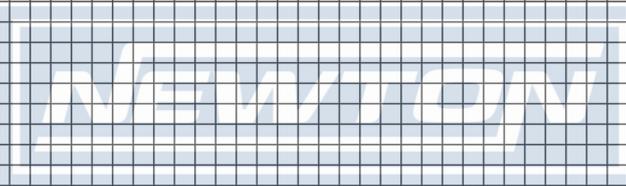




**FERRAMENTAS PARA PRENSAS DOBRADEIRAS**

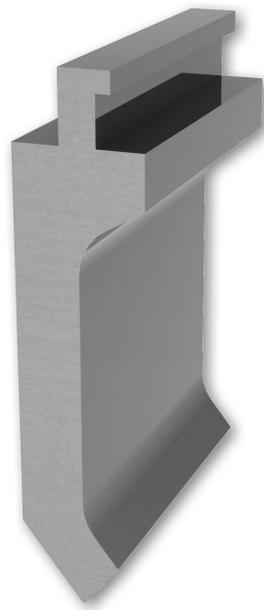
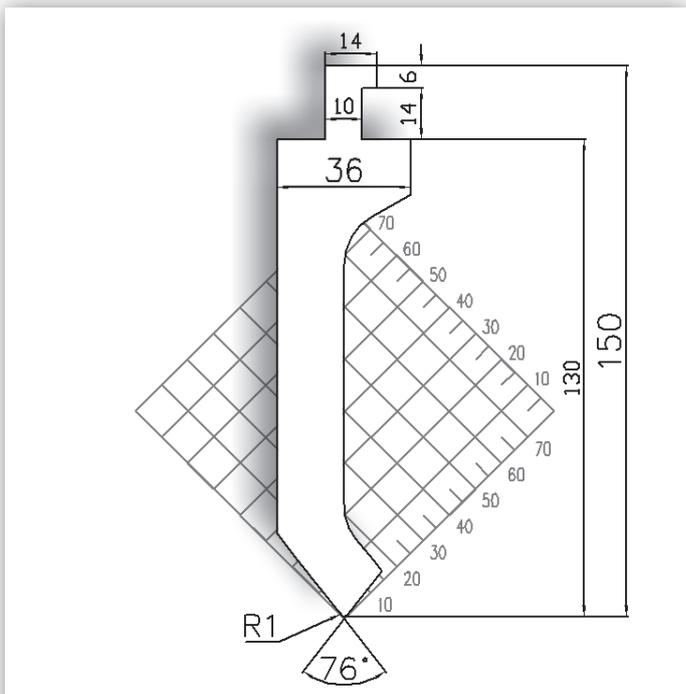


**FERRAMENTAS da linha NEWTON USN**

**FERRAMENTAS da linha NEWTON - EUROPEU US**

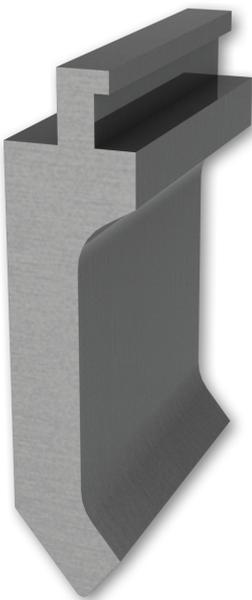
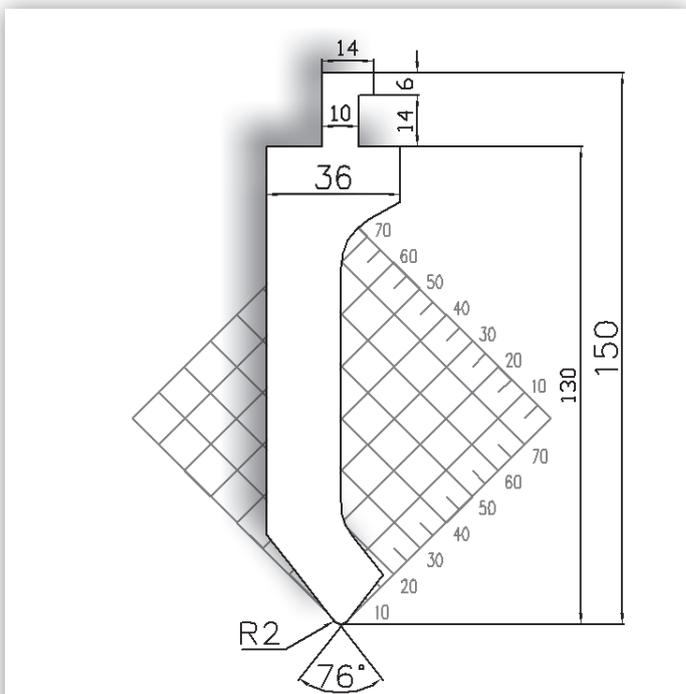
**FERRAMENTAS ESPECIAIS STA**

**MESA COMPENSADORA controlada pelo CNC (opcional) TABLUS**



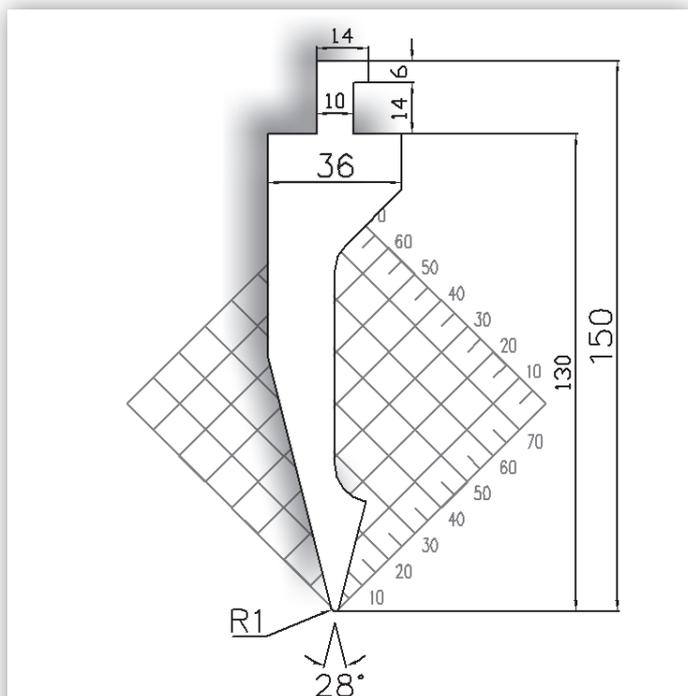
<b>USN-PN-160</b>	150x36 mm
ALTURA	130,00 mm
ÂNGULO	76°
RAIO	1,0 mm
CARGA	max 80 ton/mt
MATERIAL	AÇO 42 CrMo4
BENEFICIAMENTO	TÊMPERA POR INDUÇÃO
ACABAMENTO	DUREZA 52/58 HRC RETIFICADO

CÓDIGOS	COMPRIMENTOS
2.23.12.81103	1250 mm
2.23.12.81104	2050 mm
2.23.12.81105	2550 mm
2.23.12.81106	3100 mm
2.23.12.81107	1775+1775 = 3550 mm
2.23.12.81108	2025+2025 = 4050 mm



<b>USN-PN-165</b>	150x36 mm
ALTURA	130,00 mm
ÂNGULO	76°
RAIO	2,0 mm
CARGA	max 100 ton/mt
MATERIAL	AÇO 42 CrMo4
BENEFICIAMENTO	TÊMPERA POR INDUÇÃO
ACABAMENTO	DUREZA 52/58 HRC RETIFICADO

CÓDIGOS	COMPRIMENTOS
2.23.12.81109	3100 mm
2.23.12.81110	1775+1775 = 3550 mm
2.23.12.81111	2025+2025 = 4050 mm
2.23.12.81112	3100+3100 = 6200 mm



**USN-PN-150**

150x36 mm

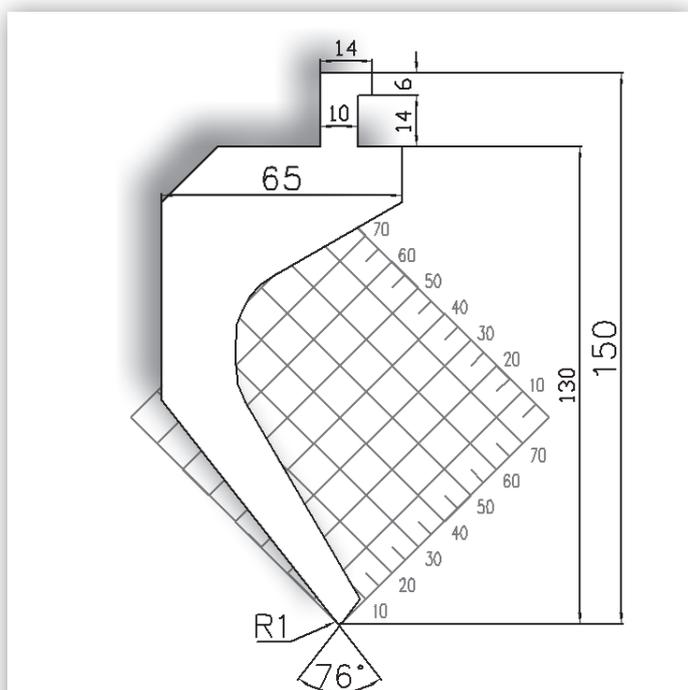
ALTURA	130,00 mm
ÂNGULO	28°
RAIO	1,0 mm
CARGA	max 80 ton/mt
MATERIAL	AÇO 42 CrMo4
BENEFICIAMENTO	TÊMPERA POR INDUÇÃO
ACABAMENTO	DUREZA 52/58 HRC RETIFICADO



**CÓDIGOS**

**COMPRIMENTOS**

2.23.12.81169	1250 mm
2.23.12.81170	2050 mm
2.23.12.81171	2550 mm
2.23.12.81172	3100 mm
2.23.12.81173	1775+1775 = 3550 mm
2.23.12.81175	2025+2025 = 4050 mm



**USN-PN-190**

150x65 mm

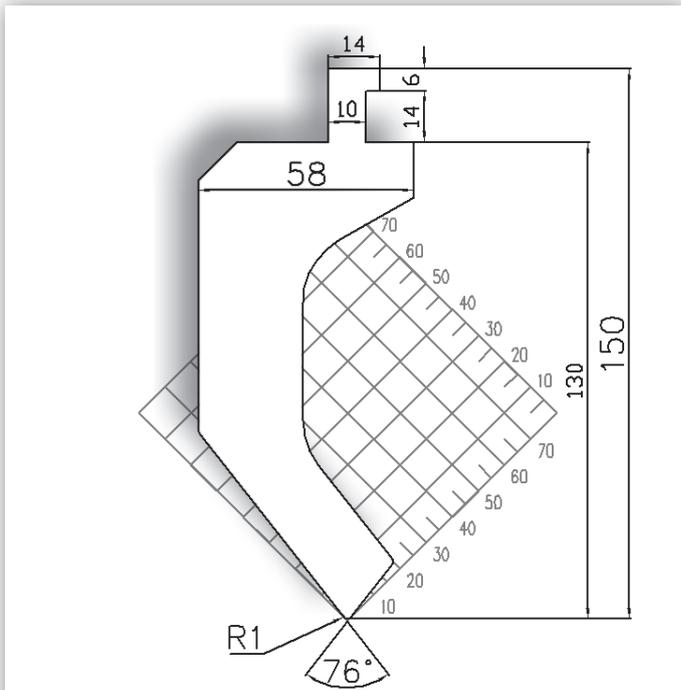
ALTURA	130,00 mm
ÂNGULO	70°
RAIO	1,0 mm
CARGA	max 50 ton/mt
MATERIAL	AÇO 42 CrMo4
BENEFICIAMENTO	TÊMPERA POR INDUÇÃO
ACABAMENTO	DUREZA 52/58 HRC RETIFICADO



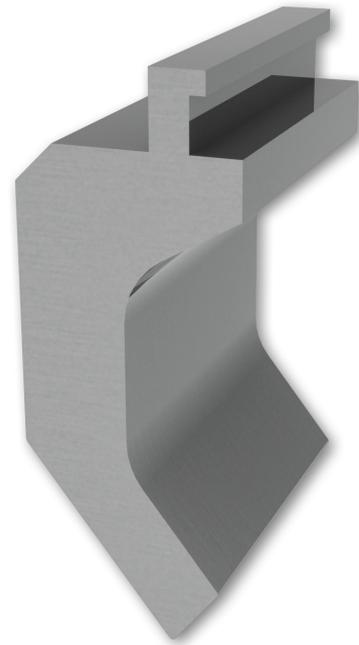
**CÓDIGOS**

**COMPRIMENTOS**

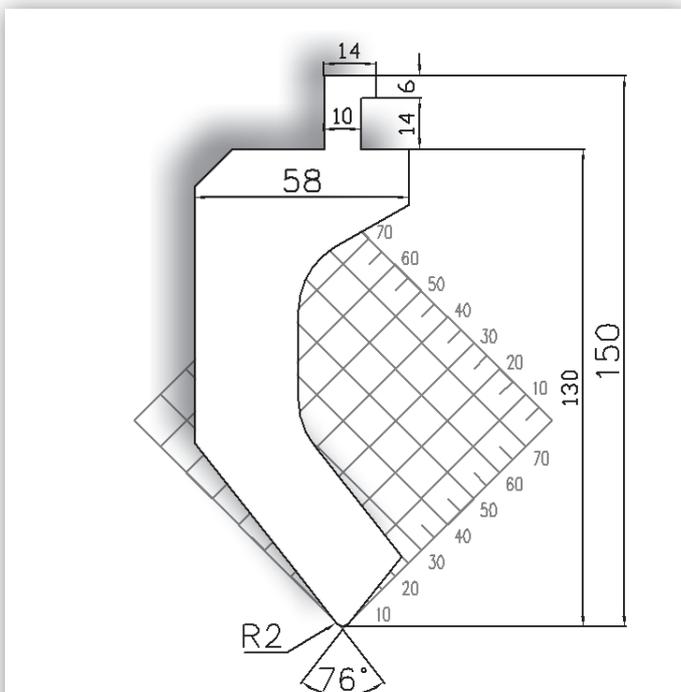
2.23.12.81241	1250 mm
2.23.12.81242	2050 mm
2.23.12.81243	2550 mm
2.23.12.81244	3100 mm
2.23.12.81245	1775+1775 = 3550 mm
2.23.12.81246	2025+2025 = 4050 mm



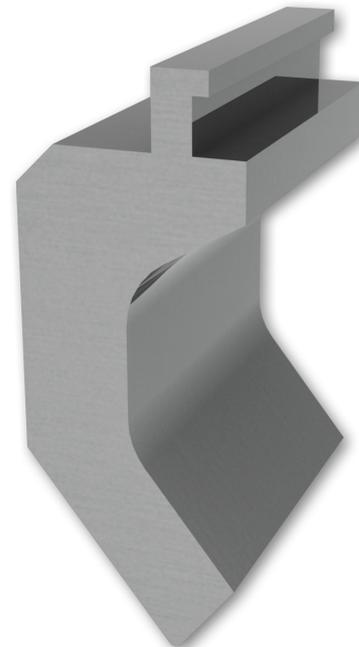
<b>USN-PN-140</b>	150x58 mm
ALTURA	130,00 mm
ÂNGULO	76°
RAIO	1,0 mm
CARGA	max 100 ton/mt
MATERIAL	AÇO 42 CrMo4
BENEFICIAMENTO	TÊMPERA POR INDUÇÃO
ACABAMENTO	DUREZA 52/58 HRC RETIFICADO



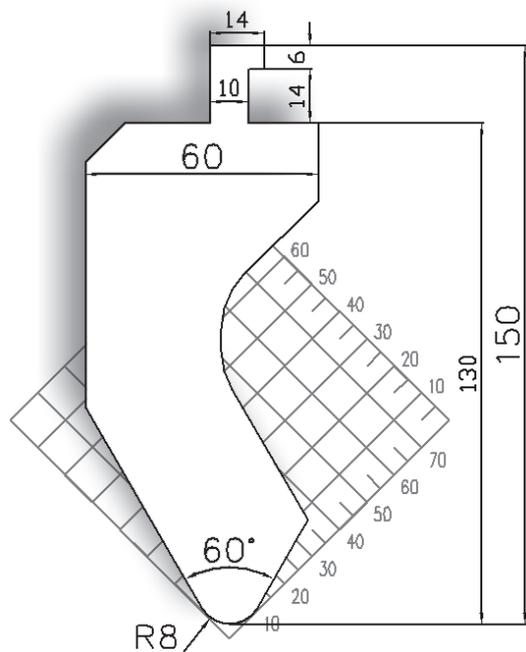
CÓDIGOS	COMPRIMENTOS
2.23.12.81081	1250 mm
2.23.12.81083	2050 mm
2.23.12.81085	2550 mm
2.23.12.81087	3100 mm
2.23.12.81091	1775+1775 = 3550 mm
2.23.12.81093	2025+2025 = 4050 mm



<b>USN-PN-145</b>	150x58 mm
ALTURA	130,00 mm
ÂNGULO	76°
RAIO	2,0 mm
CARGA	max 120 ton/mt
MATERIAL	AÇO 42 CrMo4
BENEFICIAMENTO	TÊMPERA POR INDUÇÃO
ACABAMENTO	DUREZA 52/58 HRC RETIFICADO



CÓDIGOS	COMPRIMENTOS
2.23.12.81094	3100 mm
2.23.12.81095	1775+1775 = 3550 mm
2.23.12.81096	2025+2025 = 4050 mm
2.23.12.81097	3100+3100 = 6200 mm
2.23.12.81233	2700+2700+2700 = 8100 mm
2.23.12.81234	3030+3030+3030 = 9090 mm



**USN-PN-170**

150x60 mm

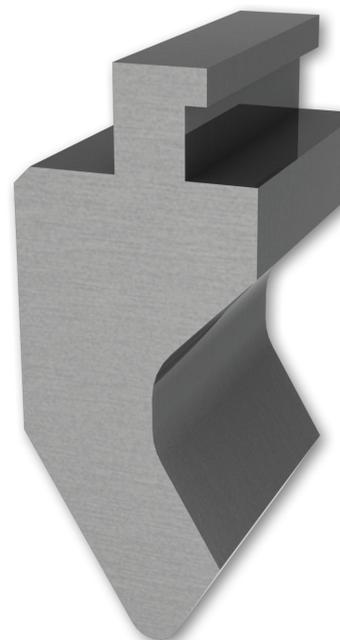
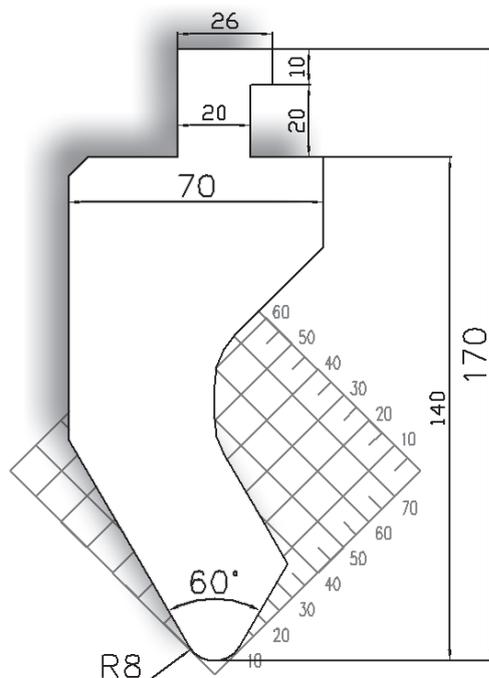
ALTURA	130,00 mm
ÂNGULO	60°
RAIO	8,0 mm
CARGA	max 200 ton/mt

MATERIAL	AÇO 42 CrMo4
BENEFICIAMENTO	TÊMPERA POR INDUÇÃO
ACABAMENTO	DUREZA 52/58 HRC RETIFICADO

**CÓDIGOS**

**COMPRIMENTOS**

2.23.12.81141	2025+2025 = 4050 mm
2.23.12.81146	3100+3100 = 6200 mm
2.23.12.81231	2700+2700+2700 = 8100 mm
2.23.12.81254	3030+3030+3030 = 9090 mm



**USN-PN-180**

170x70 mm

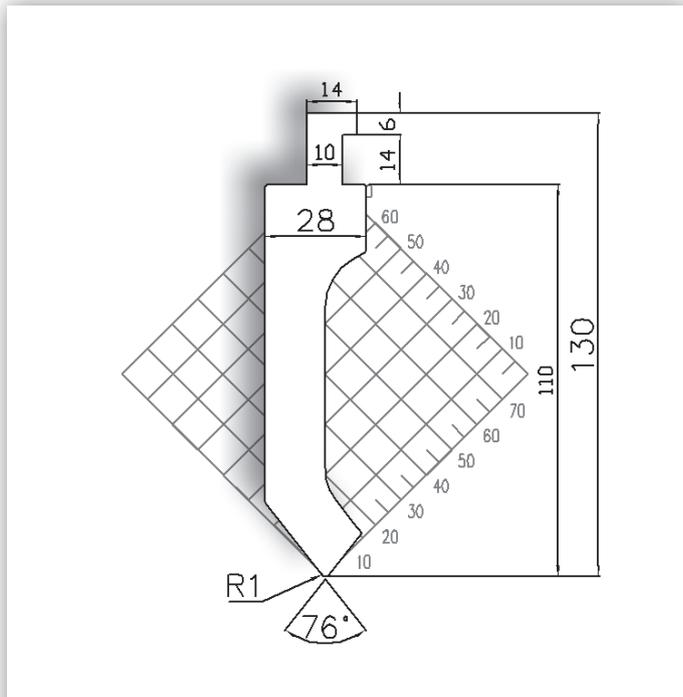
ALTURA	140,00 mm
ÂNGULO	60°
RAIO	8,0 mm
CARGA	max 200 ton/mt

MATERIAL	AÇO 42 CrMo4
BENEFICIAMENTO	TÊMPERA POR INDUÇÃO
ACABAMENTO	DUREZA 52/58 HRC RETIFICADO

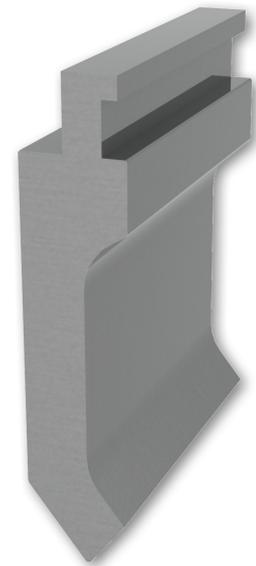
**CÓDIGOS**

**COMPRIMENTOS**

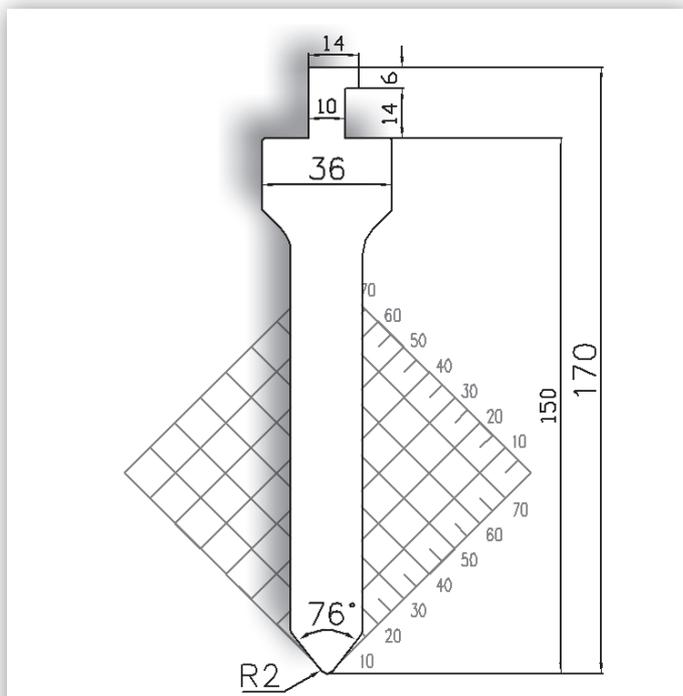
2.23.12.81235	3100+3100 = 6200 mm
2.23.12.81236	2700+2700+2700 = 8100 mm
2.23.12.81237	3030+3030+3030 = 9090 mm



<b>USN-PN-110</b>	130x28 mm
ALTURA	110,00 mm
ÂNGULO	70°
RAIO	1,0 mm
CARGA	max 60 ton/mt
MATERIAL	AÇO 42 CrMo4
BENEFICIAMENTO	TÊMPERA POR INDUÇÃO
ACABAMENTO	DUREZA 52/58 HRC RETIFICADO



CÓDIGOS	COMPRIMENTOS
2.23.12.81255	1250 mm
2.23.12.81256	2050 mm
2.23.12.81257	2550 mm
2.23.12.81258	3100 mm
2.23.12.81259	1775+1775 = 3550 mm
2.23.12.81260	2025+2025 = 4050 mm



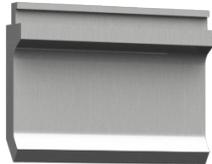
<b>USN-PN-195</b>	170x36 mm
ALTURA	150,00 mm
ÂNGULO	60°
RAIO	2,0 mm
CARGA	max 100 ton/mt
MATERIAL	AÇO 42 CrMo4
BENEFICIAMENTO	TÊMPERA POR INDUÇÃO
ACABAMENTO	DUREZA 52/58 HRC RETIFICADO



CÓDIGOS	COMPRIMENTOS
2.23.12.81261	1250 mm
2.23.12.81262	2050 mm
2.23.12.81263	2550 mm
2.23.12.81264	3100 mm
2.23.12.81265	1775+1775 = 3550 mm
2.23.12.81266	2025+2025 = 4050 mm
2.23.12.81267	3100+3100 = 6050 mm



100 DIR



200



400



100 ESQ



10



15



20



40



50



100



150

**SECCIONAMENTO A : 11 PÇS = 1185 mm**

10 + 15 + 20 + 40 + 50 + 100 + 100 ESQ + 100 DIR + 150 + 200 + 400 mm



100 DIR



500



200



100 ESQ



50



55



60



65



70



75



80



85



90



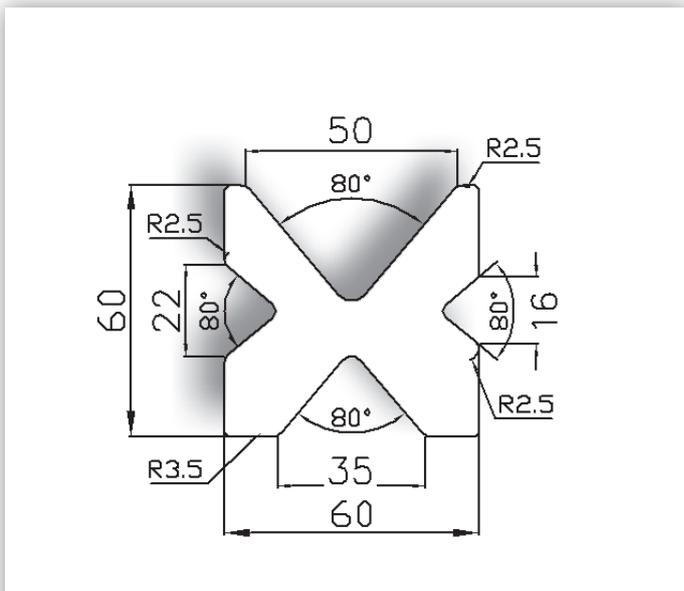
95



100

**SECCIONAMENTO B : 15 PÇS = 1725 mm**

50+55+60+65+70+75+80+85+90+95+100+100ESQ+100DIR+200+500 mm



**USN-MN-925**

60x60 mm

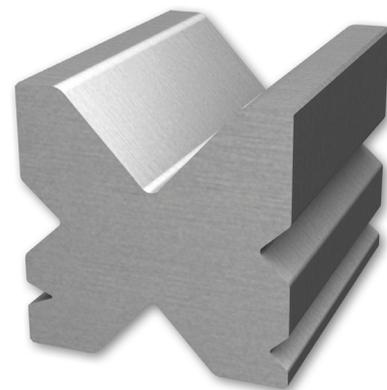
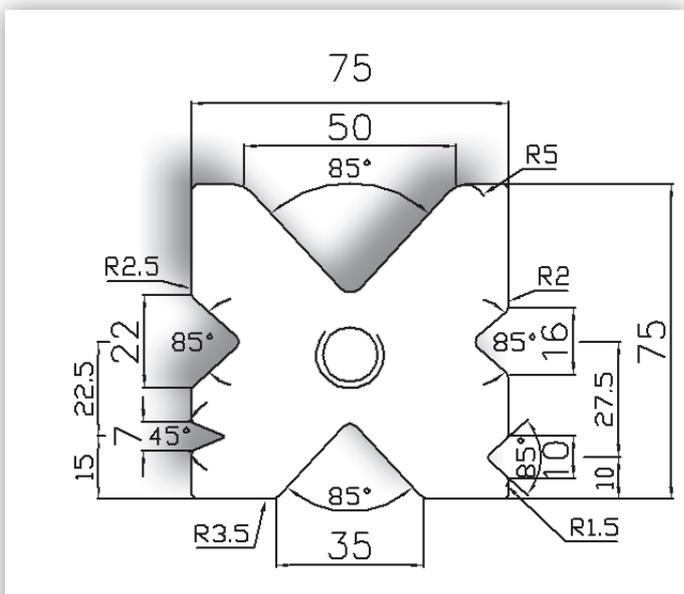
**MATERIAL** AÇO 42 CrMo4  
**BENEFICIAMENTO** TÊMPERA POR INDUÇÃO  
**ACABAMENTO** RETIFICADO

**CÓDIGOS**

**COMPRIMENTOS**

2.14.12.62.135	1250 mm
2.14.12.62.136	2050 mm
2.14.12.62.137	2550 mm
2.14.12.62.076	3100 mm
2.14.12.62.208	4050 mm

V CANAL	mm	16	22	35	50					
<b>S</b> ESPESSURA	mm	2,0	2,5	2,5	3,0	4,0	5,0	5,0	6,0	
<b>F</b> FORÇA	R42 kgf/mm <sup>2</sup> -AÇO 1010/1020	ton/mt	16	27	17	27	28	47	29	45
	R70 kgf/mm <sup>2</sup> -AÇO INOX	ton/mt	26	44	29	44	47	79	49	75
RAIO INTERNO	mm	2,7	2,7	3,7	3,7	5,8	5,8	8,3	8,3	
BORDO MÍNIMO	mm	11,2	11,2	15,4	15,4	24,5	24,5	35,0	35,0	



**USN-M1000**

75x75 mm

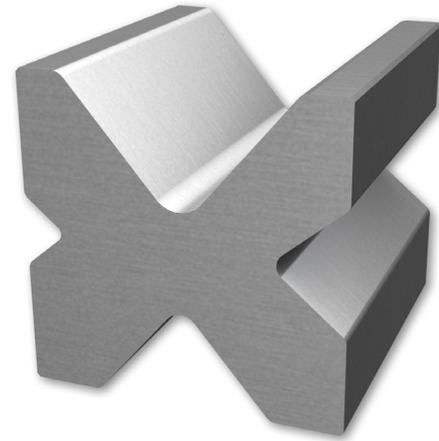
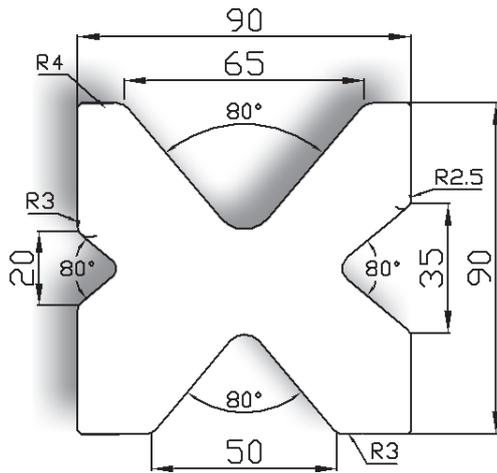
**MATERIAL** AÇO 42 CrMo4  
**BENEFICIAMENTO** TÊMPERA POR INDUÇÃO  
**ACABAMENTO** RETIFICADO

**CÓDIGOS**

**COMPRIMENTOS**

2.14.12.62.053	1250 mm
2.14.12.62.049	2050 mm
2.14.12.62.055	2550 mm
2.14.12.62.056	3100 mm
2.14.12.62.050	3550 mm
2.14.12.62.188	4050 mm

V CANAL	mm	7	10	16	22	35	50							
<b>S</b> ESPESSURA	mm	0,8	1,0	1,2	1,5	2,0	2,5	2,5	3,0	4,0	5,0	5,0	6,0	
<b>F</b> FORÇA	R42 kgf/mm <sup>2</sup> -AÇO 1010/1020	ton/mt	6	9	9	15	16	27	17	27	28	47	29	45
	R70 kgf/mm <sup>2</sup> -AÇO INOX	ton/mt	9	16	15	25	26	44	29	44	47	79	49	75
RAIO INTERNO	mm	1,2	1,2	1,7	1,7	2,7	2,7	3,7	3,7	5,8	5,8	8,3	8,3	
BORDO MÍNIMO	mm	4,9	4,9	7,0	7,0	11,2	11,2	15,4	15,4	24,5	24,5	35,0	35,0	



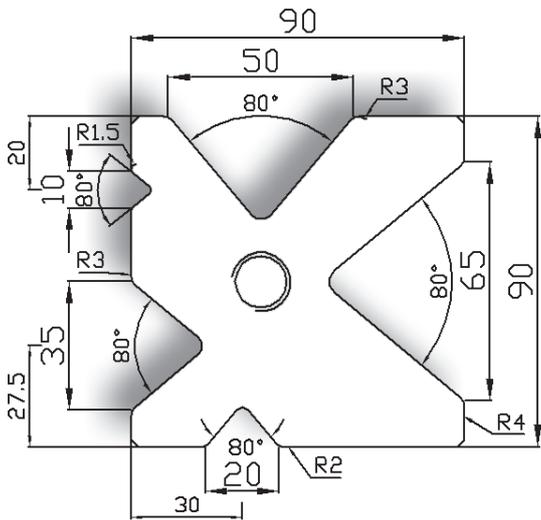
**USN-MN-155**

90x90 mm

MATERIAL	AÇO 42 CrMo4
BENEFICIAMENTO	TÊMPERA POR INDUÇÃO
ACABAMENTO	DUREZA 52/58 HRC RETIFICADO

CÓDIGOS	COMPRIMENTOS
2.14.12.62.068	3100 mm
2.14.12.62.069	3550 mm
2.14.12.62.074	4050 mm
2.14.12.62.209	4050 mm

V CANAL	mm	20	35	50	65				
S ESPESSURA	mm	2,5	3,0	4,0	5,0	5,0	6,0	6,0	7,0
F FORÇA	R42 kgf/mm <sup>2</sup> -AÇO 1010/1020 ton/mt	20	30	28	47	29	45	32	45
	R70 kgf/mm <sup>2</sup> -AÇO INOX ton/mt	33	50	47	79	49	75	53	76
RAIO INTERNO	mm	3,3	3,3	5,8	5,8	8,3	8,3	10,8	10,8
BORDO MÍNIMO	mm	14,0	14,0	24,5	24,5	35,0	35,0	45,5	45,5



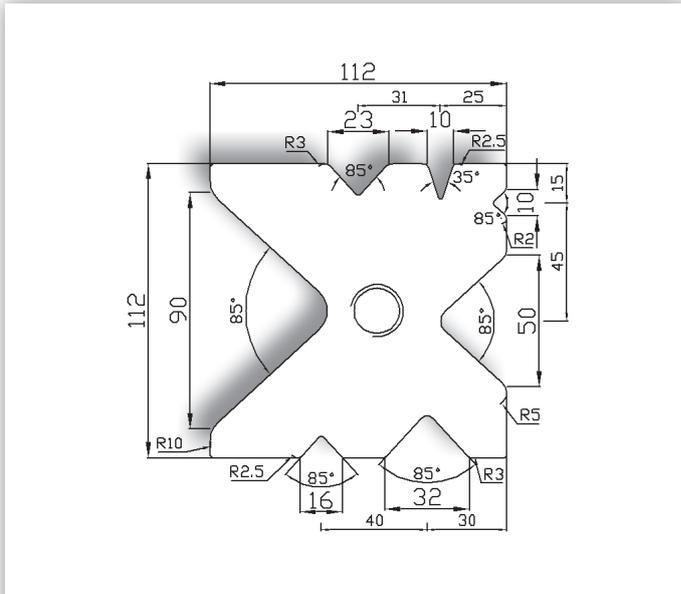
**USN-MN-135**

90x90 mm

MATERIAL	AÇO 42 CrMo4
BENEFICIAMENTO	TÊMPERA POR INDUÇÃO
ACABAMENTO	DUREZA 52/58 HRC RETIFICADO

CÓDIGOS	COMPRIMENTOS
2.14.12.62.060	2050 mm
2.14.22.62.029	3100 mm
2.14.12.62.057	3550 mm
2.14.12.62.067	4050 mm
2.14.12.62.144	6200 mm

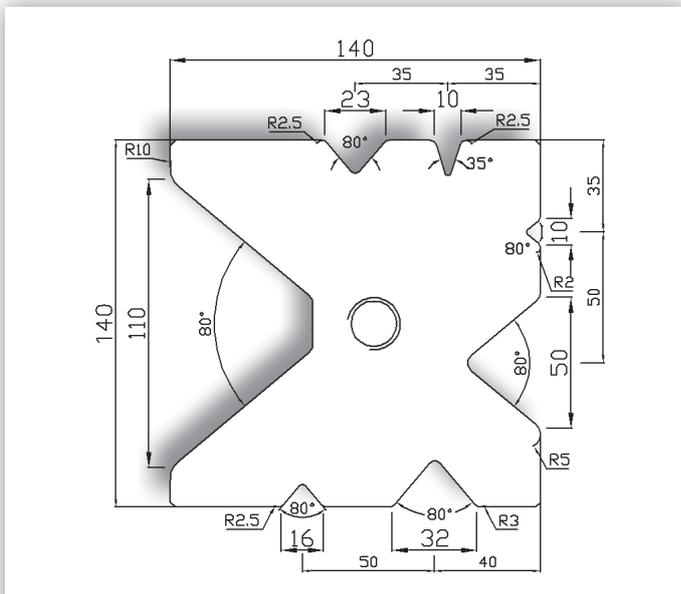
V CANAL	mm	10	20	35	50	65					
S ESPESSURA	mm	1,2	1,5	2,5	3,0	4,0	5,0	5,0	6,0	6,0	7,0
F FORÇA	R42 kgf/mm <sup>2</sup> -AÇO 1010/1020 ton/mt	9	15	20	30	28	47	29	45	32	45
	R70 kgf/mm <sup>2</sup> -AÇO INOX ton/mt	15	25	33	50	47	79	49	75	53	76
RAIO INTERNO	mm	1,7	1,7	3,3	3,3	5,8	5,8	8,3	8,3	10,8	10,8
BORDO MÍNIMO	mm	7,0	7,0	14,0	14,0	24,5	24,5	35,0	35,0	45,5	45,5



<b>USN-MN-915</b>	112x112 mm
<b>MATERIAL</b>	AÇO 42 CrMo4
<b>BENEFICIAMENTO</b>	TÊMPERA POR INDUÇÃO
<b>ACABAMENTO</b>	RETIFICADO
	DUREZA 52/58 HRC

CÓDIGOS	COMPRIMENTOS
2.13.22.62.052	3100 mm
2.13.22.62.054	3550 mm
2.13.22.62.045	4050 mm
2.13.22.62.051	6200 mm
2.13.12.62.189	8100 mm
2.13.12.62.207	9100 mm

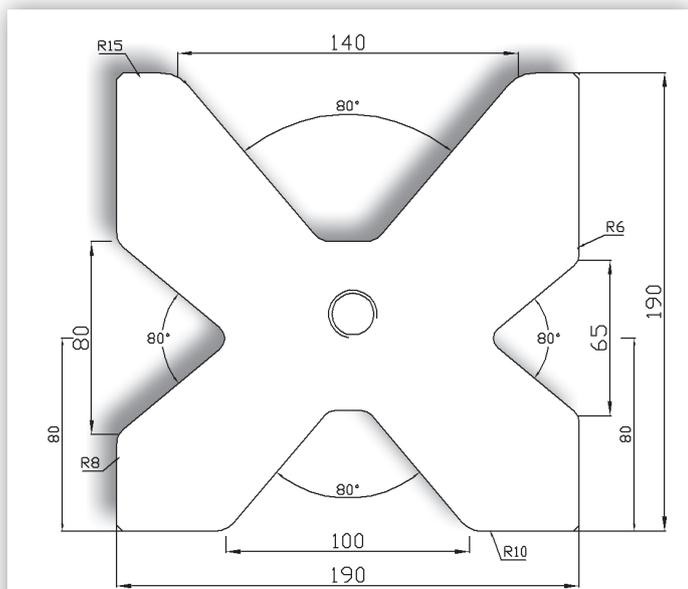
V CANAL	mm	10	16	23	32	50	90							
<b>S</b> ESPESSURA	mm	1,2	1,5	2,0	2,5	2,5	3,0	4,0	5,0	5,0	6,0	8,0	10,0	
<b>F</b> FORÇA	R42 kgf/mm <sup>2</sup> -AÇO 1010/1020 R70 kgf/mm <sup>2</sup> -AÇO INOX	ton/mt	9	15	16	27	16	25	32	53	29	45	40	67
RAIO INTERNO	mm	1,7	1,7	2,7	2,7	3,8	3,8	5,3	5,3	8,3	8,3	15,0	15,0	
BORDO MÍNIMO	mm	7,0	7,0	11,2	11,2	16,1	16,1	22,4	22,4	35,0	35,0	63,0	63,0	



<b>USN-M920</b>	140x140 mm
<b>MATERIAL</b>	AÇO 42 CrMo4
<b>BENEFICIAMENTO</b>	TÊMPERA POR INDUÇÃO
<b>ACABAMENTO</b>	RETIFICADO
	DUREZA 52/58 HRC

CÓDIGOS	COMPRIMENTOS
2.13.12.62.070	3100 mm
2.13.12.62.071	3550 mm
2.13.12.62.072	4050 mm
2.13.12.62.075	6200 mm
2.13.12.62.091	8100 mm
2.13.12.62.092	9100 mm

V CANAL	mm	10	16	23	32	50	110							
<b>S</b> ESPESSURA	mm	1,2	1,5	2,0	2,5	2,5	3,0	4,0	5,0	5,0	6,0	10,0	12,0	
<b>F</b> FORÇA	R42 kgf/mm <sup>2</sup> -AÇO 1010/1020 R70 kgf/mm <sup>2</sup> -AÇO INOX	ton/mt	9	15	16	27	16	25	32	53	29	45	52	79
RAIO INTERNO	mm	1,7	1,7	2,7	2,7	3,8	3,8	5,3	5,3	8,3	8,3	18,3	18,3	
BORDO MÍNIMO	mm	7,0	7,0	11,2	11,2	16,1	16,1	22,4	22,4	35,0	35,0	77,0	77,0	



**USN-MN-159**

190x190 mm

**MATERIAL** AÇO 42 CrMo4

**BENEFICIAMENTO** TÊMPERA POR INDUÇÃO

**ACABAMENTO** DUREZA 52/58 HRC

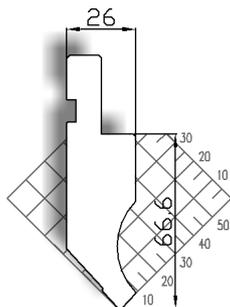
RETIFICADO

**CÓDIGOS**

**COMPRIMENTOS**

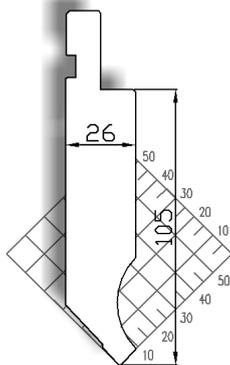
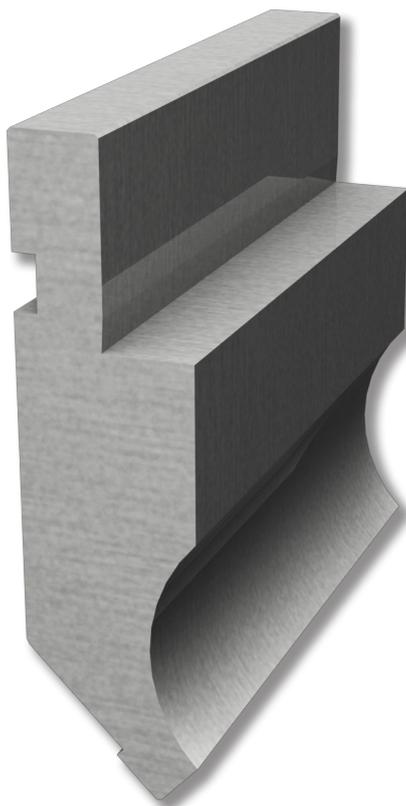
2.13.12.62.062	3100 mm
2.13.12.62.058	3550 mm
2.13.12.62.063	4050 mm
2.13.12.62.061	6200 mm
2.13.12.62.190	8100 mm
2.13.12.62.206	9200 mm

V CANAL	mm	64	80	100	140					
<b>S</b> ESPESSURA	mm	5,0	6,0	8,0	10,0	10,0	12,0	12,0	15,0	
<b>F</b> FORÇA	R42 kgf/mm <sup>2</sup> -AÇO 1010/1020	ton/mt	22	32	47	79	59	90	58	96
	R70 kgf/mm <sup>2</sup> -AÇO INOX	ton/mt	36	54	78	131	98	149	97	161
RAIO INTERNO	mm	10,7	10,7	13,3	13,3	16,7	16,7	23,3	23,3	
BORDO MÍNIMO	mm	44,8	44,8	56,0	56,0	70,0	70,0	98,0	98,0	



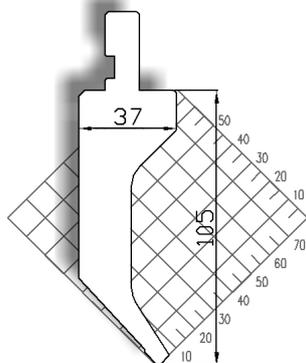
**US 110/85° R0,8**

ALTURA	66,60 mm
ÂNGULO	85°
RAIO	0,8 mm
CARGA	max 100 ton/mt
AÇO C45 - RETIFICADO	
TÊMPERA POR INDUÇÃO DUREZA 52/58 HRC	
COMPRIMENTO	835 mm - 415 mm - sec



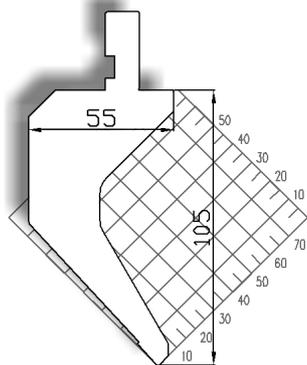
**US 110/85° R0,8 h105**

ALTURA	105,00 mm
ÂNGULO	85°
RAIO	0,8 mm
CARGA	max 100 ton/mt
AÇO C45 - RETIFICADO	
TÊMPERA POR INDUÇÃO DUREZA 52/58 HRC	
COMPRIMENTO	835 mm - 415 mm - sec



**US 142/85° R0,8**

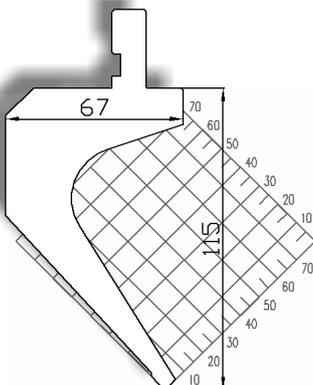
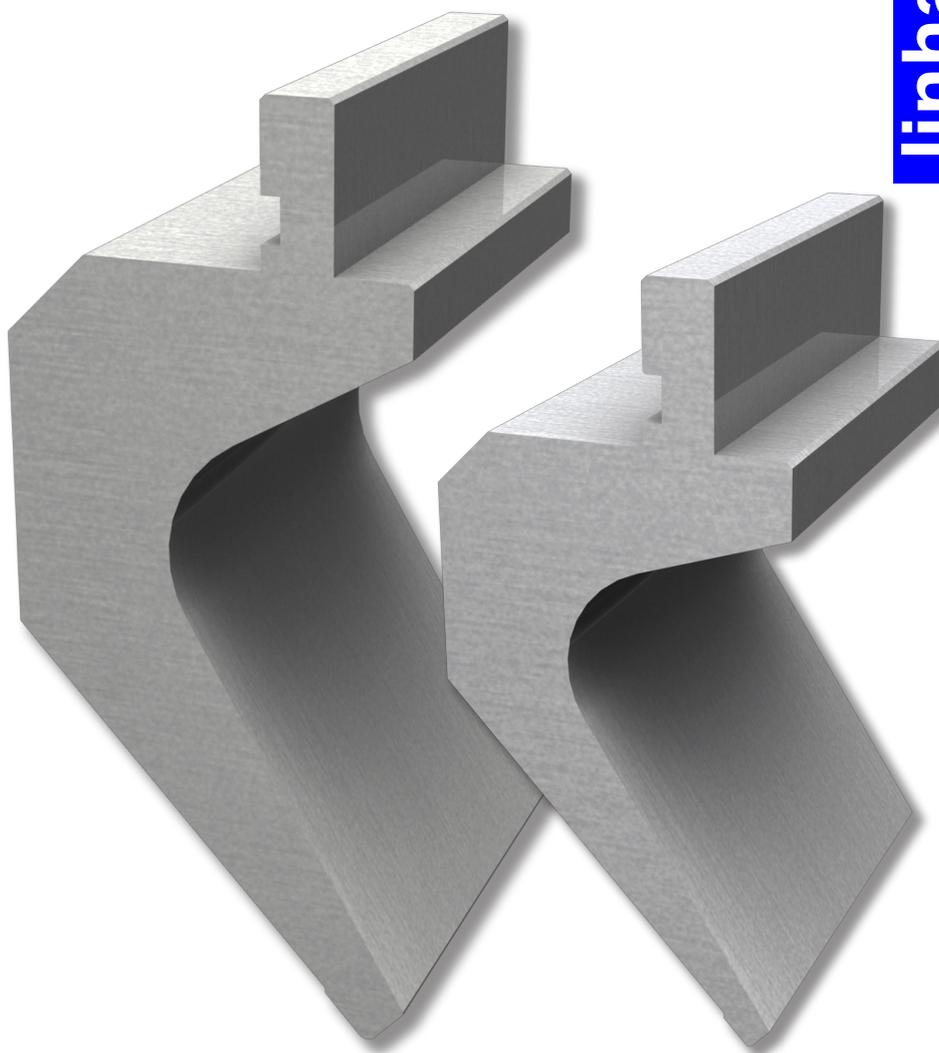
ALTURA	105,00 mm
ÂNGULO	85°
RAIO	0,8 mm
CARGA	max 60 ton/mt
AÇO 42 CrMo4 - RETIFICADO	
TÊMPERA POR INDUÇÃO DUREZA 52/58 HRC	
COMPRIMENTO	835 mm - 415 mm - sec



**US 129/85° R0,8**

ALTURA 105,00 mm  
 ÂNGULO 85°  
 RAIO 0,8 mm  
 CARGA max 100 ton/mt

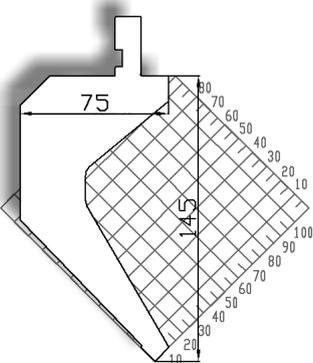
AÇO 42 CrMo4 - RETIFICADO  
 TÊMPERA POR INDUÇÃO DUREZA 52/58 HRC  
 COMPRIMENTO 835 mm - 415 mm - sec



**US 141/85° R0,8**

ALTURA 115,00 mm  
 ÂNGULO 85°  
 RAIO 0,8 mm  
 CARGA max 700 kN/mt

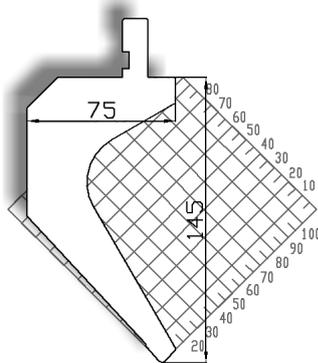
AÇO 42 CrMo4 - RETIFICADO  
 TÊMPERA POR INDUÇÃO DUREZA 52/58 HRC  
 COMPRIMENTO 835 mm - 415 mm - sec



**US 127/85° R0,8**

ALTURA 145,00 mm  
 ÂNGULO 85°  
 RAIO 0,8 mm  
 CARGA max 50 ton/mt

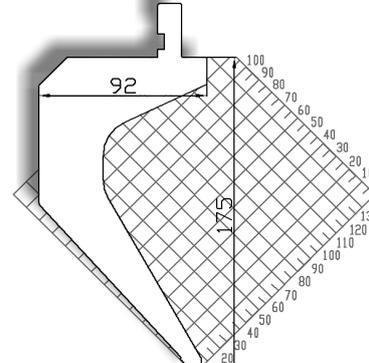
AÇO C45 - RETIFICADO  
 TÊMPERA POR INDUÇÃO DUREZA 52/58 HRC  
 COMPRIMENTO 835 mm - 415 mm - sec



**US 145/85° R2,0**

ALTURA 145,00 mm  
 ÂNGULO 85°  
 RAIO 2,0 mm  
 CARGA max 90 ton/mt

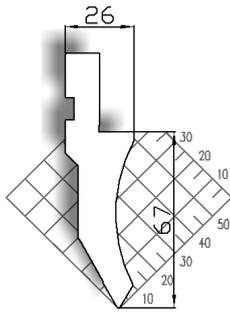
AÇO 42 CrMo4 - RETIFICADO  
 TÊMPERA POR INDUÇÃO DUREZA 52/58 HRC  
 COMPRIMENTO 835 mm - 415 mm - sec



**US 146/85° R1,25**

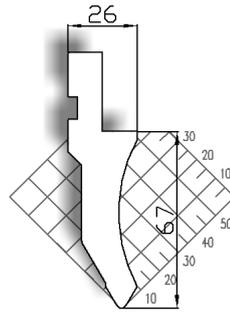
ALTURA 175,00 mm  
 ÂNGULO 85°  
 RAIO 1,25 mm  
 CARGA max 90 ton/mt

AÇO 42 CrMo4 - RETIFICADO  
 TÊMPERA POR INDUÇÃO DUREZA 52/58 HRC  
 COMPRIMENTO 835 mm - 415 mm - sec



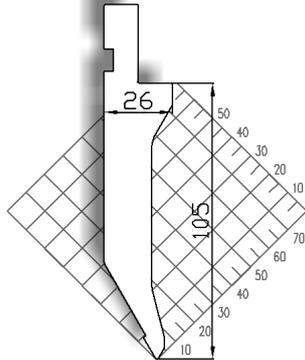
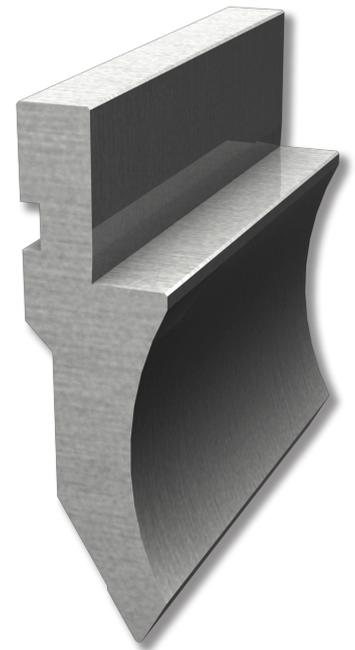
**US 124/60° R0,8**

ALTURA	67,00 mm
ÂNGULO	60°
RAIO	0,8 mm
CARGA	max 80 ton/mt
AÇO C45 - RETIFICADO	
TÊMPERA POR INDUÇÃO DUREZA 52/58 HRC	
COMPRIMENTO	835 mm - 415 mm - sec



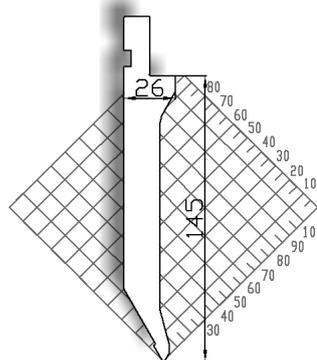
**US 124/60° R2,0**

ALTURA	67,00 mm
ÂNGULO	60°
RAIO	2,0 mm
CARGA	max 80 ton/mt
AÇO C45 - RETIFICADO	
TÊMPERA POR INDUÇÃO DUREZA 52/58 HRC	
COMPRIMENTO	835 mm - 415 mm - sec



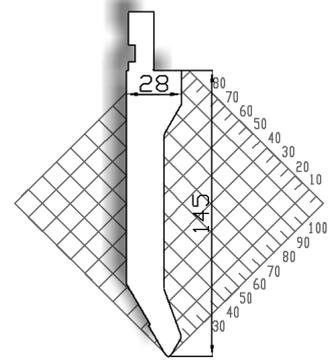
**US 128/60° R0,8**

ALTURA	105,00 mm
ÂNGULO	60°
RAIO	0,8 mm
CARGA	max 80 ton/mt
AÇO 42 CrMo4 - RETIFICADO	
TÊMPERA POR INDUÇÃO DUREZA 52/58 HRC	
COMPRIMENTO	835 mm - 415 mm - sec



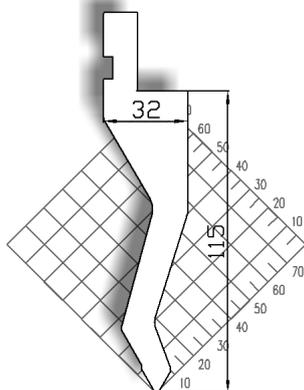
**US 135/60° R0,8**

ALTURA	145,00 mm
ÂNGULO	60°
RAIO	0,8 mm
CARGA	max 80 ton/mt
AÇO 42 CrMo4 - RETIFICADO	
TÊMPERA POR INDUÇÃO DUREZA 52/58 HRC	
COMPRIMENTO	835 mm - 415 mm - sec



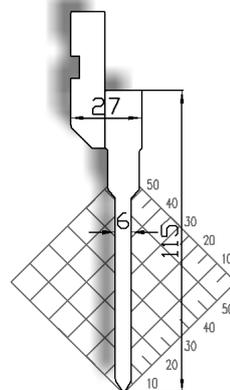
**US 136/60° R2,0**

ALTURA	145,00 mm
ÂNGULO	60°
RAIO	2,0 mm
CARGA	max 100 ton/mt
AÇO 42 CrMo4 - RETIFICADO	
TÊMPERA POR INDUÇÃO DUREZA 52/58 HRC	
COMPRIMENTO	835 mm - 415 mm - sec



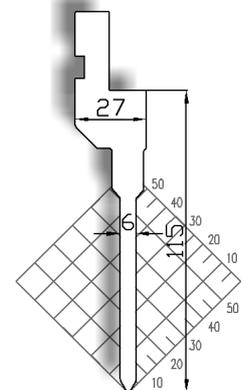
**US 134/60° R0,8**

ALTURA	115,00 mm
ÂNGULO	60°
RAIO	0,8 mm
CARGA	max 70 ton/mt
AÇO 42 CrMo4 - RETIFICADO	
TÊMPERA POR INDUÇÃO DUREZA 52/58 HRC	
COMPRIMENTO	835 mm - 415 mm - sec



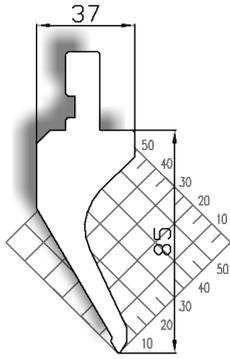
**US 151/60° R0,8**

ALTURA	115,00 mm
ÂNGULO	60°
RAIO	0,8 mm
CARGA	max 50 ton/mt
AÇO C45 - RETIFICADO	
TÊMPERA POR INDUÇÃO DUREZA 52/58 HRC	
COMPRIMENTO	835 mm - 415 mm



**US 151/60° R0,8 mono**

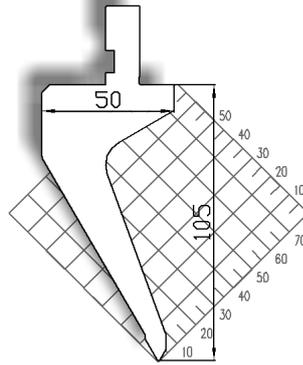
ALTURA	115,00 mm
ÂNGULO	60°
RAIO	0,8 mm
CARGA	max 50 ton/mt
AÇO C45 - RETIFICADO	
TÊMPERA POR INDUÇÃO DUREZA 52/58 HRC	
COMPRIMENTO	sec



**US 148/60° R0,8**

ALTURA 85,00 mm  
 ÂNGULO 60°  
 RAIO 0,8 mm  
 CARGA max 40 ton/mt

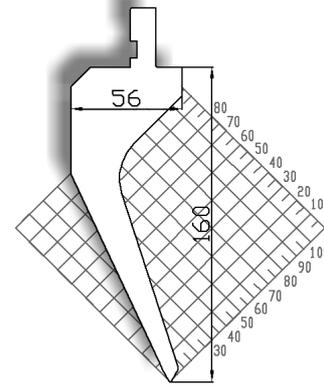
AÇO 42 CrMo4 - RETIFICADO  
 TÊMPERA POR INDUÇÃO DUREZA 52/58 HRC  
 COMPRIMENTO 835 mm - 415 mm - sec



**US 132/60° R0,8**

ALTURA 105,00 mm  
 ÂNGULO 60°  
 RAIO 0,8 mm  
 CARGA max 70 ton/mt

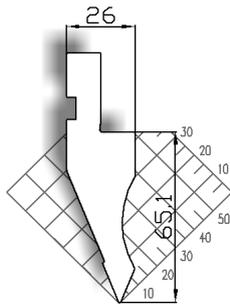
AÇO 42 CrMo4 - RETIFICADO  
 TÊMPERA POR INDUÇÃO DUREZA 52/58 HRC  
 COMPRIMENTO 835 mm - 415 mm - sec



**US 150/60° R0,8**

ALTURA 160,00 mm  
 ÂNGULO 60°  
 RAIO 0,8 mm  
 CARGA max 40 ton/mt

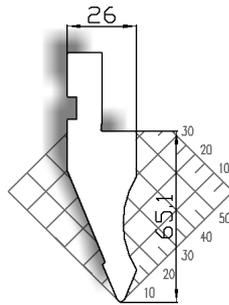
AÇO C45 - RETIFICADO  
 TÊMPERA POR INDUÇÃO DUREZA 52/58 HRC  
 COMPRIMENTO 835 mm - 415 mm - sec



**US 111/45° R0,8**

ALTURA 65,10 mm  
 ÂNGULO 45°  
 RAIO 0,8 mm  
 CARGA max 80 ton/mt

AÇO C45 - RETIFICADO  
 TÊMPERA POR INDUÇÃO DUREZA 52/58 HRC  
 COMPRIMENTO 835 mm - 415 mm - sec

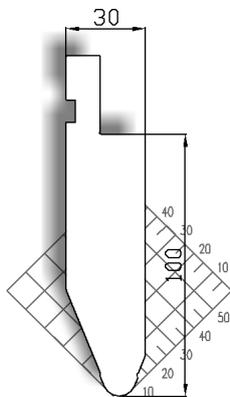


**US 111/45° R1,5**

ALTURA 65,10 mm  
 ÂNGULO 45°  
 RAIO 1,5 mm  
 CARGA max 80 ton/mt

AÇO C45 - RETIFICADO  
 TÊMPERA POR INDUÇÃO DUREZA 52/58 HRC  
 COMPRIMENTO 835 mm - 415 mm - sec

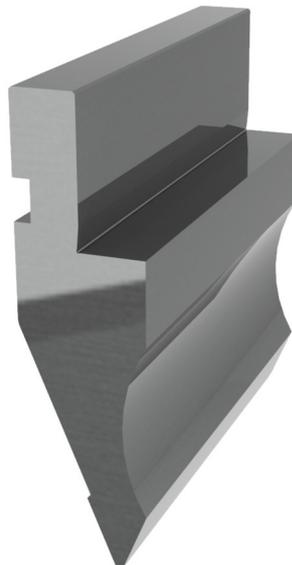
45°

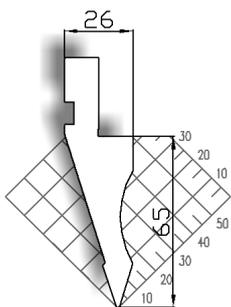


**US 149/45° R6,0**

ALTURA 100,00 mm  
 ÂNGULO 45°  
 RAIO 6,0 mm  
 CARGA max 100 ton/mt

AÇO C45 - RETIFICADO  
 TÊMPERA POR INDUÇÃO DUREZA 52/58 HRC  
 COMPRIMENTO 835 mm - 415 mm - sec

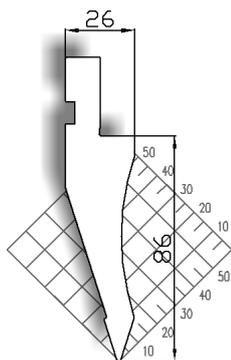




**US 111/35° R0,8**

ALTURA 65,00 mm  
 ÂNGULO 35°  
 RAIO 0,8 mm  
 CARGA max 50 ton/mt

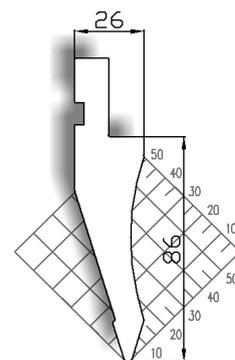
AÇO C45 - RETIFICADO  
 TÊMPERA POR INDUÇÃO DUREZA 52/58 HRC  
 COMPRIMENTO 835 mm - 415 mm - sec



**US 112/35° R0,8**

ALTURA 86,00 mm  
 ÂNGULO 35°  
 RAIO 0,8 mm  
 CARGA max 70 ton/mt

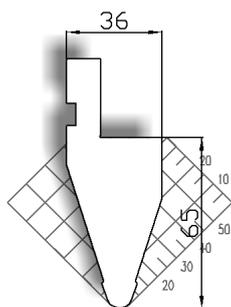
AÇO C45 - RETIFICADO  
 TÊMPERA POR INDUÇÃO DUREZA 52/58 HRC  
 COMPRIMENTO 835 mm - 415 mm - sec



**US 112/35° R1,5**

ALTURA 86,00 mm  
 ÂNGULO 35°  
 RAIO 1,5 mm  
 CARGA max 70 ton/mt

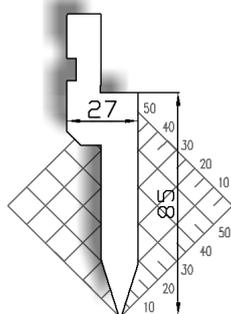
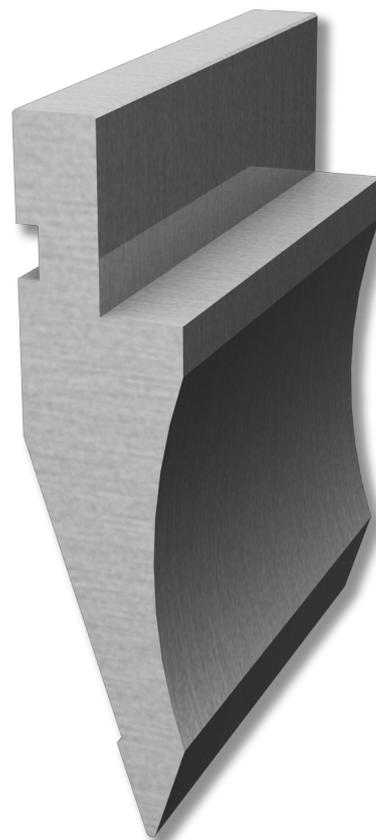
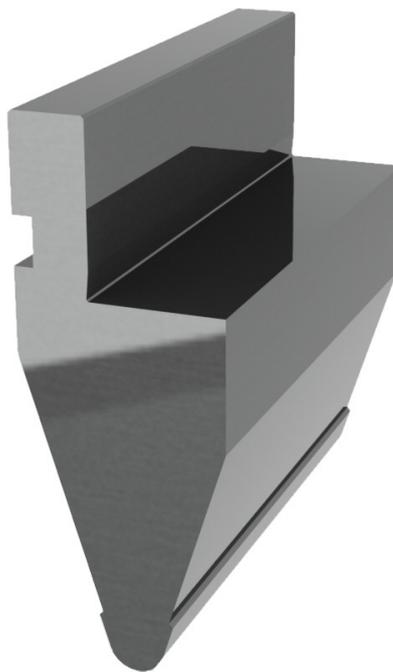
AÇO C45 - RETIFICADO  
 TÊMPERA POR INDUÇÃO DUREZA 52/58 HRC  
 COMPRIMENTO 835 mm - 415 mm - sec



**US 113/35° R5,0**

ALTURA 65,00 mm  
 ÂNGULO 35°  
 RAIO 5,0 mm  
 CARGA max 100 ton/mt

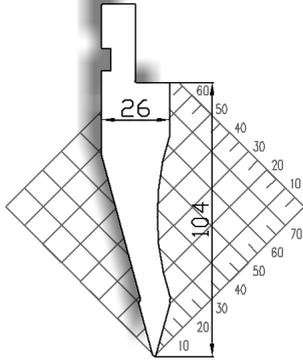
AÇO C45 - RETIFICADO  
 TÊMPERA POR INDUÇÃO DUREZA 52/58 HRC  
 COMPRIMENTO 835 mm - 415 mm - sec



**US 121/35° R0,8**

ALTURA 85,00 mm  
 ÂNGULO 35°  
 RAIO 0,8 mm  
 CARGA max 100 ton/mt

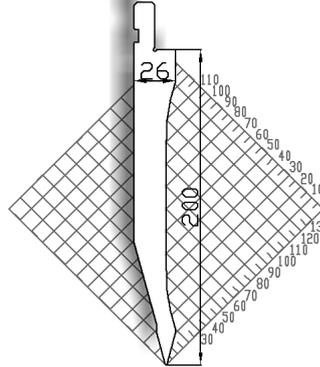
AÇO C45 - RETIFICADO  
 TÊMPERA POR INDUÇÃO DUREZA 52/58 HRC  
 COMPRIMENTO 835 mm - 415 mm - sec



**US 133/30° R0,8**

ALTURA 104,00 mm  
 ÂNGULO 30°  
 RAIO 0,8 mm  
 CARGA max 70 ton/mt

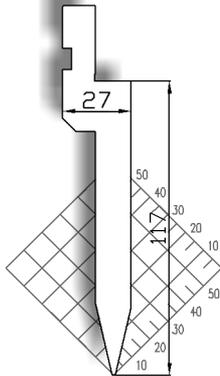
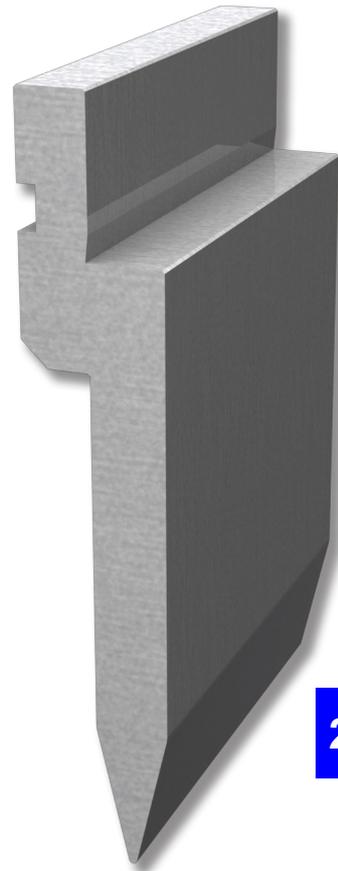
AÇO C45 - RETIFICADO  
 TÊMPERA POR INDUÇÃO DUREZA 52/58 HRC  
 COMPRIMENTO 835 mm - 415 mm - sec



**US 154/30° R0,5**

ALTURA 200,00 mm  
 ÂNGULO 30°  
 RAIO 0,5 mm  
 CARGA max 50 ton/mt

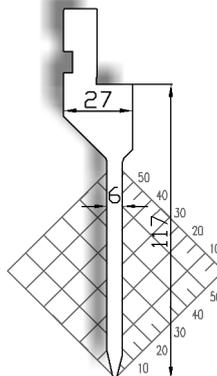
AÇO C45 - RETIFICADO  
 TÊMPERA POR INDUÇÃO DUREZA 52/58 HRC  
 COMPRIMENTO 835 mm - 415 mm - sec



**US 122/26° R0,8**

ALTURA 117,00 mm  
 ÂNGULO 26°  
 RAIO 0,8 mm  
 CARGA max 100 ton/mt

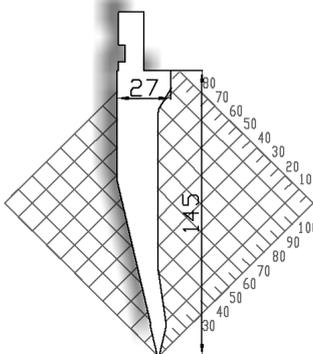
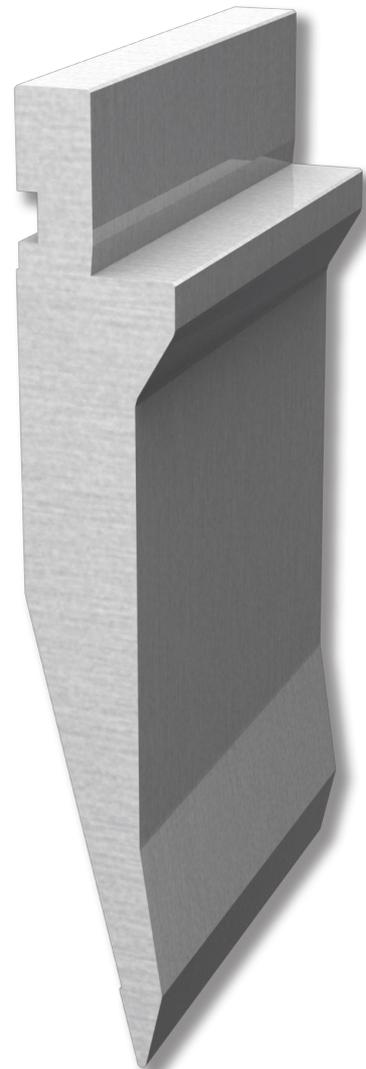
AÇO C45 - RETIFICADO  
 TÊMPERA POR INDUÇÃO DUREZA 52/58 HRC  
 COMPRIMENTO 835 mm - 415 mm - sec



**US 137/26° R0,8**

ALTURA 117,00 mm  
 ÂNGULO 26°  
 RAIO 0,8 mm  
 CARGA max 50 ton/mt

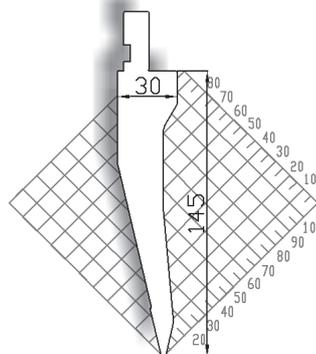
AÇO 42 CrMo4 - RETIFICADO  
 TÊMPERA POR INDUÇÃO DUREZA 52/58 HRC  
 COMPRIMENTO 835 mm - 415 mm - sec



**US 139/26° R0,8**

ALTURA 145,00 mm  
 ÂNGULO 26°  
 RAIO 0,8 mm  
 CARGA max 100 ton/mt

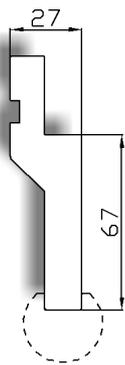
AÇO 42 CrMo4 - RETIFICADO  
 TÊMPERA POR INDUÇÃO DUREZA 52/58 HRC  
 COMPRIMENTO 835 mm - 415 mm - sec



**US 140/26° R1,5**

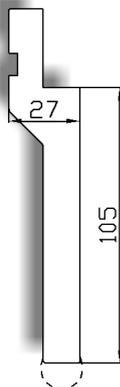
ALTURA 145,00 mm  
 ÂNGULO 26°  
 RAIO 1,5 mm  
 CARGA max 100 ton/mt

AÇO 42 CrMo4 - RETIFICADO  
 TÊMPERA POR INDUÇÃO DUREZA 52/58 HRC  
 COMPRIMENTO 835 mm - 415 mm - sec



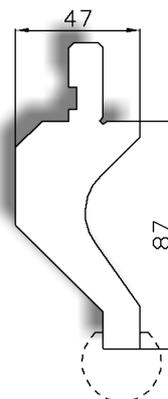
**US 119 h 67**

ALTURA 67,00 mm  
 RAIIO min 8 - max 50 mm  
 CARGA max 80 ton/mt  
**AÇO C45 - RETIFICADO**  
 COMPRIMENTO 830 mm - 412 mm



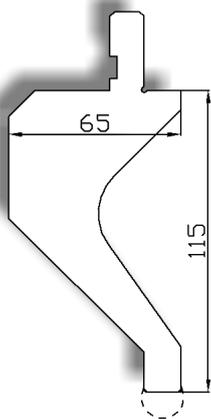
**US 119 h 105**

ALTURA 105,00 mm  
 RAIIO min 8 - max 50 mm  
 CARGA max 80 ton/mt  
**AÇO C45 - RETIFICADO**  
 COMPRIMENTO 830 mm - 412 mm



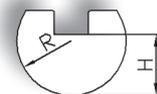
**US 119C h 87**

ALTURA 87,00 mm  
 RAIIO min 8 - max 50 mm  
 CARGA max 50 ton/mt  
**AÇO C45 - RETIFICADO**  
 COMPRIMENTO 830 mm - 412 mm



**US 119C h 115**

ALTURA 115,00 mm  
 RAIIO min 8 - max 50 mm  
 CARGA max 50 ton/mt  
**AÇO C45 - RETIFICADO**  
 COMPRIMENTO 830 mm - 412 mm



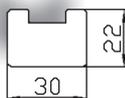
**US 305 R 8÷50**

**AÇO C45 - RETIFICADO**

**US 305N R 8÷50**

**39NiCrMo3 NITRURATO - RETIFICADO**

COMPRIMENTO 835 mm - 415 mm



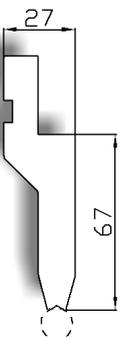
**US 310 SEM TÊMPERA**

**US 310 T**

TÊMPERA POR INDUÇÃO DUREZA 52/58 HRC

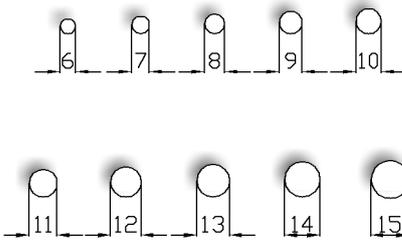
**AÇO C45 - RETIFICADO**  
 COMPRIMENTO 835 mm - 415 mm

	raio	altura
<b>US 305/R 8</b>	8	10 mm
<b>US 305/R 9</b>	9	10 mm
<b>US 305/R 10</b>	10	12 mm
<b>US 305/R 12,5</b>	12,5	17 mm
<b>US 305/R 15</b>	15	20 mm
<b>US 305/R 17,5</b>	17,5	22 mm
<b>US 305/R 20</b>	20	24 mm
<b>US 305/R 22,5</b>	22,5	25 mm
<b>US 305/R 25</b>	25	29 mm
<b>US 305/R 27,5</b>	27,5	34 mm
<b>US 305/R 30</b>	30	34 mm
<b>US 305/R 35</b>	35	39 mm
<b>US 305/R 40</b>	40	44 mm
<b>US 305/R 45</b>	45	50 mm
<b>US 305/R 50</b>	50	54 mm



**US 118 h 67**

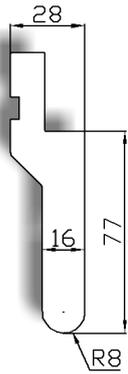
ALTURA 67,00 mm  
 RAIIO min 3 - max 7,5 mm  
 CARGA max 40 ton/mt  
**AÇO C45 - RETIFICADO**  
 COMPRIMENTO 830 mm - 412 mm



**US 305 R 3÷7,5**

RAIO min 3 - max 7,5 mm  
 espessura maxima 30/10  
**AÇO C45 - RETIFICADO**  
 COMPRIMENTO 835 mm - 415 mm

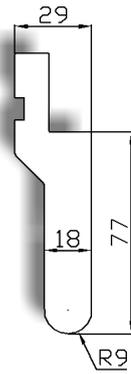
	raio	altura
<b>US 305/R 3,0</b>	3,0	6 mm
<b>US 305/R 3,5</b>	3,5	7 mm
<b>US 305/R 4,0</b>	4,0	8 mm
<b>US 305/R 4,5</b>	4,5	9 mm
<b>US 305/R 5,0</b>	5,0	10 mm
<b>US 305/R 5,5</b>	5,5	11 mm
<b>US 305/R 6,0</b>	6,0	12 mm
<b>US 305/R 6,5</b>	6,5	13 mm
<b>US 305/R 7,0</b>	7,0	14 mm
<b>US 305/R 7,5</b>	7,5	15 mm



**US 307 R 8**

ALTURA	77,00 mm
ÂNGULO	180°
RAIO	8,0 mm
CARGA	max 100 ton/mt

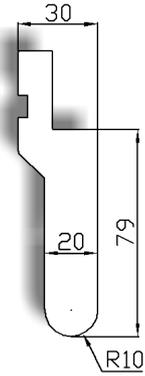
AÇO C45 - RETIFICADO  
TÊMPERA POR INDUÇÃO DUREZA 52/58 HRC  
COMPRIMENTO 835 mm - 415 mm - sec



**US 307 R 9**

ALTURA	77,00 mm
ÂNGULO	180°
RAIO	9,0 mm
CARGA	max 100 ton/mt

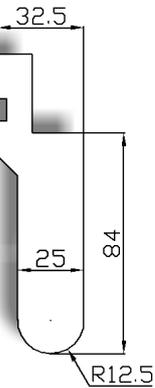
AÇO C45 - RETIFICADO  
TÊMPERA POR INDUÇÃO DUREZA 52/58 HRC  
COMPRIMENTO 835 mm - 415 mm - sec



**US 307 R 10**

ALTURA	79,00 mm
ÂNGULO	180°
RAIO	10,0 mm
CARGA	max 100 ton/mt

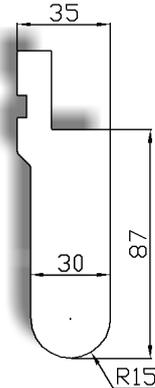
AÇO C45 - RETIFICADO  
TÊMPERA POR INDUÇÃO DUREZA 52/58 HRC  
COMPRIMENTO 835 mm - 415 mm - sec



**US 307 R 12,5**

ALTURA	84,00 mm
ÂNGULO	180°
RAIO	12,5 mm
CARGA	max 100 ton/mt

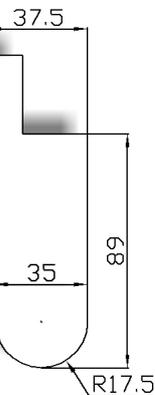
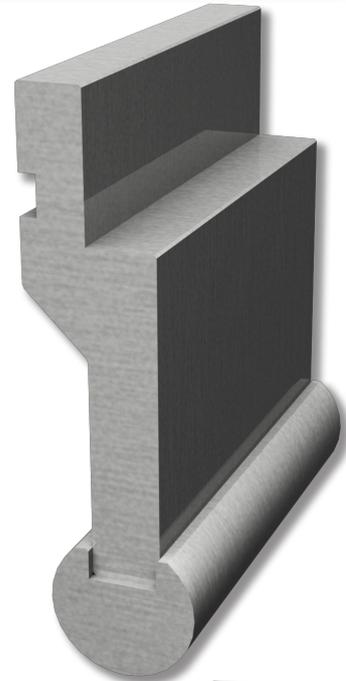
AÇO C45 - RETIFICADO  
TÊMPERA POR INDUÇÃO DUREZA 52/58 HRC  
COMPRIMENTO 835 mm - 415 mm - sec



**US 307 R 15**

ALTURA	87,00 mm
ÂNGULO	180°
RAIO	15,0 mm
CARGA	max 100 ton/mt

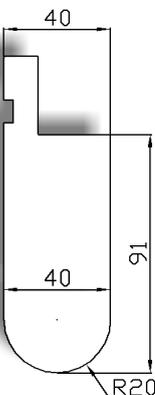
AÇO C45 - RETIFICADO  
TÊMPERA POR INDUÇÃO DUREZA 52/58 HRC  
COMPRIMENTO 835 mm - 415 mm - sec



**US 307 R 17,5**

ALTURA	89,00 mm
ÂNGULO	180°
RAIO	17,5 mm
CARGA	max 100 ton/mt

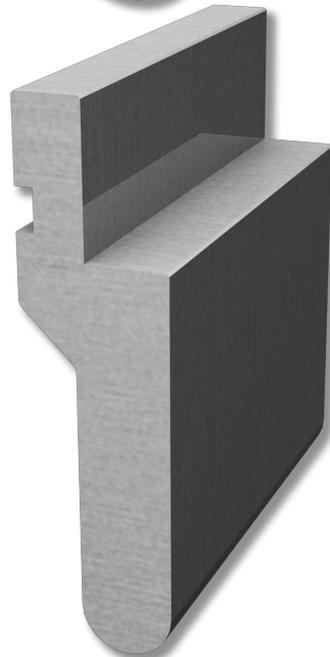
AÇO C45 - RETIFICADO  
TÊMPERA POR INDUÇÃO DUREZA 52/58 HRC  
COMPRIMENTO 835 mm - 415 mm - sec



**US 307 R 20**

ALTURA	91,00 mm
ÂNGULO	180°
RAIO	20,0 mm
CARGA	max 100 ton/mt

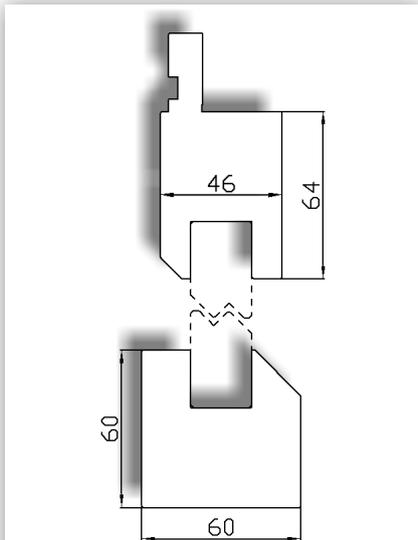
AÇO C45 - RETIFICADO  
TÊMPERA POR INDUÇÃO DUREZA 52/58 HRC  
COMPRIMENTO 835 mm - 415 mm - sec



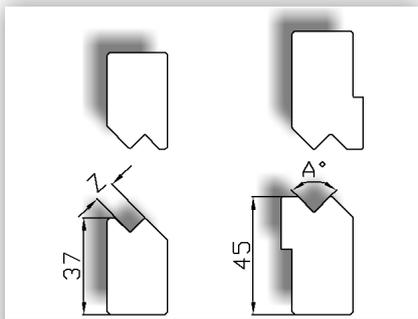
# FERRAMENTA ZETA



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**US 130**  
 ALTURA superior 64,00 mm  
 ALTURA inferior 60,00 mm  
 CARGA max 100 ton/mt  
**AÇO C45 - RETIFICADO**  
 COMPRIMENTO 835 mm - 415 mm

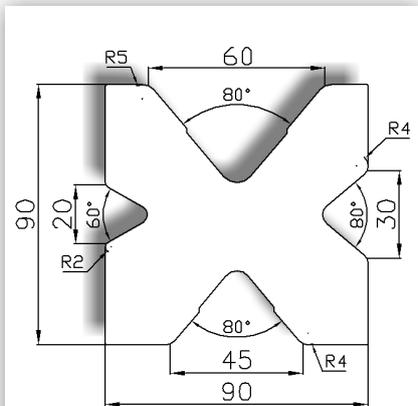


**US 131 Z1 + Z12**  
**AÇO C45 - RETIFICADO**  
 TÊMPERA POR INDUÇÃO DUREZA 52/58 HRC  
 COMPRIMENTO 835 mm - 415 mm

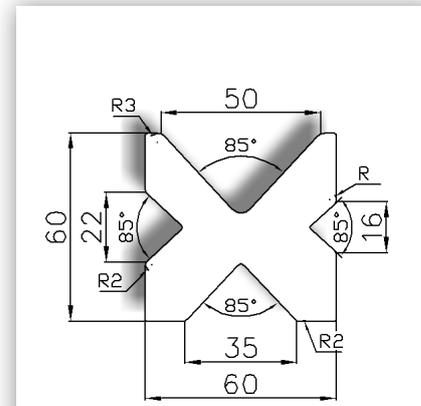
	Z	A°	espessura máxima	altura
	mm		mm	mm
<b>US 131 / 1,0</b>	1,0	160°	0,5	37
<b>US 131 / 1,5</b>	1,5	160°	0,6	37
<b>US 131 / 2,0</b>	2,0	150°	0,8	37
<b>US 131 / 2,5</b>	2,5	140°	1,0	37
<b>US 131 / 3,0</b>	3,0	90°	1,0	37
<b>US 131 / 3,5</b>	3,5	90°	1,2	37
<b>US 131 / 4,0</b>	4,0	90°	1,2	37
<b>US 131 / 4,5</b>	4,5	90°	1,5	37
<b>US 131 / 5,0</b>	5,0	90°	1,5	37
<b>US 131 / 5,5</b>	5,5	90°	1,5	37
<b>US 131 / 6,0</b>	6,0	90°	1,5	37
<b>US 131 / 6,5</b>	6,5	90°	1,5	37
<b>US 131 / 7,0</b>	7,0	90°	2,0	37
<b>US 131 / 7,5</b>	7,5	90°	2,0	37
<b>US 131 / 8,0</b>	8,0	90°	2,5	37
<b>US 131 / 8,5</b>	8,5	90°	2,5	37
<b>US 131 / 9,0</b>	9,0	90°	2,5	45
<b>US 131 / 10,0</b>	10,0	90°	3,0	45
<b>US 131 / 11,0</b>	11,0	90°	3,0	45
<b>US 131 / 12,0</b>	12,0	90°	3,0	45



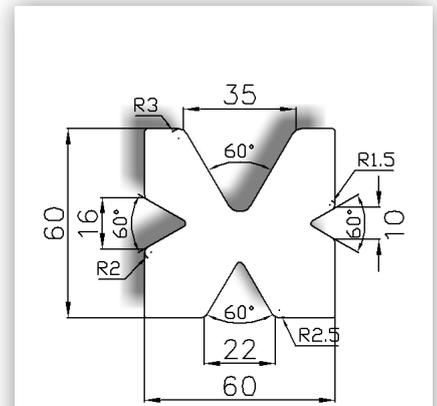
# FERRAMENTA INFERIOR



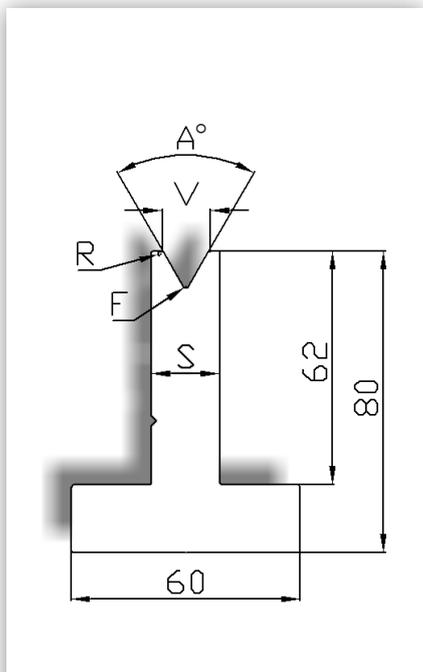
**US 204/4V**  
 DIMENSÃO 90X90 mm  
 V CANAL 20/60°30-45-60 mm/80°  
 CARGA max 100 ton/mt  
**AÇO C45 - RETIFICADO**  
 TÊMPERA POR INDUÇÃO DUREZA 52/58 HRC  
 COMPRIMENTO 835 mm - 415 mm - sec



**US 205/4V**  
 DIMENSÃO 60X60 mm  
 V CANAL 16-22-35-50 mm/85°  
 CARGA max 80 ton/mt  
**AÇO C45 - RETIFICADO**  
 TÊMPERA POR INDUÇÃO DUREZA 52/58 HRC  
 COMPRIMENTO 835 mm - 415 mm - sec



**US 210/4V**  
 DIMENSÃO 60X60 mm  
 V CANAL 16-22-35-50 mm/60°  
 CARGA max 60 ton/mt  
**AÇO C45 - RETIFICADO**  
 TÊMPERA POR INDUÇÃO DUREZA 52/58 HRC  
 COMPRIMENTO 835 mm - 415 mm - sec



**US 220 h 80 mm**

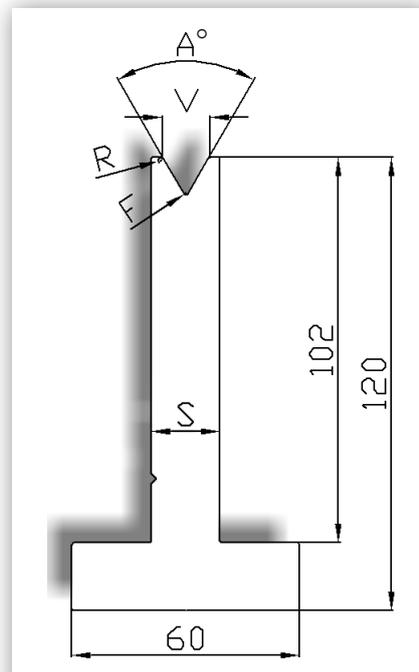
DIMENSÃO 80X60 mm

AÇO C45 - RETIFICADO

TÊMPERA POR INDUÇÃO DUREZA 52/58 HRC

COMPRIMENTO 835 mm - 415 mm - sec

A°	V mm	R mm	S mm	F mm	max ton/mt
85°	6	2,75	14	r0,5	100
	8	2,75	14	r0,5	100
	10	2,75	18	r0,5	100
	12	2,75	18	r0,5	100
	16	2,75	24	r0,5	100
	20	3,00	30	r0,8	100
	25	3,00	35	r0,8	100
60°	6	0,50	14	r0,5	80
	8	0,80	14	r0,5	70
	10	0,80	18	r0,5	80
	12	0,80	18	r0,5	70
	16	2,75	24	r2,0	100
	20	3,00	30	r2,0	100
	25	3,00	35	r2,0	100
	6 R	1,50	14	r0,5	80
	8 R	1,50	14	r0,5	70
	10 R	2,75	18	r0,5	80
12 R	2,75	18	r0,5	70	
45°	6	0,80	14	r0,5	50
	8	1,00	18	r0,8	50
	10	1,20	18	r0,8	50
	12	1,60	24	r0,8	50
	16	2,75	26	r2,0	50
	20	3,00	30	r2,0	60
	25	3,00	37	r2,0	70
35°	6	0,80	14	r0,5	35
	8	1,00	16	r0,5	35
	10	1,20	20	r0,5	40
	12	1,60	22	r0,5	40
	16	3,00	30	r2,0	45
	20	3,00	35	r2,0	50
30°	6	0,60	14	r1,0	35
	8	0,80	18	r1,2	35
	10	1,00	24	r1,2	50
	12	1,50	24	r1,2	40
	16	2,00	30	r3,0	45
	20	2,50	35	r3,0	50
26°	6	0,80	16	r1,0	25
	8	1,00	20	r1,0	25
	10	1,20	24	r1,0	25
	12	1,60	26	r1,0	25



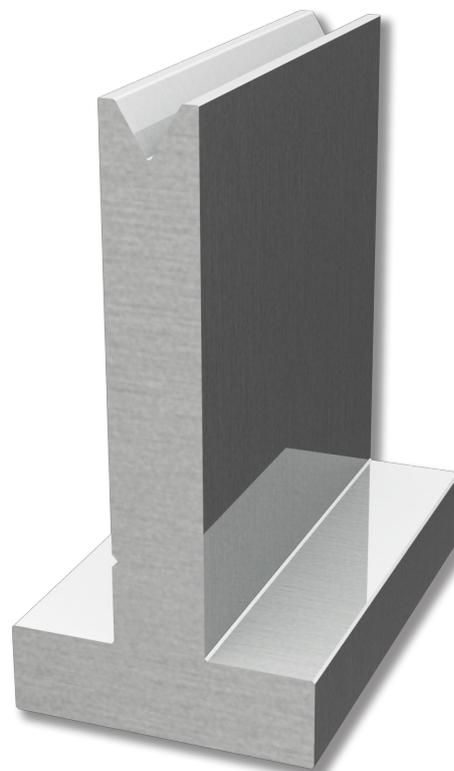
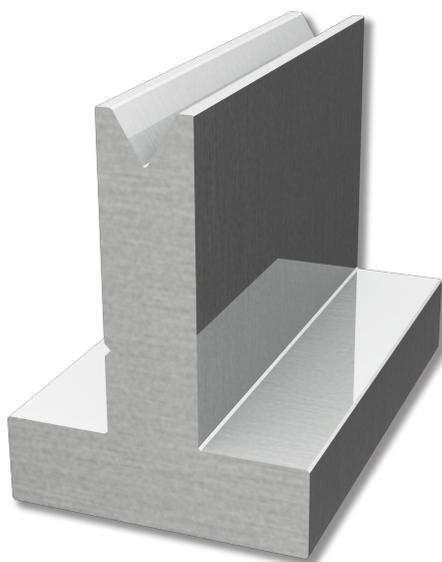
**US 420 h 120 mm**

DIMENSÃO 120X60 mm

AÇO C45 - RETIFICADO

TÊMPERA POR INDUÇÃO DUREZA 52/58 HRC

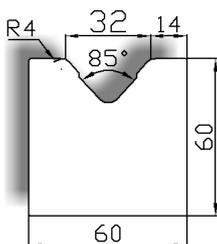
COMPRIMENTO 835 mm - 415 mm - sec



# FERRAMENTA INFERIOR

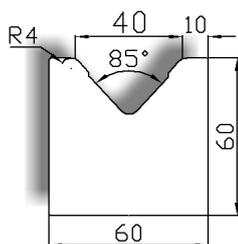


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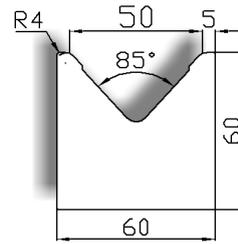
## US 211/32

DIMENSÃO 60X60 mm  
V CANAL / ÂNGULO 32 mm / 85°  
RAIO 4,0 mm  
CARGA max 100 ton/mt  
AÇO C45 - RETIFICADO  
TÊMPERA POR INDUÇÃO DUREZA 52/58 HRC  
COMPRIMENTO 835 mm - 415 mm - sec



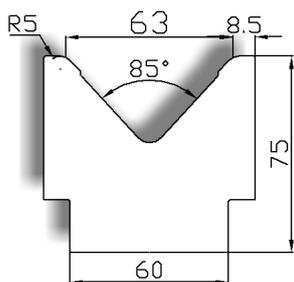
## US 211/40

DIMENSÃO 60X60 mm  
V CANAL / ÂNGULO 40 mm / 85°  
RAIO 4,0 mm  
CARGA max 100 ton/mt  
AÇO C45 - RETIFICADO  
TÊMPERA POR INDUÇÃO DUREZA 52/58 HRC  
COMPRIMENTO 835 mm - 415 mm - sec



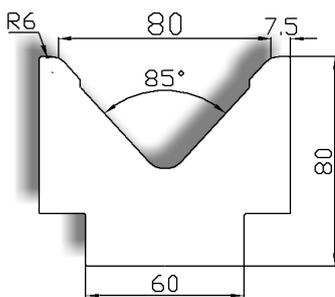
## US 211/50

DIMENSÃO 60X60 mm  
V CANAL / ÂNGULO 50 mm / 85°  
RAIO 4,0 mm  
CARGA max 100 ton/mt  
AÇO C45 - RETIFICADO  
TÊMPERA POR INDUÇÃO DUREZA 52/58 HRC  
COMPRIMENTO 835 mm - 415 mm - sec



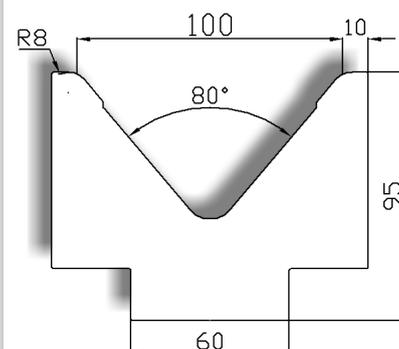
## US 211/63

DIMENSÃO 75X80 mm  
V CANAL / ÂNGULO 63 mm / 80°  
RAIO 5,0 mm  
CARGA max 100 ton/mt  
AÇO C45 - RETIFICADO  
TÊMPERA POR INDUÇÃO DUREZA 52/58 HRC  
COMPRIMENTO 835 mm - 415 mm - sec



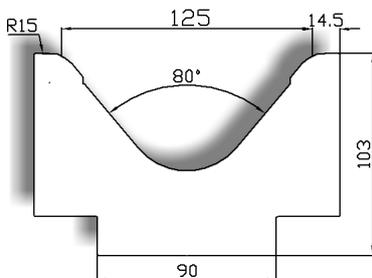
## US 211/80

DIMENSÃO 80X95 mm  
V CANAL / ÂNGULO 80 mm / 85°  
RAIO 6,0 mm  
CARGA max 100 ton/mt  
AÇO C45 - RETIFICADO  
TÊMPERA POR INDUÇÃO DUREZA 52/58 HRC  
COMPRIMENTO 835 mm - 415 mm - sec



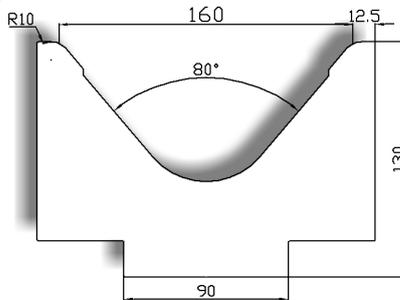
## US 211/100

DIMENSÃO 95X120 mm  
V CANAL / ÂNGULO 100 mm / 80°  
RAIO 8,0 mm  
CARGA max 100 ton/mt  
AÇO C45 - RETIFICADO  
TÊMPERA POR INDUÇÃO DUREZA 52/58 HRC  
COMPRIMENTO 835 mm - 415 mm - sec



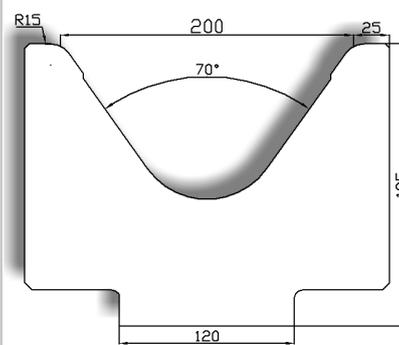
## US 211/125

DIMENSÃO 103X154 mm  
V CANAL / ÂNGULO 125 mm / 80°  
RAIO 15,0 mm  
CARGA max 100 ton/mt  
AÇO C45 - RETIFICADO  
TÊMPERA POR INDUÇÃO DUREZA 52/58 HRC  
COMPRIMENTO 835 mm - 415 mm - sec



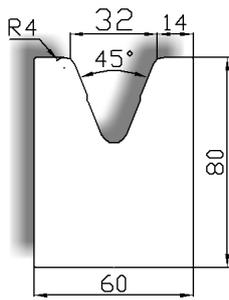
## US 211/160

DIMENSÃO 130X185 mm  
V CANAL / ÂNGULO 160 mm / 80°  
RAIO 10,0 mm  
CARGA max 100 ton/mt  
AÇO C45 - RETIFICADO  
TÊMPERA POR INDUÇÃO DUREZA 52/58 HRC  
COMPRIMENTO 835 mm - 415 mm - sec



## US 211/200

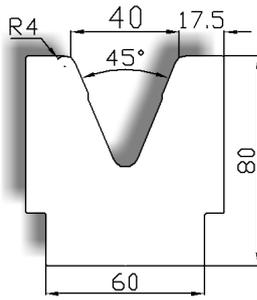
DIMENSÃO 195X250 mm  
V CANAL / ÂNGULO 200 mm / 70°  
RAIO 15,0 mm  
CARGA max 180 ton/mt  
AÇO 42 CrMo4 - RETIFICADO  
TÊMPERA POR INDUÇÃO DUREZA 52/58 HRC  
COMPRIMENTO 415 mm



**US 220/45° V32**

DIMENSÃO 80X60 mm  
V CANAL / ÂNGULO 32 mm / 45°  
RAIO 4,0 mm  
CARGA max 100 ton/mt

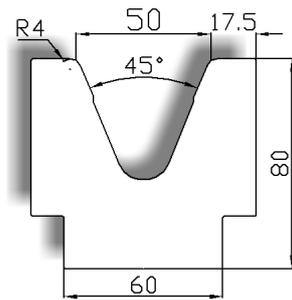
AÇO C45 - RETIFICADO  
TÊMPERA POR INDUÇÃO DUREZA 52/58 HRC  
COMPRIMENTO 835 mm - 415 mm - sec



**US 220/45° V40**

DIMENSÃO 80X75 mm  
V CANAL / ÂNGULO 40 mm / 45°  
RAIO 4,0 mm  
CARGA max 100 ton/mt

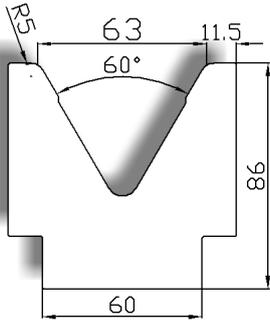
AÇO C45 - RETIFICADO  
TÊMPERA POR INDUÇÃO DUREZA 52/58 HRC  
COMPRIMENTO 835 mm - 415 mm - sec



**US 220/45° V50**

DIMENSÃO 80X85 mm  
V CANAL / ÂNGULO 50 mm / 45°  
RAIO 4,0 mm  
CARGA max 90 ton/mt

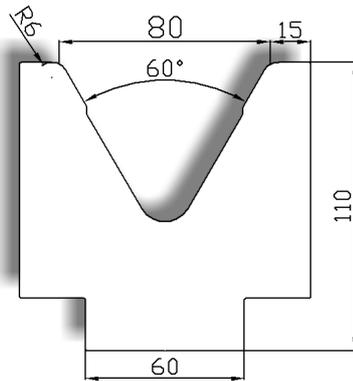
AÇO C45 - RETIFICADO  
TÊMPERA POR INDUÇÃO DUREZA 52/58 HRC  
COMPRIMENTO 835 mm - 415 mm - sec



**US 220/60° V63**

DIMENSÃO 86X86 mm  
V CANAL / ÂNGULO 63 mm / 60°  
RAIO 5,0 mm  
CARGA max 100 ton/mt

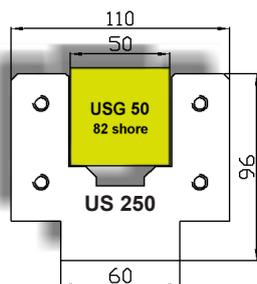
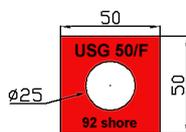
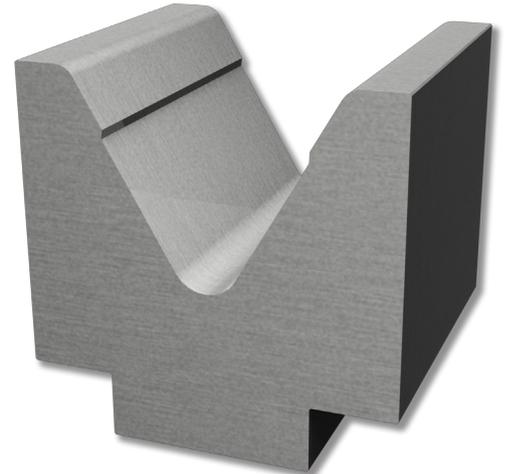
AÇO C45 - RETIFICADO  
TÊMPERA POR INDUÇÃO DUREZA 52/58 HRC  
COMPRIMENTO 830 mm - 412 mm



**US 220/60° V80**

DIMENSÃO 110X110mm  
V CANAL / ÂNGULO 80 mm / 60°  
RAIO 6,0 mm  
CARGA max 100 ton/mt

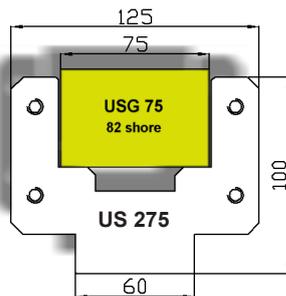
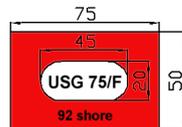
AÇO C45 - RETIFICADO  
TÊMPERA POR INDUÇÃO DUREZA 52/58 HRC  
COMPRIMENTO 835 mm - 415 mm - sec



**US 250 - 50 x 50**

USG 50 - 82 shore (amarelo)  
USG 50/F - 92 shore (vermelho)

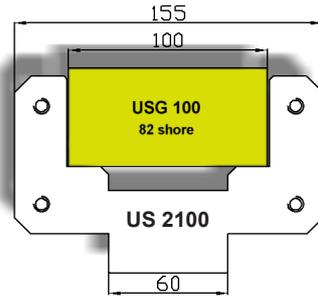
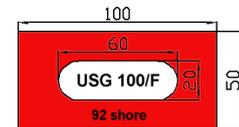
AÇO C45 - RETIFICADO  
COMPRIMENTO 835 mm - 415 mm



**US 275 - 75 x 50**

USG 75 - 82 shore (amarelo)  
USG 75/F - 92 shore (vermelho)

AÇO C45 - RETIFICADO  
COMPRIMENTO 835 mm - 415 mm



**US 2100 - 100 x 50**

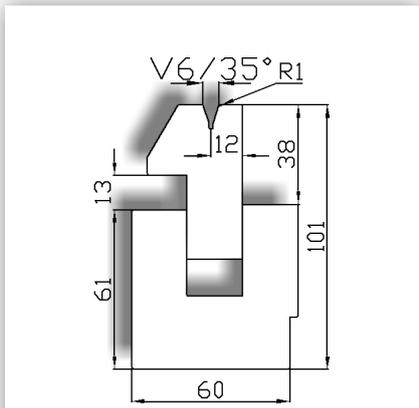
USG 100 - 82 shore (amarelo)  
USG 100/F - 92 shore (vermelho)

AÇO C45 - RETIFICADO  
COMPRIMENTO 835 mm - 415 mm

# FERRAMENTA INFERIOR

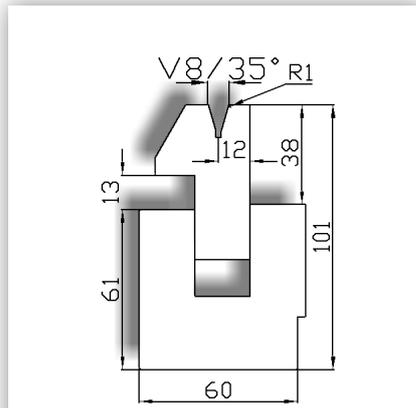


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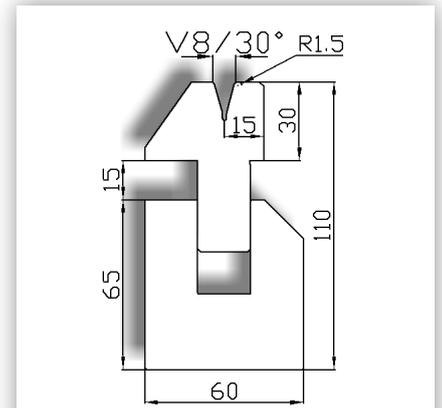
## US 303/35° V6

ALTURA	101/88 mm
ÂNGULO	35°
RAIO	1,0 mm
ESPESSURA MÁXIMA	12/10 mm
AÇO C45 - RETIFICADO	
TÊMPERA POR INDUÇÃO DUREZA 52/58 HRC	
COMPRIMENTO	835 mm - 415 mm



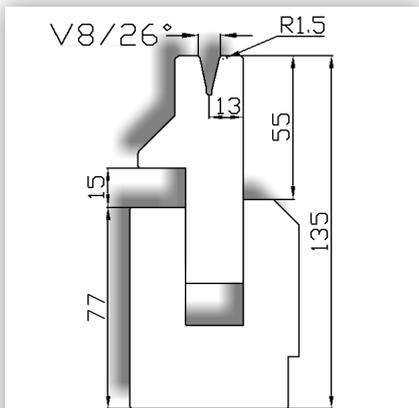
## US 303/35° V8

ALTURA	101/88 mm
ÂNGULO	35°
RAIO	1,0 mm
ESPESSURA MÁXIMA	15/10 mm
AÇO C45 - RETIFICADO	
TÊMPERA POR INDUÇÃO DUREZA 52/58 HRC	
COMPRIMENTO	835 mm - 415 mm



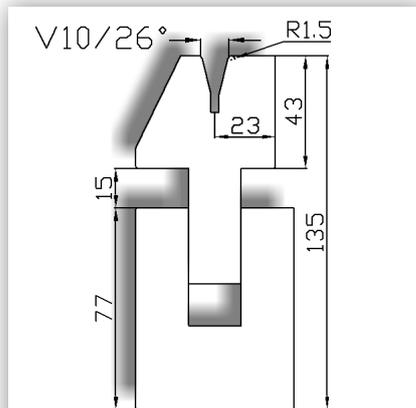
## US 306/30° V8

ALTURA	110/95 mm
ÂNGULO	30°
RAIO	1,5 mm
ESPESSURA MÁXIMA	15/10 mm
AÇO C45 - RETIFICADO	
TÊMPERA POR INDUÇÃO DUREZA 52/58 HRC	
COMPRIMENTO	835 mm - 415 mm



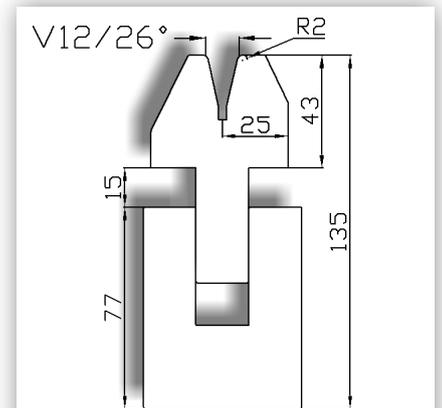
## US 308/26° V8

ALTURA	135/120 mm
ÂNGULO	26°
RAIO	1,5 mm
ESPESSURA MÁXIMA	15/10 mm
AÇO 42 CrMo4 - RETIFICADO	
TÊMPERA POR INDUÇÃO DUREZA 52/58 HRC	
COMPRIMENTO	835 mm - 415 mm



## US 302/26° V10

ALTURA	135/120 mm
ÂNGULO	26°
RAIO	1,5 mm
ESPESSURA MÁXIMA	20/10 mm
AÇO C45 - RETIFICADO	
TÊMPERA POR INDUÇÃO DUREZA 52/58 HRC	
COMPRIMENTO	835 mm - 415 mm



## US 300/26° V12

ALTURA	135/120 mm
ÂNGULO	26°
RAIO	2,0 mm
ESPESSURA MÁXIMA	25/10 mm
AÇO C45 - RETIFICADO	
TÊMPERA POR INDUÇÃO DUREZA 52/58 HRC	
COMPRIMENTO	835 mm - 415 mm

As ferramentas conjugada de cunhare amassar da série 300, são fornecidas com cilindros pneumáticos para a movimentação da peça superior. A parte inferior e a superior têm a mesma carga. O tratamento térmico indução é realizado em ambas as partes onde é realizado o amassamento da chapa e também no canal na peça superior onde é realizada a dobra.

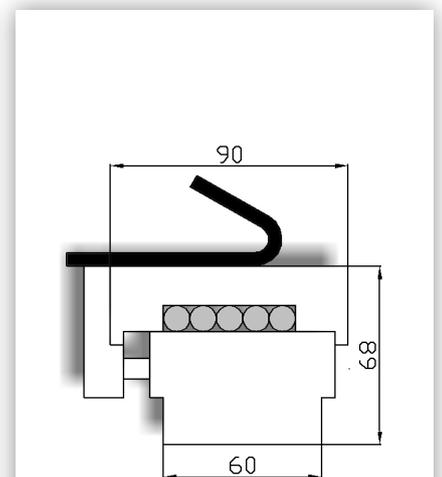


## KIT / PNEU

S mm	X	R45 kgf/mm <sup>2</sup>	R70 kgf/mm <sup>2</sup>
0,6	mm 3,0	90 kN/mt	150 kN/mt
0,8	mm 3,0	120 kN/mt	200 kN/mt
1	mm 3,5	150 kN/mt	250 kN/mt
1,2	mm 3,5	170 kN/mt	260 kN/mt
1,5	mm 4,6	220 kN/mt	380 kN/mt
2	mm 5,5	300 kN/mt	500 kN/mt
2,5	mm 6,5	550 kN/mt	900 kN/mt
3	mm 8,0	700 kN/mt	1000 kN/mt

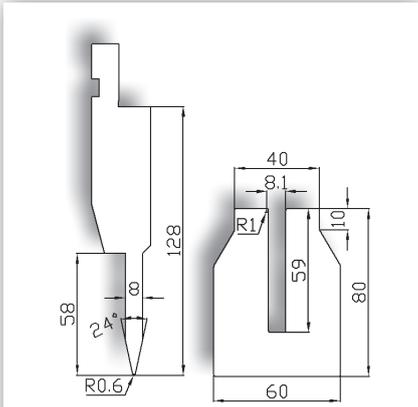
S mm	X	R45 kgf/mm <sup>2</sup>	R70 kgf/mm <sup>2</sup>
0,6	mm 1,2	230 kN/mt	350 kN/mt
0,8	mm 1,6	320 kN/mt	500 kN/mt
1	mm 2,0	400 kN/mt	600 kN/mt
1,2	mm 2,4	500 kN/mt	800 kN/mt
1,5	mm 3,0	630 kN/mt	950 kN/mt
2	mm 4,0	800 kN/mt	1300 kN/mt
2,5	mm 5,0	900 kN/mt	1800 kN/mt
3	mm 6,0	1000 kN/mt	2100 kN/mt

S : espessura - R : resistência



## US 304

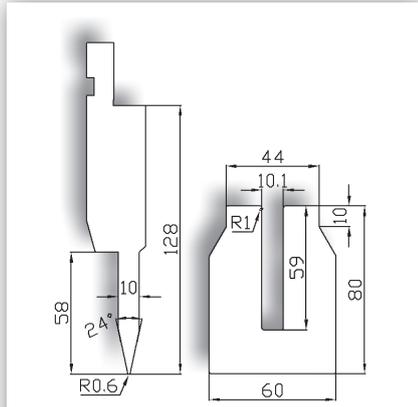
AÇO C45 - RETIFICADO	
COMPRIMENTO	835 mm



**US138L8 + US138M8**

ALTURA	128 mm / 80 mm
ÂNGULO	24°
RAIO	0,6 mm / 1,0 mm
CARGA	max 800/500 kN/mt

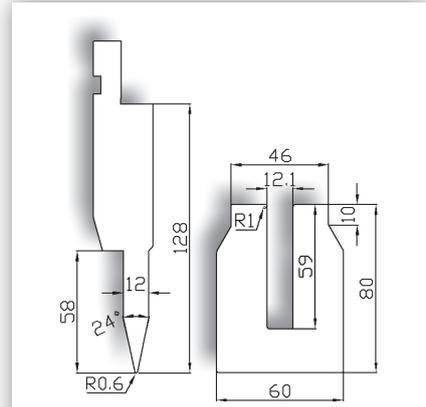
AÇO 42 CrMo4 - RETIFICADO  
TÊMPERA POR INDUÇÃO DUREZA 52/58 HRC  
COMPRIMENTO 835 mm - 415 mm - fraz



**US138L10 + US138M10**

ALTURA	128 mm / 80 mm
ÂNGULO	24°
RAIO	0,6 mm / 1,0 mm
CARGA	max 800/500 kN/mt

AÇO 42 CrMo4 - RETIFICADO  
TÊMPERA POR INDUÇÃO DUREZA 52/58 HRC  
COMPRIMENTO 835 mm - 415 mm - fraz

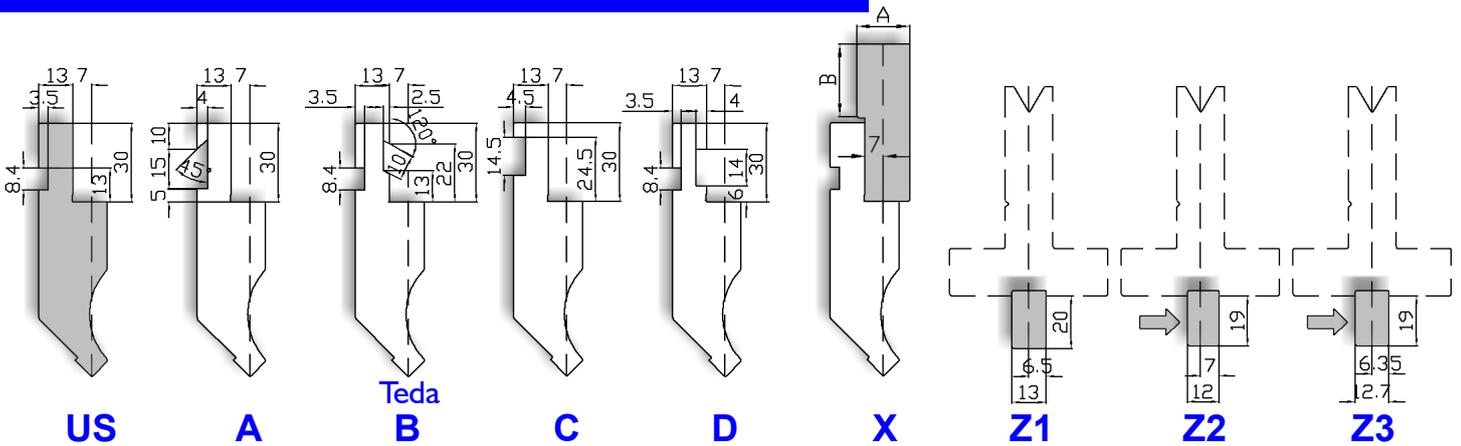


**US138L12 + US138M12**

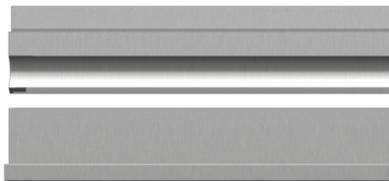
ALTURA	128 mm / 80 mm
ÂNGULO	24°
RAIO	0,6 mm / 1,0 mm
CARGA	max 800/500 kN/mt

AÇO 42 CrMo4 - RETIFICADO  
TÊMPERA POR INDUÇÃO DUREZA 52/58 HRC  
COMPRIMENTO 835 mm - 415 mm - fraz

**ENCAIXE ESPECIAL - linha EUROPEU**



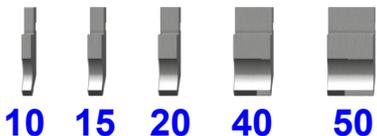
**COMPRIMENTO - SECCIONAMENTO**



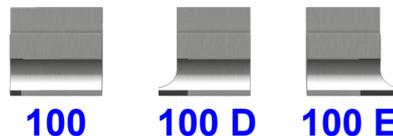
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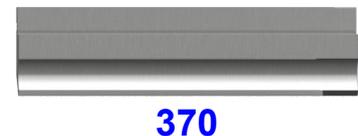
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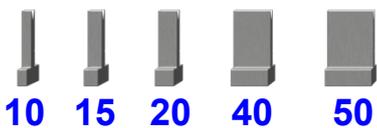
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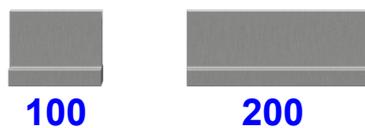
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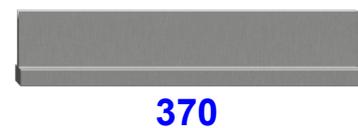
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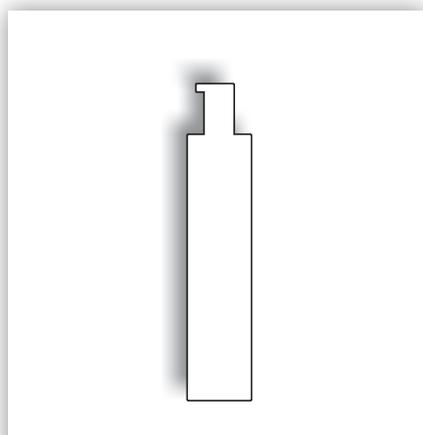
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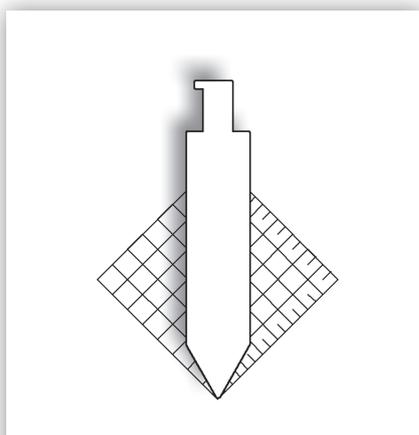
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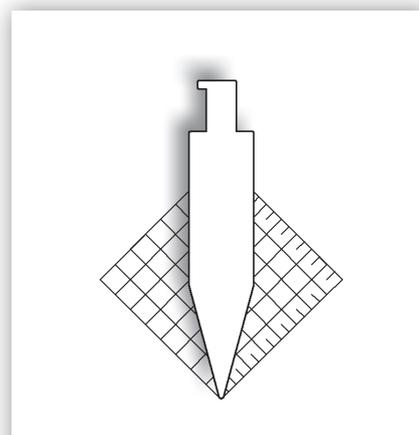
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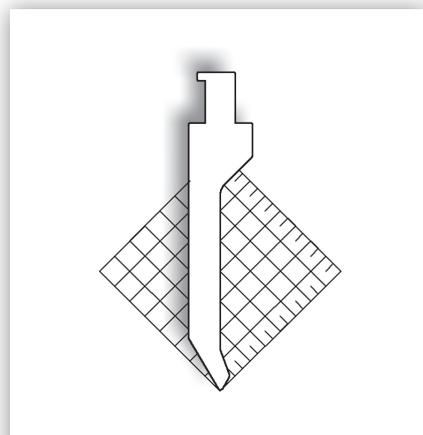
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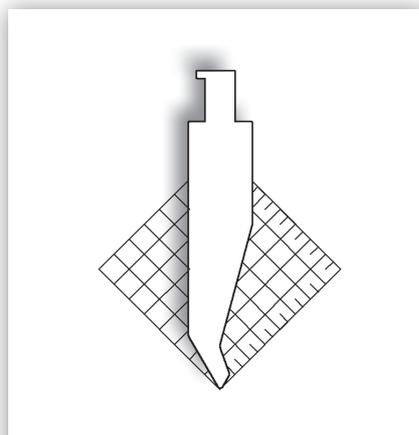
LS 60°



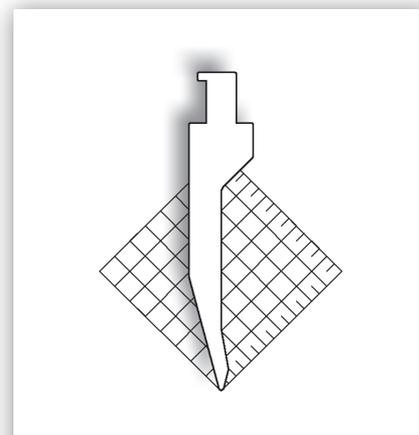
LS 30°



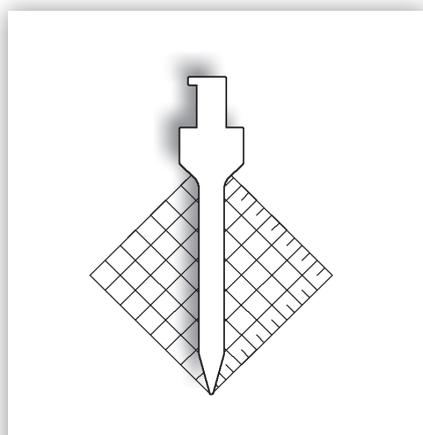
LD 60°



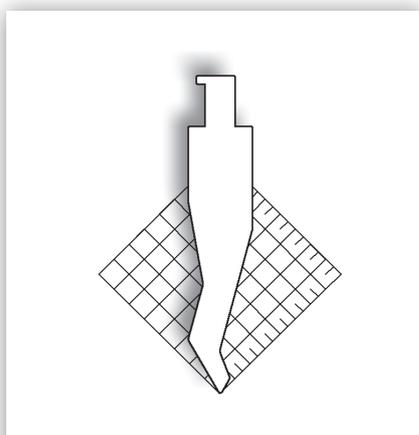
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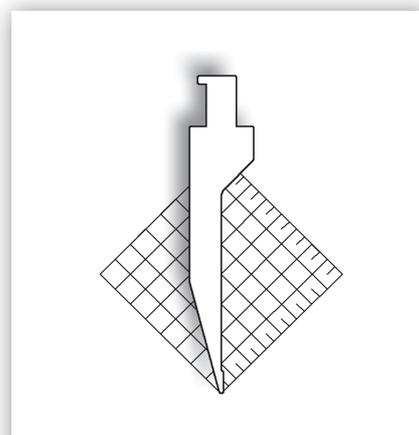
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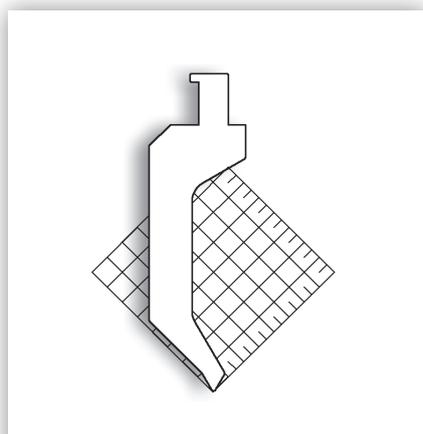
LDP 30°



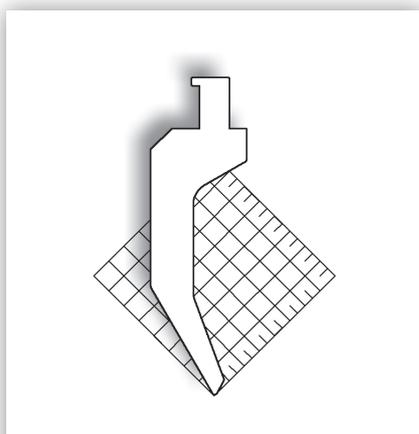
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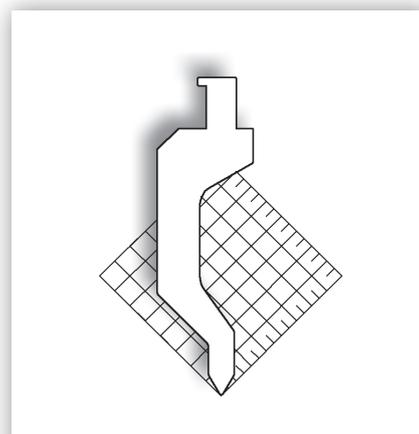
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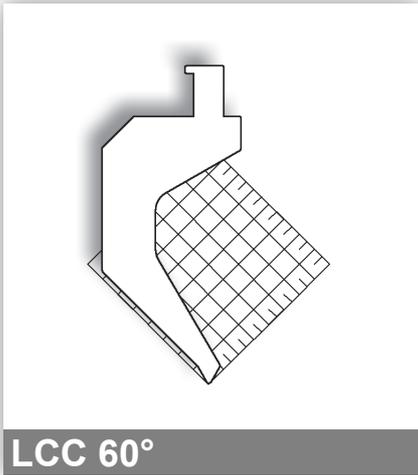
LSCC 60°



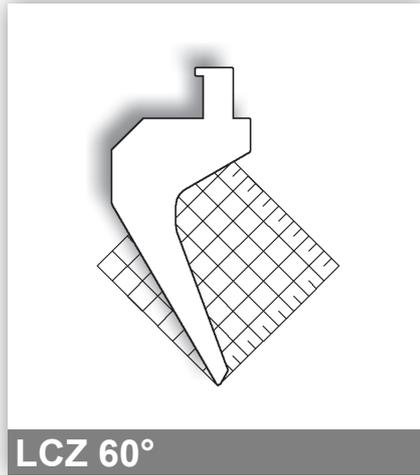
LSCZ 60°



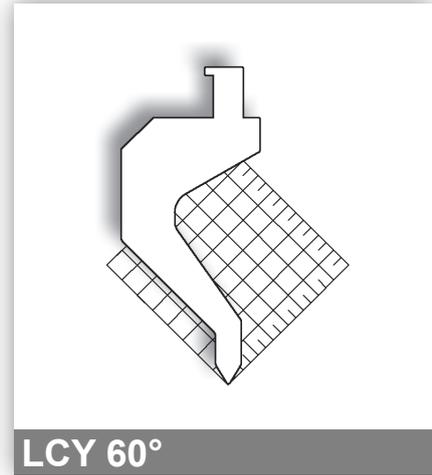
LSCY 60°



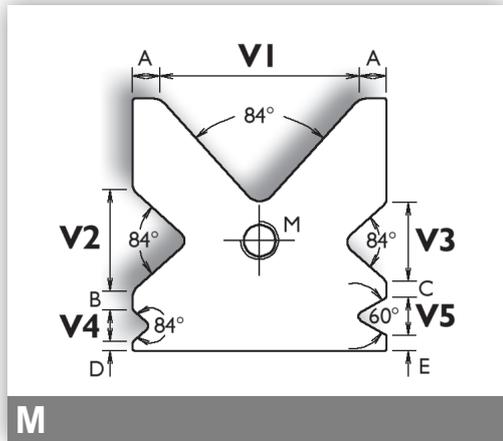
LCC 60°



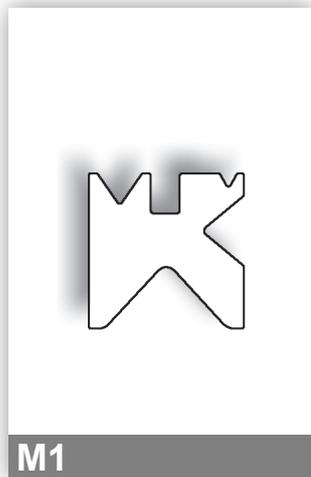
LCZ 60°



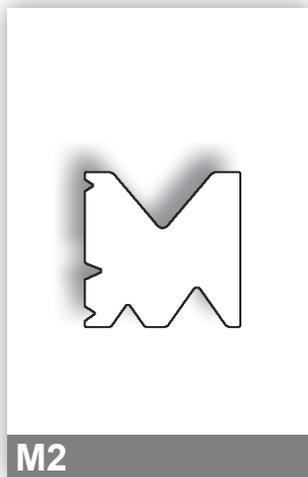
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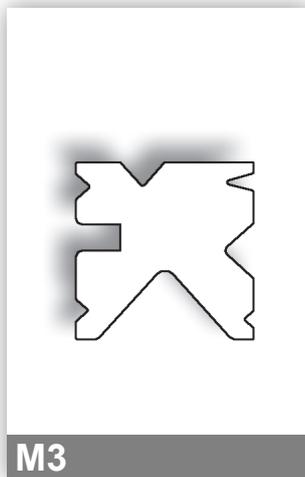
tipo M	DIMENSÃO	84°				60°					M	
		V1	V2	V3	V4	V5	A	B	C	D		E
		mm										
M 60	60x60	40	25	20	10	12	10	6	5	3	5	
M 70	70x70	50	32	25	10	12	10	6	5	3	5	M12
M 80	80x80	63	32	25	10	12	8,5	6	5	3	5	M12
M 90	90x90	70	40	25	10	12	10	6	5	3	5	M16
M 100	100x100	80	40	32	10	12	10	9	5	3	5	M16
M 110	110x110	90	50	32	10	12	10	9	5	3	5	M16
M 120	120x120	90	50	40	12	16	15	10	10	5	5	M16
M 130	130x130	110	50	40	12	16	10	10	10	5	5	M16
M 140	140x140	110	50	40	16	20	15	10	10	5	5	M20



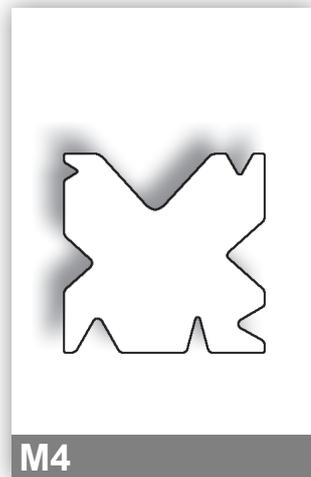
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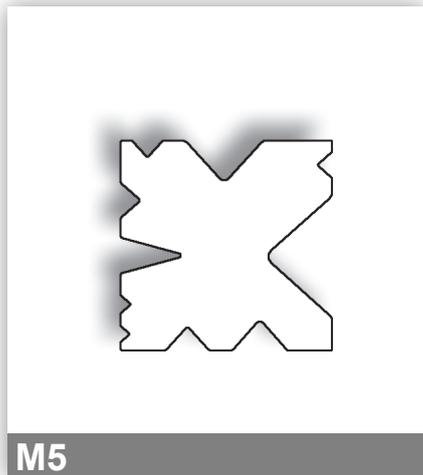
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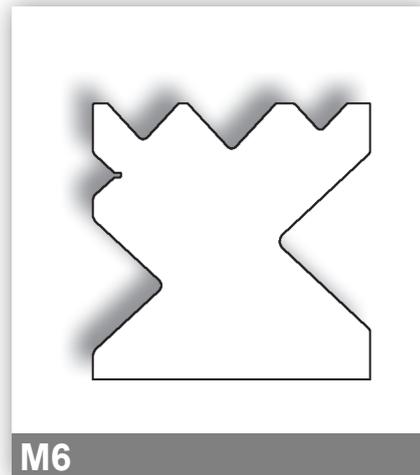
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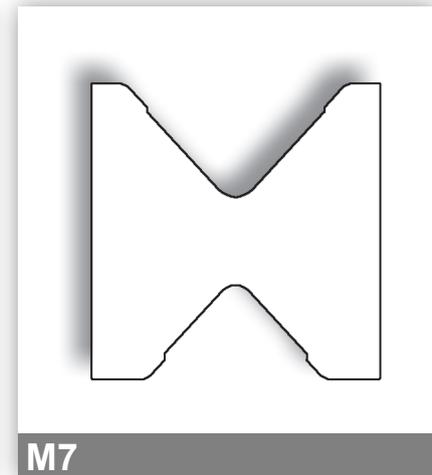
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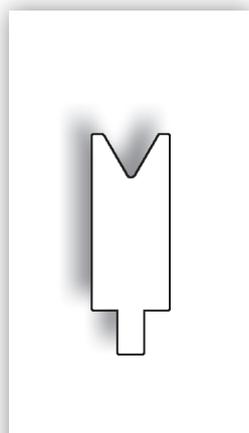
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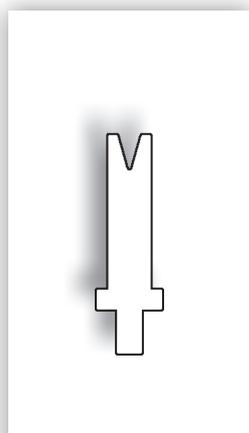
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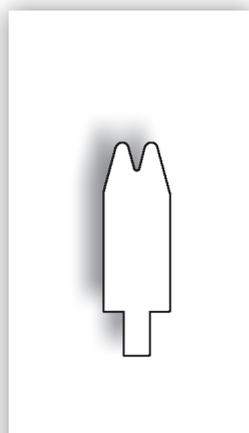
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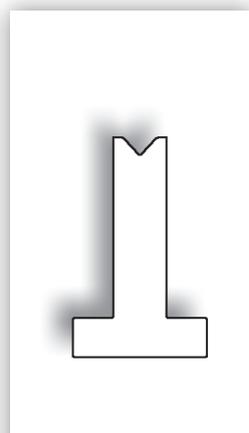
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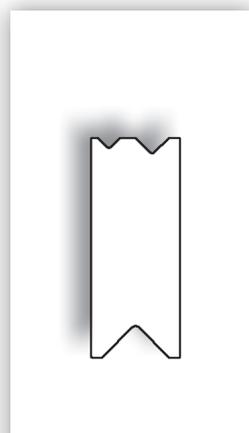
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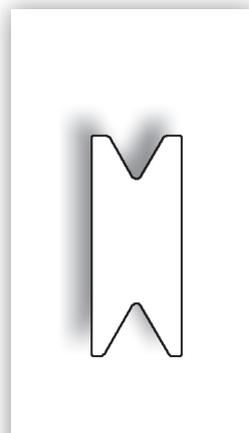
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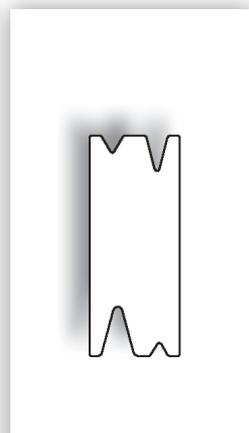
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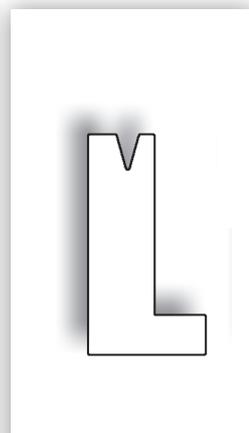
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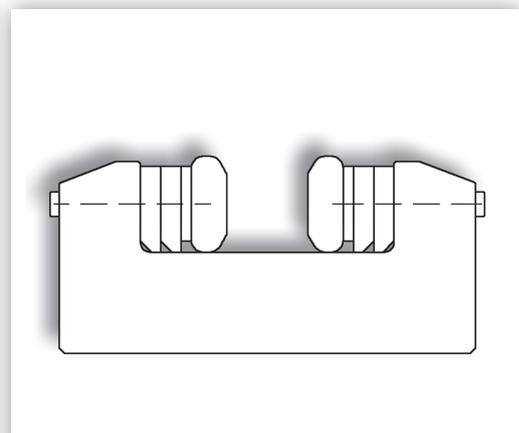
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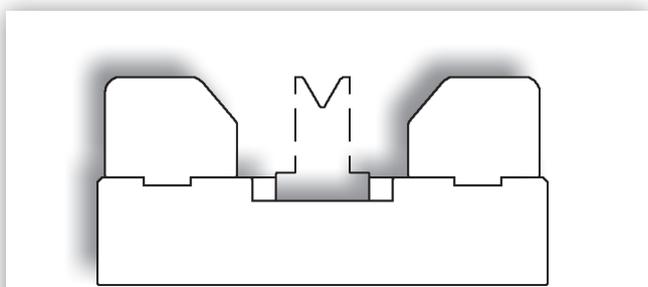
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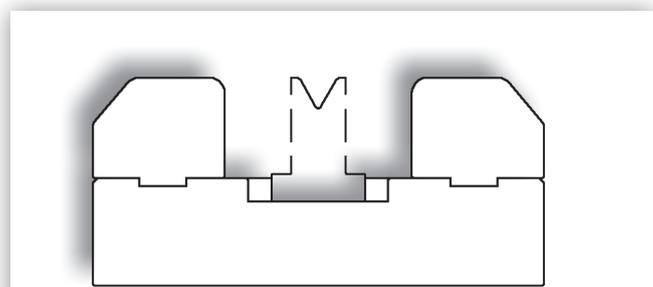
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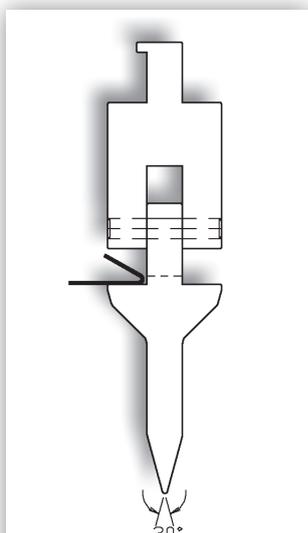
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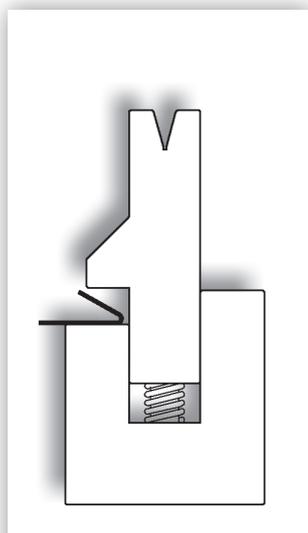
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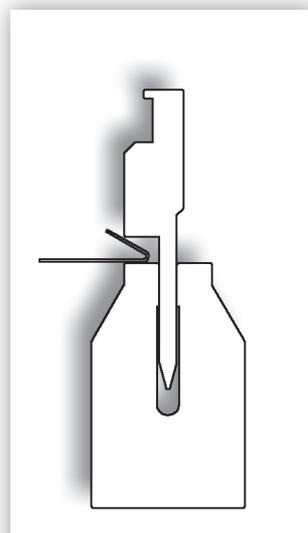
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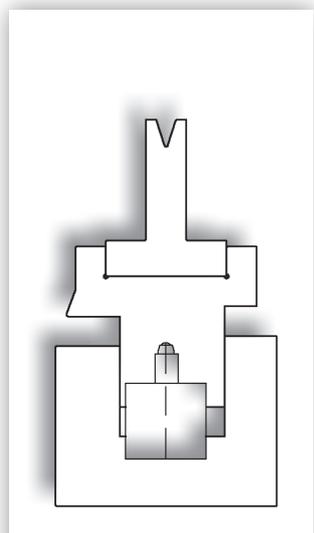
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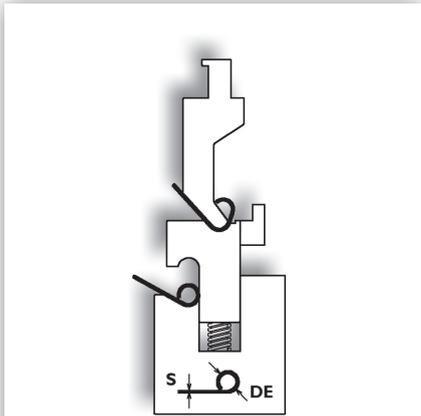
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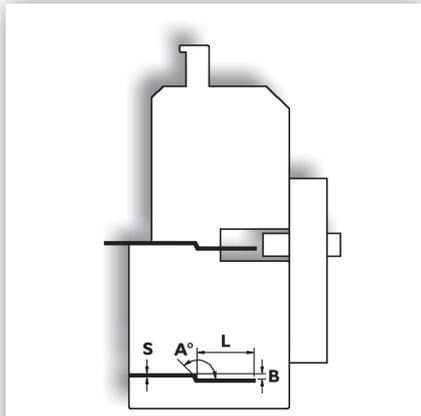
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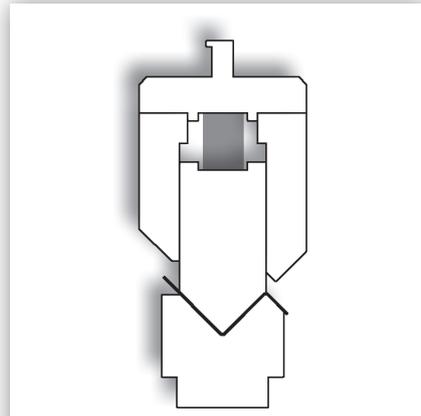
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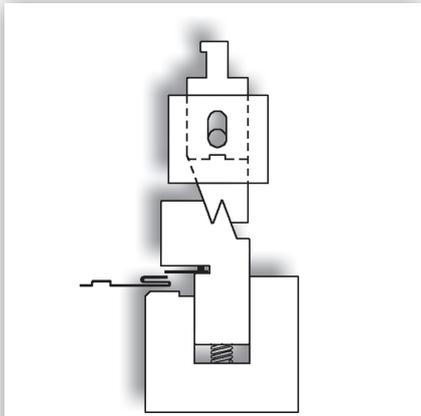
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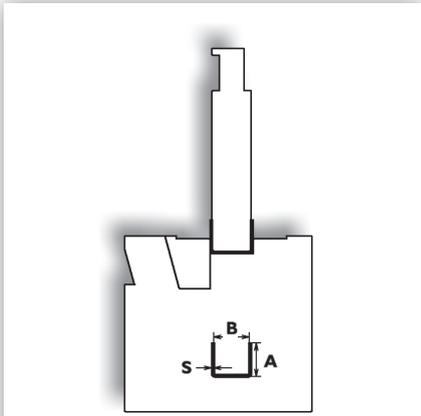
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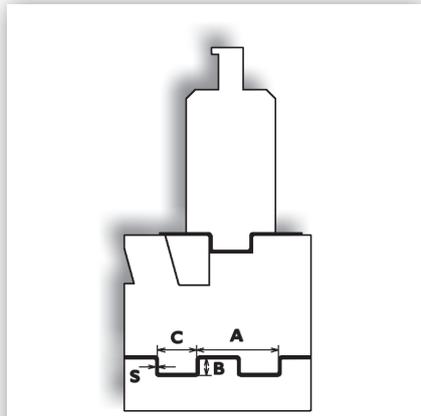
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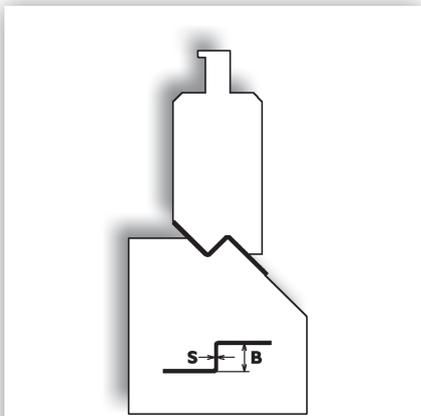
SP9



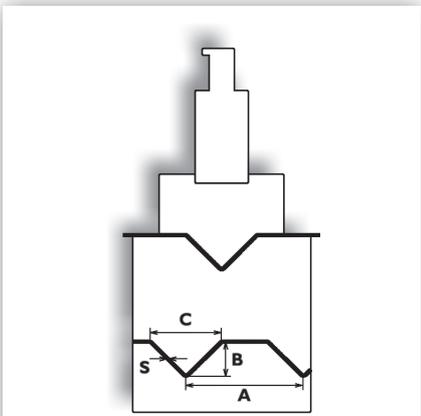
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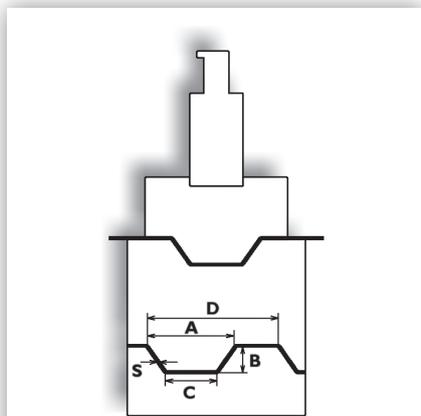
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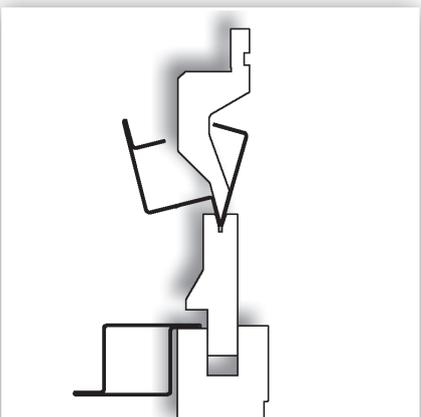
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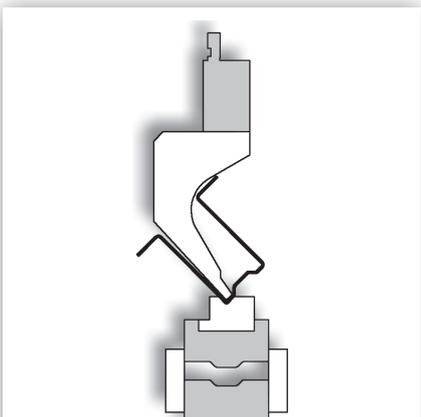
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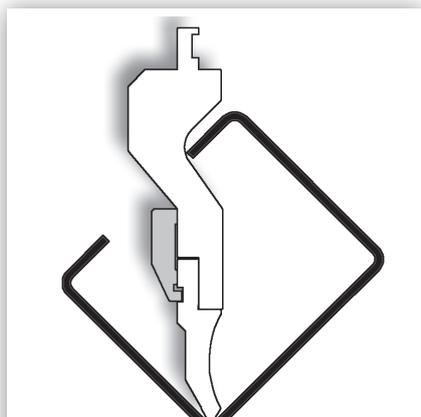
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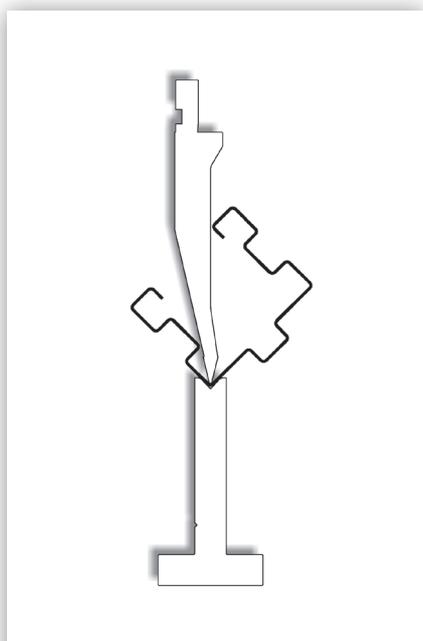
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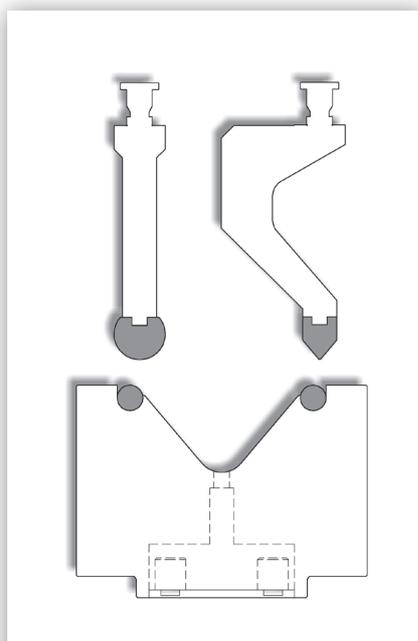
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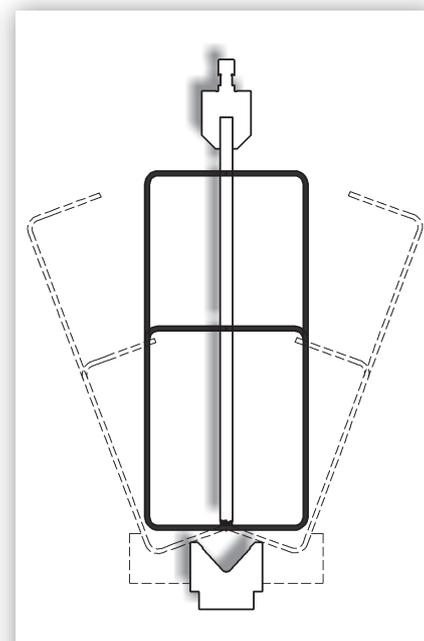
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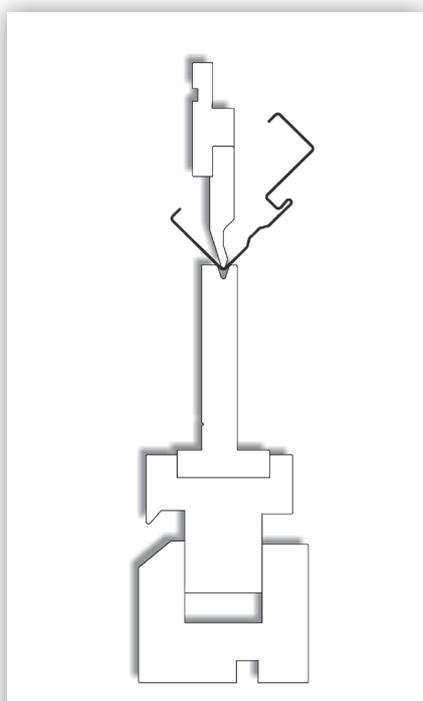
SP58



SP60



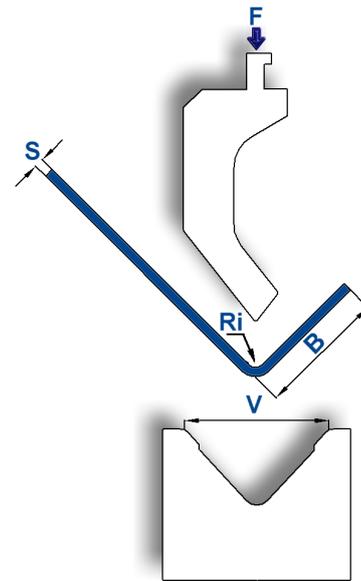
SP64



SP61



<b>S mm</b>	Espessura da chapa
<b>V mm</b>	Abertura do canal na matriz
<b>F ton/mt</b>	Força por metro de dobra
<b>R kg/mm<sup>2</sup></b>	Resistência a tração
<b>Ri mm</b>	Raio interno da dobra
<b>B mm</b>	Bordo mínimo



$$F = \frac{(1 + \frac{4 \times S}{V}) \times S^2 \times R}{V}$$

$$B = 0,7 \times V$$

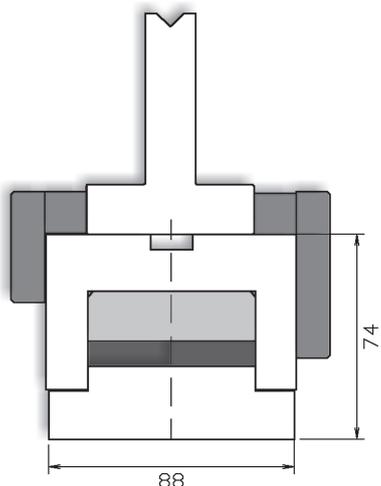
$$Ri = \frac{V}{6}$$

S mm	0,6		0,8		1,0		1,2		1,5		2,0	
<b>V mm</b>	<b>6</b>	<b>7</b>	<b>6</b>	<b>7</b>	<b>7</b>	<b>8</b>	<b>8</b>	<b>10</b>	<b>10</b>	<b>12</b>	<b>12</b>	<b>16</b>
<b>F = ton/mt</b> R42 kg/mm <sup>2</sup>	4	3	7	6	9	8	12	9	15	12	23	16
<b>F = ton/mt</b> R70 kg/mm <sup>2</sup>	6	5	11	9	16	13	20	15	25	20	39	26
<b>Ri mm</b>	1,0	1,2	1,0	1,2	1,2	1,3	1,3	1,7	1,7	2,0	2,0	2,7
<b>B mm</b>	4,2	4,9	4,2	4,9	4,9	5,6	5,6	7,0	7,0	8,4	8,4	11,2

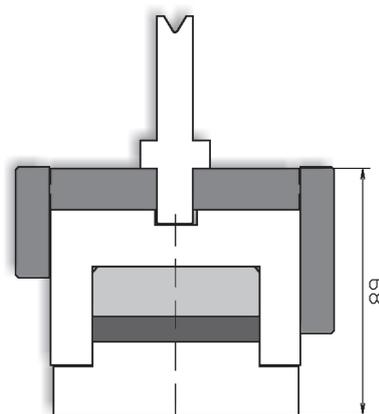
S mm	2,5		3		4		5		6		8	
<b>V mm</b>	<b>20</b>	<b>23</b>	<b>23</b>	<b>25</b>	<b>32</b>	<b>35</b>	<b>35</b>	<b>40</b>	<b>50</b>	<b>65</b>	<b>80</b>	<b>90</b>
<b>F = ton/mt</b> R42 kg/mm <sup>2</sup>	20	16	25	22	32	28	47	39	45	32	47	40
<b>F = ton/mt</b> R70 kg/mm <sup>2</sup>	33	27	42	37	53	47	79	66	75	53	78	67
<b>Ri mm</b>	3,3	3,8	3,8	4,2	5,3	5,8	5,8	6,7	8,3	10,8	13,3	15
<b>B mm</b>	14,0	16,1	16,1	17,5	22,4	24,5	24,5	28,0	35,0	45,5	56,0	63,0

S mm	10		12		15		16		20		25	
<b>V mm</b>	<b>90</b>	<b>100</b>	<b>110</b>	<b>125</b>	<b>140</b>	<b>160</b>	<b>160</b>	<b>200</b>	<b>200</b>	<b>250</b>	<b>250</b>	<b>300</b>
<b>F = ton/mt</b> R42 kg/mm <sup>2</sup>	67	59	79	67	96	81	94	71	118	89	147	117
<b>F = ton/mt</b> R70 kg/mm <sup>2</sup>	112	98	132	112	161	135	157	118	196	148	245	194
<b>Ri mm</b>	15,0	16,7	18,3	20,8	23,3	26,7	26,7	33,3	33,3	41,7	41,7	50,0
<b>B mm</b>	63,0	70,0	77,0	87,5	98,0	112	112	140	140	175	175	210

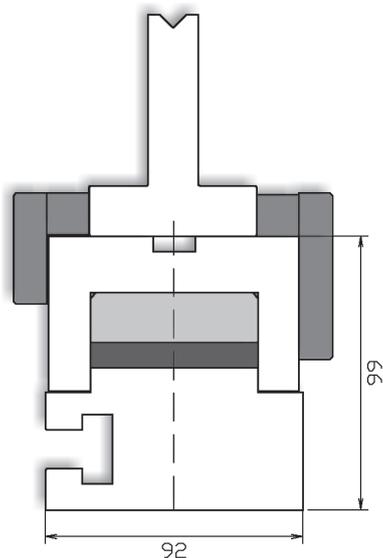
Obs. O Ri (raio interno) mínimo recomendado é igual a espessura multiplicada por 1,15  
 Exemplo : para espessura = 4 mm ◀▶ Raio mínimo recomendado é 4 mm x 1,15 = 4,6 mm



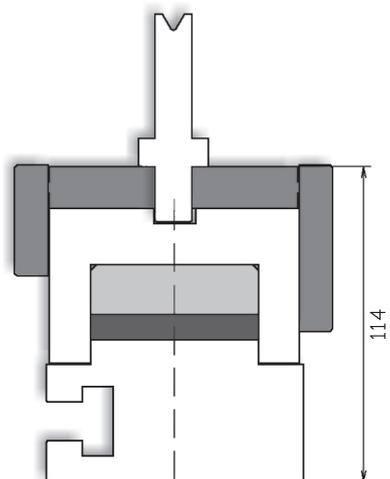
**TCM - TCMR 60/90**  
L.MM.3100-4100-5100-6200



**TCM - TCMR 13/60/90**  
L.MM.3100-4100-5100-6200

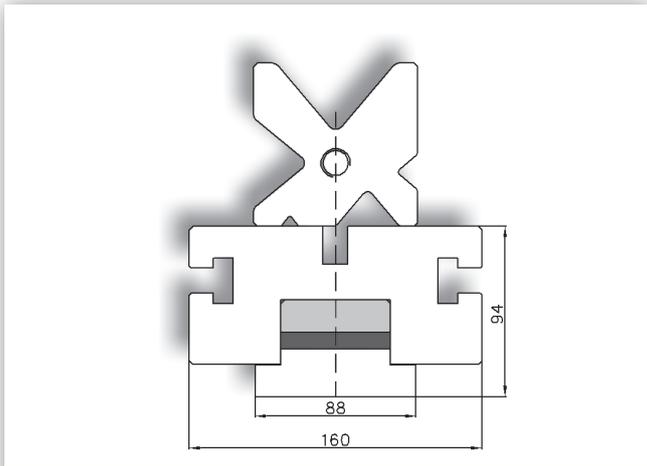


**TCM - TCMR 60/90 + T**  
L.MM.3100-4100-5100-6200

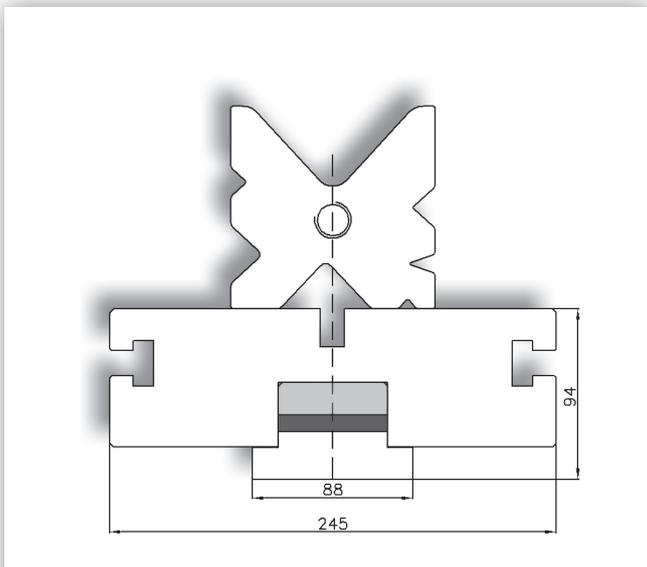
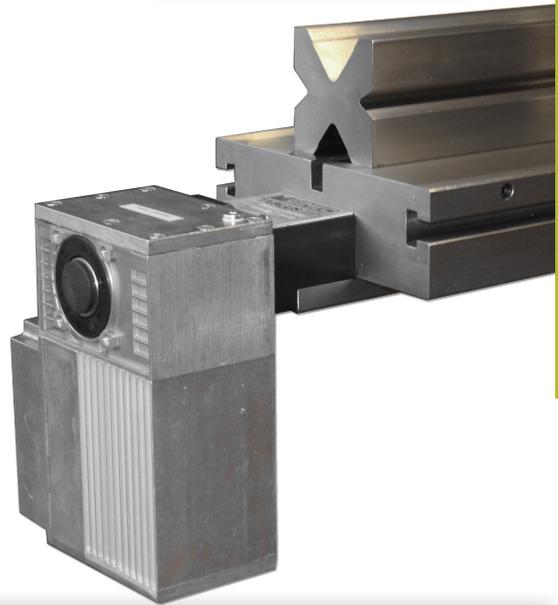


**TCM - TCMR 13/60/90 + T**  
L.MM.3100-4100-5100-6200

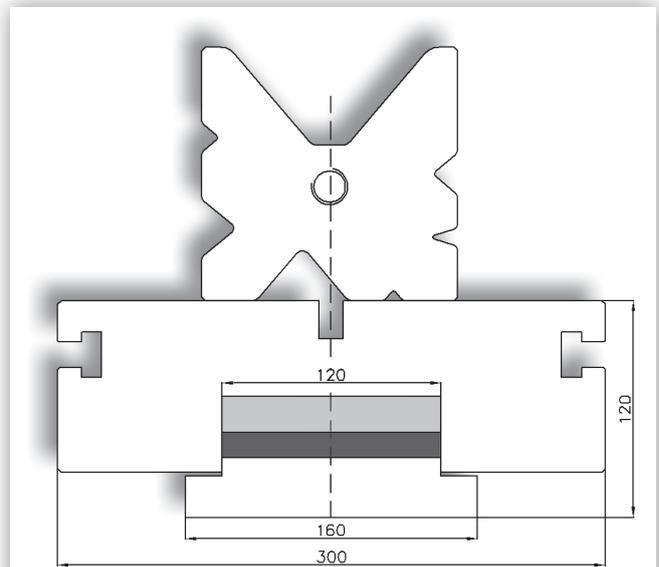




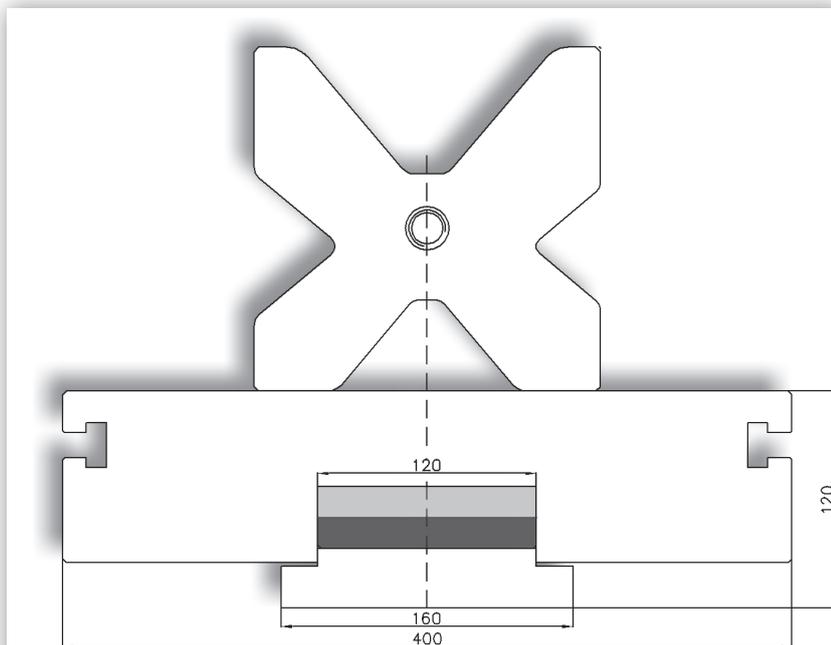
**TABLUS TM - TMR 160 x 94 h**  
L.MM.3100-4100-5100-6200-8100-9100



**TABLUS TMR 245 x 94 h**  
L.MM.3100-4100-5100-6200-8100-9100



**TABLUS TMR 300 x 120 h**  
L.MM.3100-4100-5100-6200-8100-9100



**TABLUS TMR 400 x 120 h**  
L.MM.3100-4100-5100-6200-8100-9100



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