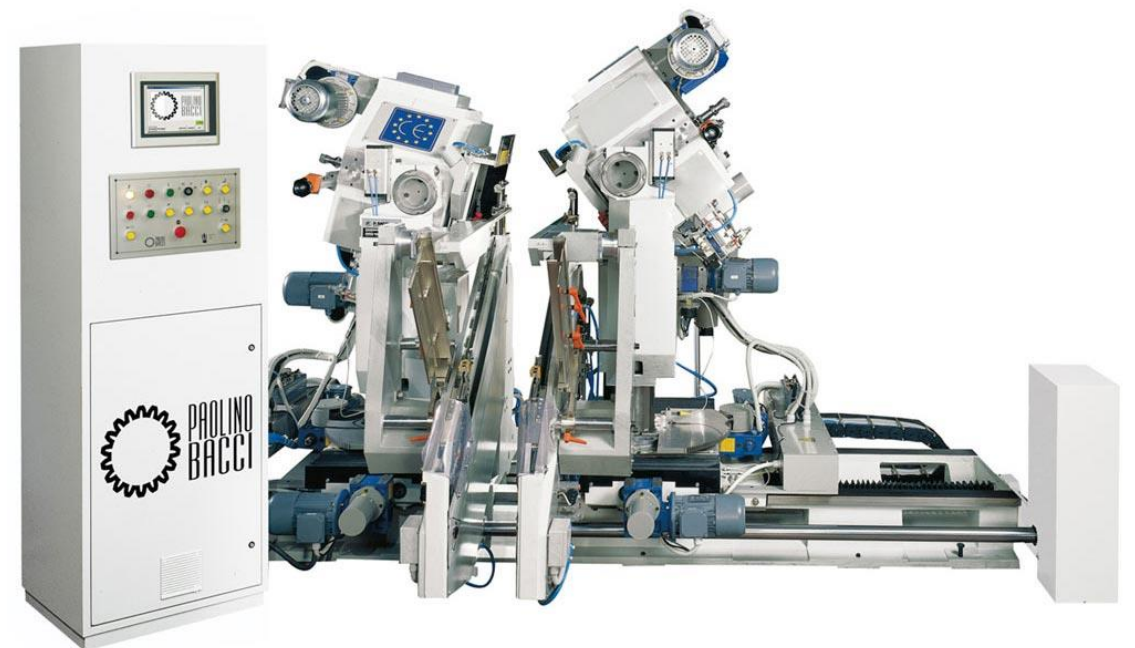


- **Kombinacije radnih stolova**

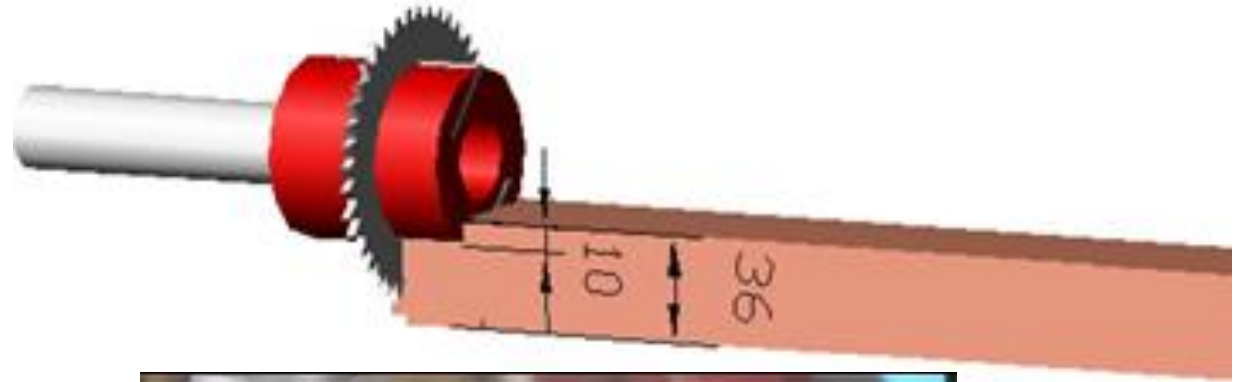
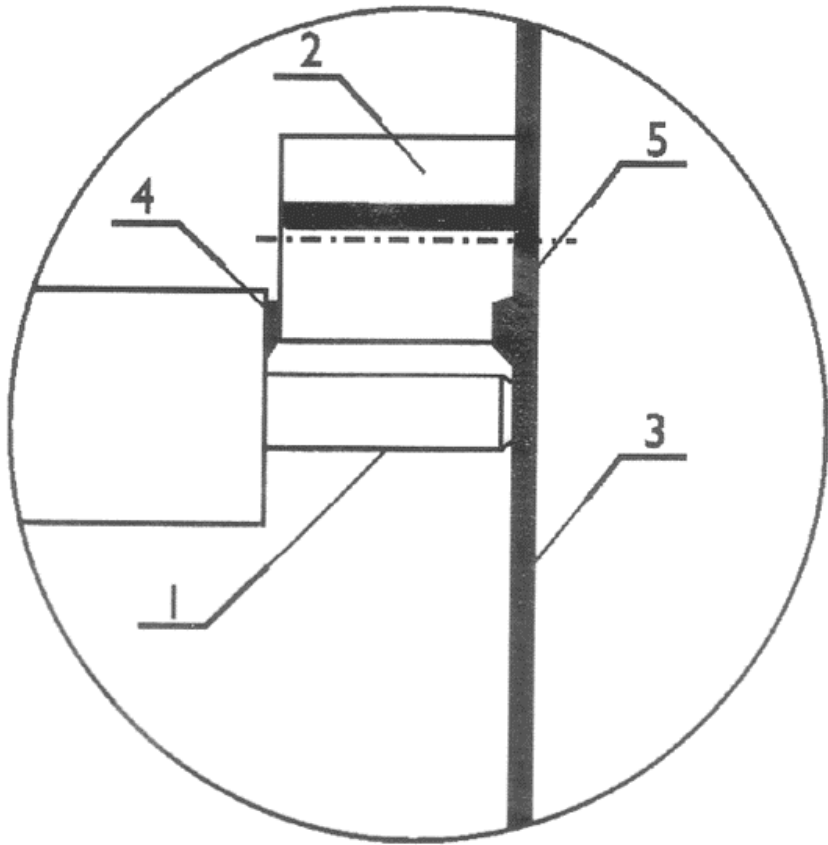
- **1/2**



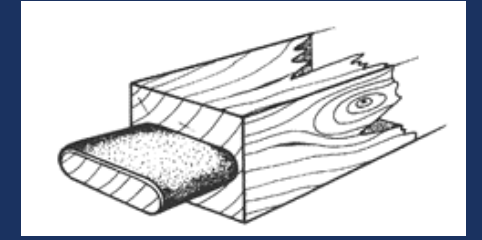
- **2/1**



ALAT

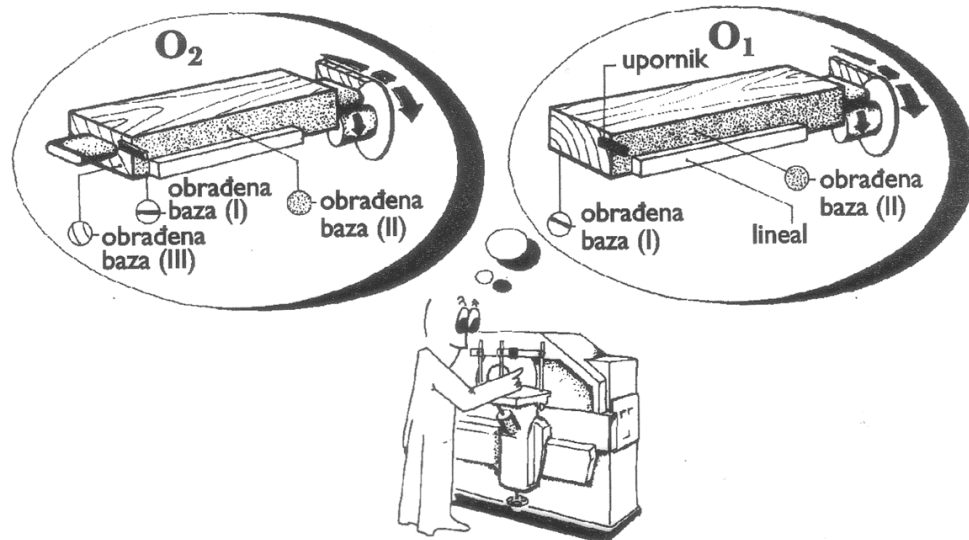


BAZNE POVRŠINE

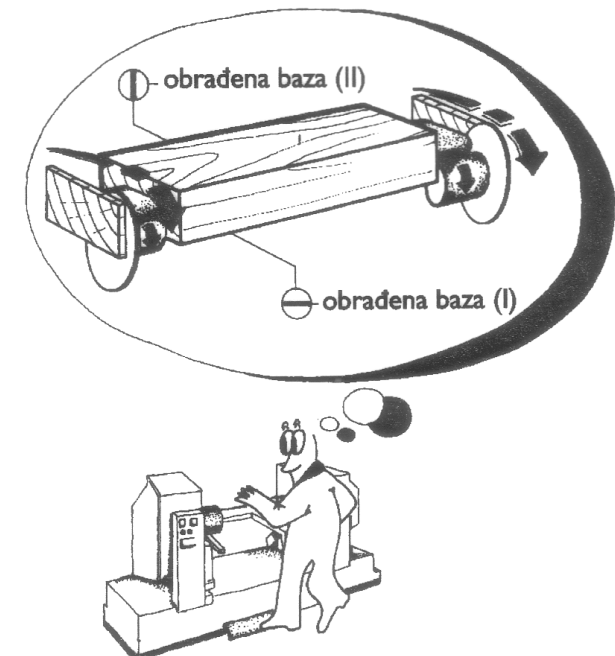


■ Kombinacije radnih stolova

■ 1/2



■ 2/1





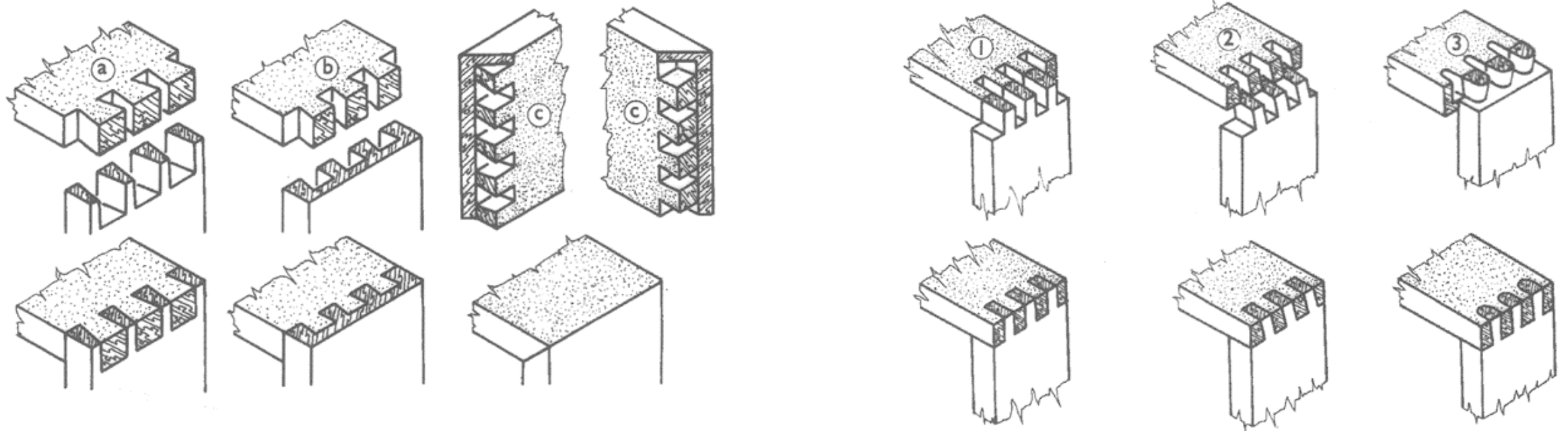
REŽIMI OBRADE

alat	D (mm)	a (mm)	n (o/min)	u (m/mim)
Glodalo	60/80; 60/90; 70/110	Razlika dimenzije čepa i dimenzije gredice	18.000	1÷5



IZRADA LASTINOG REPA

Materijal – daščane ploče



IZRADA LASTINOG REPA GLODALICA ZA POPREČNO KOPIRANJE



- Posluživanje: 1 radnik
- Br.vretena: 1 ÷ 10
- $d = 8/10/12\text{mm}$
- $D = 20\text{mm}$
- $n_{\text{max}} = 22.000 \text{ o/min}$
- $u = 1 \div 5 \text{ m/min}$ (mehanizovano)
- $E = 3 \text{ kW}$ (x br.vretena)



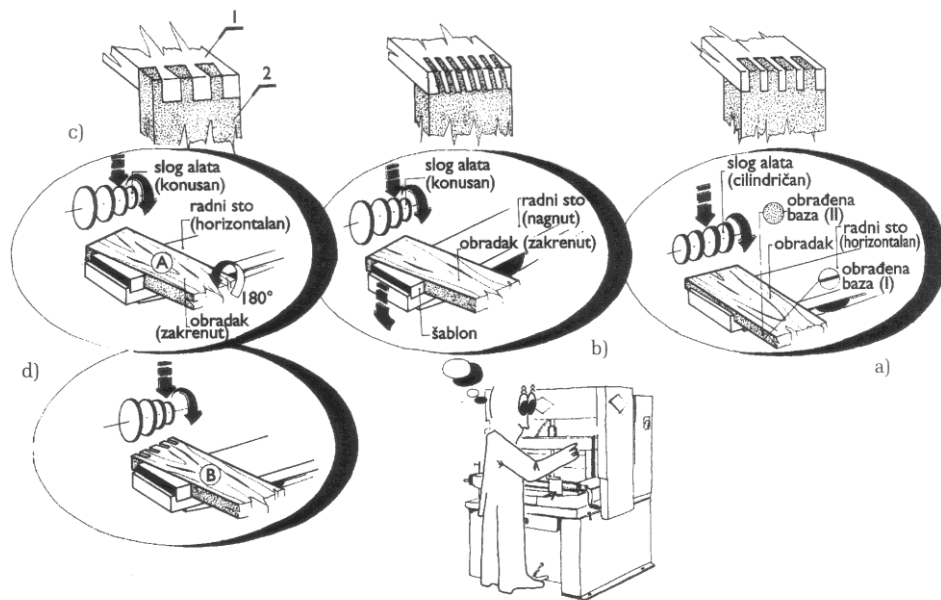
<https://www.youtube.com/watch?v=bBfBwsPcd5A>

<https://www.youtube.com/watch?v=0rmPBZnALM4>

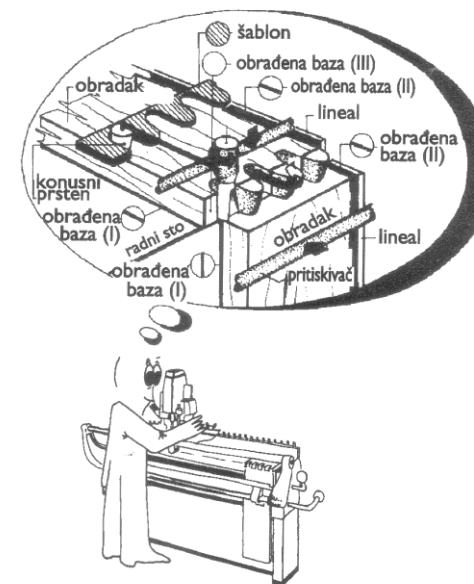
<https://www.youtube.com/watch?v=YYiBAgckN6c>

IZRADA LASTINOG REPA GLODALICA ZA POPREČNO KOPIRANJE

Prizmatični lastin rep



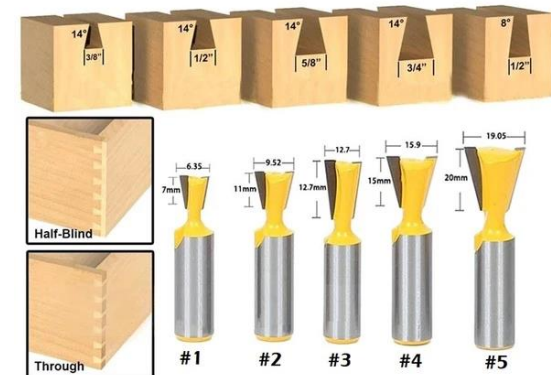
Ovalni lastin rep



ALAT I REŽIMI



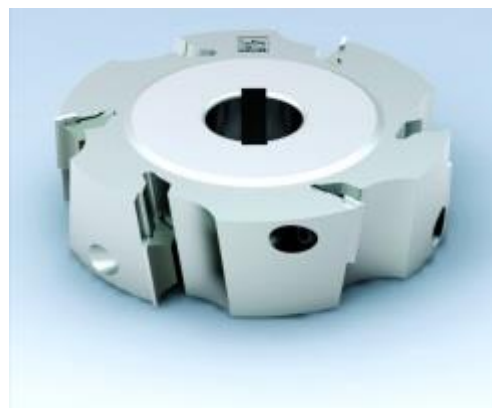
alat	D (mm)	a (mm)	n (o/min)	u (m/mim)
Glodalo	20	Razlika dimenzije čepa i dimenzije gredice	22.000	1 ÷ 5



<https://www.youtube.com/watch?v=eNoMPH4yMWI>

<https://www.youtube.com/watch?v=pH8vqwSyFCw>

ALAT I REŽIMI



alat	D (mm)	a (mm)	n (o/min)	u (m/mim)
Glodalo	150	a= deblina stranice	12.000	1÷5

GLODALICA ZA POPREČNO KOPIRANJE



- Posluživanje: 1 radnik
- Br.vretena: 1
- $d = 40\text{mm}$
- $D = <150\text{mm}$
- $n_{\text{max}} = 9.000 \text{ o/min}$
- $u = 1 \div 5 \text{ m/min}$ (mehanizovano)
- $E = 7,5 \text{ kW}$



<https://www.youtube.com/watch?v=6sjdqpKG90A>

<https://www.youtube.com/watch?v=eaFvvzz8wAQ>