

2013



PRESS BRAKE TOOLING | NARZĘDZIA DO PRAS KRAWĘDZIOWYCH

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Dear customers,

we present to you catalogue of press brake tools and shear knives produced by PPMiU Plasmet.

The content of this catalogue are standard tools available from stock. Produced from high quality steel, they are all ground and induction hardened and we guarantee full exchangeability of unused tools.

All tools in the catalogue can also be made from 1.2312 steel 30 HRC in the body and induction hardened to 55-60 HRC. It is particularly advisable for tools working on hard, plasma or laser cut sheets.

As well as those in the catalogue, we are able to deliver special tools for all types of press brakes also tools designed by you.

We can help in choosing the right tools for the job, and make tools according to the final product with the assist of computer design.

Apart from production of new tools we can offer alteration and regrinding of used tools.

Szanowni klienci,

przedstawiamy katalog narzędzi do pras krawędziowych i noży do nożyc gilotynowych produkowanych przez P.P.M.i U. Plasmet.

Zawarta w nim oferta to narzędzia standardowe, dostępne z magazynu. Są to narzędzia produkowane ze stali narzędziowej najwyższej jakości, szlifowane i hartowane indukcyjnie. Gwarantujemy pełną zamienność narzędzi.

Wszystkie narzędzia prezentowane w katalogu mogą być również wykonane ze stali 1.2312, ulepszonej do 30 HRC i zahartowanej indukcyjnie na krawędziach pracujących do 55-60 HRC. Jest to szczególnie korzystne dla narzędzi pracujących na blachach twardej, z krawędziami ciętymi laserem.

Poza narzędziami standardowymi oferujemy narzędzia do różnych typów pras krawędziowych, katalogowe lub specjalne wykonane ze stali wysokostopowych.

Jesteśmy w stanie, przy pomocy programu komputerowego, pomóc w doborze narzędzi do profilu końcowego. Oprócz wykonywania narzędzi, proponujemy także przeróbki i regenerację narzędzi używanych.

Zapraszamy do skorzystania z naszej oferty.

# GENERAL INFORMATION | INFORMACJE OGÓLNE

## standard tools TYPE "A" | narzędzia standardowe TYPU „A”

### Material

C45, C50, 41Cr4 or 42CrMo4

### Working edge hardened

53 ±2 HRC

### Standard lengths

835 and 415 mm

### Segment length

as shown on drawing

### Material

C45, C50, 40H lub 40HM

### Część robocza hartowana

53 ±2 HRC

### Długość standardowa

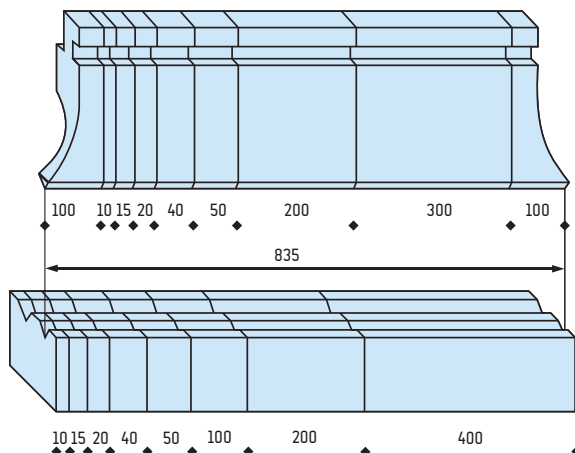
835 i 415 mm

### Narzędzia segmentowe

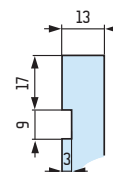
jak na rysunku

Sectionalized tool TYPE "A"

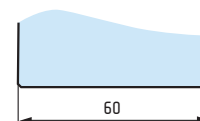
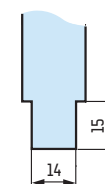
Schemat narzędzia segmentowego TYPU „A”



Punch mounting edge  
Uchwyt stempla



Die mounting edge  
Uchwyt matrycy



## standard tools TYPE "T" | narzędzia standardowe TYPU „T”

### Material

C45, 42CrMo4 or 1.2312

### Thermal enhancement to\*

30 ±2 HRC (950 - 1100 MPa)

### Working edge hardened

53 ±2 HRC (1500 - 1600 MPa)

### Length

835, 500 and 550 mm segmented

\* applies to 1.2312

### Material

C45, 40HM lub 1.2312

### Ulepszenie cieplne\*

30 ±2 HRC (950 - 1100 MPa)

### Część robocza hartowana

53 ±2 HRC (1500 - 1600 MPa)

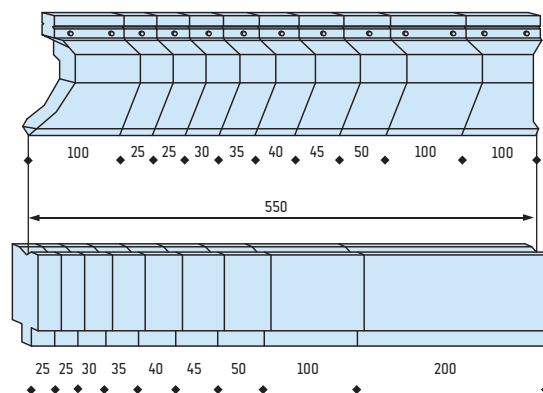
### Długość

835, 500 i 550 mm segmentowa

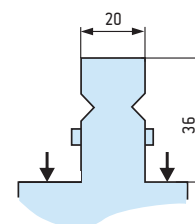
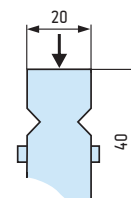
\* dotyczy 1.2312

Sectionalized tool TYPE "T"

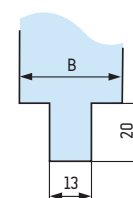
Schemat narzędzia segmentowego TYPU „T”



Punch mounting edge  
Uchwyt stempla



Die mounting edge  
Uchwyt matrycy





# GENERAL INFORMATION | INFORMACJE OGÓLNE

standard tools TYPE "L" | narzędzia standardowe TYPU „L”

## Material

C45, 42CrMo4 or 1.2312

## Thermal enhancement to\*

30 ±2 HRC (950 – 1100 MPa)

## Working edge hardened

53 ±2 HRC (1500 – 1600 MPa)

## Length

508 and 550 mm segmented

\* applies to 1.2312

## Material

C45, 40HM lub 1.2312

## Ulepszenie cieplne\*

30 ±2 HRC (950 – 1100 MPa)

## Część robocza hartowana

53 ±2 HRC (1500 – 1600 MPa)

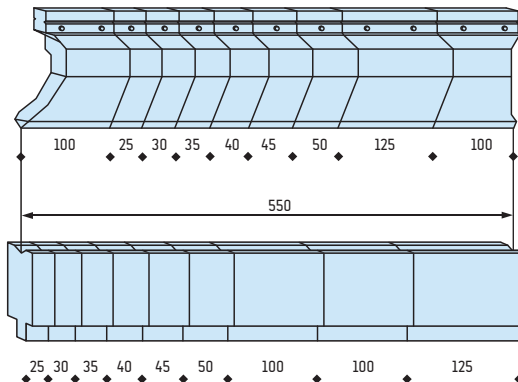
## Długość

508 i 550 mm segmentowa

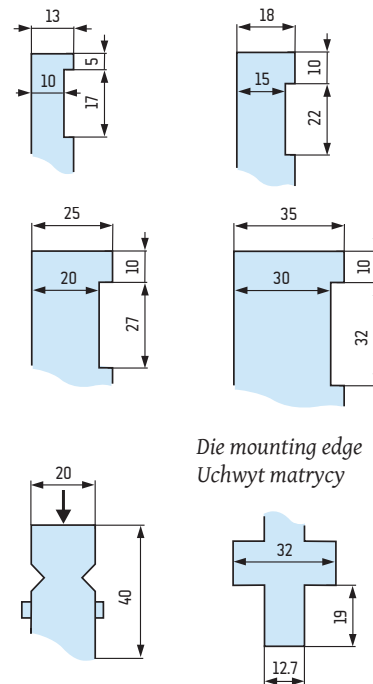
\* dotyczy 1.2312

Sectionalized tool TYPE "L"

Schemat narzędzia segmentowego TYPU „L”



Punches type "L" have five different clampings  
Narzędzia typu „L” występują z pięcioma typami mocowań



Die mounting edge  
Uchwyt matrycy

tool ordering code | sposób zamawiania

## Punches i.e 2010/88/R0.8/835

2010/88/R0.8/835 - Catalogue number

2010/**88**/R0.8/835 - Angle  $\alpha = 30^\circ, 35^\circ, 60^\circ, 75^\circ, 80^\circ, 88^\circ, 90^\circ$

2010/88/**R0.8**/835 - Working edge type - thus "F" or "R" and size

2010/88/R0.8/**835** - Length of tool - thus 835 mm, 415 mm, 835 mm sectionalized

## Dies i.e 6112/35/835

6112/35/835 - Catalogue number

6112/**35**/835 - Angle  $\alpha = 30^\circ, 35^\circ, 60^\circ, 85^\circ, 88^\circ, 90^\circ$

6112/35/**835** - Length of tool - thus 835 mm, 415 mm, 835 mm sectionalized

## Stemple np. 2010/88/R0.8/835

2010/88/R0.8/835 - Numer katalogowy stempla

2010/**88**/R0.8/835 - Kąt  $\alpha = 30^\circ, 35^\circ, 60^\circ, 75^\circ, 80^\circ, 88^\circ, 90^\circ$

2010/88/**R0.8**/835 - Część robocza stempla („F” lub „R” oraz wielkość)

2010/88/R0.8/**835** - Długość elementu 835 mm, 415 mm, 835 mm segmentowy

## Matryce np. 6112/35/835

6112/35/835 - Numer katalogowy matrycy

6112/**35**/835 - Kąt  $\alpha = 30^\circ, 35^\circ, 60^\circ, 85^\circ, 88^\circ, 90^\circ$

6112/35/**835** - Rodzaj elementu 835 mm, 415 mm, 835 mm segmentowy

special tools | narzędzia specjalne

## Material

C45, 40HM lub 1.2312

## Ulepszenie cieplne\*

30 ±2HRC (950 – 1100 MPa)

## Część robocza hartowana

53 ±2HRC (1500 – 1600 MPa)

## Długość

do 4100 mm

\* dotyczy 1.2312

## Material

C45, 42CrMo4 or 1.2312

## Thermal enhancement to\*

30 ±2HRC (950 – 1100 MPa)

## Working edge hardened

53 ±2HRC (1500 – 1600 MPa)

## Length

up to 4100 mm

\* applies to 1.2312

additional information | oznaczenia symboli



in stock / dostępne z magazynu



fast delivery possible / możliwość szybkiej dostawy

**42CrMo4** 42CrMo4 steel as standard / narzędzie wykonane ze stali 42CrMo4

Narzędzia wykonywane w szczególności z wymienionych gatunków stali lub z innej stali o podobnej wytrzymałości.

Prezentowany katalog nie stanowi oferty handlowej w rozumieniu Kodeksu Cywilnego, a ma jedynie charakter informacyjny.

# TYPE "A" PUNCHES | STEMPLU TYPU „A“



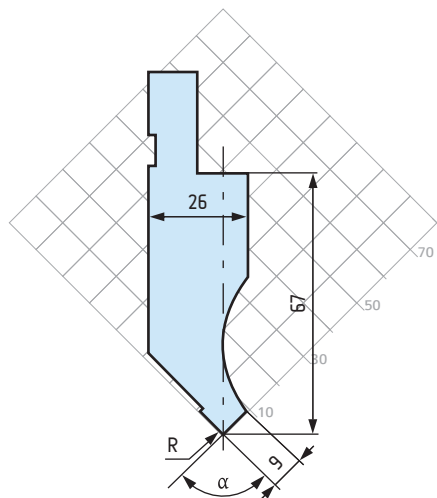
**S 2010** 100 t/m

$\alpha = 75^\circ, R = 0.8 \text{ mm}$

$\alpha = 85^\circ, R = 0.8 \text{ mm}$

$\alpha = 88^\circ, R = 0.2 \text{ mm}, 0.8 \text{ mm}, 1.5 \text{ mm}, 3 \text{ mm}$

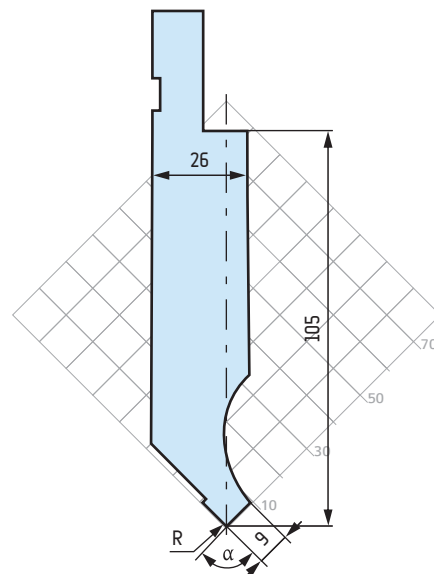
$\alpha = 90^\circ, R = 0.2 \text{ mm}, 0.8 \text{ mm}$



**S 2010/105** 100 t/m

$\alpha = 75^\circ, 85^\circ, 88^\circ$

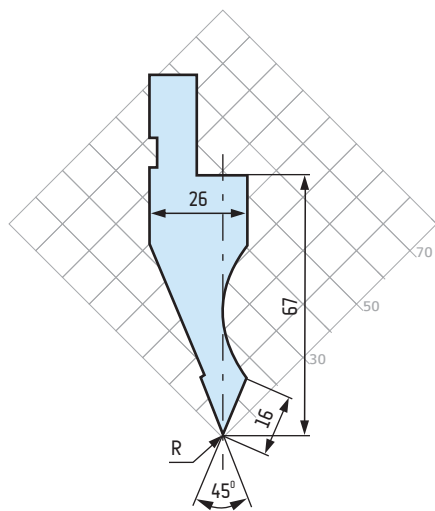
$R = 0.8 \text{ mm}$



**S 2011** 80 t/m

$\alpha = 45^\circ$

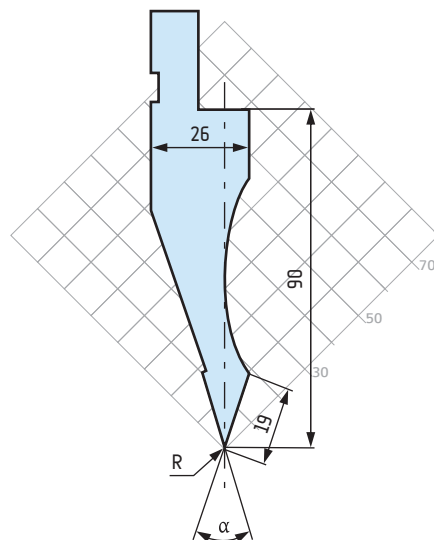
$R = 0.4 \text{ mm}, 0.8 \text{ mm}, 1.5 \text{ mm}$



**S 2012** 70 t/m

$\alpha = 30^\circ, 35^\circ$

$R = 1 \text{ mm}$



# TYPE "A" PUNCHES | STEMPEL TYPU „A“

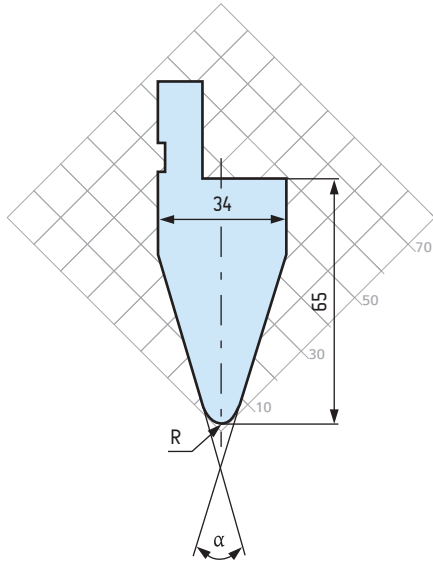


**S 2013** 100 t/m

$\alpha = 35^\circ, R = 5 \text{ mm}$

$\alpha = 60^\circ, R = 6 \text{ mm}$

$\alpha = 80^\circ, R = 6 \text{ mm}$



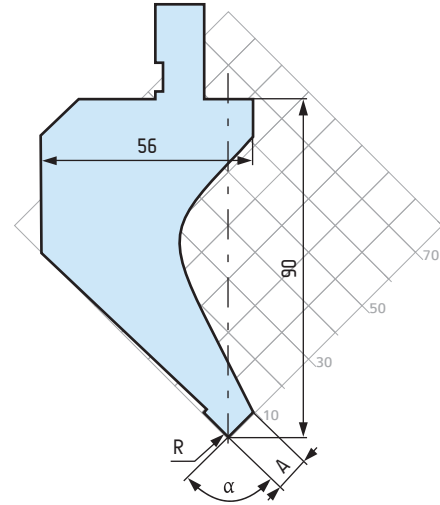
**S 2014** 60 t/m\*

$\alpha = 75^\circ, A = 9 \text{ mm}, R = 0.8 \text{ mm}, *30 \text{ t/m}$

$\alpha = 88^\circ, A = 6 \text{ mm}, R = 0.2 \text{ mm}, 0.8 \text{ mm} *50 \text{ t/m}$

$\alpha = 88^\circ, A = 9 \text{ mm}, R = 0.2 \text{ mm}, 0.8 \text{ mm}$

$\alpha = 90^\circ, A = 9 \text{ mm}, R = 0.8 \text{ mm}$

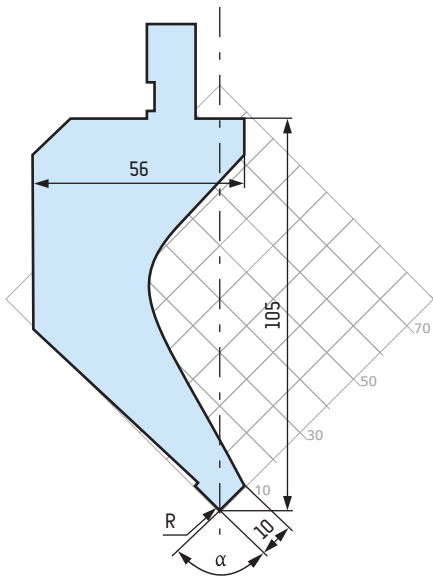


**S 2015** 50 t/m

$\alpha = 85^\circ, R = 0.8 \text{ mm}$

$\alpha = 88^\circ, R = 0.2 \text{ mm}, 0.8 \text{ mm},$

$\alpha = 90^\circ, R = 0.8 \text{ mm}$



**S 2016** 10 t/m

$\alpha = 88^\circ, 90^\circ$

$F = 0.6 \text{ mm}$

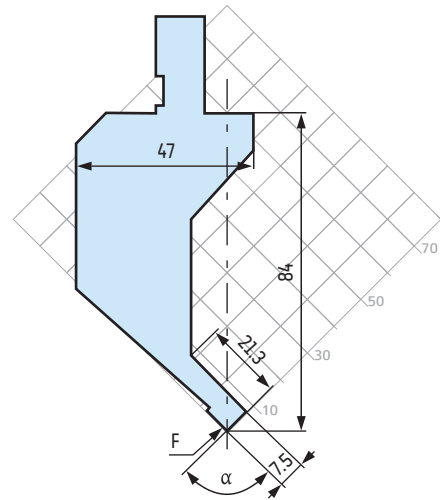


**42CrMo4**

**S 2016** 20 t/m

$\alpha = 88^\circ, 90^\circ$

$F = 0.6 \text{ mm}$





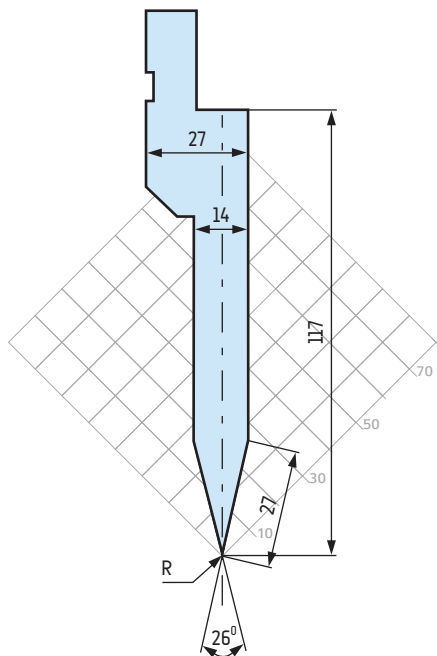
# TYPE "A" PUNCHES | STEMPLE TYPU „A”



**S 2017/26** 100 t/m

$\alpha = 26^\circ$

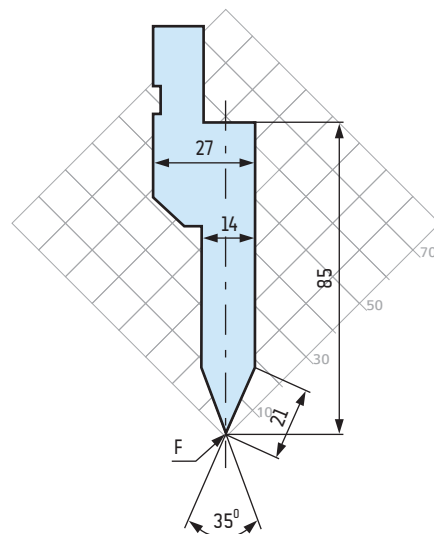
$R/F = 0.8 \text{ mm}$



**S 2017/35** 100 t/m

$\alpha = 35^\circ$

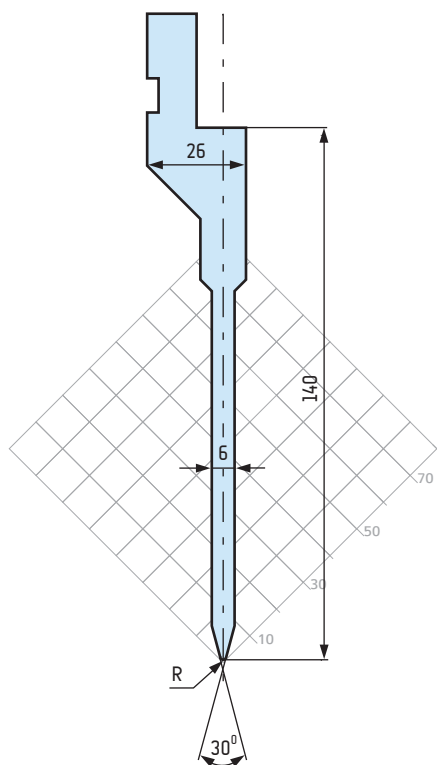
$F = 0.8 \text{ mm}$



**S 2017/30** 40 t/m

$\alpha = 30^\circ$

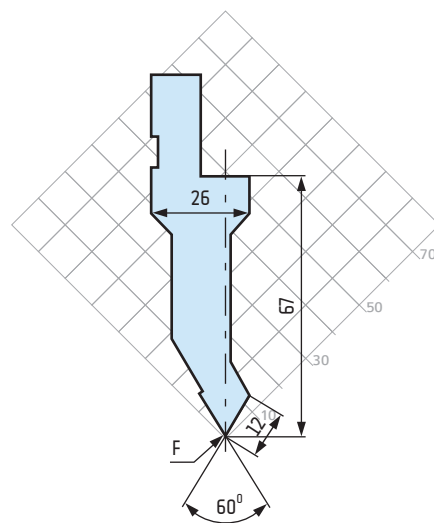
$R = 0.8 \text{ mm}$



**S 2018** 60 t/m

$\alpha = 60^\circ$

$F = 0.8 \text{ mm}$



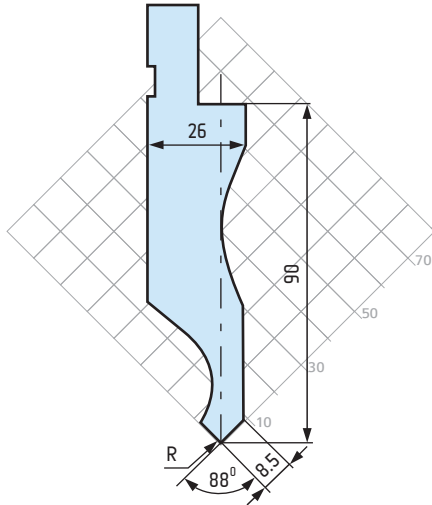
# TYPE "A" PUNCHES | STEMPEL TYPU „A“



**S 2019** 70 t/m

$\alpha = 88^\circ$

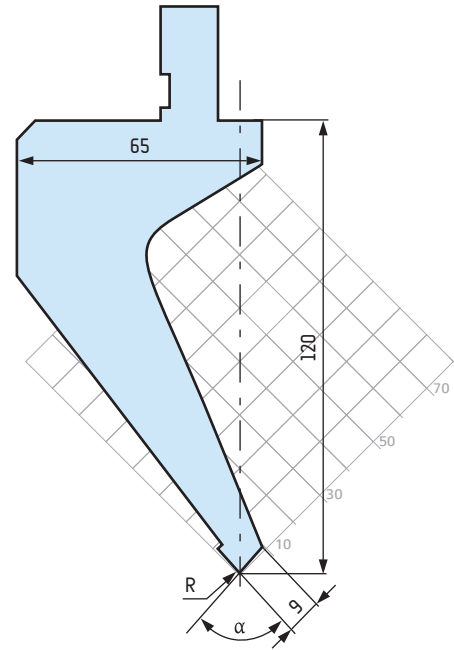
$R = 0.8 \text{ mm}$



**S 2020** 50 t/m

$\alpha = 75^\circ, R = 0.8 \text{ mm}$

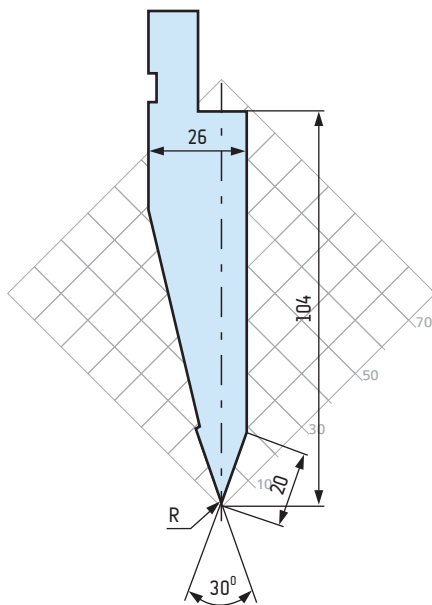
$\alpha = 88^\circ, R = 0.2 \text{ mm}, R = 0.8 \text{ mm}$



**S 2021** 100 t/m

$\alpha = 30^\circ$

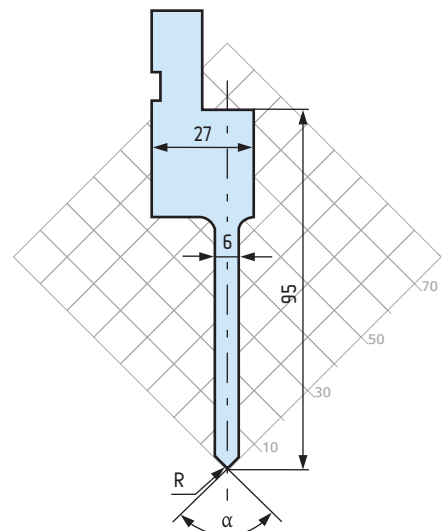
$R = 0.8 \text{ mm}$



**S 2022** 50 t/m

$\alpha = 75^\circ, R = 0.8 \text{ mm}$

$\alpha = 88^\circ, 90^\circ, R = 0.2 \text{ mm}$



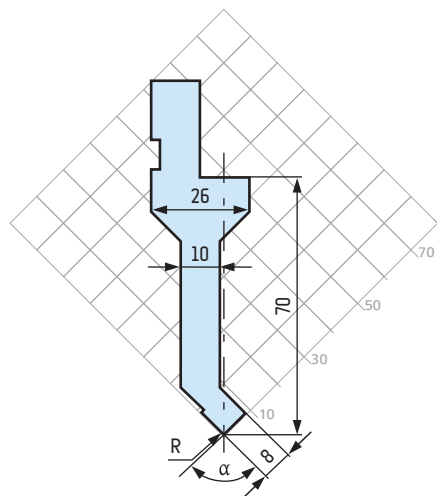
# TYPE "A" PUNCHES | STEMPEL TYPU „A“



**S 2023** 50 t/m

$\alpha = 88^\circ, 90^\circ$

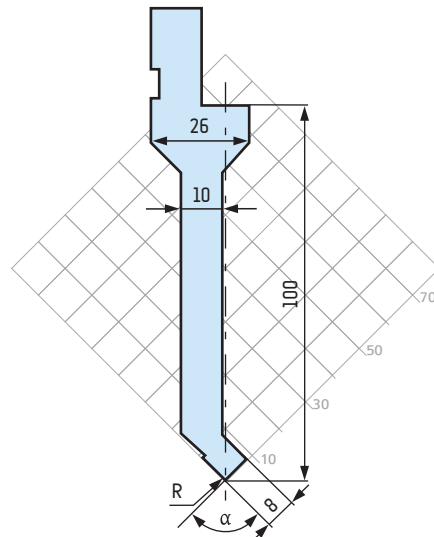
$R = 0.2 \text{ mm}$



**S 2024** 50 t/m

$\alpha = 88^\circ, 90^\circ$

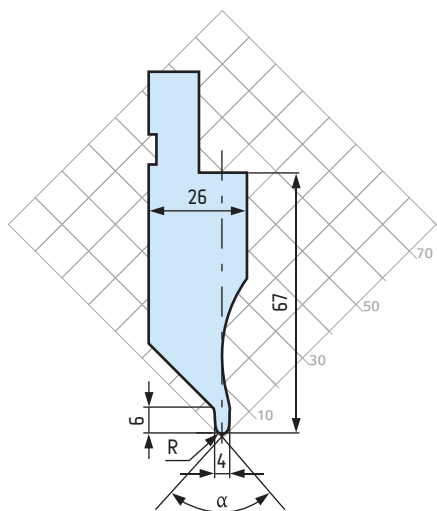
$R = 0.2 \text{ mm}$



**S 2025** 40 t/m

$\alpha = 88^\circ, 90^\circ$

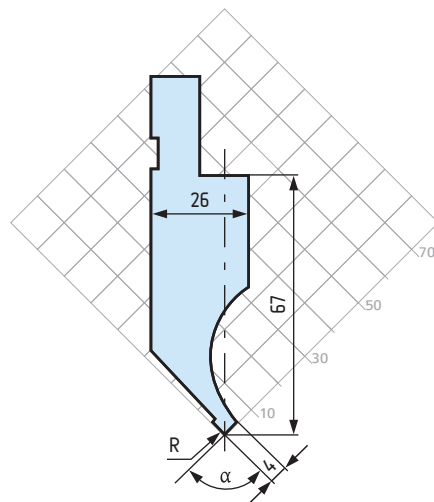
$R = 0.2 \text{ mm}$



**S 2026** 35 t/m

$\alpha = 88^\circ, 90^\circ$

$R = 0.2 \text{ mm}$



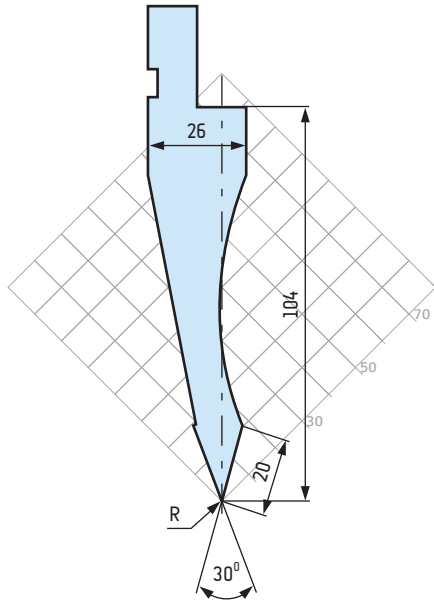
# TYPE "A" PUNCHES | STEMPLE TYPU „A”



**S 2027** 70 t/m

$\alpha = 30^\circ$

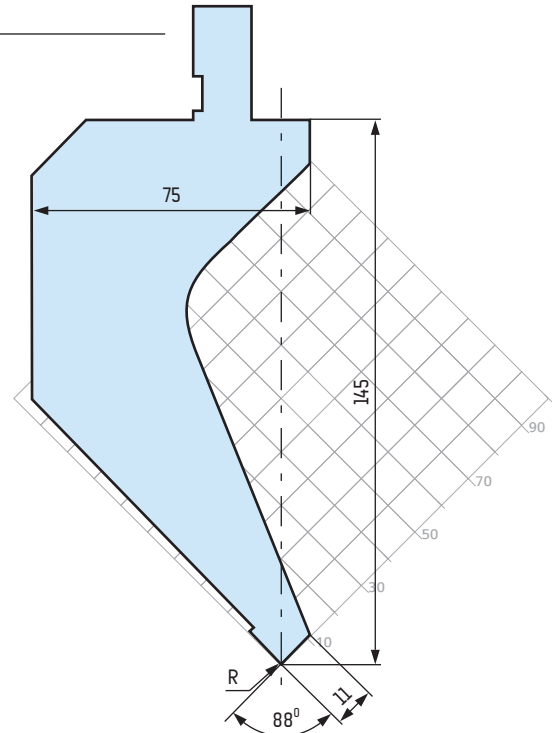
$R = 0.8 \text{ mm}$



**S 2028** 80 t/m

$\alpha = 88^\circ$

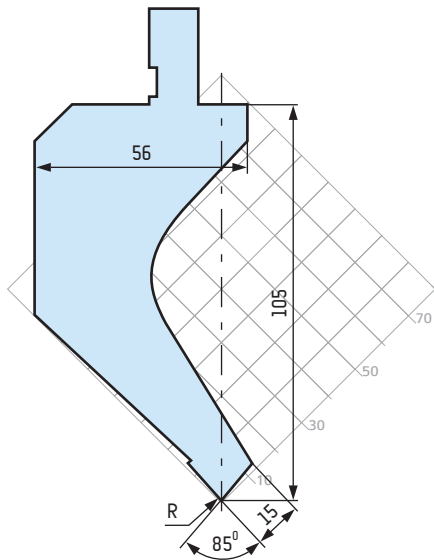
$R = 0.8 \text{ mm}$



**S 2029** 60 t/m

$\alpha = 85^\circ$

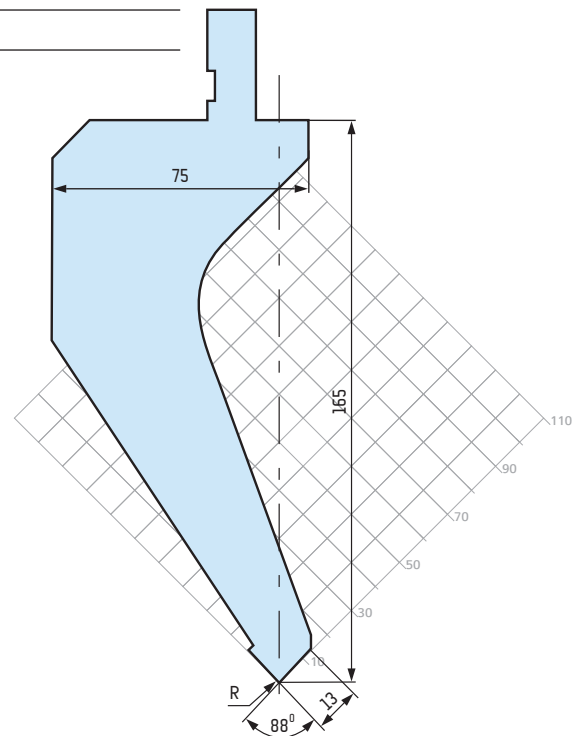
$R = 5 \text{ mm}, 6.5 \text{ mm}$



**S 2030** 60 t/m

$\alpha = 88^\circ$

$R = 0.8 \text{ mm}$



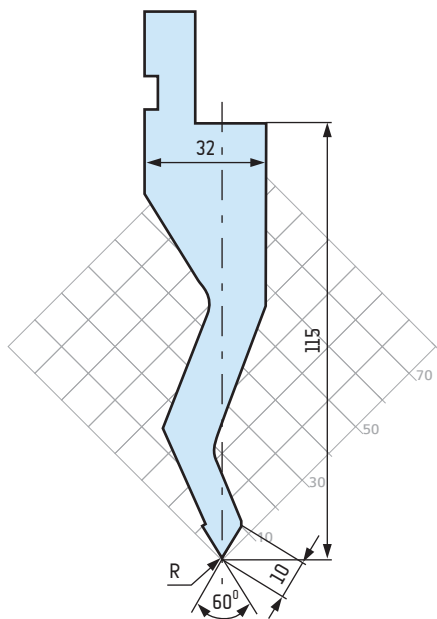
# TYPE "A" PUNCHES | STEMPEL TYPU „A“



**S 2031** 60 t/m

$\alpha = 60^\circ$

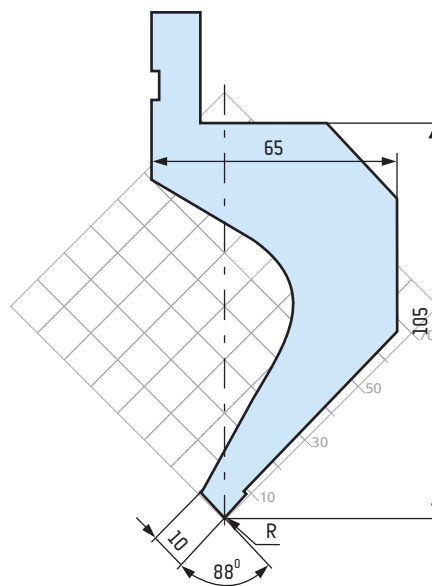
$R = 0.8 \text{ mm}$



**S 2032** 45 t/m

$\alpha = 88^\circ$

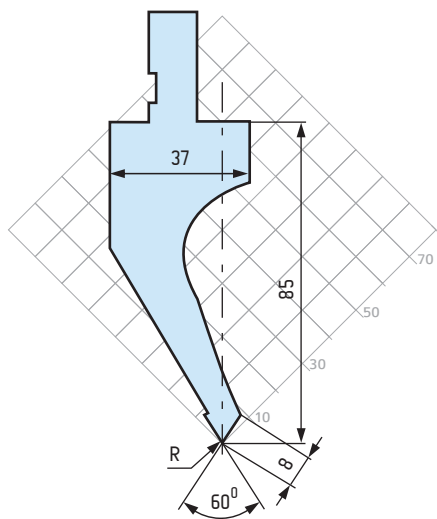
$R = 0.8 \text{ mm}$



**S 2034** 35 t/m

$\alpha = 60^\circ$

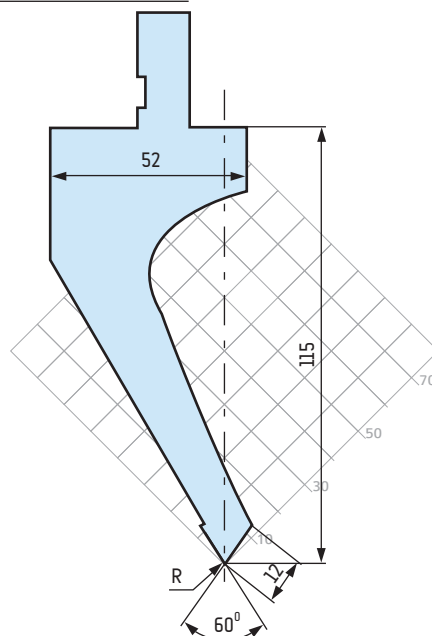
$R = 0.8 \text{ mm}$



**S 2035** 35 t/m

$\alpha = 60^\circ$

$R = 0.8 \text{ mm}$



# TYPE "A" PUNCHES | STEMPLE TYPU „A”

flattening tools | zestaw do zagniatania

24h 42CrMo4

**S 2033** 70 t/m

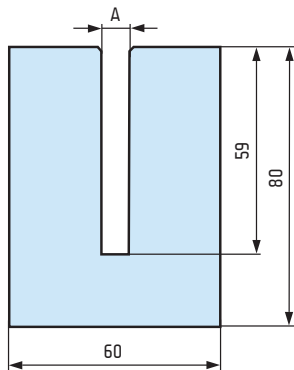
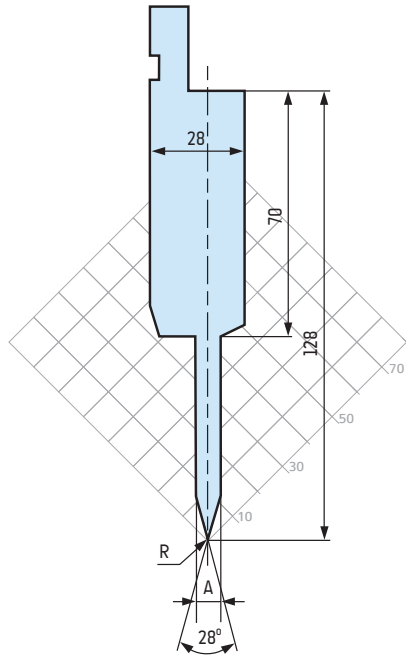
$\alpha = 28^\circ$

$R = 0.6 \text{ mm}, A = 8 \text{ mm}, 10 \text{ mm}, 12 \text{ mm}$

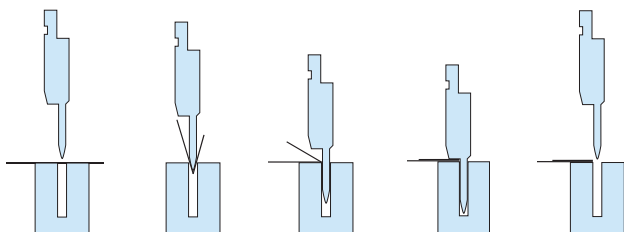
24h 42CrMo4

**M 3000** 70 t/m

$A = 8 \text{ mm}, 10 \text{ mm}, 12 \text{ mm}$

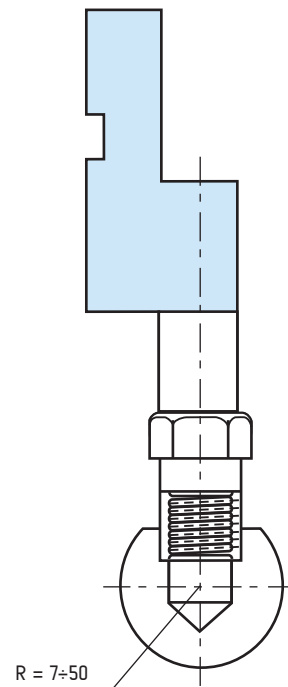


example of use S 2033 and M 3000 |  
przykład zastosowania S 2033 i M 3000



# RADIUS PUNCHES | STEMPLE PROMIENIOWE

assembly | sposób mocowania

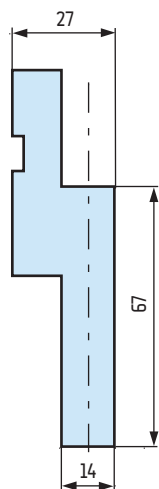




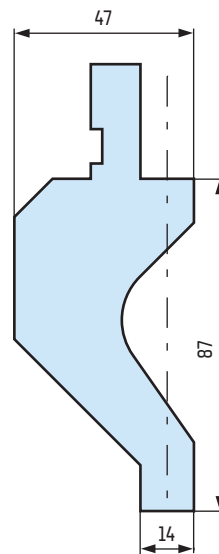
# RADIUS PUNCHES | STEMPLE PROMIENIOWE



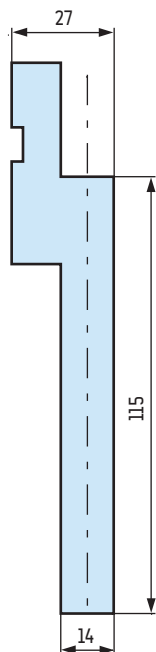
**STEMPEL R 80 t/m**



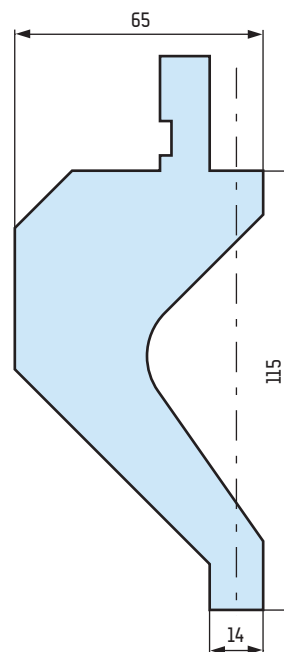
**STEMPEL R 2 80 t/m**



**STEMPEL R/115 80 t/m**



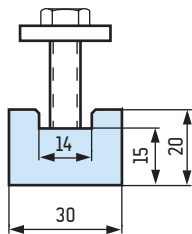
**STEMPEL R 2/115 60 t/m**



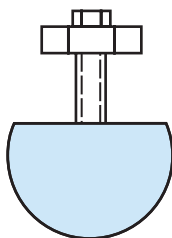
# RADIUS PUNCHES | STEMPLE PROMIENIOWE



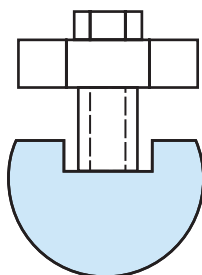
## FLATTENING INSERT | WKŁADKA PŁASKA



## WKŁADKA R 7 – R 12

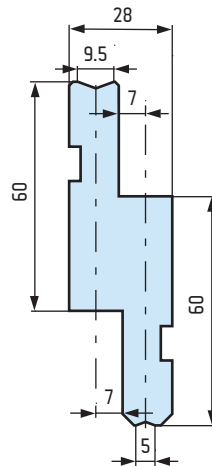


## WKŁADKA R 12.5 – R 50



## STEMPEL R – R 80 t/m

Double radius punch  
Stempel podwójny promieniowy

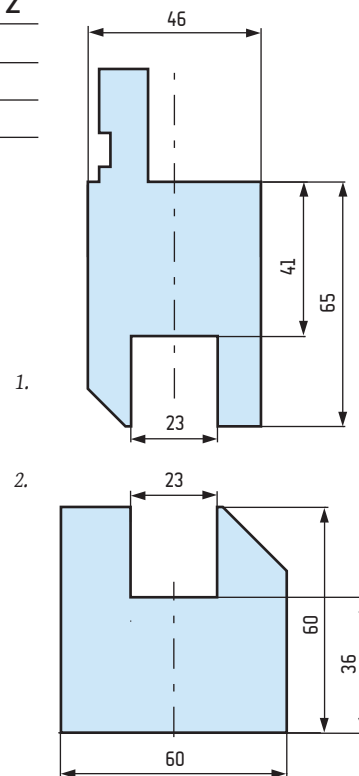
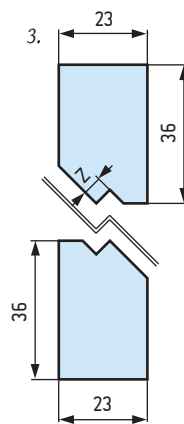


## WKŁADKA R 3 – R 6.5



## Z SHAPE TOOL | ZESTAW DO Z

1. Z Punch / Stempel Z
2. Z Die / Matryca Z
3. Z Insert (set) / Wkładka Z (kpl)



## joiners | adaptery



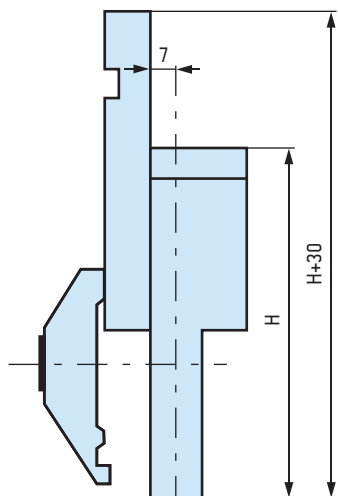
TYPE "A" | TYP „A”

$H = 100 \text{ mm}, L = 150 \text{ mm}$

$H = 120 \text{ mm}, L = 150 \text{ mm}$

$H = 140 \text{ mm}, L = 150 \text{ mm}$

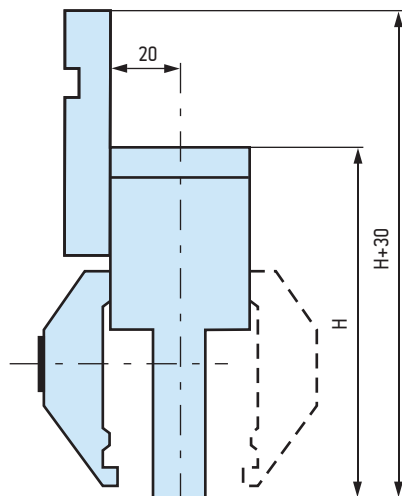
$H = 150 \text{ mm}, L = 150 \text{ mm}$



TYPE "B" | TYP „B”

$H = 120 \text{ mm}, L = 150 \text{ mm}$

$H = 170 \text{ mm}, L = 150 \text{ mm}$

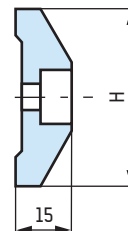


## clamping washers | podkładki mocujące (klamry)



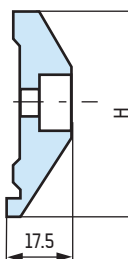
TYPE "A" | TYP „A”

$H = 50 \text{ mm}, L = 150 \text{ mm}$



TYPE "S" | TYP „S”

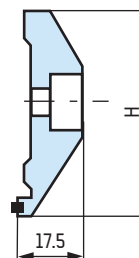
$H = 58 \text{ mm}, L = 150 \text{ mm}$



TYPE "P" | TYP „P”

with plastic insert / z wkładką plastikową

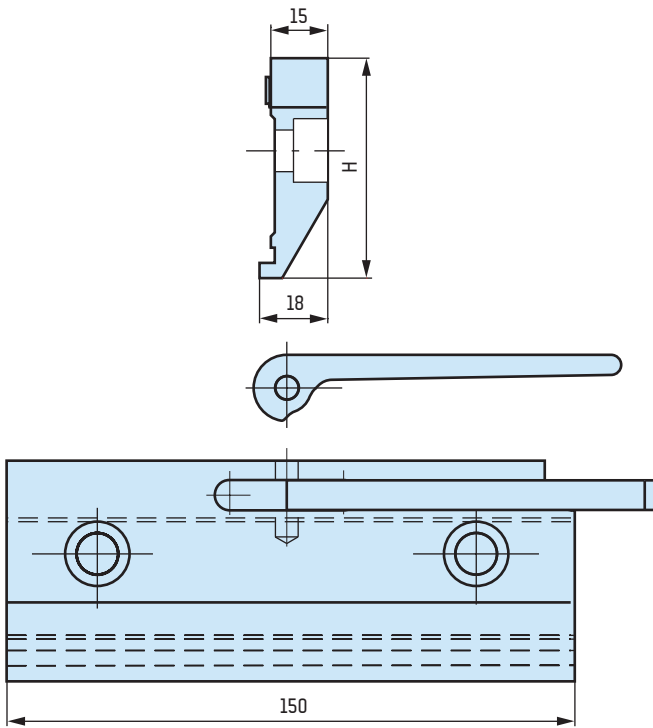
$H = 58 \text{ mm}, L = 150 \text{ mm}$





TYPE "Q" | TYP „Q”

H = 60 mm, L = 150 mm

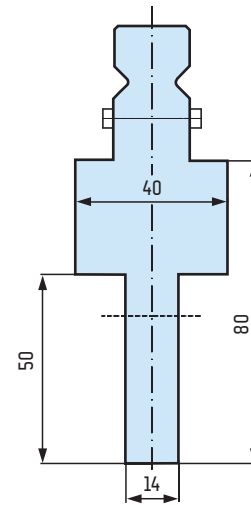


system changing adaptors |  
adaptery międzysystemowe



TYPE "T/A" | TYP „T/A”

H = 80 mm, L = 150 mm



type "T" adaptor | adapter typu „T”



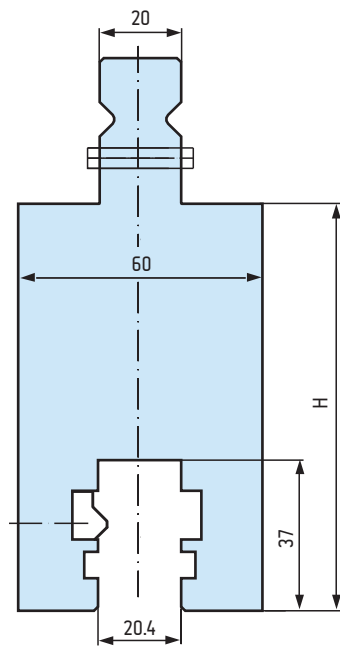
TYPE "T/T" | TYP „T/T”

H = 60 mm, L = 100 mm

H = 80 mm, L = 100 mm

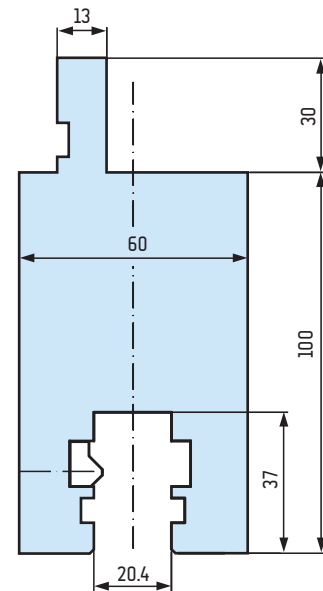
H = 100 mm, L = 100 mm

H = 150 mm, L = 100 mm



TYPE "A/T" | TYP „A/T”

H = 100 mm, L = 100 mm

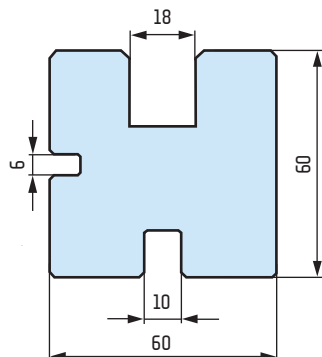


# TYPE "A" DIES | MATRYCE TYPU „A”

multiple vee dies | matryce wielorowkowe



MR 100 t/m



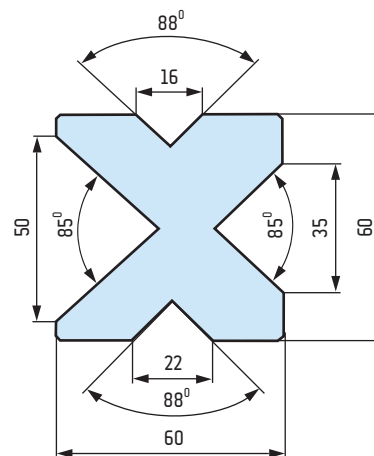
42CrMo4

M 4 80 t/m

$\alpha = 85^\circ, 88^\circ$

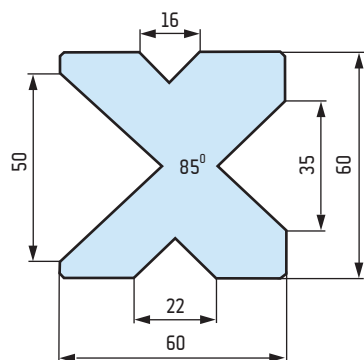
M 4 80 t/m

$\alpha = 85^\circ, 88^\circ$



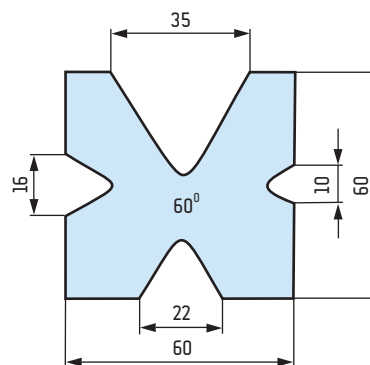
M 4/85° 80 t/m

$\alpha = 85^\circ$



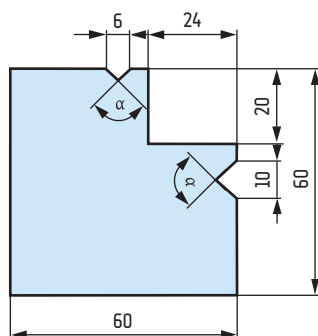
M 4/60° 60 t/m

$\alpha = 60^\circ$



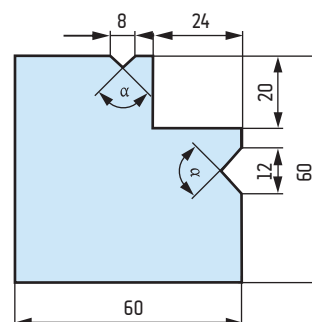
M 2/6 - 10 100 t/m

$\alpha = 90^\circ$



M 2/8 - 12 100 t/m

$\alpha = 90^\circ$



# TYPE "A" DIES | MATRYCE TYPU „A”

with groove | rowkowe



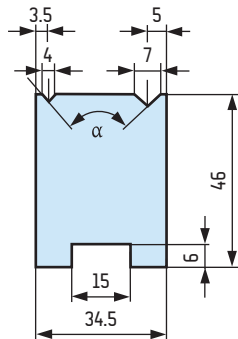
**M 6019** 100 t/m

$\alpha = 90^\circ$



**M 6119** 80 t/m

$\alpha = 88^\circ$



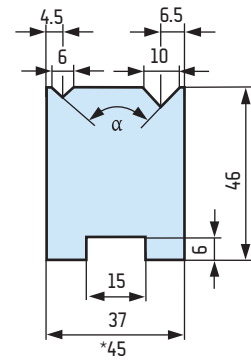
**M 6020** 80 t/m

$\alpha = 90^\circ$



**M 6120** 80 t/m

$\alpha = 88^\circ$



**M 6220** 35 t/m\*

$\alpha = 30^\circ$



**M 6021** 80 t/m

$\alpha = 90^\circ$



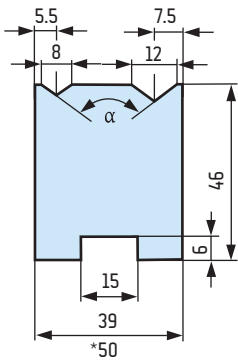
**M 6121** 80 t/m

$\alpha = 88^\circ$



**M 6221** 40 t/m

$\alpha = 30^\circ$



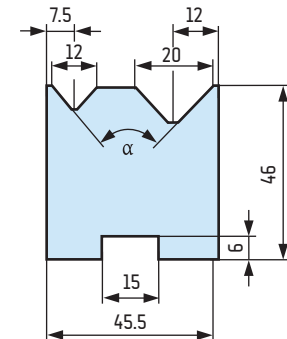
**M 6022** 80 t/m

$\alpha = 90^\circ$



**M 6122** 80 t/m

$\alpha = 88^\circ$



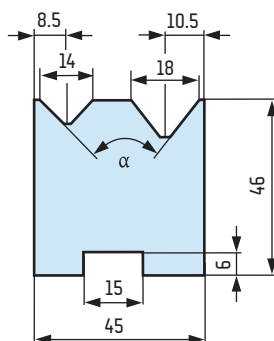
**M 6023** 80 t/m

$\alpha = 90^\circ$



**M 6123** 80 t/m

$\alpha = 88^\circ$



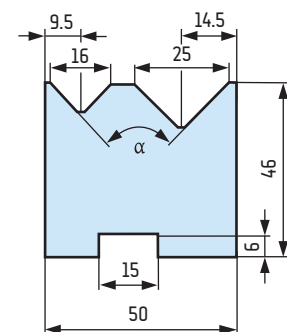
**M 6024** 80 t/m

$\alpha = 90^\circ$



**M 6124** 80 t/m

$\alpha = 88^\circ$





# TYPE "A" DIES | MATRYCE TYPU „A“

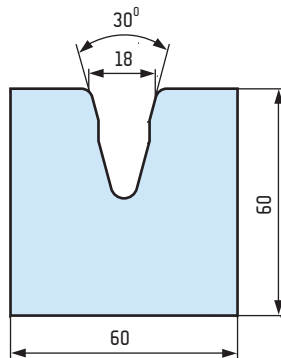
1V dies | matryce 1V



**M 3330/18**

$\alpha = 30^\circ$

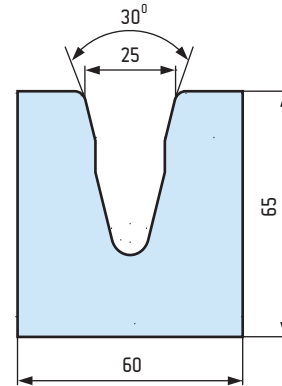
$V = 18 \text{ mm}$



**M 3330/25**

$\alpha = 30^\circ$

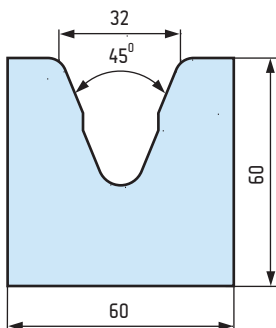
$V = 25 \text{ mm}$



**M 3345/32**

$\alpha = 45^\circ$

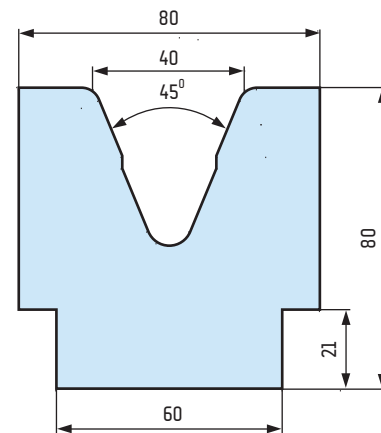
$V = 32 \text{ mm}$



**M 3345/40**

$\alpha = 45^\circ$

$V = 40 \text{ mm}$



# TYPE "A" DIES | MATRYCE TYPU „A“

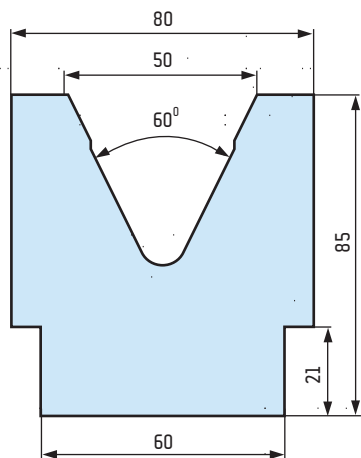
## 1V dies | matryce 1V



**M 3360/50**

$\alpha = 60^\circ$

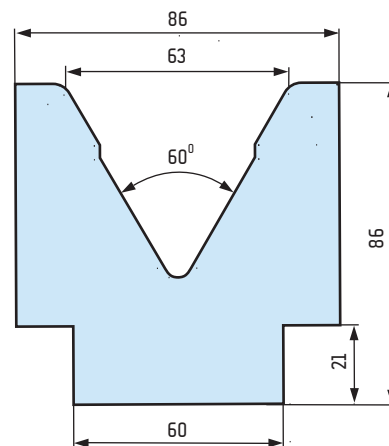
$V = 50 \text{ mm}$



**M 3360/63**

$\alpha = 60^\circ$

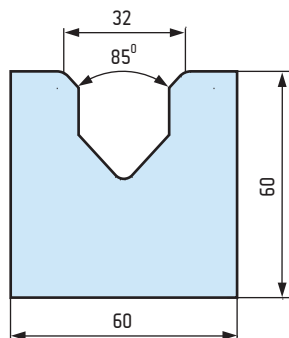
$V = 63 \text{ mm}$



**M 3385/32**

$\alpha = 85^\circ$

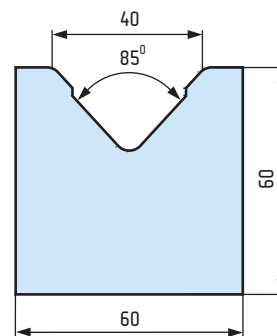
$V = 32 \text{ mm}$



**M 3385/40**

$\alpha = 85^\circ$

$V = 40 \text{ mm}$



# TYPE "A" DIES | MATRYCE TYPU „A“

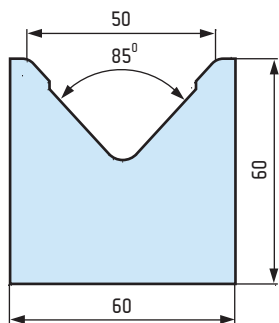
1V dies | matryce 1V



**M 3385/50**

$\alpha = 85^\circ$

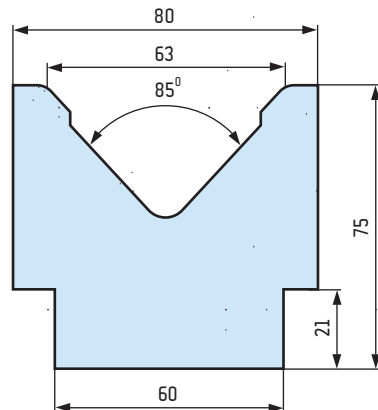
$V = 50 \text{ mm}$



**M 3385/63**

$\alpha = 85^\circ$

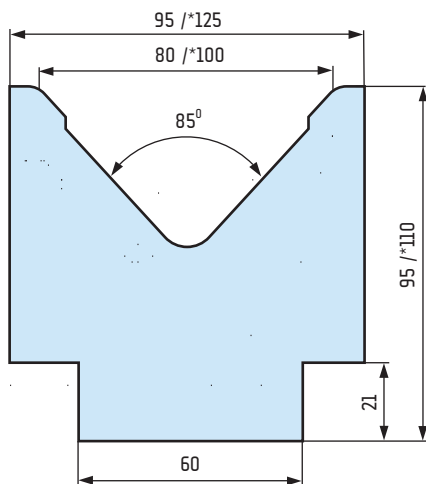
$V = 63 \text{ mm}$



**M 3385/80**

$\alpha = 85^\circ$

$V = 80 \text{ mm}$



**M 3385/100 \***

$\alpha = 85^\circ *$

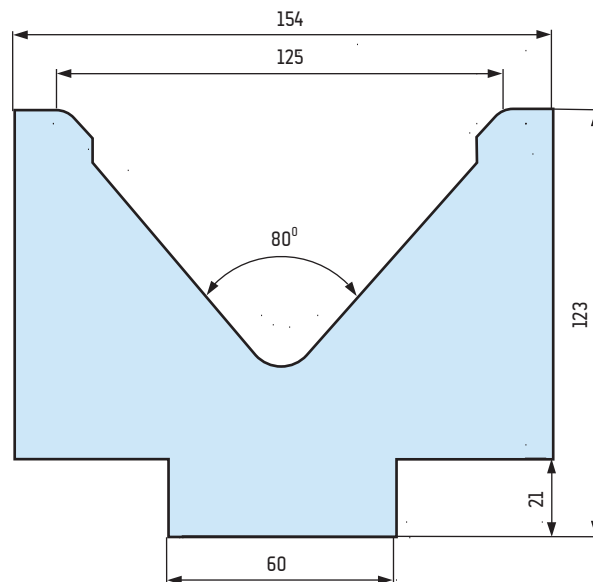
$V = 100 \text{ mm} *$



**M 3380/125**

$\alpha = 80^\circ$

$V = 125 \text{ mm}$



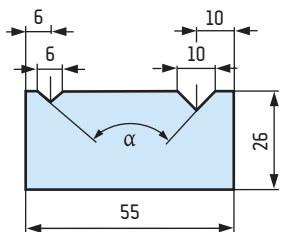
# TYPE "A" DIES | MATRYCE TYPU „A“

bolt fastened | mocowane śrubami



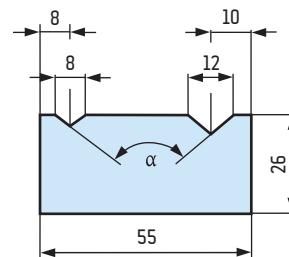
**M 6112** 100 t/m

$\alpha = 90^\circ$



**M 6212** 80 t/m

$\alpha = 60^\circ$



**M 6113** 100 t/m

$\alpha = 90^\circ$



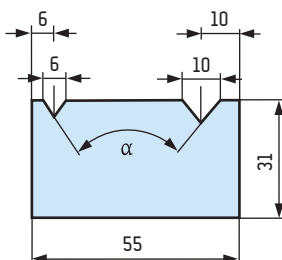
**M 6213** 80 t/m

$\alpha = 60^\circ$



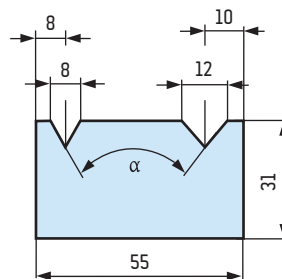
**M 6312** 60 t/m

$\alpha = 35^\circ$



**M 6313** 60 t/m

$\alpha = 35^\circ$



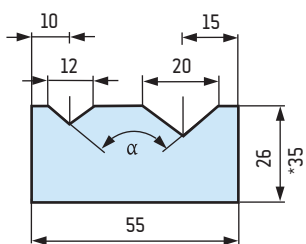
**M 6114** 100 t/m

$\alpha = 88^\circ$



**M 6214** 80 t/m \*

$\alpha = 60^\circ$



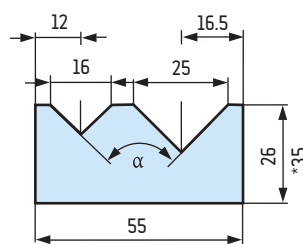
**M 6115** 100 t/m

$\alpha = 88^\circ$



**M 6215** 80 t/m \*

$\alpha = 60^\circ$



# TYPE "A" DIES | MATRYCE TYPU „A“

dies with base H = 80 mm | matryce z podstawą H = 80 mm



**M 6130** 30 t/m

A = 8 mm, B = 16 mm

R<sub>1</sub> = 1 mm, R<sub>2</sub> = 1 mm



**M 6230** 35 t/m

A = 10 mm, B = 20 mm

R<sub>1</sub> = 1 mm, R<sub>2</sub> = 1 mm



**M 6330** 35 t/m

A = 12 mm, B = 22 mm

R<sub>1</sub> = 1 mm, R<sub>2</sub> = 1 mm



**M 6430** 45 t/m

A = 16 mm, B = 30 mm

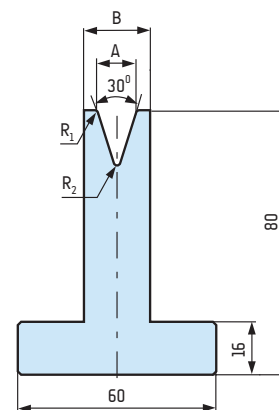
R<sub>1</sub> = 2 mm, R<sub>2</sub> = 2 mm



**M 6530** 30 t/m

A = 6 mm, B = 14 mm

R<sub>1</sub> = 0.8 mm, R<sub>2</sub> = 0.8 mm



**M 6135** 35 t/m

A = 8 mm, B = 14 mm

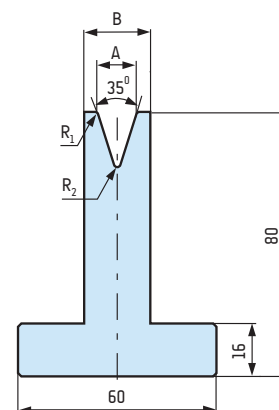
R<sub>1</sub> = 1.5 mm, R<sub>2</sub> = 0.8 mm



**M 6235** 40 t/m

A = 12 mm, B = 18 mm

R<sub>1</sub> = 2 mm, R<sub>2</sub> = 1 mm



**M 6145** 50 t/m

A = 10 mm, B = 16 mm

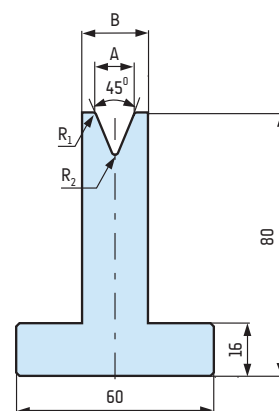
R<sub>1</sub> = 2 mm, R<sub>2</sub> = 1 mm



**M 6245** 50 t/m

A = 12 mm, B = 18 mm

R<sub>1</sub> = 2.5 mm, R<sub>2</sub> = 1 mm



# TYPE "A" DIES | MATRYCE TYPU „A“

dies with base H = 80 mm | matryce z podstawą H = 80 mm



**M 6160** 60 t/m

A = 8 mm, B = 14 mm

R<sub>1</sub> = 1.5 mm, R<sub>2</sub> = 0.8 mm



**M 6260** 60 t/m

A = 10 mm, B = 16 mm

R<sub>1</sub> = 2 mm, R<sub>2</sub> = 1 mm



**M 6360** 60 t/m

A = 12 mm, B = 18 mm

R<sub>1</sub> = 2.5 mm, R<sub>2</sub> = 1 mm



**M 6460** 60 t/m

A = 16 mm, B = 24 mm

R<sub>1</sub> = 1.5 mm, R<sub>2</sub> = 1.5 mm



**M 6560** 60 t/m

A = 20 mm, B = 30 mm

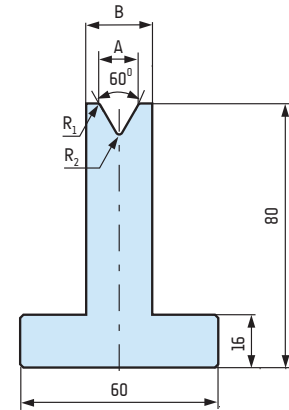
R<sub>1</sub> = 2 mm, R<sub>2</sub> = 2 mm



**M 6660** 60 t/m

A = 25 mm, B = 40 mm

R<sub>1</sub> = 3 mm, R<sub>2</sub> = 3 mm



**M 6088** 100 t/m

A = 8 mm, B = 14 mm

R<sub>1</sub> = 1 mm, R<sub>2</sub> = 0.5 mm



**M 6188** 100 t/m

A = 12 mm, B = 18 mm

R<sub>1</sub> = 2.5 mm, R<sub>2</sub> = 1 mm



**M 6288** 100 t/m

A = 16 mm, B = 22 mm

R<sub>1</sub> = 2.5 mm, R<sub>2</sub> = 1 mm



**M 6388** 100 t/m

A = 20 mm, B = 30 mm

R<sub>1</sub> = 3 mm, R<sub>2</sub> = 1.5 mm



**M 6488** 100 t/m

A = 25 mm, B = 40 mm

R<sub>1</sub> = 3 mm, R<sub>2</sub> = 3 mm



**M 6588** 100 t/m

A = 10 mm, B = 16 mm

R<sub>1</sub> = 1 mm, R<sub>2</sub> = 1 mm



**M 6688** 100 t/m

A = 14 mm, B = 18 mm

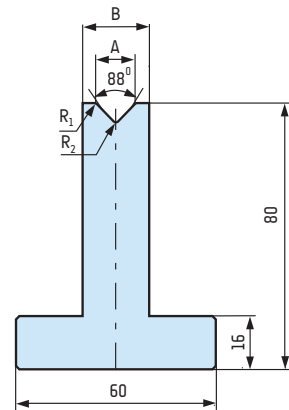
R<sub>1</sub> = 2.6 mm, R<sub>2</sub> = 0.4 mm



**M 6788** 100 t/m

A = 6 mm, B = 12 mm

R<sub>1</sub> = 0.5 mm, R<sub>2</sub> = 0.5 mm



**M 6190** 100 t/m

A = 6 mm, B = 12 mm

R<sub>1</sub> = 1.5 mm, R<sub>2</sub> = 0.5 mm



**M 6290** 100 t/m

A = 8 mm, B = 14 mm

R<sub>1</sub> = 1.5 mm, R<sub>2</sub> = 0.8 mm



**M 6390** 100 t/m

A = 10 mm, B = 16 mm

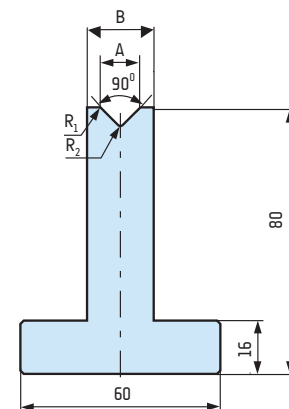
R<sub>1</sub> = 2 mm, R<sub>2</sub> = 1 mm



**M 6490** 100 t/m

A = 12 mm, B = 18 mm

R<sub>1</sub> = 2.5 mm, R<sub>2</sub> = 1.5 mm





# TYPE "A" DIES | MATRYCE TYPU „A“

dies with base H = 120 mm | matryce z podstawą H = 120 mm

**M 9130** 30 t/m

A = 8 mm, B = 18 mm

R<sub>1</sub> = 1 mm, R<sub>2</sub> = 1 mm

**M 9230** 35 t/m

A = 10 mm, B = 24 mm

R<sub>1</sub> = 1 mm, R = 1 mm

**M 9330** 35 t/m

A = 12 mm, B = 24 mm

R<sub>1</sub> = 1 mm, R<sub>2</sub> = 1 mm

**M 9430** 45 t/m

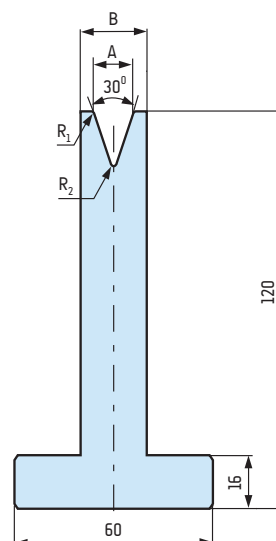
A = 16 mm, B = 30 mm

R<sub>1</sub> = 2 mm, R<sub>2</sub> = 2 mm

**M 9530** 30 t/m

A = 6 mm, B = 14 mm

R<sub>1</sub> = 0.8 mm, R = 0.8 mm



**M 9135** 35 t/m

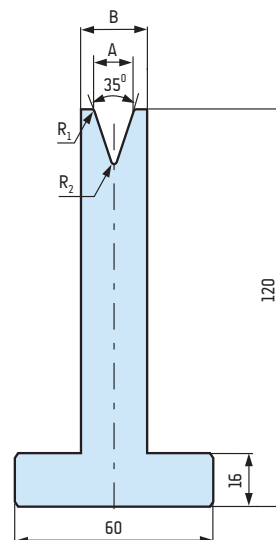
A = 8 mm, B = 18 mm

R<sub>1</sub> = 1.5 mm, R<sub>2</sub> = 0.8 mm

**M 9235** 40 t/m

A = 12 mm, B = 18 mm

R<sub>1</sub> = 2 mm, R<sub>2</sub> = 1 mm



**M 9145** 50 t/m

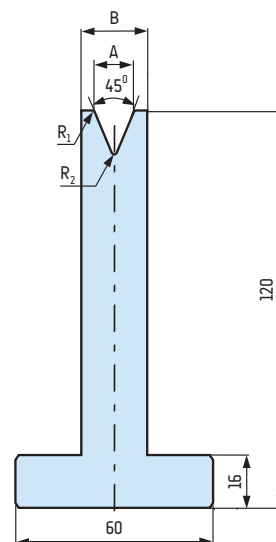
A = 10 mm, B = 18 mm

R<sub>1</sub> = 2 mm, R<sub>2</sub> = 1 mm

**M 9245** 50 t/m

A = 12 mm, B = 18 mm

R<sub>1</sub> = 2.5 mm, R<sub>2</sub> = 1 mm



# TYPE "A" DIES | MATRYCE TYPU „A”

dies with base H = 120 mm | matryce z podstawą H = 120 mm

<b>M 9160</b> 60 t/m
A = 8 mm, B = 14 mm
R <sub>1</sub> = 1.5 mm, R <sub>2</sub> = 0.8 mm

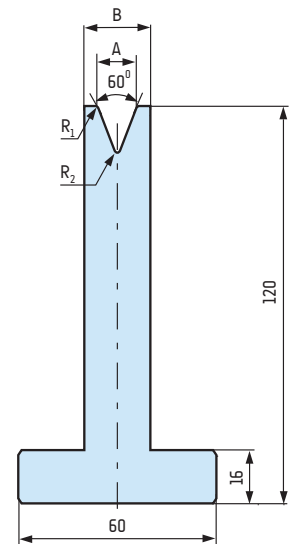
<b>M 9260</b> 60 t/m
A = 10 mm, B = 18 mm
R <sub>1</sub> = 2 mm, R <sub>2</sub> = 1 mm

<b>M 9360</b> 60 t/m
A = 12 mm, B = 18 mm
R <sub>1</sub> = 2.5 mm, R <sub>2</sub> = 1 mm

<b>M 9460</b> 60 t/m
A = 16 mm, B = 24 mm
R <sub>1</sub> = 1.5 mm, R <sub>2</sub> = 1.5 mm

<b>M 9560</b> 60 t/m
A = 20 mm, B = 30 mm
R <sub>1</sub> = 2 mm, R <sub>2</sub> = 2 mm

<b>M 9660</b> 60 t/m
A = 25 mm, B = 40 mm
R <sub>1</sub> = 3 mm, R <sub>2</sub> = 3 mm



<b>M 9088</b> 100 t/m
A = 8 mm, B = 14 mm
R <sub>1</sub> = 1 mm, R <sub>2</sub> = 0.5 mm

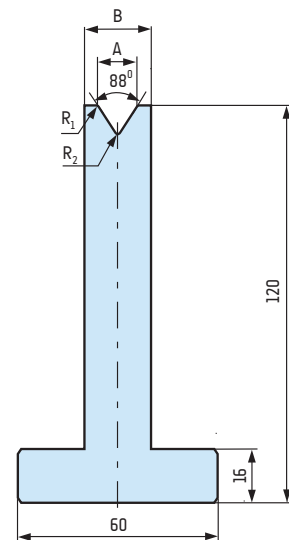
<b>M 9188</b> 100 t/m
A = 12 mm, B = 18 mm
R <sub>1</sub> = 2.5 mm, R <sub>2</sub> = 1 mm

<b>M 9288</b> 100 t/m
A = 16 mm, B = 24 mm
R <sub>1</sub> = 2.5 mm, R <sub>2</sub> = 1 mm

<b>M 9388</b> 100 t/m
A = 20 mm, B = 30 mm
R <sub>1</sub> = 3 mm, R <sub>2</sub> = 1.5 mm

<b>M 9488</b> 100 t/m
A = 25 mm, B = 40 mm
R <sub>1</sub> = 3 mm, R <sub>2</sub> = 3 mm

<b>M 9588</b> 100 t/m
A = 10 mm, B = 18 mm
R <sub>1</sub> = 1 mm, R <sub>2</sub> = 1 mm



<b>M 9688</b> 100 t/m
A = 14 mm, B = 18 mm
R <sub>1</sub> = 2.6 mm, R <sub>2</sub> = 0.4 mm

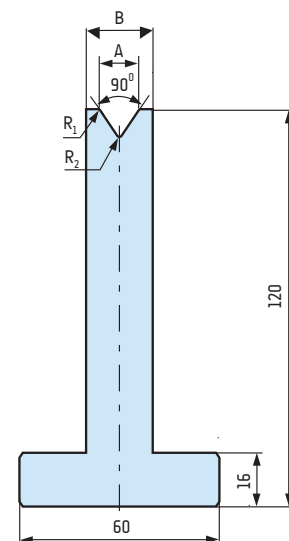
<b>M 9788</b> 100 t/m
A = 6 mm, B = 14 mm
R <sub>1</sub> = 0.5 mm, R <sub>2</sub> = 0.5 mm

<b>M 9190</b> 100 t/m
A = 6 mm, B = 14 mm
R <sub>1</sub> = 1.5 mm, R <sub>2</sub> = 0.5 mm

<b>M 9290</b> 100 t/m
A = 8 mm, B = 14 mm
R <sub>1</sub> = 1.5 mm, R <sub>2</sub> = 0.8 mm

<b>M 9390</b> 100 t/m
A = 10 mm, B = 18 mm
R <sub>1</sub> = 2 mm, R <sub>2</sub> = 1 mm

<b>M 9490</b> 100 t/m
A = 12 mm, B = 18 mm
R <sub>1</sub> = 3 mm, R <sub>2</sub> = 0.8 mm



# TYPE "A" DIES | MATRYCE TYPU „A“

Dies fixed using die supports A 31 or A 61 -> p. 52

Matryce montowane przy pomocy wkładek A 31 lub A 61 -> str 52

## insert dies | matryce wkładkowe

 42CrMo4

**M 8130**

$\alpha = 30^\circ$

A = 6 mm, B = 16 mm

 42CrMo4

**M 8230**

$\alpha = 30^\circ$

A = 8 mm, B = 19 mm

 42CrMo4

**M 8330**

$\alpha = 30^\circ$

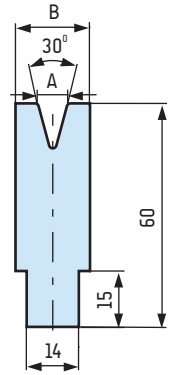
A = 10 mm, B = 24 mm

 42CrMo4

**M 8430**

$\alpha = 30^\circ$

A = 12 mm, B = 25 mm



 42CrMo4

**M 8160**

$\alpha = 60^\circ$

A = 6 mm, B = 14 mm

 42CrMo4

**M 8260**

$\alpha = 60^\circ$

A = 8 mm, B = 15 mm

 42CrMo4

**M 8360**

$\alpha = 60^\circ$

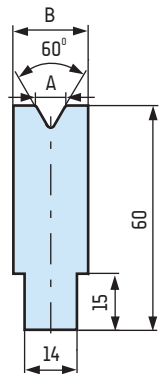
A = 10 mm, B = 18 mm

 42CrMo4

**M 8460**

$\alpha = 60^\circ$

A = 12 mm, B = 18 mm



 42CrMo4

**M 8560**

$\alpha = 60^\circ$

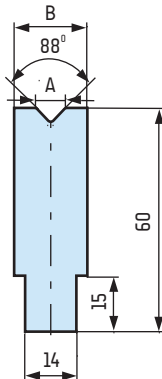
A = 16 mm, B = 24 mm

 42CrMo4

**M 8660**

$\alpha = 60^\circ$

A = 20 mm, B = 30 mm



 42CrMo4

**M 8188**

$\alpha = 88^\circ$

A = 6 mm, B = 14 mm

 42CrMo4

**M 8288**

$\alpha = 88^\circ$

A = 8 mm, B = 14 mm

 42CrMo4

**M 8388**

$\alpha = 88^\circ$

A = 10 mm, B = 15 mm

 42CrMo4

**M 8488**

$\alpha = 88^\circ$

A = 12 mm, B = 17 mm

 42CrMo4

**M 8588**

$\alpha = 88^\circ$

A = 14 mm, B = 18 mm

 42CrMo4

**M 8688**

$\alpha = 88^\circ$

A = 16 mm, B = 21 mm

 42CrMo4

**M 8788**

$\alpha = 88^\circ$

A = 18 mm, B = 23 mm

 42CrMo4

**M 8888**

$\alpha = 88^\circ$

A = 20 mm, B = 25 mm

 42CrMo4

**M 8988**

$\alpha = 88^\circ$

A = 25 mm, B = 30 mm

 42CrMo4

**M 8190**

$\alpha = 90^\circ$

A = 6 mm, B = 14 mm

 42CrMo4

**M 8290**

$\alpha = 90^\circ$

A = 8 mm, B = 14 mm

 42CrMo4

**M 8390**

$\alpha = 90^\circ$

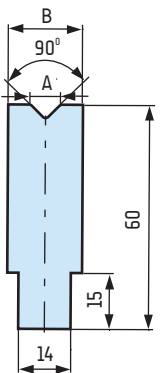
A = 10 mm, B = 15 mm

 42CrMo4

**M 8490**

$\alpha = 90^\circ$

A = 12 mm, B = 17 mm



 42CrMo4

**M 8590**

$\alpha = 90^\circ$

A = 14 mm, B = 18 mm

# TYPE "A" DIES | MATRYCE TYPU „A“

Bending and folding die, upper part moves on springs.  
 Matryce dwufunkcyjne do gięcia i zagniatania.  
 Górna część porusza się na sprężynach.

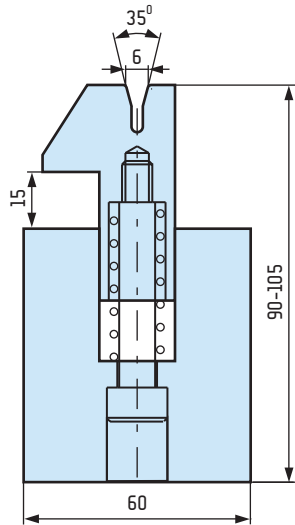
## flattening dies | matryce do zagniatania



**M 3033/6**

$\alpha = 35^\circ$

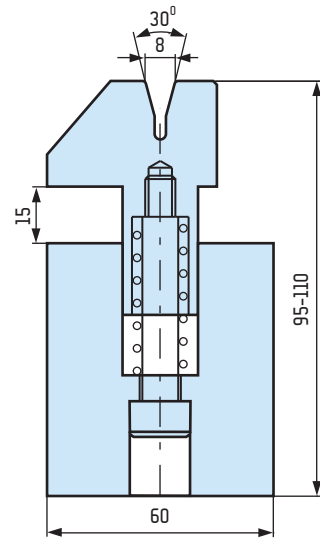
$V = 6 \text{ mm}$



**M 3033/8**

$\alpha = 30^\circ$

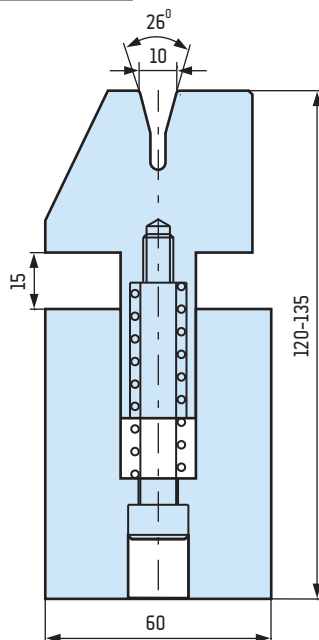
$V = 8 \text{ mm}$



**M 3033/10**

$\alpha = 26^\circ$

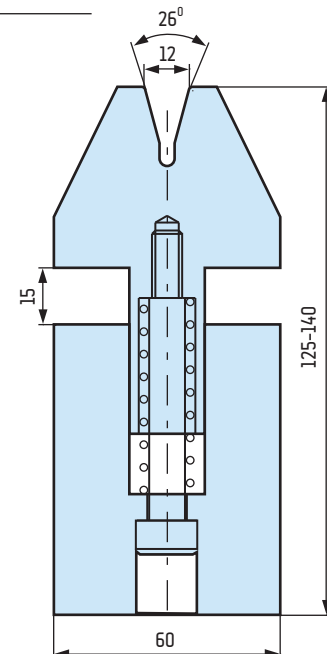
$V = 10 \text{ mm}$



**M 3033/12**

$\alpha = 26^\circ$

$V = 12 \text{ mm}$



# TYPE "A" DIES | MATRYCE TYPU „A“



## W 24

$B = 14 \text{ mm}$ ,  $H = 15 \text{ mm}$ ,  $A = 24 \text{ mm}$

$\alpha = 35^\circ$ ,  $V = 6 \text{ mm} / 8 \text{ mm} / 10 \text{ mm}$

$\alpha = 45^\circ$ ,  $V = 6 \text{ mm} / 8 \text{ mm} / 10 \text{ mm} / 12 \text{ mm}$

$\alpha = 60^\circ$ ,  $V = 6 \text{ mm} / 8 \text{ mm} / 10 \text{ mm} / 12 \text{ mm} / 16 \text{ mm}$

$\alpha = 88^\circ$ ,  $V = 6 \text{ mm} / 8 \text{ mm} / 10 \text{ mm} / 12 \text{ mm} / 16 \text{ mm}$



## W 35

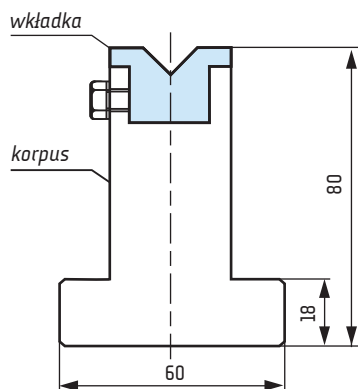
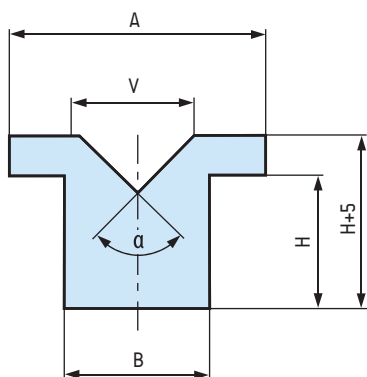
$B = 20 \text{ mm}$ ,  $H = 19 \text{ mm}$ ,  $A = 35 \text{ mm}$

$\alpha = 35^\circ$ ,  $V = 6 \text{ mm} / 8 \text{ mm} / 10 \text{ mm}$

$\alpha = 45^\circ$ ,  $V = 6 \text{ mm} / 8 \text{ mm} / 10 \text{ mm} / 12 \text{ mm}$

$\alpha = 60^\circ$ ,  $V = 6 \text{ mm} / 8 \text{ mm} / 10 \text{ mm} / 12 \text{ mm} / 16 \text{ mm} / 20 \text{ mm}$

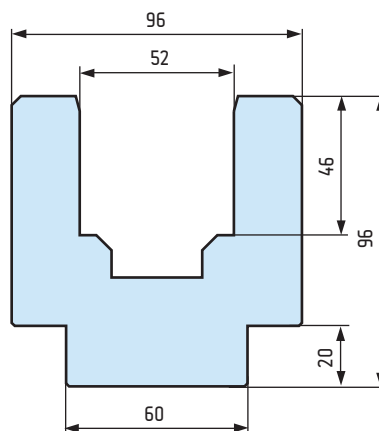
$\alpha = 88^\circ$ ,  $V = 6 \text{ mm} / 8 \text{ mm} / 10 \text{ mm} / 12 \text{ mm} / 16 \text{ mm} / 20 \text{ mm} / 25 \text{ mm}$



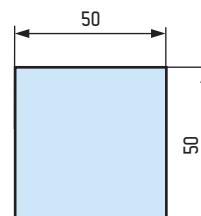
Polyamid inserts allow to minimize bending marks on coated or stainless steel.

Wkładki poliamidowe pozwalają zminimalizować ślady przy gięciu cienkich blach pokrywanych lub nierdzewnych.

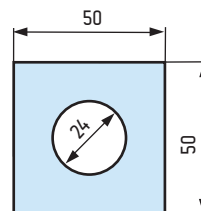
## W 50



### INSERT 50 FULL | WKŁADKA 50 PEŁNA

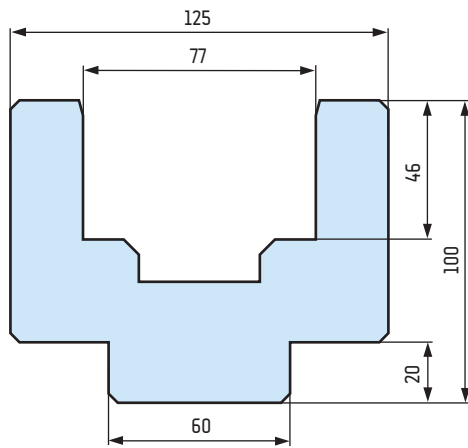


### INSERT 50 WITH HOLE | WKŁADKA 50 Z OTWOREM

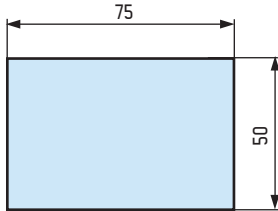


# TYPE "A" DIES | MATRYCE TYPU „A“

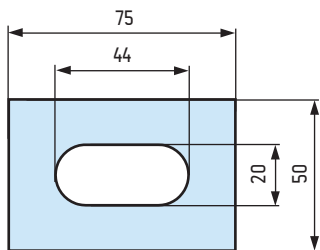
## W 75



### INSERT 75 FULL | WKŁADKA 75 PEŁNA



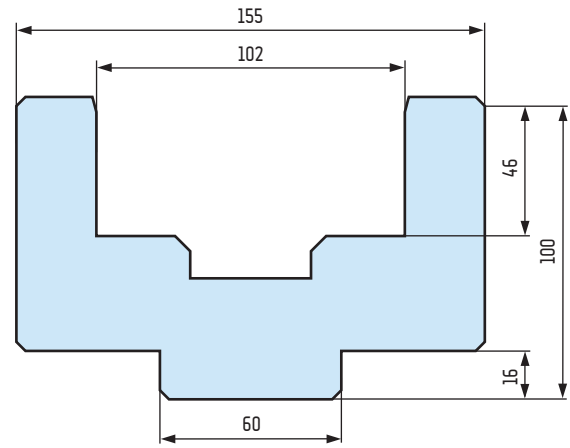
### INSERT 75 WITH HOLE | WKŁADKA 75 Z OTWOREM



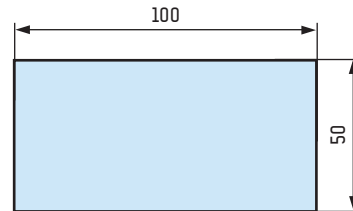
Rubber inserts allow mark free bending. Especially good with type "R" punches.

Wkładki gumowe pozwalają na gięcie bez uszkodzeń blachy. Szczególnie polecane ze stemplami „R“

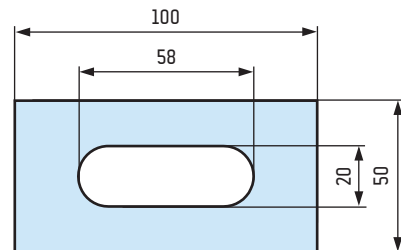
## W 100



### INSERT 100 FULL | WKŁADKA 100 PEŁNA



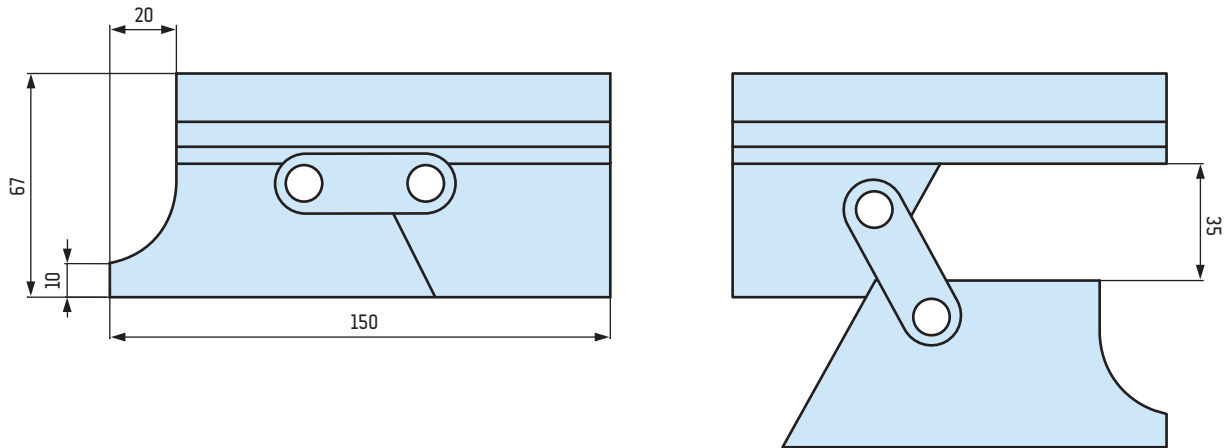
### INSERT 100 WITH HOLE | WKŁADKA 100 Z OTWOREM



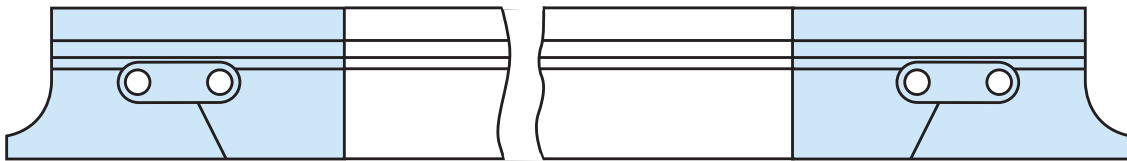


## BOX – CLOSING PUNCH | STEMPEL DO ZAMYKANIA PUDEŁEK

Punch with dimensions as S2010/88/R0.8 used for closing boxes.  
Stempel o geometrii jak S2010/88/R0.8 służący do zamykania pudełek.



Assembly with S2010.  
Złożenie z S2010.



## PROTECTIVE TAPE | TAŚMA OCHRONNA

### Tape size

thickness = 0.4 mm, width = 100 mm

thickness = 0.5 mm, width = 105 mm

thickness = 0.8 mm, width = 95 mm

### Wymiary taśmy

grubość = 0.4 mm, szerokość = 100 mm

grubość = 0.5 mm, szerokość = 105 mm

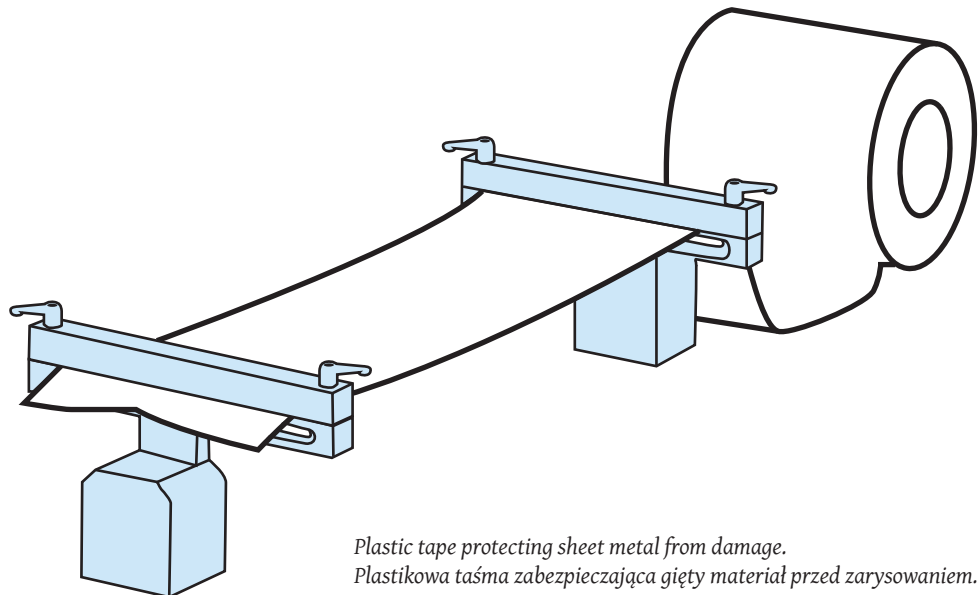
grubość = 0.8 mm, szerokość = 95 mm

### Holder for protective tape

suitable for dies size 13 mm to 60 mm

### Uchwyt do folii ochronnej

mocowanie do matryc od 13 do 60 mm



Plastic tape protecting sheet metal from damage.  
Plastikowa taśma zabezpieczająca gięty materiał przed zarysowaniem.

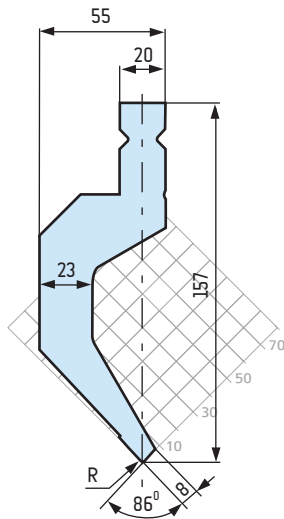
# TYPE "T" PUNCHES | STEMPLE TYPU „T”

24h 42CrMo4

S 2200 80 t/m

$\alpha = 86^\circ$

$R = 1 \text{ mm}$

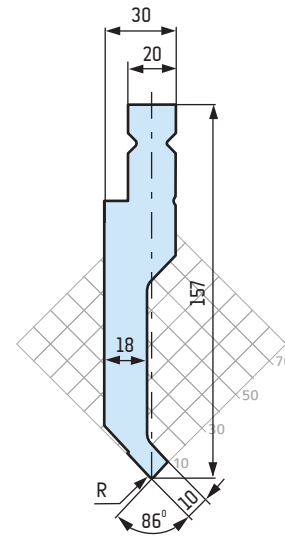


24h 42CrMo4

S 2201 80 t/m

$\alpha = 86^\circ$

$R = 1 \text{ mm}$

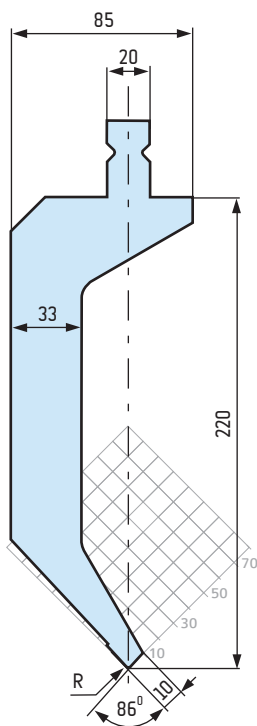


24h 42CrMo4

S 2200 W 80 t/m

$\alpha = 86^\circ$

$R = 1 \text{ mm}$

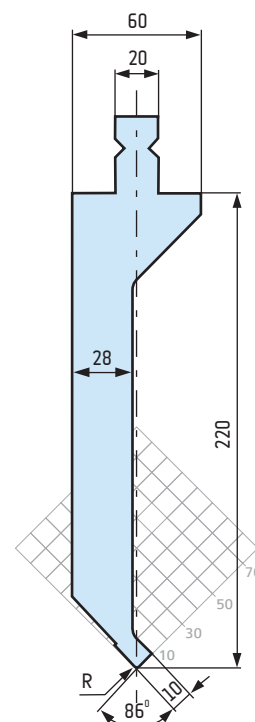


24h 42CrMo4

S 2201 W 80 t/m

$\alpha = 86^\circ$

$R = 1 \text{ mm}$



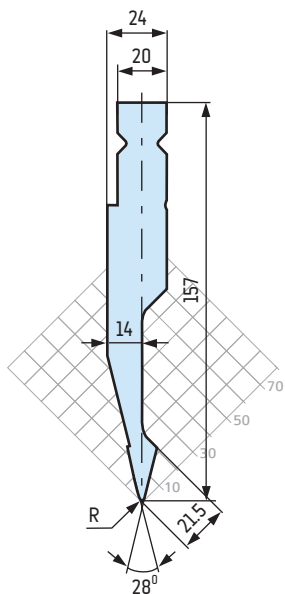
# TYPE "T" PUNCHES | STEMPEL TYPU „T“

24h 42CrMo4

S 2202 60 t/m

$\alpha = 28^\circ$

R = 1 mm

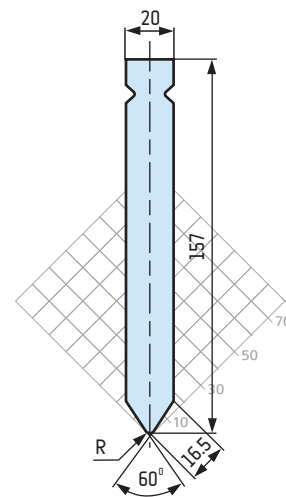


24h 42CrMo4

S 2203 130 t/m

$\alpha = 60^\circ$

R = 4 mm

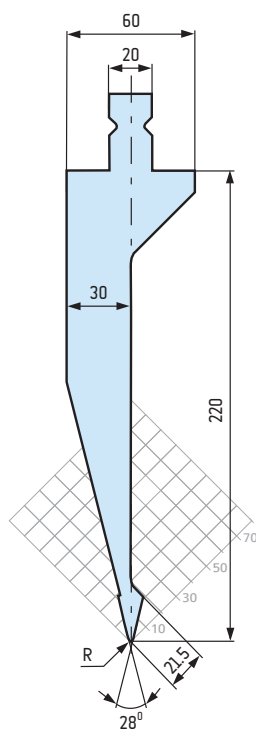


24h 42CrMo4

S 2202 W 60 t/m

$\alpha = 28^\circ$

R = 1 mm

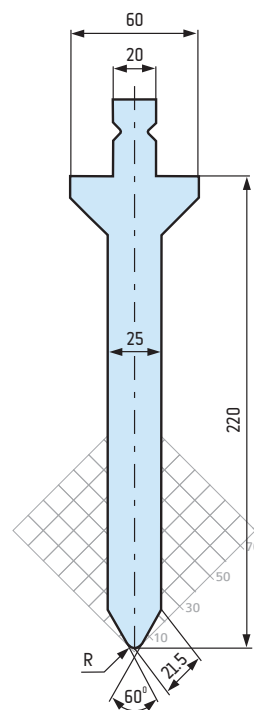


24h 42CrMo4

S 2203 W 130 t/m

$\alpha = 60^\circ$

R = 4 mm



# TYPE "T" PUNCHES | STEMPLE TYPU „T”

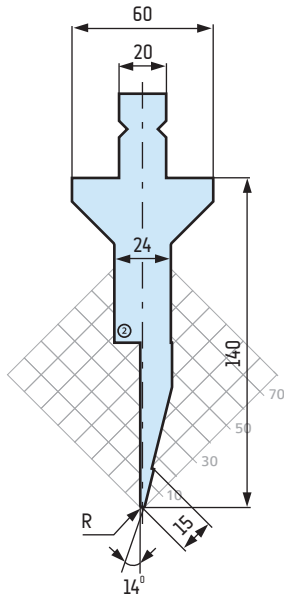
24h 42CrMo4

S 2204 40 t/m

② 130 t/m

$\alpha = 14^\circ$

R = 1 mm



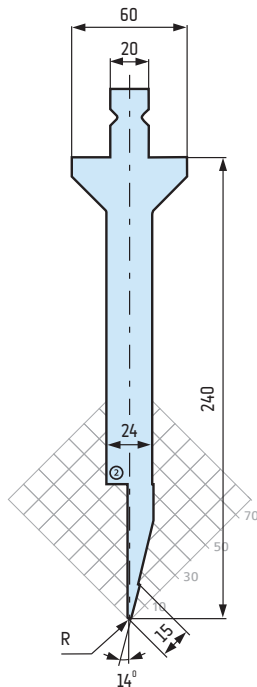
24h 42CrMo4

S 2204 W 40 t/m

② 130 t/m

$\alpha = 14^\circ$

R = 1 mm



## flattening tools | zestaw do zagniatania

42CrMo4

S 2205 80 t/m

A = 8 mm, 10 mm, 12 mm

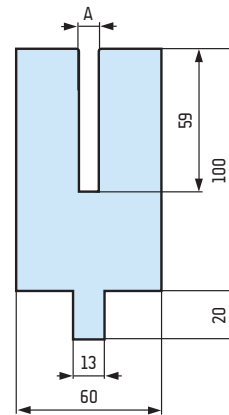
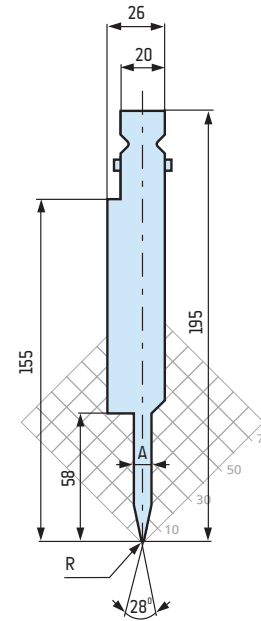
R = 0.6 mm

42CrMo4

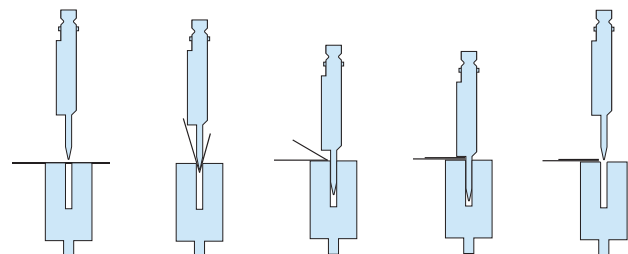
M 2000 50 t/m

A = 8 mm, 10 mm, 12 mm

R = 0.6 mm



example of use S 2205 and M 2000 |  
przykład zastosowania S 2205 i M 2000

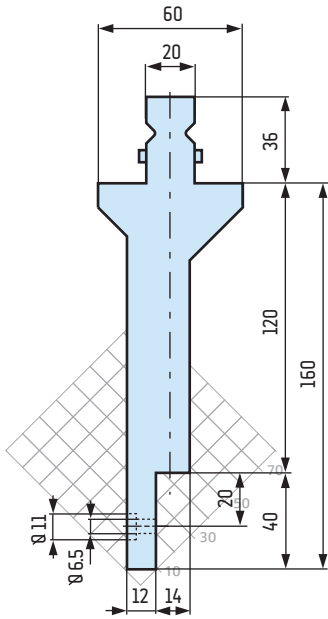


# TYPE "T" PUNCHES | STEMPLE TYPU „T”

insert punch | stempel z wkładką

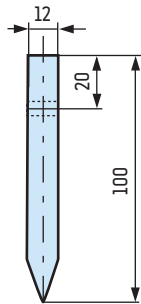
24h 42CrMo4

S 2206 100 t/m



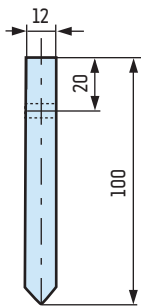
WKŁADKA R 0.3 – R 6

$\alpha = 28^\circ$



WKŁADKA R 0.2 – R 1.5

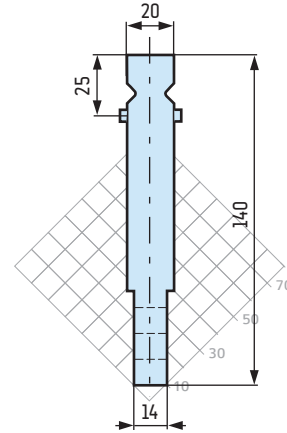
$\alpha = 84^\circ, 86^\circ, 90^\circ$



radius punch | stempel promieniowy

24h 42CrMo4

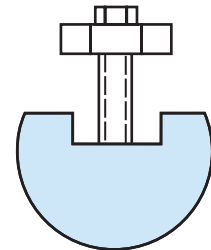
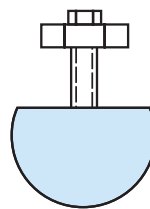
S 2207 80 t/m



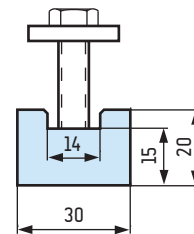
WKŁADKA R 7 – R 12



WKŁADKA R 12.5 – R 50

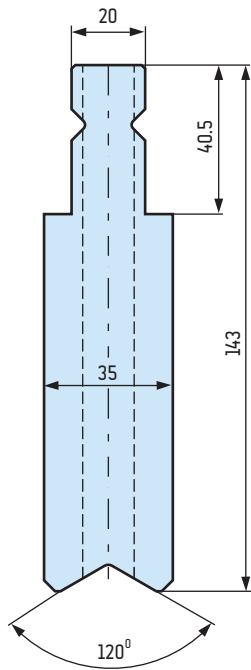


FLATTENING INSERT | WKŁADKA PŁASKA



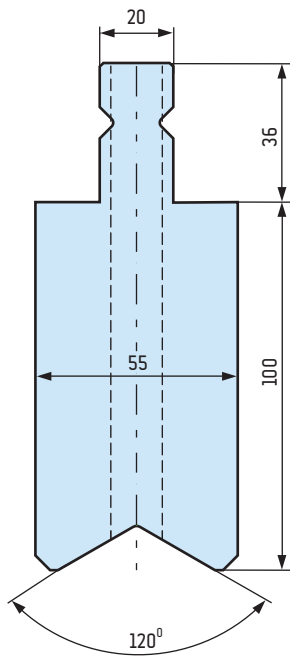
24h 42CrMo4

S 2208 R 10 – R 25

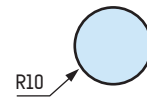


24h 42CrMo4

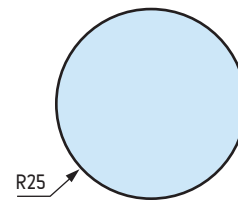
S 2208 W R 25 – R 75



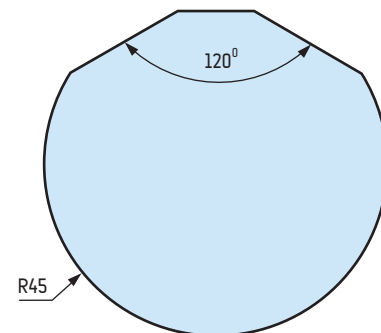
R 10



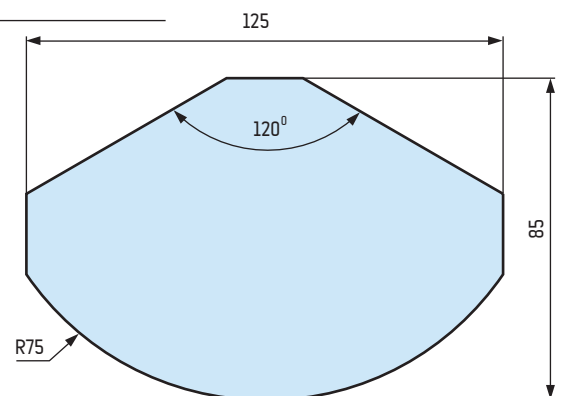
R 25



R 45



R 75



# TYPE "T" DIES 100 MM | MATRYCE TYPU „T” 100 MM

 42CrMo4

**M 7106** 100 t/m  
A = 6 mm, B = 20 mm

 42CrMo4

**M 7108** 100 t/m  
A = 8 mm, B = 20 mm

 42CrMo4

**M 7110** 100 t/m  
A = 10 mm, B = 20 mm

 42CrMo4

**M 7112** 100 t/m  
A = 12 mm, B = 25 mm

 42CrMo4

**M 7116** 100 t/m  
A = 16 mm, B = 30 mm

 42CrMo4

**M 7120** 100 t/m  
A = 20 mm, B = 30 mm

 42CrMo4

**M 7124** 100 t/m  
A = 24 mm, B = 35 mm

 42CrMo4

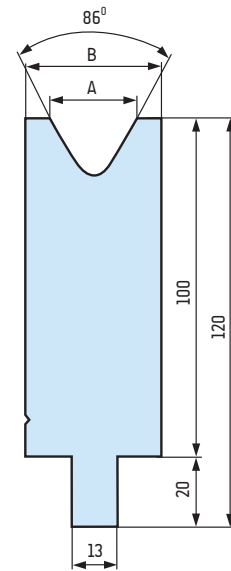
**M 7130** 100 t/m  
A = 30 mm, B = 45 mm

 42CrMo4

**M 7140** 100 t/m  
A = 40 mm, B = 55 mm

 42CrMo4

**M 7150** 100 t/m  
A = 50 mm, B = 75 mm

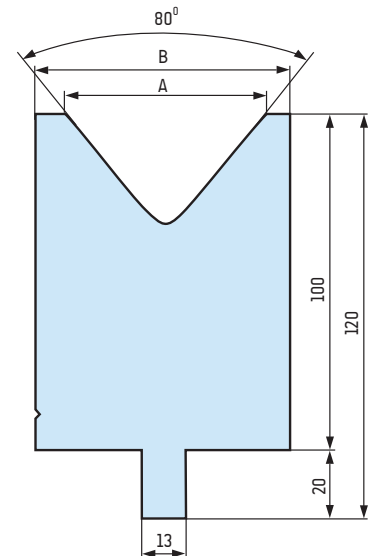


42CrMo4

**M 7260** 100 t/m  
A = 60 mm, B = 75 mm

42CrMo4

**M 7280** 100 t/m  
A = 80 mm, B = 100 mm



42CrMo4

**M 7306** 50 t/m  
A = 6 mm, B = 20 mm

42CrMo4

**M 7308** 40 t/m  
A = 8 mm, B = 20 mm

42CrMo4

**M 7310** 40 t/m  
A = 10 mm, B = 20 mm

42CrMo4

**M 7312** 40 t/m  
A = 12 mm, B = 25 mm

42CrMo4

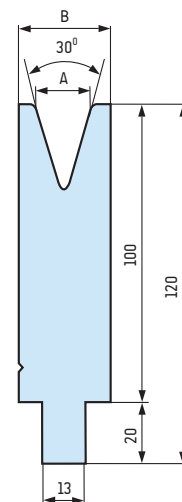
**M 7316** 45 t/m  
A = 16 mm, B = 30 mm

42CrMo4

**M 7320** 50 t/m  
A = 20 mm, B = 35 mm

42CrMo4

**M 7324** 50 t/m  
A = 24 mm, B = 40 mm



# TYPE "T" DIES 55 MM | MATRYCE TYPU „T” 55 MM

42CrMo4

**M 7406** 100 t/m

$\alpha = 90^\circ$

A = 6 mm, B = 15 mm

42CrMo4

**M 7408** 100 t/m

$\alpha = 90^\circ$

A = 8 mm, B = 15 mm

42CrMo4

**M 7410** 100 t/m

$\alpha = 90^\circ$

A = 10 mm, B = 20 mm

42CrMo4

**M 7412** 100 t/m

$\alpha = 88^\circ$

A = 12 mm, B = 20 mm

42CrMo4

**M 7416** 100 t/m

$\alpha = 88^\circ$

A = 16 mm, B = 30 mm

42CrMo4

**M 7420** 100 t/m

$\alpha = 88^\circ$

A = 20 mm, B = 30 mm

42CrMo4

**M 7424** 100 t/m

$\alpha = 88^\circ$

A = 24 mm, B = 40 mm

42CrMo4

**M 7432** 100 t/m

$\alpha = 85^\circ$

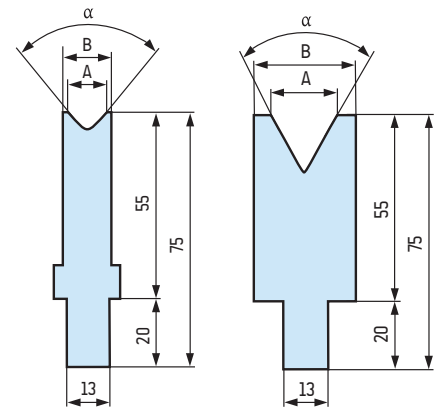
A = 32 mm, B = 50 mm

42CrMo4

**M 7440** 100 t/m

$\alpha = 85^\circ$

A = 40 mm, B = 55 mm



42CrMo4

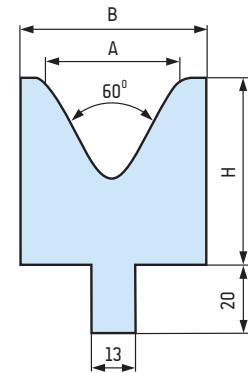
**M 7540** 80 t/m

A = 40 mm, B = 55 mm, H = 55 mm

42CrMo4

**M 7560** 60 t/m

A = 60 mm, B = 80 mm, H = 65 mm



42CrMo4

**M 7606** 35 t/m

A = 6 mm, B = 15 mm

42CrMo4

**M 7608** 100 t/m

A = 8 mm, B = 15 mm

42CrMo4

**M 7610** 100 t/m

A = 10 mm, B = 15 mm

42CrMo4

**M 7612** 40 t/m

A = 12 mm, B = 20 mm

42CrMo4

**M 7616** 45 t/m

A = 16 mm, B = 30 mm, H = 55 mm

42CrMo4

**M 7620** 50 t/m

A = 20 mm, B = 35 mm, H = 55 mm

42CrMo4

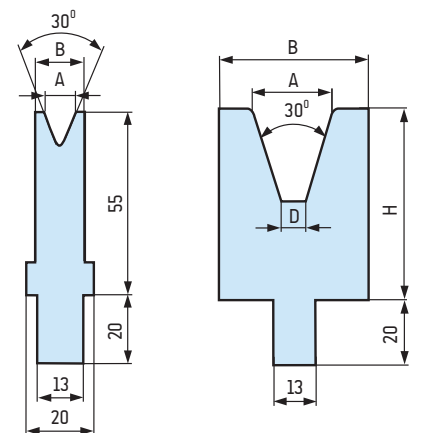
**M 7624** 50 t/m

A = 24 mm, B = 40 mm, H = 55 mm

42CrMo4

**M 7632** 50 t/m

A = 32 mm, B = 60 mm, H = 60 mm





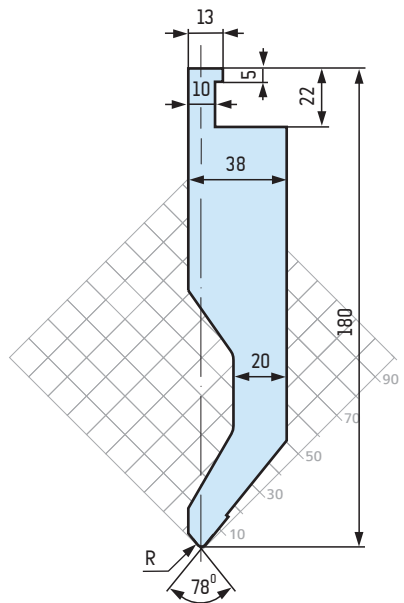
# TYPE "L" PUNCHES | STEMPEL TYPU „L“

42CrMo4

**S 2510 C** 70 t/m

$\alpha = 78^\circ$

$R = 2 \text{ mm}$

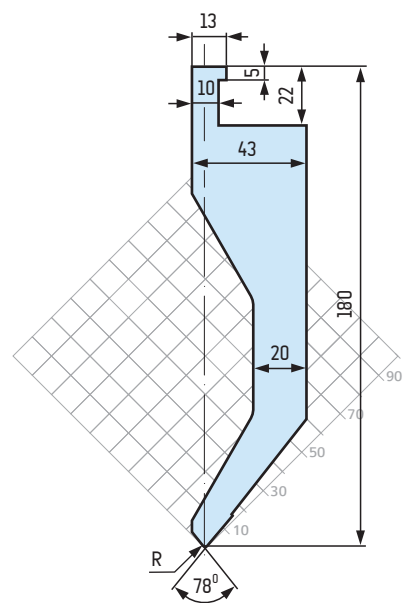


42CrMo4

**S 2510 D** 40 t/m

$\alpha = 78^\circ$

$R = 1 \text{ mm}$

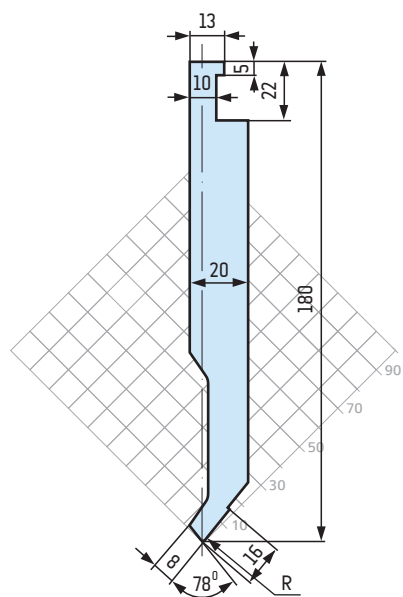


42CrMo4

**S 2510 E** 40 t/m

$\alpha = 78^\circ$

$R = 1 \text{ mm}$

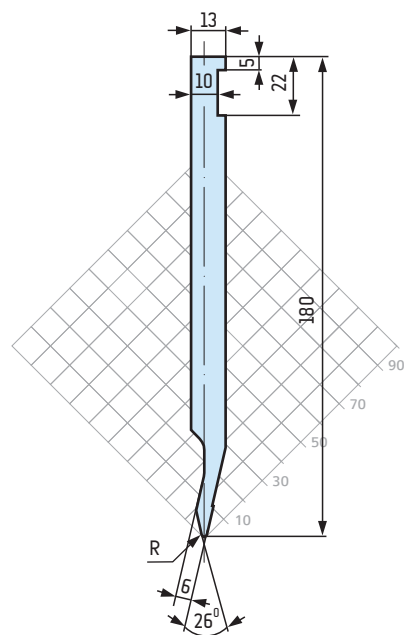


42CrMo4

**S 2510 F** 40 t/m

$\alpha = 26^\circ$

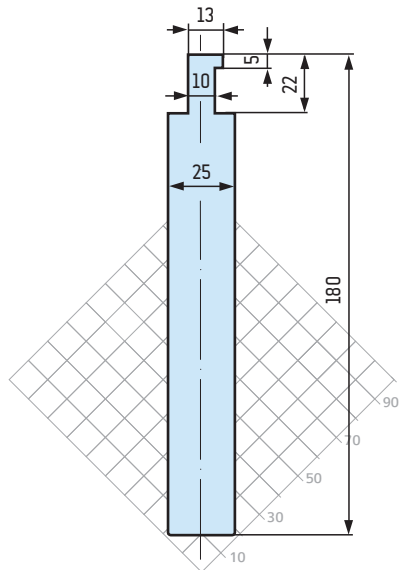
$R = 1 \text{ mm}$



# TYPE "L" PUNCHES | STEMPE TYPU „L“

42CrMo4

**S 2510 H** 150 t/m

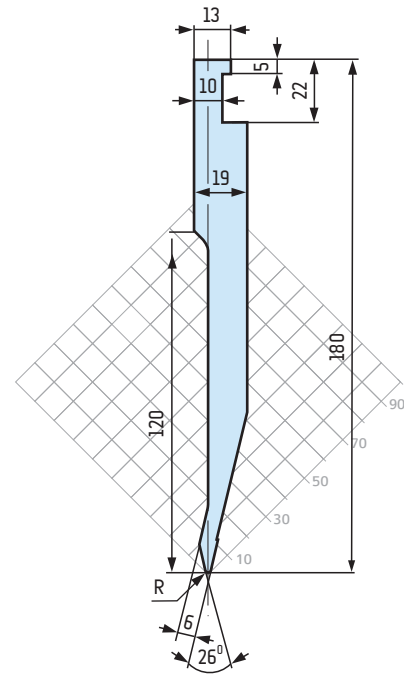


42CrMo4

**S 2510 J** 40 t/m

$\alpha = 26^\circ$

$R = 1 \text{ mm}$



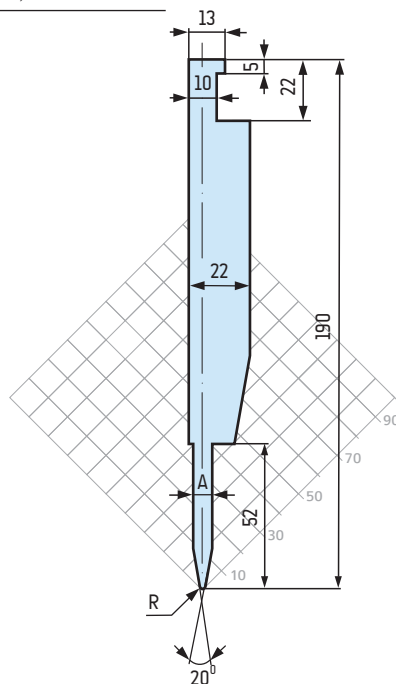
42CrMo4

**S 2510 P** 40 t/m

$\alpha = 20^\circ$

$R = 1 \text{ mm}$

$A = 8 \text{ mm}, 10 \text{ mm}, 12 \text{ mm}$

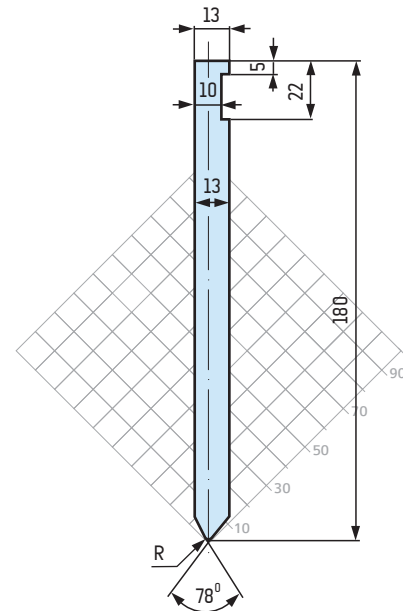


42CrMo4

**S 2510 R** 80 t/m

$\alpha = 78^\circ$

$R = 2 \text{ mm}$



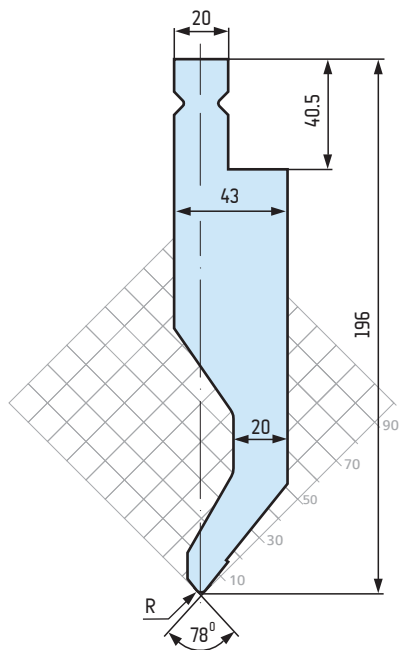
# TYPE "L" PUNCHES | STEMPEL TYPUS „L“

42CrMo4

**S 2610 C** 70 t/m

$\alpha = 78^\circ$

$R = 2 \text{ mm}$

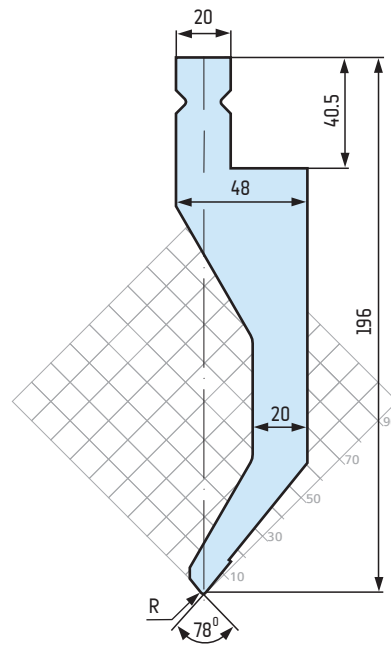


42CrMo4

**S 2610 D** 40 t/m

$\alpha = 78^\circ$

$R = 1 \text{ mm}$

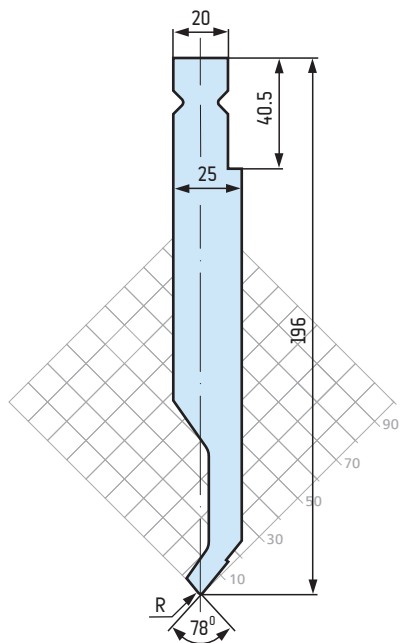


42CrMo4

**S 2610 E** 40 t/m

$\alpha = 78^\circ$

$R = 1 \text{ mm}$

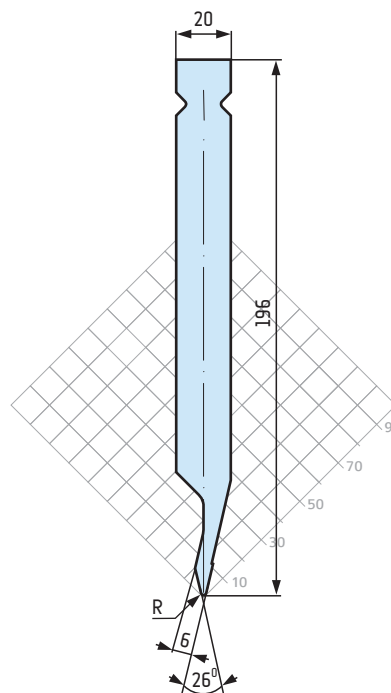


42CrMo4

**S 2610 F** 40 t/m

$\alpha = 26^\circ$

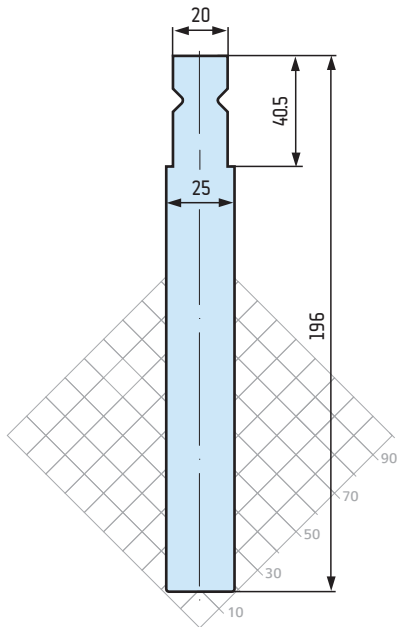
$R = 1 \text{ mm}$



# TYPE "L" PUNCHES | STEMPEL TYPU „L“

42CrMo4

**S 2610 H** 160 t/m

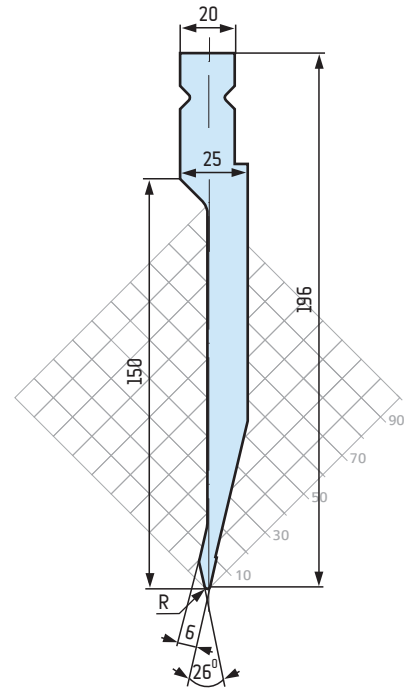


42CrMo4

**S 2610 J** 40 t/m

$\alpha = 26^\circ$

$R = 1 \text{ mm}$



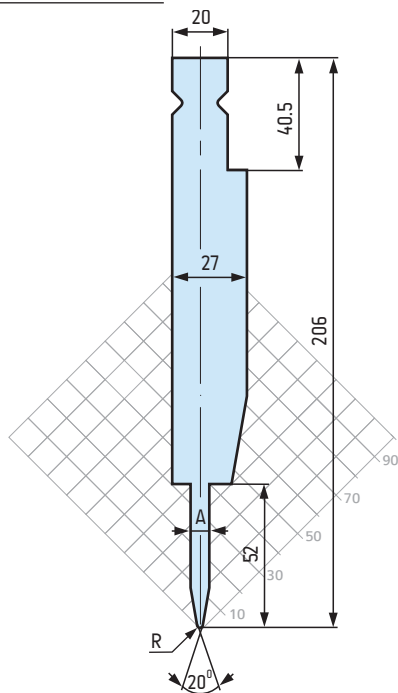
42CrMo4

**S 2610 P** 40 t/m

$\alpha = 20^\circ$

$R = 1 \text{ mm}$

$A = 8 \text{ mm}, 10 \text{ mm}, 12 \text{ mm}$

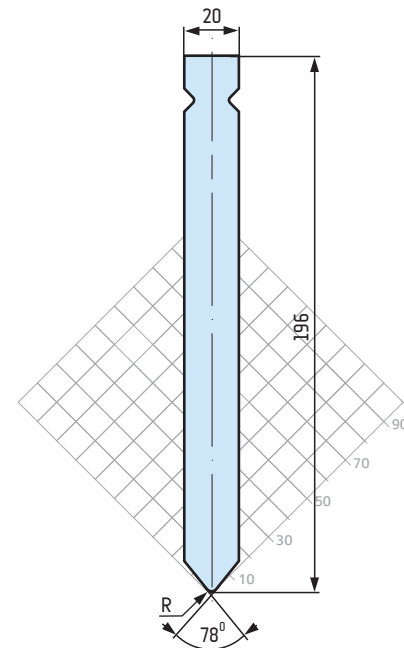


42CrMo4

**S 2610 R** 80 t/m

$\alpha = 78^\circ$

$R = 2 \text{ mm}$



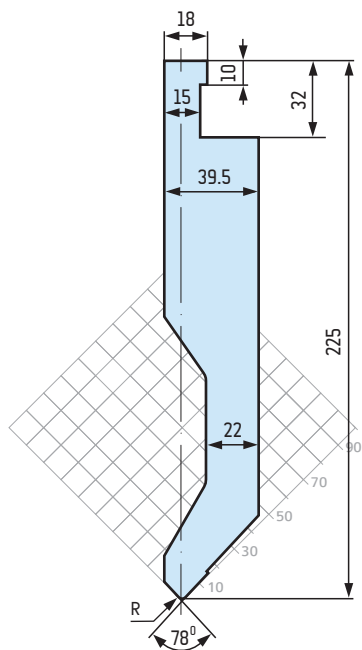
# TYPE "L" PUNCHES | STEMPEL TYPU „L“

42CrMo4

**S 2515 C** 80 t/m

$\alpha = 78^\circ$

$R = 2 \text{ mm}$

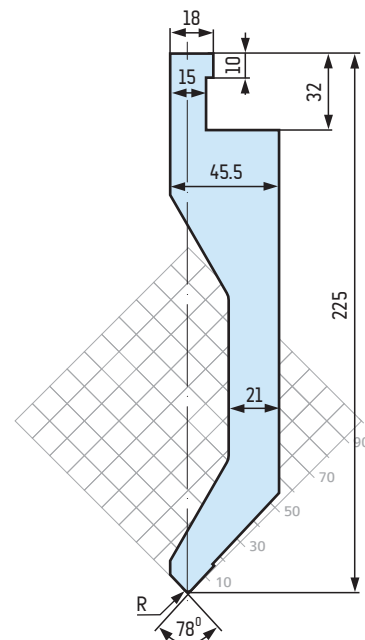


42CrMo4

**S 2515 D** 75 t/m

$\alpha = 78^\circ$

$R = 2 \text{ mm}$

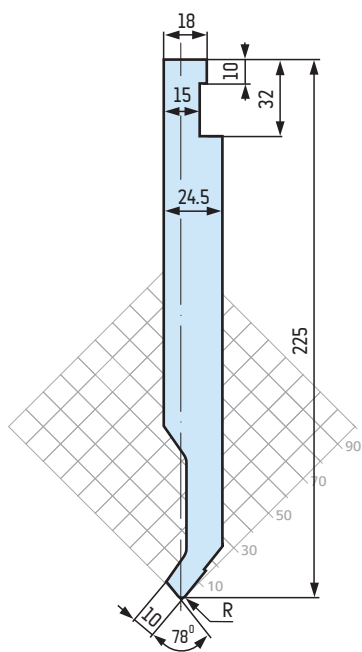


42CrMo4

**S 2515 E** 50 t/m

$\alpha = 78^\circ$

$R = 2 \text{ mm}$

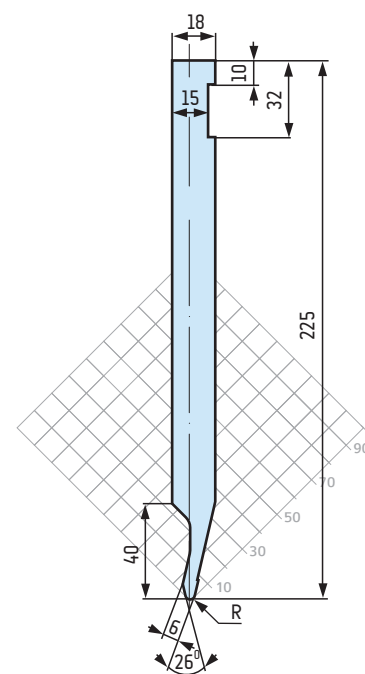


42CrMo4

**S 2515 F** 50 t/m

$\alpha = 26^\circ$

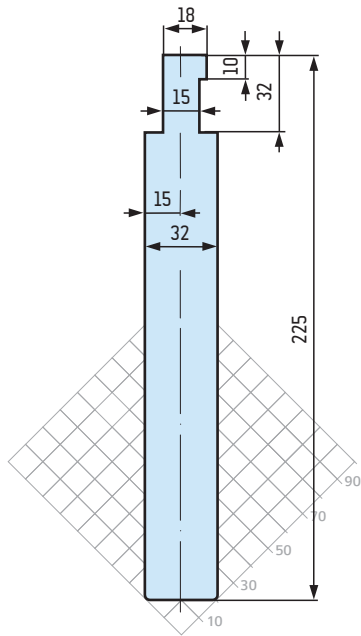
$R = 2 \text{ mm}$



# TYPE "L" PUNCHES | STEMPEL TYPU „L“

42CrMo4

**S 2515 H** 150 t/m

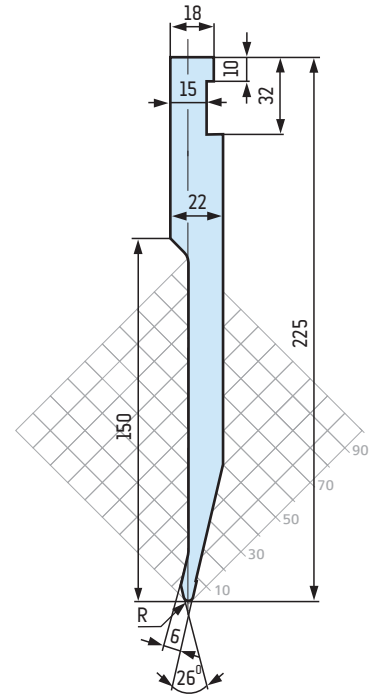


42CrMo4

**S 2515 J** 50 t/m

$\alpha = 26^\circ$

$R = 2 \text{ mm}$

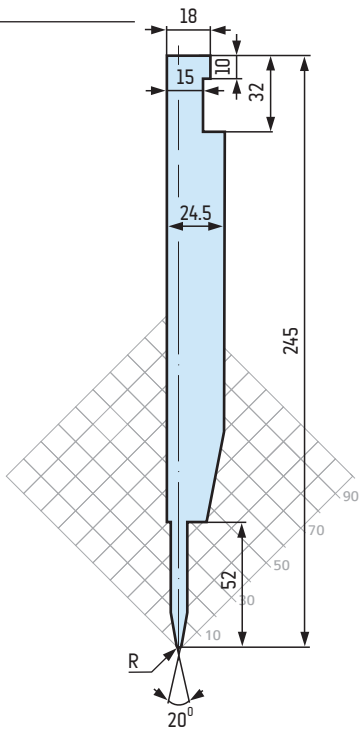


42CrMo4

**S 2515 P** 40 t/m

$\alpha = 20^\circ$

$R = 1 \text{ mm}$

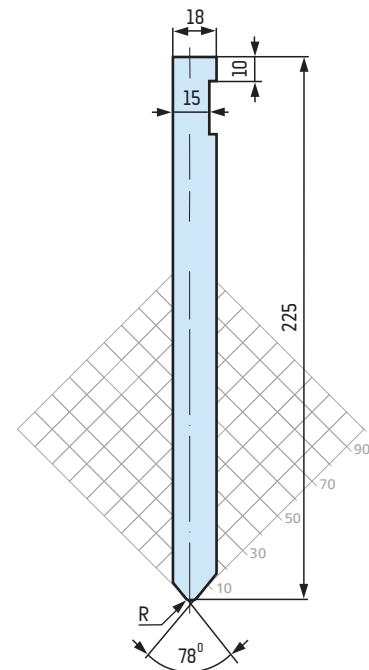


42CrMo4

**S 2515 R** 120 t/m

$\alpha = 78^\circ$

$R = 2 \text{ mm}$



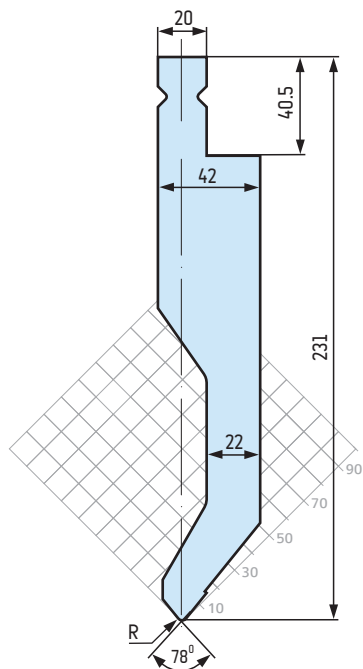
# TYPE "L" PUNCHES | STEMPEL TYPU „L“

42CrMo4

**S 2615 C** 80 t/m

$\alpha = 78^\circ$

$R = 2 \text{ mm}$

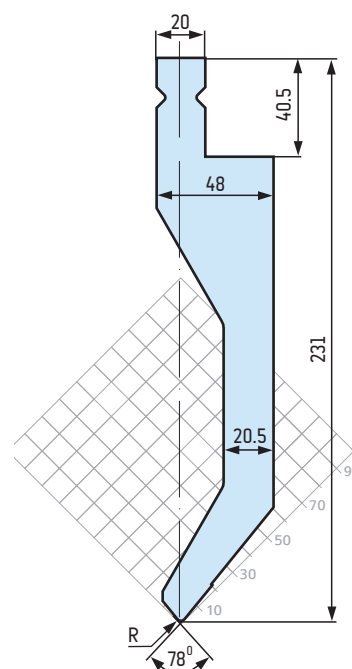


42CrMo4

**S 2615 D** 75 t/m

$\alpha = 78^\circ$

$R = 2 \text{ mm}$

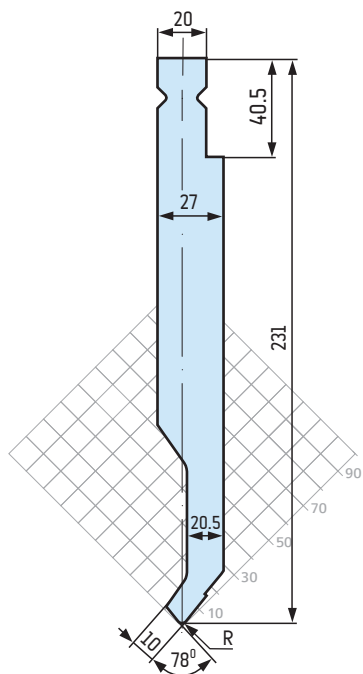


42CrMo4

**S 2615 E** 50 t/m

$\alpha = 78^\circ$

$R = 2 \text{ mm}$

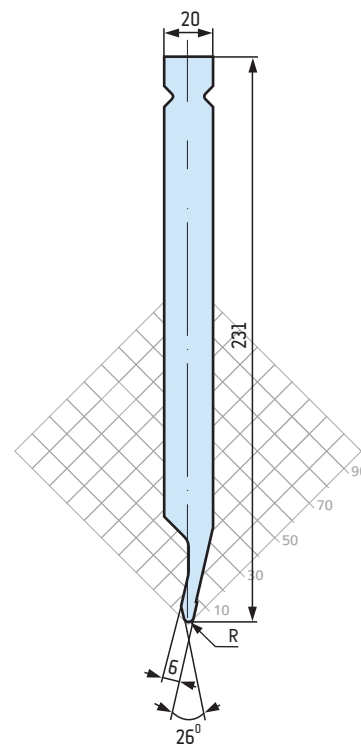


42CrMo4

**S 2615 F** 50 t/m

$\alpha = 26^\circ$

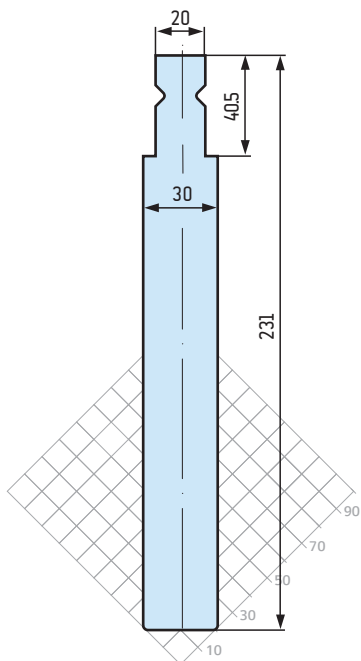
$R = 2 \text{ mm}$



# TYPE "L" PUNCHES | STEMPEL TYPU „L“

42CrMo4

**S 2615 H** 150 t/m

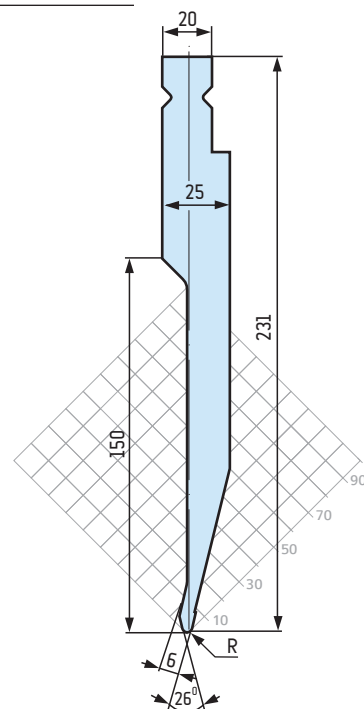


42CrMo4

**S 2615 J** 50 t/m

$\alpha = 26^\circ$

$R = 2 \text{ mm}$

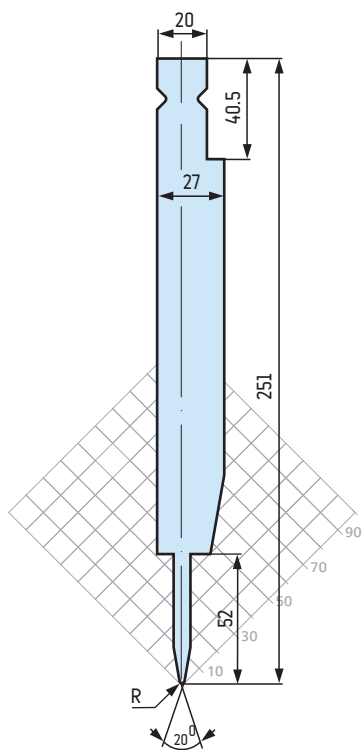


42CrMo4

**S 2615 P** 40 t/m

$\alpha = 20^\circ$

$R = 1 \text{ mm}$

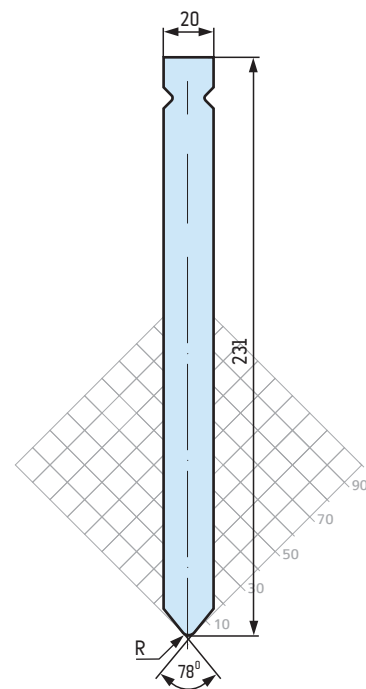


42CrMo4

**S 2615 R** 120 t/m

$\alpha = 78^\circ$

$R = 3 \text{ mm}$





# TYPE "L" DIES 90 MM | MATRYCE TYPU „L” 90 MM

 42CrMo4

**M 5106** 20 t/m

A = 6 mm, B = 16 mm, C = 32 mm

 42CrMo4

**M 5110** 30 t/m

A = 10 mm, B = 25 mm, C = 32 mm

 42CrMo4

**M 5116** 35 t/m

A = 16 mm, B = 32 mm, C = 32 mm

 42CrMo4

**M 5124** 55 t/m

A = 24 mm, B = 45 mm, C = 45 mm

 42CrMo4

**M 5140** 60 t/m

A = 40 mm, B = 75 mm, C = 75 mm

 42CrMo4

**M 5108** 20 t/m

A = 8 mm, B = 18 mm, C = 32 mm

 42CrMo4

**M 5112** 35 t/m

A = 12 mm, B = 25 mm, C = 32 mm

 42CrMo4

**M 5120** 60 t/m

A = 20 mm, B = 40 mm, C = 40 mm

 42CrMo4

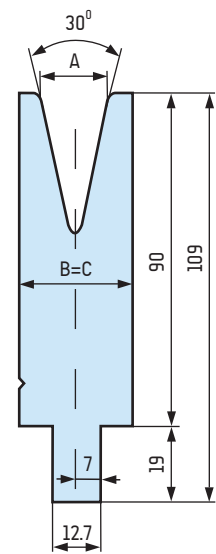
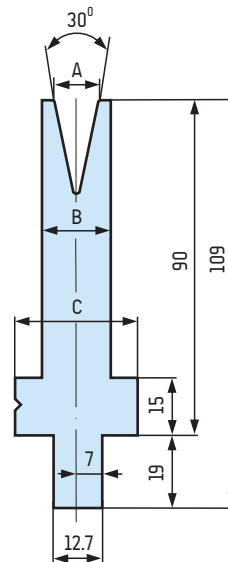
**M 5130** 35 t/m

A = 30 mm, B = 70 mm, C = 70 mm

 42CrMo4

**M 5150** 80 t/m

A = 50 mm, B = 95 mm, C = 95 mm



42CrMo4

**M 5206** 40 t/m

A = 6 mm, B = 12 mm, C = 32 mm

42CrMo4

**M 5210** 50 t/m

A = 10 mm, B = 14 mm, C = 32 mm

42CrMo4

**M 5216** 80 t/m

A = 16 mm, B = 25 mm, C = 32 mm

42CrMo4

**M 5224** 100 t/m

A = 24 mm, B = 32 mm, C = 32 mm

42CrMo4

**M 5240** 130 t/m

A = 40 mm, B = 50 mm, C = 50 mm

42CrMo4

**M 5260** 150 t/m

A = 60 mm, B = 70 mm, C = 70 mm

42CrMo4

**M 5208** 40 t/m

A = 8 mm, B = 12 mm, C = 32 mm

42CrMo4

**M 5212** 60 t/m

A = 12 mm, B = 18 mm, C = 32 mm

42CrMo4

**M 5220** 100 t/m

A = 20 mm, B = 32 mm, C = 32 mm

42CrMo4

**M 5230** 110 t/m

A = 30 mm, B = 40 mm, C = 40 mm

42CrMo4

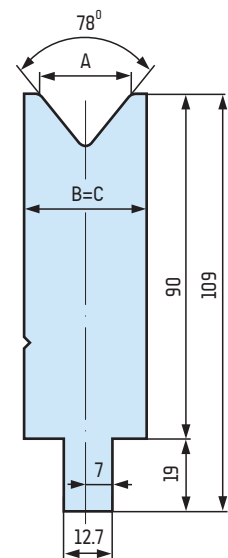
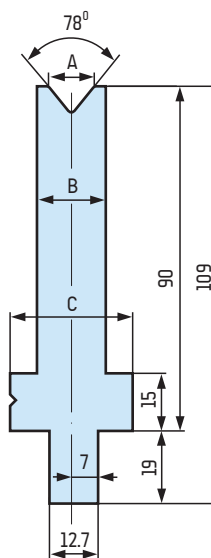
**M 5250** 150 t/m

A = 50 mm, B = 70 mm, C = 70 mm

42CrMo4

**M 5280** 150 t/m

A = 80 mm, B = 95 mm, C = 95 mm



# TYPE "L" DIES 130 MM | MATRYCE TYPU „L” 130 MM

**24h** 42CrMo4

**M 5306** 20 t/m

A = 6 mm, B = 16 mm, C = 32 mm

**24h** 42CrMo4

**M 5312** 35 t/m

A = 12 mm, B = 25 mm, C = 32 mm

**24h** 42CrMo4

**M 5324** 55 t/m

A = 24 mm, B = 45 mm, C = 45 mm

**24h** 42CrMo4

**M 5350** 70 t/m

A = 50 mm, B = 95 mm, C = 95 mm

**24h** 42CrMo4

**M 5308** 20 t/m

A = 8 mm, B = 18 mm, C = 32 mm

**24h** 42CrMo4

**M 5316** 35 t/m

A = 16 mm, B = 32 mm, C = 32 mm

**24h** 42CrMo4

**M 5330** 60 t/m

A = 30 mm, B = 70 mm, C = 70 mm

**24h** 42CrMo4

**M 5310** 30 t/m

A = 10 mm, B = 25 mm, C = 32 mm

**24h** 42CrMo4

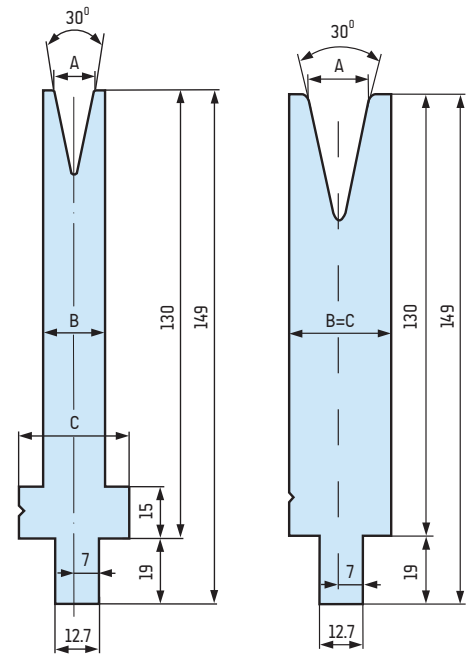
**M 5320** 35 t/m

A = 20 mm, B = 40 mm, C = 40 mm

**24h** 42CrMo4

**M 5340** 60 t/m

A = 40 mm, B = 75 mm, C = 75 mm



42CrMo4

**M 5406** 40 t/m

A = 6 mm, B = 12 mm, C = 32 mm

42CrMo4

**M 5412** 60 t/m

A = 12 mm, B = 18 mm, C = 32 mm

42CrMo4

**M 5424** 100 t/m

A = 24 mm, B = 32 mm, C = 32 mm

42CrMo4

**M 5450** 150 t/m

A = 50 mm, B = 70 mm, C = 70 mm

42CrMo4

**M 54120** 150 t/m

A = 120 mm, B = 140 mm, C = 140 mm

42CrMo4

**M 5408** 40 t/m

A = 8 mm, B = 12 mm, C = 32 mm

42CrMo4

**M 5416** 80 t/m

A = 16 mm, B = 25 mm, C = 32 mm

42CrMo4

**M 5430** 110 t/m

A = 30 mm, B = 40 mm, C = 40 mm

42CrMo4

**M 5480** 150 t/m

A = 80 mm, B = 95 mm, C = 95 mm

42CrMo4

**M 5410** 50 t/m

A = 10 mm, B = 14 mm, C = 32 mm

42CrMo4

**M 5420** 100 t/m

A = 20 mm, B = 32 mm, C = 32 mm

42CrMo4

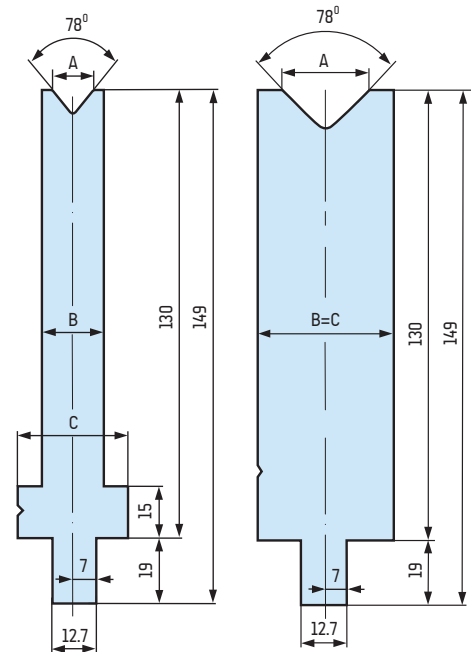
**M 5440** 130 t/m

A = 40 mm, B = 50 mm, C = 50 mm

42CrMo4

**M 54100** 150 t/m

A = 100 mm, B = 120 mm, C = 120 mm



# TYPE "L" DIES | MATRYCE TYPU „L”

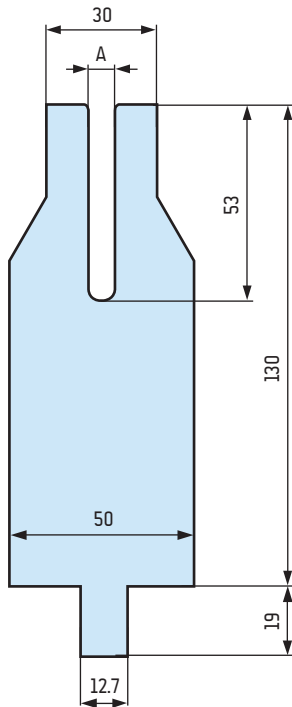
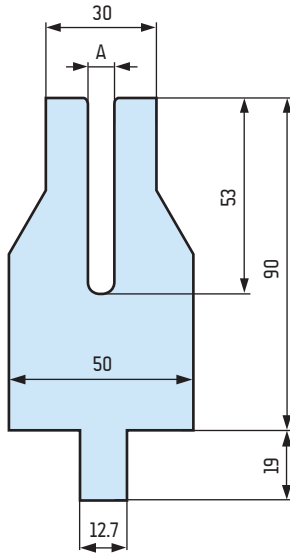
flattening dies | matryce do zagniatania

42CrMo4

**M 5000**

A = 8 mm, 10 mm, 12 mm

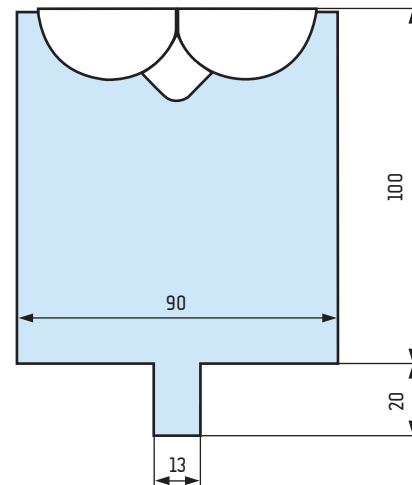
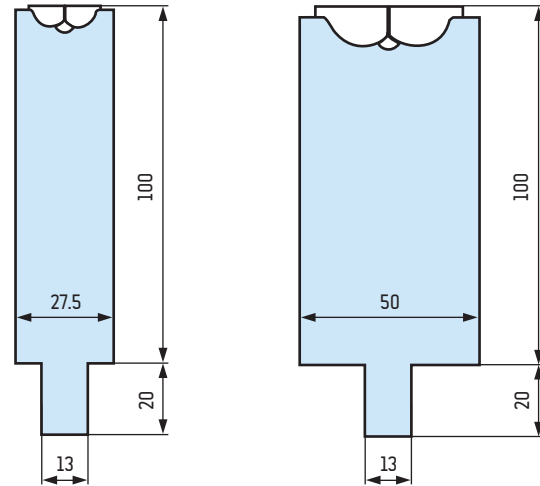
R = 1 mm



dies with movable inserts |  
matryce z ruchomymi wkładkami

*Dies created for mark-free bending of stainless and coated steel.  
Thanks to continuous support they allow use on short bending arms,  
and next to holes.*

*Matryce przeznaczone do gięcia bezśladowego blachy nierdzewnej  
i powlekanej. Dzięki stałemu podparciu umożliwiają gięcie blach  
o krótkich ramionach, i w sąsiedztwie otworów.*

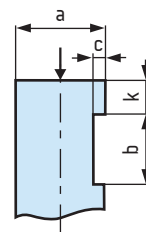
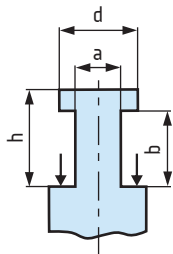
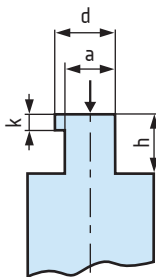
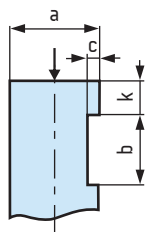


*Different sizes of dies available. Dies can be offered with:  
60 mm - type A, 13 mm - type T and 12.7 mm - type L holding type.  
Length of a single section - 100 mm.*

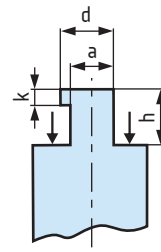
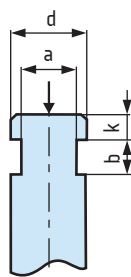
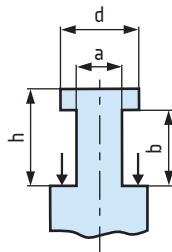
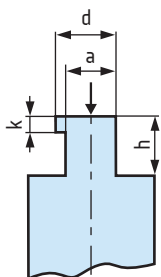
*Możliwość wykonania różnej wielkości matryc. Dostępne uchwyty matryc:  
60 mm - typ A, 13 mm - typ T oraz 12.7 mm - typ L.  
Długość pojedynczego segmentu do 100 mm.*

# PUNCH MOUNTING EDGE | RODZAJE UCHWYTÓW STEMPLI

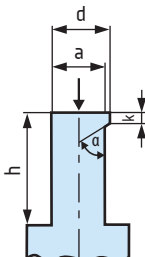
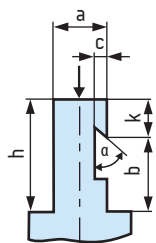
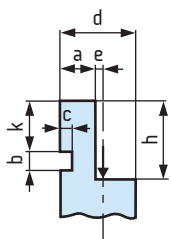
A B C D



E F G H



I J K



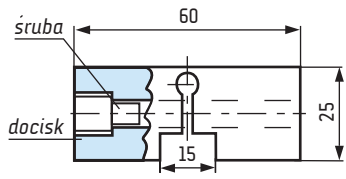
We offer punches with mounting edges as shown. The client can order a type from the drawing specifying his dimensions. The client may order a mounting edge to his own design.

W ofercie znajdują się stemple z uchwytem standardowym oraz z innymi typami uchwytów. Klient ma możliwość zamówienia narzędzi z uchwytem z przedstawionego zestawu po określeniu symbolu literowego (np: „E”) oraz zaznaczonych wymiarów. Można również zamówić narzędzie z uchwytem własnego projektu.

# DIE HOLDERS | MOCOWANIA MATRYC

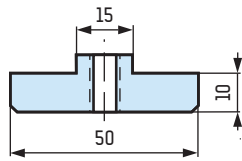
24h

2 V

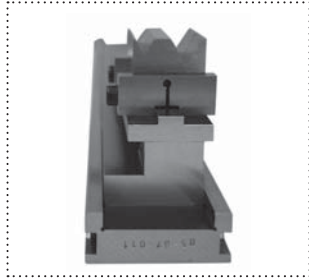
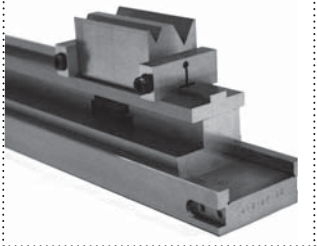


24h

A

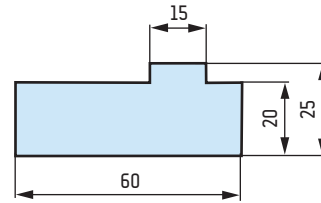


ASSEMBLY | PRZYKŁAD MONTAŻU



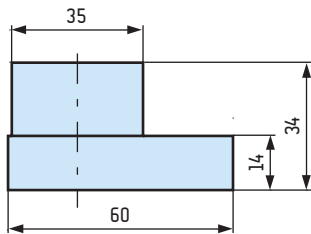
24h

A 20



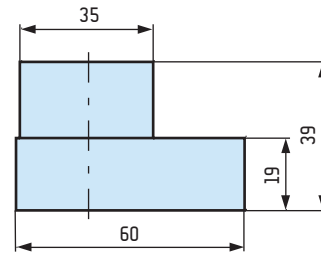
24h

A 34



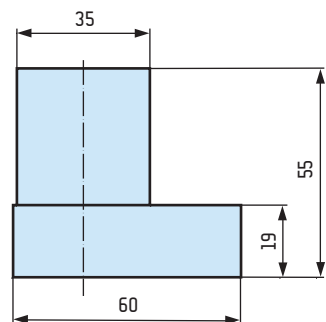
24h

A 39



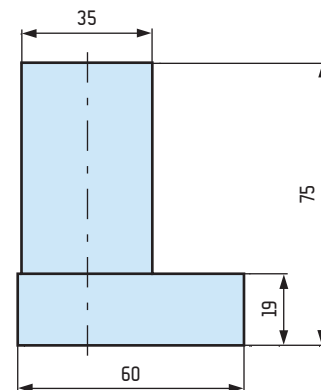
24h

A 55



24h

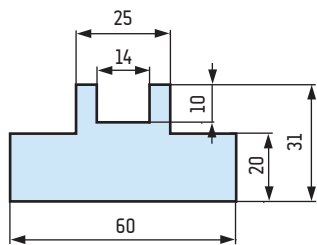
A 75



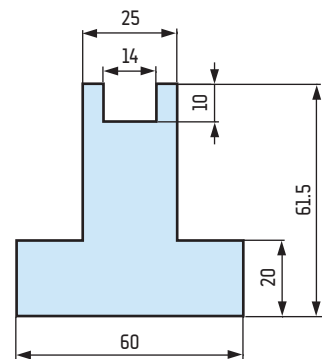
# DIE HOLDERS | MOCOWANIA MATRYC



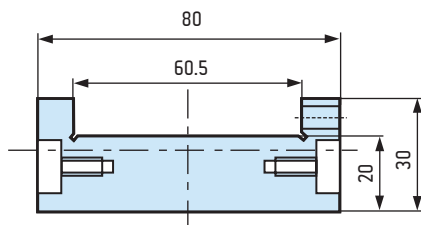
A 31



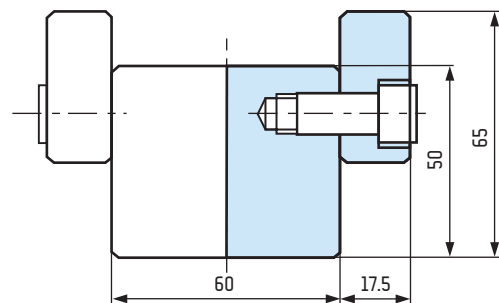
A 61



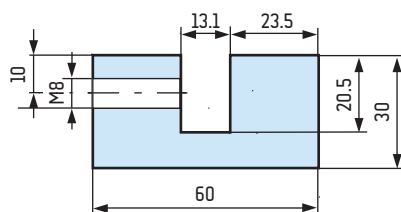
B 60



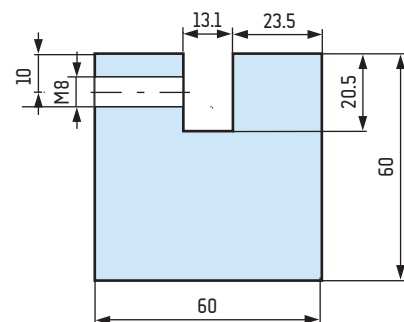
C 60

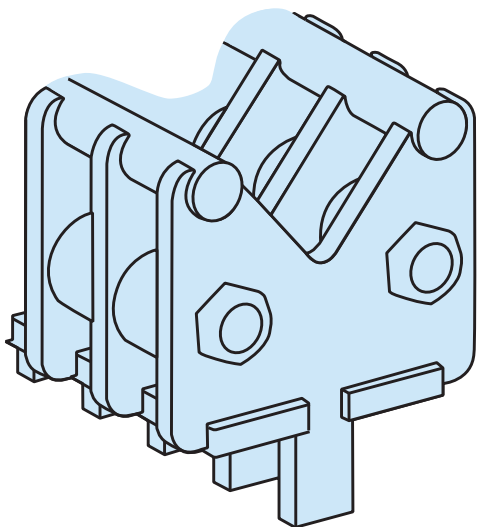


D 30



D 60





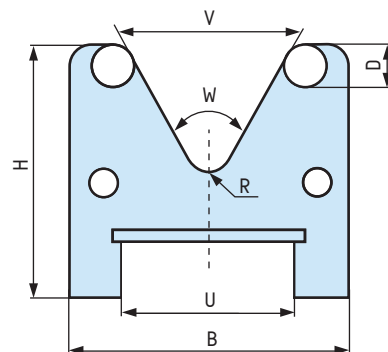
Matryce składane - o niskim tarciu. Wykonane ze stali stopowej, z wkładkami o twardości 60 HRC, stanowią tańszą alternatywę dla matryc pełnych. Dzięki wysokiej wytrzymałości mogą być używane do większości zastosowań przy blachach grubych i średniej grubości. Możliwa jest zmiana długości matryc, wymiana wkładek i wykonanie z każdym systemem mocowania.

“Low Friction” dies meet the high demands of customers who need continual product improvement. By using new production techniques a new tooling product has been developed offering great value for money. It can be used for almost any application and will be a major advantage for use in the midrange and heavy sheet metal industry.

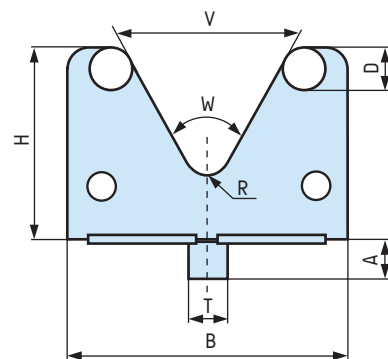
V	D	W <sup>0</sup>	B	H	R	t/m
24	6	80	44	55	2	50
24	6	30	44	55	2	30
32	6	80	52	55	3	50
32	6	30	52	55	5	30
40	6	80	60	55	5	60
48	6	80	68	55	5	70
mm	mm	°	mm	mm	mm	

V	D	W <sup>0</sup>	B	H	R	t/m
40	15	30	78	80	5	100
50	15	35	88	90	7	100
60	15	40	98	110	10	120
80	20	45	130	130	10	160
100	20	55	150	140	18	200
120	25	60	180	160	18	250
150	25	70	212	180	25	300
200	30	80	270	220	30	350
250	30	80	325	300	40	400
300	40	80	400	360	40	450
400	50	80	524	400	50	550
mm	mm	°	mm	mm	mm	

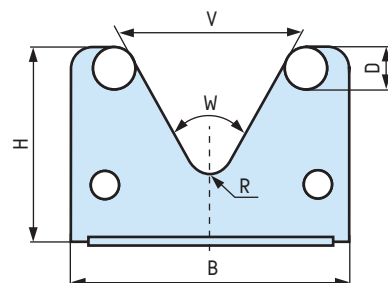
S



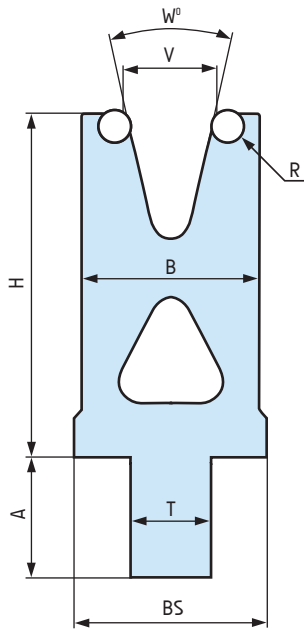
T



U



# COMPOUND DIES | MATRYCE SKŁADANE

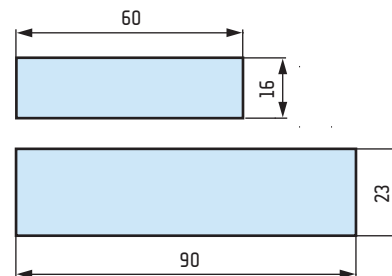
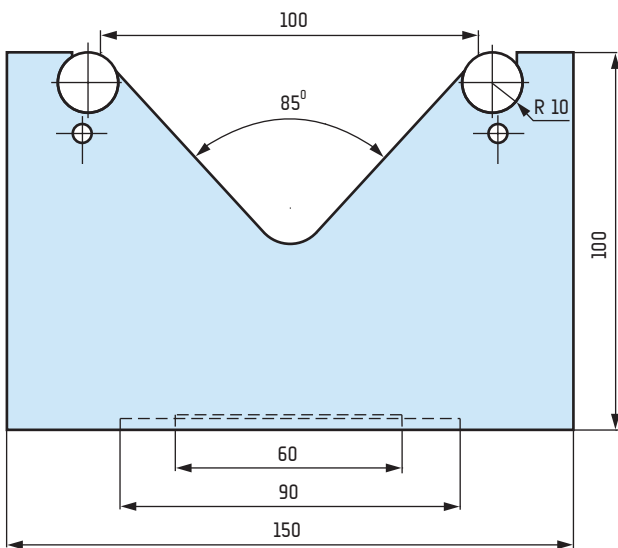


Compound dies are press brake dies for “airbending” only. The high precision, high quality, hardened and anodised, aluminium die body, contains the two hardened and ground die bars. The die bars are interchangeable in case of wear. The bars can be TiN coated for longer life, and less friction. Bronze or non metallic bars can be supplied for special applications.

Matryce kompozytowe, wykonane z wytrzymałych stopów utwardzonego aluminium. Matryce posiadają wysokiej jakości wymienne wkładki stalowe, hartowane i szlifowane. Możliwe jest zastosowanie wkładek pokrytych powłoką TiN dla zmniejszenia tarcia lub użycie wkładek plastikowych. Do specjalnych zastosowań możemy dostarczyć wkładki z brązu lub innych materiałów

V	R	W	B	BS	H	T/m	T	A
8	1.5	30	20	30	55	20	13	20
12	2	30	24	30	55	30	13	20
16	2.5	30	28	28	55	40	13	20
20	2.5	30	32	32	55	45	13	20
24	3	30	40	40	55	50	13	20
32	4	60	52	52	55	60	13	20

# ROLL DIES | MATRYCE ROLKOWE



Round inserts hardened up to 60 HRC allow for bending steel up to 14 mm thick.

Matryce z rolkami o twardości do 60 HRC pozwalają na gięcie twardych blach o grubości do 14 mm.

Rectangular inserts 60 mm or 90 mm wide allow the die to be fixed on smaller machine beams.

Wkładki o szerokości 60 mm lub 90 mm mogą służyć do zamocowania na węższym stole.

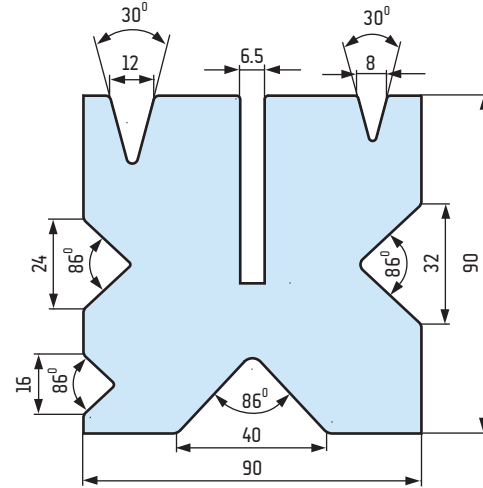
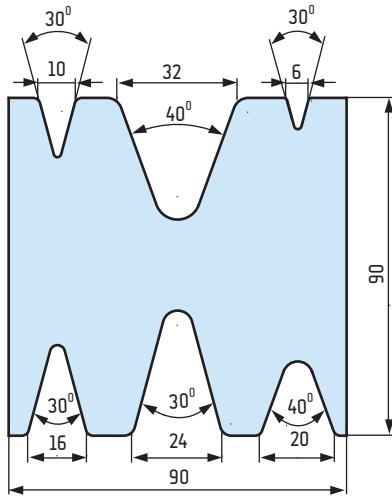


# SPECIAL DIES | MATRYCE SPECJALNE

## multiple vee dies | matryce wielorowkowe 42CrMo4

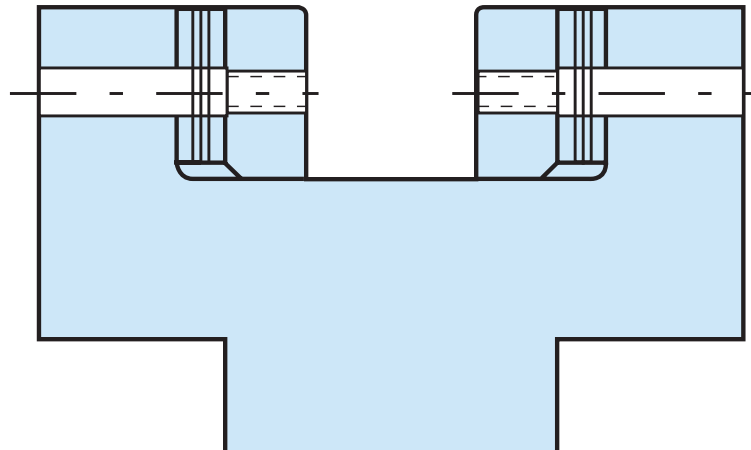
We can offer different sizes to the customers specification, length up to 4100 mm.

Oferujemy matryce z wieloma rowkami, według specyfikacji klienta o długości do 4100 mm.



## variable vee die | matryca z regulowaną szerokością wyjęcia

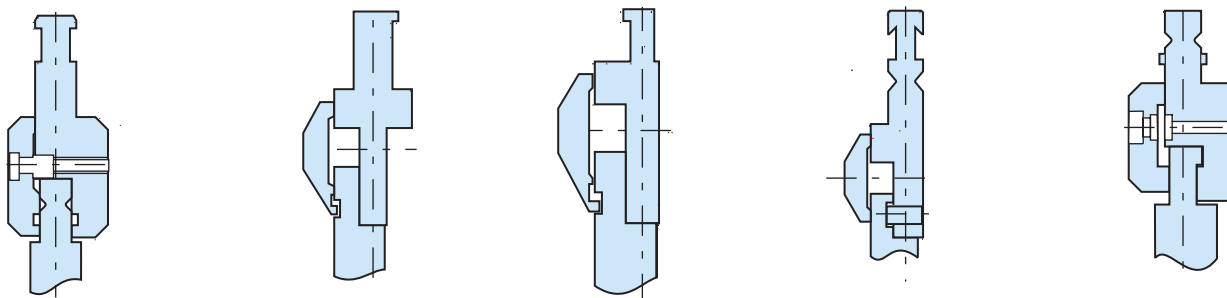
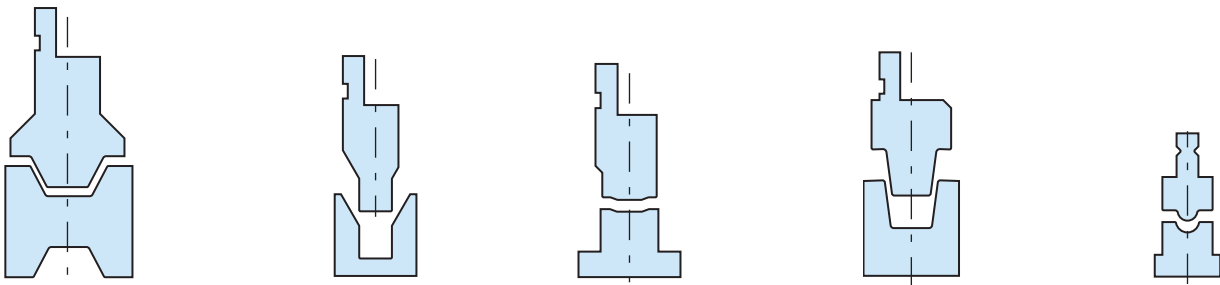
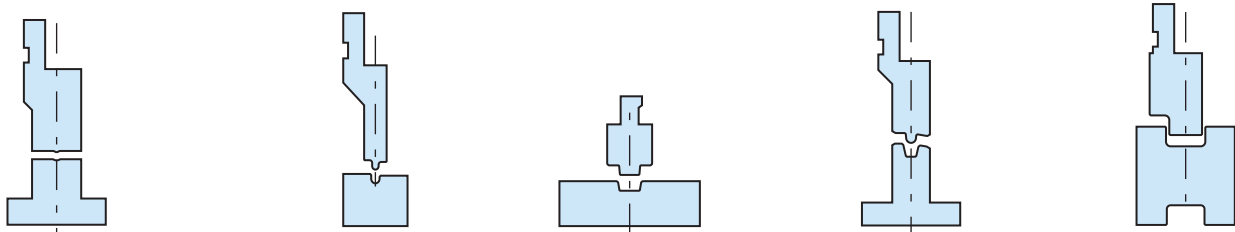
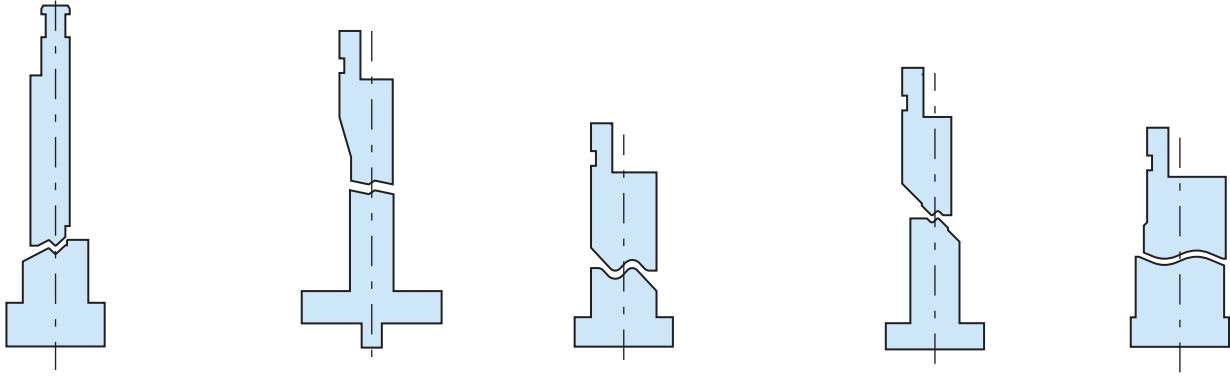
Adjusted with inserts for different vee size.  
Wkładki pozwalają zmieniać szerokość roboczą matrycy.



# SPECIAL TOOLING | NARZĘDZIA SPECJALNE

Example of specialized tooling. We can offer many types of punches and dies for special applications, as well as non standard holders.

Przykłady narzędzi do zastosowań specjalnych. Możemy zaoferować wiele typów narzędzi do gięcia specjalistycznych profili, oraz niestandardowych mocowań narzędzi.

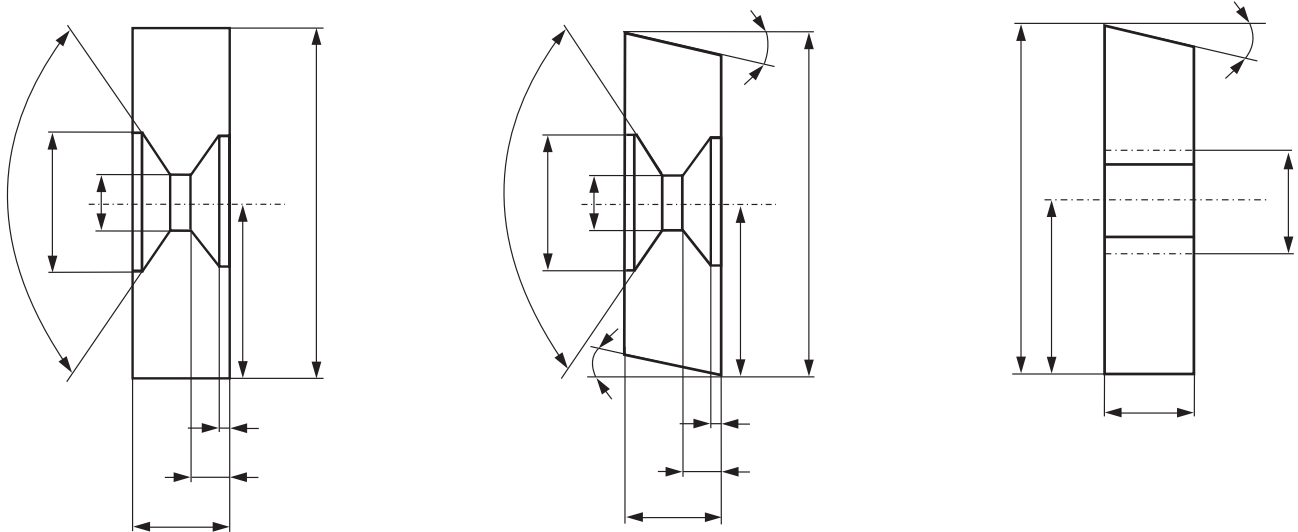
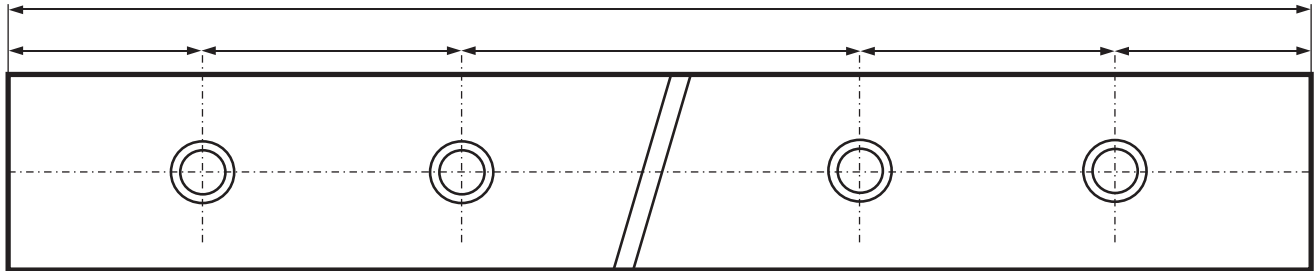


## OTHER PRODUCTS | POZOSTAŁE PRODUKTY

### shear blades | noże do gilotyn

*Insert dimensions*

*Przy zamówieniu uzupełnić wymiary*

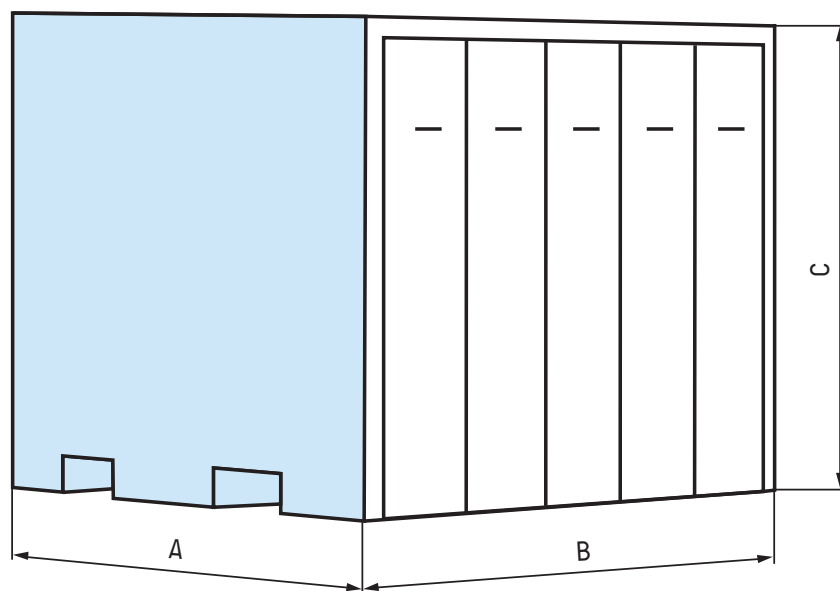


We offer shear blades for most types of shears, typical or according to the clients own drawings .We grind the blades and harden them to  $55 \pm 2$  HRC. We have in stock all types of Polish and Czech shear knives types NG 3-13, NTE, CNTA 6.3-25. We can also offer many other types of blades according to the client drawings and specification, of length up to 1550 mm. We can regrind and repair used blades of up to 4100 mm in length.

Produkujemy noże do nożyc gilotynowych, szlifowane i hartowane na wskroś do  $55 \pm 2$  HRC. W stałej sprzedaży posiadamy noże do nożyc NG 3-13, NTE, CNTA 6.3-25. Możemy wykonać wiele innych typów noży według rysunków i specyfikacji klienta o długości noża do 1550 mm. Oferujemy również ostrzenie noży gilotynowych o długości do 4100 mm.

## OTHER PRODUCTS | POZOSTAŁE PRODUKTY

tooling cabinets | szafy na narzędzia



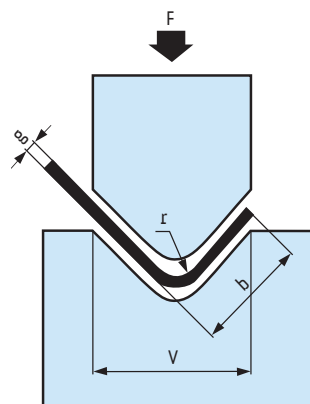
Safe and functional tooling cabinets allow fast and easy access to tools, while protecting them from mechanical damage. Available with 3, 4 or 5 sections, each capable of storing up to 10 m of tooling. Solid upper and lower shelves allow storing of sectionalized tooling. As standard made for type A tools, punches with 13 mm holding and dies with 60 mm holding, 835 mm in length, also possible to make shelves for tools of types T and L, with length of tool 1100 mm. Cabinets are powder coated and easy to transport. They were designed and manufactured to last a long time.

Bezpieczne i funkcjonalne szafy narzędziowe – szybki i łatwy dostęp do narzędzi, zabezpieczają przed uszkodzeniami mechanicznymi. Dostępne w wersji 3, 4 i 5 komorowej, jedna komora pozwala na przechowanie do 10 mb narzędzi. Stała górna i dolna półka pozwala na przechowywanie narzędzi segmentowych. Standardowe wykonanie dla narzędzi typu A – mocowanie stempli 13 mm i matryc 60 mm, długość narzędzi 835 mm, możliwe również wykonanie półek dla narzędzi typu T i L o długości 1100 mm. Lakierowane proszkowo, przystosowane do transportu wózkiem paletowym i widłowym. Solidne wykonanie zapewnia długi czas użytkowania.

# PRESSURE TABLE | TABELA DOBORU SIŁ

The table shows bending pressure for sheets with air bending  
 Parametry gięcia swobodnego blach przy gięciu w powietrzu

$F [t]$  - pressure on 1 m  
 $r$  - inner radius on steel  
 $b$  - minimum length of bending arm  
 $V$  - vee size



$F [t]$  - siła na 1 m  
 $r$  - promień wewnętrzny giętej blachy  
 $b$  - minimalna długość zagananego ramienia  
 $V$  - szerokość wyjęcia

RM = 45 kg/mm<sup>2</sup>

g	V b r	4	6	7	8	10	12	14	16	18	20	25	32	40	50	63	80	100	125	140	160	200	250	
		2.8	4	5	5.5	7	8.5	10	11	13.5	14	17.5	22	28	35	45	55	71	89	100	113	140	180	
		0.7	1	1.1	1.3	1.6	2	2.3	2.6	3	3.3	4	5	6.5	8	10	13	16	20	23	26	33	40	
0.5		4	3																					
0.6		6	4	3	3																			
0.8			7	6	5	4																		
1.0			13	10	8	6	5																	
1.2					13	10	8	6	5															
1.5							13	10	9	8	7													
2.0							25	20	17	14	13	10												
2.5									29	24	21	16	12											
3.0										38	32	24	17	13										
4.0												47	34	25	19	14								
5.0													57	42	32	24	18							
6.0														65	48	36	26	20						
8.0															94	69	50	38	29	25				
10.0																	84	63	48	41	35			
12.0																		130	96	72	62	53	40	31
16.0																			139	120	101	76	58	
20.0																						126	95	

RM = 70 kg/mm<sup>2</sup>

g	V b r	4	6	7	8	10	12	14	16	18	20	25	32	40	50	63	80	100	125	140	160	200	250	
		2.8	4	5	5.5	7	8.5	10	11	13.5	14	17.5	22	28	35	45	55	71	89	100	113	140	180	
		0.7	1	1.1	1.3	1.6	2	2.3	2.6	3	3.3	4	5	6.5	8	10	13	16	20	23	26	33	40	
0.5		7	4																					
0.6		10	6	5	4																			
0.8			11	9	8	6																		
1.0			19	16	13	10	8																	
1.2					20	15	12	10	8															
1.5							20	16	14	12	10													
2.0							39	31	26	22	20	15												
2.5									44	38	33	25	18											
3.0										58	50	37	27	20										
4.0												73	53	39	30	22								
5.0													89	66	49	37	27							
6.0														101	75	55	41	31						
8.0															147	107	78	59	45	39				
10.0																	131	98	74	64	55			
12.0																		202	149	112	97	82	62	48
16.0																				217	187	157	118	90
20.0																						196	148	