

Fresas inteiriças de Metal Duro



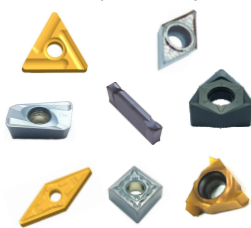
Brocas intercambiáveis



Brocas inteiriças de metal duro



Insertos para usinagem



Limas rotativas de metal duro



SA SB SC SD SE SF SG SH SJ SK SL SM SN

Chave de código

Aplicação das Ferramentas

UM Usinagem Geral **AL** Usinagem de Ligas de Alumínio

Número de Cortes

Tipo de Ferramenta

E Fresa de topo reto com proteção de aresta **B** Fresa de topo esférico
R Fresa de topo reto com raio **W** Fresa detalonada

Comprimento

L Aresta de corte longa **X** Aresta de corte extra longa Comprimento padrão

KUM-2ELP-D12R0.5-P (4X16X6X75)

Tipo de estrutura

S Diâmetro minúsculo **P** Haste da hélice paralela
 Comprimento padrão

Diâmetro da Ferramenta

Raio da aresta

Tipo de estrutura

S Diâmetro da haste reduzida **P** Haste paralela

Dimensões

4 Diâmetro de corte **16** Comprimento da aresta
6 Diâmetro da haste **75** Comprimento Total

Informações adicionais

- Ângulo da hélice


35°

- Coberturas

45HRC
TiAlN

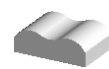
55HRC
AlTiN

- Tolerância do diâmetro de corte

 $D \leq 12$ 0~-0.020
 $12 < D$ 0~-0.030

Operações

- Fresamento de canal
- Fresamento de perfil

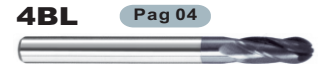


- Fresamento lateral
- Fresamento de contornos e cantos raiaados



Fresas inteiriças de MD

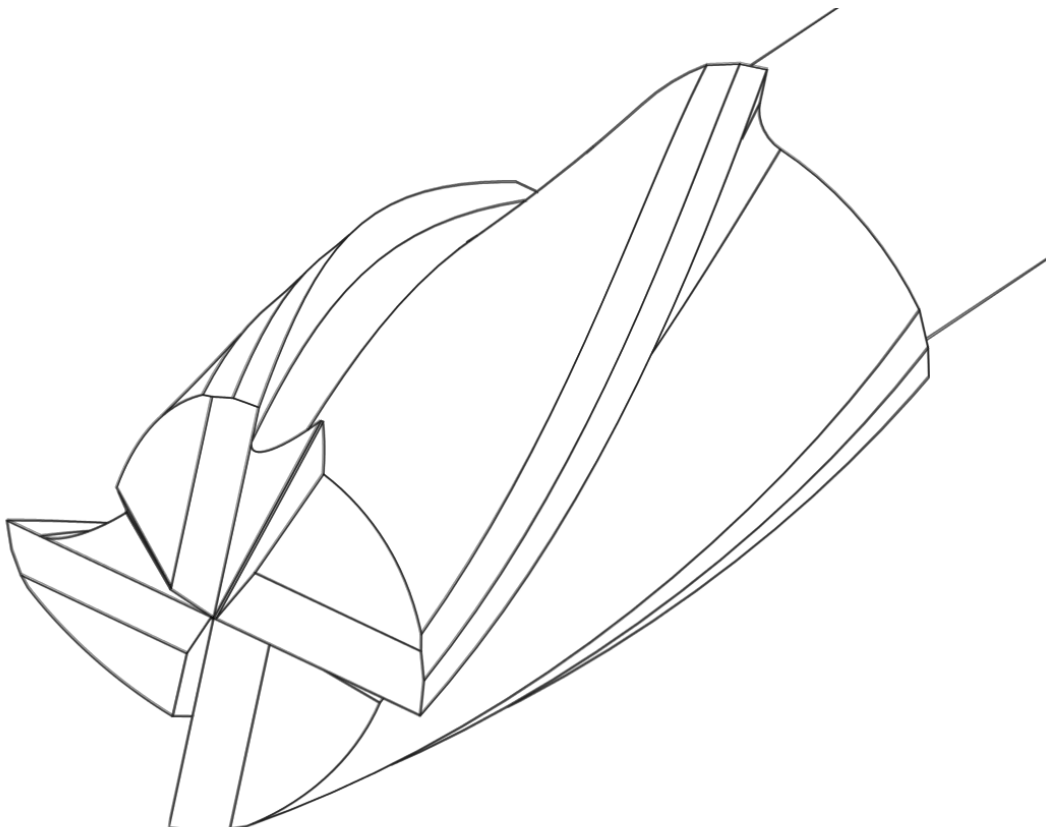
Usinagem geral até 45 HRC



Usinagem geral até 55 HRC

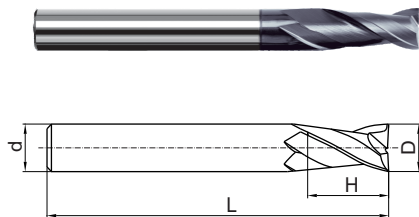


Usinagem geral para ligas de alumínio

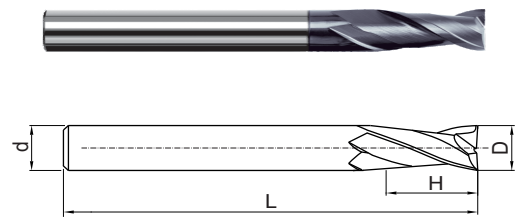


Usinagem geral até 45 HRC

2 cortes
Fresa de topo reto com haste paralela



2 cortes
Fresa de topo reto com haste paralela longa



Cobertura

TiAlN

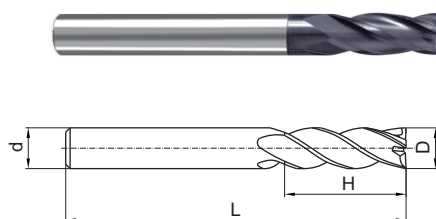
	D ≤ 12	0 ~ -0.020
	12 < D	0 ~ -0.030

Código	Dimensões				
	D	d	H	L	Z
KUM-2E-D1.0S	1.0	4.0	3	50	2
KUM-2E-D1.5S	1.5	4.0	4	50	2
KUM-2E-D2.0S	2.0	4.0	6	50	2
KUM-2E-D2.5S	2.5	4.0	8	50	2
KUM-2E-D3.0S	3.0	4.0	8	50	2
KUM-2E-D4.0S	4.0	4.0	11	50	2
KUM-2E-D 2.0P	2.0	2.0	6	50	2
KUM-2E-D 3.0P	3.0	3.0	8	50	2
KUM-2E-D 5.0P	5.0	5.0	13	50	2
KUM-2E-D1.0	1.0	6.0	3	50	2
KUM-2E-D1.5	1.5	6.0	4	50	2
KUM-2E-D2.0	2.0	6.0	6	50	2
KUM-2E-D2.5	2.5	6.0	8	50	2
KUM-2E-D3.0	3.0	6.0	8	50	2
KUM-2E-D3.5	3.5	6.0	10	50	2
KUM-2E-D4.0	4.0	6.0	11	50	2
KUM-2E-D4.5	4.5	6.0	11	50	2
KUM-2E-D5.0	5.0	6.0	13	50	2
KUM-2E-D5.5	5.5	6.0	16	50	2
KUM-2E-D6.0	6.0	6.0	16	50	2
KUM-2E-D7.0	7.0	8.0	20	60	2
KUM-2E-D8.0	8.0	8.0	20	60	2
KUM-2E-D9.0	9.0	10.0	22	75	2
KUM-2E-D10.0	10.0	10.0	25	75	2
KUM-2E-D11.0	11.0	12.0	26	75	2
KUM-2E-D12.0	12.0	12.0	30	75	2
KUM-2E-D14.0	14.0	14.0	32	75	2
KUM-2E-D16.0	16.0	16.0	45	100	2
KUM-2E-D18.0	18.0	18.0	45	100	2
KUM-2E-D20.0	20.0	20.0	45	100	2

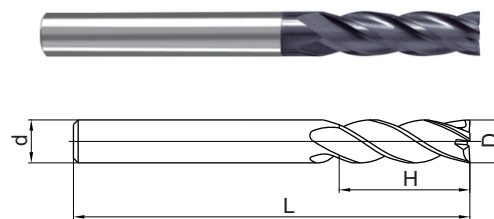
Código	Dimensões				
	D	d	H	L	Z
KUM-2EL-D3.0	3.0	6.0	12	75	2
KUM-2EL-D4.0	4.0	6.0	15	75	2
KUM-2EL-D5.0	5.0	6.0	20	75	2
KUM-2EL-D6.0	6.0	6.0	20	75	2
KUM-2EL-D8.0	8.0	8.0	25	100	2
KUM-2EL-D10.0	10.0	10.0	30	100	2
KUM-2EL-D12.0	12.0	12.0	35	100	2
KUM-2EL-D14.0	14.0	14.0	40	100	2
KUM-2EL-D16.0	16.0	16.0	50	150	2
KUM-2EL-D20.0	20.0	20.0	55	150	2

Usinagem geral até 45 HRC

4 cortes
Fresa de topo reto com haste paralela



4 cortes
Fresa de topo reto com haste paralela longa



Cobertura

TiAlN

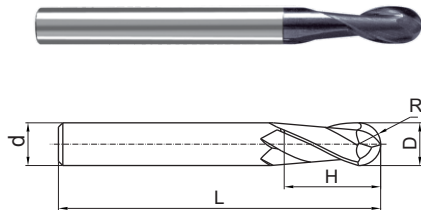
	D ≤ 12	0 ~ -0.020
	12 < D	0 ~ -0.030

Código	Dimensões				
	D	d	H	L	Z
KUM-4E-D1.0S	1.0	4.0	3	50	4
KUM-4E-D1.5S	1.5	4.0	4	50	4
KUM-4E-D2.0S	2.0	4.0	6	50	4
KUM-4E-D2.5S	2.5	4.0	8	50	4
KUM-4E-D3.0S	3.0	4.0	8	50	4
KUM-4E-D4.0S	4.0	4.0	11	50	4
KUM-4E-D 2.0P	2.0	2.0	6	50	4
KUM-4E-D 3.0P	3.0	3.0	8	50	4
KUM-4E-D 5.0P	5.0	5.0	13	50	4
KUM-4E-D1.0	1.0	6.0	3	50	4
KUM-4E-D1.5	1.5	6.0	4	50	4
KUM-4E-D2.0	2.0	6.0	6	50	4
KUM-4E-D2.5	2.5	6.0	8	50	4
KUM-4E-D3.0	3.0	6.0	8	50	4
KUM-4E-D3.5	3.5	6.0	10	50	4
KUM-4E-D4.0	4.0	6.0	11	50	4
KUM-4E-D4.5	4.5	6.0	11	50	4
KUM-4E-D5.0	5.0	6.0	13	50	4
KUM-4E-D5.5	5.5	6.0	16	50	4
KUM-4E-D6.0	6.0	6.0	16	50	4
KUM-4E-D7.0	7.0	8.0	20	60	4
KUM-4E-D8.0	8.0	8.0	20	60	4
KUM-4E-D9.0	9.0	10.0	22	75	4
KUM-4E-D10.0	10.0	10.0	25	75	4
KUM-4E-D11.0	11.0	12.0	26	75	4
KUM-4E-D12.0	12.0	12.0	30	75	4
KUM-4E-D14.0	14.0	14.0	32	75	4
KUM-4E-D16.0	16.0	16.0	45	100	4
KUM-4E-D18.0	18.0	18.0	45	100	4
KUM-4E-D20.0	20.0	20.0	45	100	4

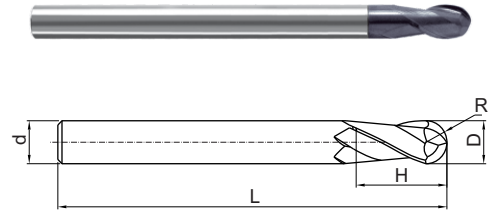
Código	Dimensões				
	D	d	H	L	Z
KUM-4EL-D3.0	3.0	6.0	12	75	4
KUM-4EL-D4.0	4.0	6.0	15	75	4
KUM-4EL-D5.0	5.0	6.0	20	75	4
KUM-4EL-D6.0	6.0	6.0	20	75	4
KUM-4EL-D8.0	8.0	8.0	25	100	4
KUM-4EL-D10	10.0	10.0	30	100	4
KUM-4EL-D12	12.0	12.0	35	100	4
KUM-4EL-D14	14.0	14.0	40	100	4
KUM-4EL-D16	16.0	16.0	50	150	4
KUM-4EL-D20	20.0	20.0	55	150	4

Usinagem geral até 45 HRC

2 cortes
Fresa de topo esférico com haste paralela



2 cortes- Fresa de topo esférico com haste paralela longa



Cobertura

TiAlN

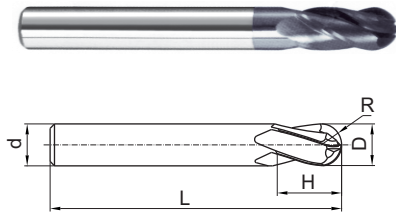
	D ≤ 12	0 ~ -0.020
	12 < D	0 ~ -0.030

Código	Dimensões					
	D	R	d	H	L	Z
KUM-2B-R0.5S	1.0	0.50	4.0	2	50	2
KUM-2B-R0.75S	1.5	0.75	4.0	3	50	2
KUM-2B-R1.0S	2.0	1.00	4.0	4	50	2
KUM-2B-R1.25S	2.5	1.25	4.0	5	50	2
KUM-2B-R1.5S	3.0	1.50	4.0	6	50	2
KUM-2B-R2.0S	4.0	2.00	4.0	8	50	2
KUM-2B-R2.5P	5.0	2.50	5.0	10	50	2
KUM-2B-R0.5	1.0	0.50	6.0	2	50	2
KUM-2B-R0.75	1.5	0.75	6.0	3	50	2
KUM-2B-R1.0	2.0	1.00	6.0	4	50	2
KUM-2B-R1.25	2.5	1.25	6.0	5	50	2
KUM-2B-R1.5	3.0	1.50	6.0	6	50	2
KUM-2B-R1.75	3.5	1.75	6.0	8	50	2
KUM-2B-R2.0	4.0	2.00	6.0	8	50	2
KUM-2B-R2.5	5.0	2.50	6.0	10	50	2
KUM-2B-R2.75	5.5	2.75	6.0	12	50	2
KUM-2B-R3.0	6.0	3.00	6.0	12	50	2
KUM-2B-R3.5	7.0	3.50	8.0	14	60	2
KUM-2B-R4.0	8.0	4.00	8.0	16	60	2
KUM-2B-R4.5	9.0	4.50	10.0	18	75	2
KUM-2B-R5.0	10.0	5.00	10.0	20	75	2
KUM-2B-R6.0	12.0	6.00	12.0	24	75	2
KUM-2B-R7.0	14.0	7.00	14.0	28	75	2
KUM-2B-R8.0	16.0	8.00	16.0	32	100	2
KUM-2B-R10.0	20.0	10.00	20.0	40	100	2

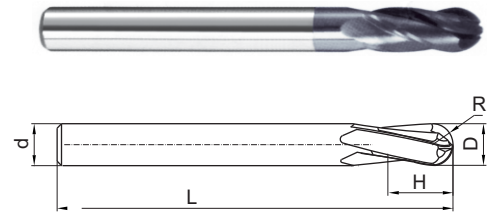
Código	Dimensões					
	D	R	d	H	L	Z
KUM-2BL-R1.0	2.0	1.00	6.0	4.0	75	2
KUM-2BL-R1.25	2.5	1.25	6.0	5.0	75	2
KUM-2BL-R1.5	3.0	1.50	6.0	6.0	75	2
KUM-2BL-R1.75	3.5	1.75	6.0	8.0	75	2
KUM-2BL-R2.0	4.0	2.00	6.0	8.0	75	2
KUM-2BL-R2.5	5.0	2.50	6.0	10.0	75	2
KUM-2BL-R2.75	5.5	2.75	6.0	12.0	75	2
KUM-2BL-R3.0	6.0	3.00	6.0	12.0	75	2
KUM-2BL-R3.5	7.0	3.50	8.0	14.0	75	2
KUM-2BL-R4.0	8.0	4.00	8.0	25.0	75	2
KUM-2BL-R4.5	9.0	4.50	10.0	18.0	100	2
KUM-2BL-R5.0	10.0	5.00	10.0	20.0	100	2
KUM-2BL-R6.0	12.0	6.00	12.0	24.0	100	2
KUM-2BL-R7.0	14.0	7.00	14.0	28.0	100	2
KUM-2BL-R8.0	16.0	8.00	16.0	32.0	150	2
KUM-2BL-R10.0	20.0	10.00	20.0	40.0	150	2
KUM-2BX-R4.0	8.0	4.0	8.0	16.0	100	2

Usinagem geral até 45 HRC

4 cortes
Fresa de topo esférico com haste paralela



4 cortes- Fresa de topo esférico com haste paralela longa



Cobertura

TiAlN

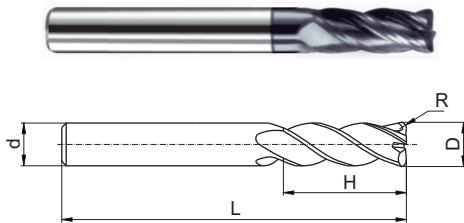
	D ≤ 12	0 ~ -0.020
	12 < D	0 ~ -0.030

Código	Dimensões					
	D	R	d	H	L	Z
KUM-4B-R1.5	3.0	1.5	6.0	6	50	4
KUM-4B-R2.0	4.0	2.0	6.0	8	50	4
KUM-4B-R2.5	5.0	2.5	6.0	10	50	4
KUM-4B-R3.0	6.0	3.0	6.0	12	50	4
KUM-4B-R4.0	8.0	4.0	8.0	16	60	4
KUM-4B-R5.0	10.0	5.0	10.0	20	75	4
KUM-4B-R6.0	12.0	6.0	12.0	24	75	4
KUM-4B-R7.0	14.0	7.0	14.0	28	75	4
KUM-4B-R8.0	16.0	8.0	16.0	32	100	4
KUM-4B-R9.0	18.0	9.0	18.0	36	100	4
KUM-4B-R10.0	20.0	10.0	20.0	40	100	4

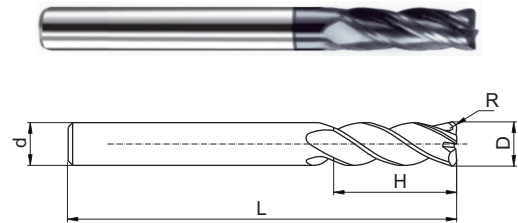
Código	Dimensões					
	D	R	d	H	L	Z
KUM-4BL-R1.5	3.0	1.5	6.0	6	75	4
KUM-4BL-R2.0	4.0	2.0	6.0	8	75	4
KUM-4BL-R2.5	5.0	2.5	6.0	10	75	4
KUM-4BL-R3.0	6.0	3.0	6.0	12	75	4
KUM-4BL-R4.0	8.0	4.0	8.0	16	100	4
KUM-4BL-R5.0	10.0	5.0	10.0	20	100	4
KUM-4BL-R6.0	12.0	6.0	12.0	24	100	4
KUM-4BL-R7.0	14.0	7.0	14.0	28	100	4
KUM-4BL-R8.0	16.0	8.0	16.0	32	100	4
KUM-4BL-R9.0	18.0	9.0	18.0	36	100	4
KUM-4BL-R10.0	20.0	10.0	20.0	40	100	4

Usinagem geral até 45 HRC

4 cortes- Fresa de topo reto com raio e haste paralela



4 cortes- Fresa de topo reto com raio e haste paralela longa



Cobertura

TiAlN

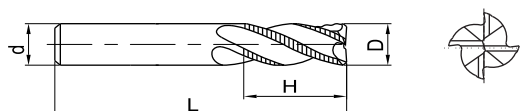
	D ≤ 12	0 ~ -0.020
	12 < D	0 ~ -0.030

Código	Dimensões					
	D	R	d	H	L	Z
KUM-4R-D3.0R0.5S	3.0	0.5	4.0	8	50	4
KUM-4R-D3.0R0.2	3.0	0.2	4.0	8	50	4
KUM-4R-D4.0R0.3	4.0	0.3	4.0	10	50	4
KUM-4R-D4.0R0.5	4.0	0.5	4.0	10	50	4
KUM-4R-D5.0R0.5P	5.0	0.5	5.0	13	50	4
KUM-4R-D5.0R0.5	5.0	0.5	6.0	13	50	4
KUM-4R-D5.0R1.0	5.0	1.0	6.0	13	50	4
KUM-4R-D6.0R0.5	6.0	0.5	6.0	15	50	4
KUM-4R-D6.0R1.0	6.0	1.0	6.0	15	50	4
KUM-4R-D8.0R0.5	8.0	0.5	8.0	20	60	4
KUM-4R-D8.0R1.0	8.0	1.0	8.0	20	60	4
KUM-4R-D10.0R0.5	10.0	0.5	10.0	25	75	4
KUM-4R-D10.0R1.0	10.0	1.0	10.0	25	75	4
KUM-4R-D10.0R2.0	10.0	2.0	10.0	25	75	4
KUM-4R-D10.0R3.0	10.0	3.0	10.0	25	75	4
KUM-4R-D12.0R0.5	12.0	0.5	12.0	30	75	4
KUM-4R-D12.0R1.0	12.0	1.0	12.0	30	75	4
KUM-4R-D12.0R2.0	12.0	2.0	12.0	30	75	4
KUM-4R-D12.0R3.0	12.0	3.0	12.0	30	75	4

Código	Dimensões					
	D	R	d	H	L	Z
KUM-4RL-D4.0R0.5	4.0	0.5	4.0	16	75	4
KUM-4RL-D4.0R1.0	4.0	1.0	4.0	16	75	4
KUM-4RL-D6.0R0.5	6.0	0.5	6.0	25	75	4
KUM-4RL-D6.0R1.0	6.0	1.0	6.0	25	75	4
KUM-4RL-D8.0R0.5	8.0	0.5	8.0	28	75	4
KUM-4RL-D8.0R1.0	8.0	1.0	8.0	28	75	4
KUM-4RL-D10.0R0.5	10.0	0.5	10.0	40	100	4
KUM-4RL-D10.0R1.0	10.0	1.0	10.0	40	100	4
KUM-4RL-D10.0R2.0	10.0	2.0	10.0	40	100	4
KUM-4RL-D12.0R0.5	12.0	0.5	12.0	45	100	4
KUM-4RL-D12.0R1.0	12.0	1.0	12.0	45	100	4
KUM-4RL-D12.0R2.0	12.0	2.0	12.0	45	100	4
KUM-4RL-D16.0R1.0	16.0	1.0	16.0	50	150	4
KUM-4RL-D16.0R2.0	16.0	2.0	16.0	50	150	4


Usinagem geral até 45 HRC

4 cortes
Fresa de topo reto detalonada



Cobertura

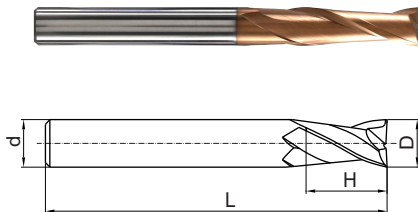
TiAlN

	D ≤ 12	0 ~ -0.020
	12 < D	0 ~ -0.030

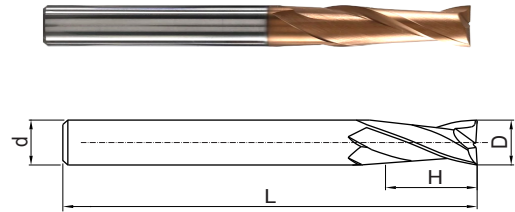
Código	Dimensões				
	D	d	H	L	Z
KUM-4W-D6.0	6.0	6.0	16	50	4
KUM-4W-D7.0	7.0	8.0	20	60	4
KUM-4W-D5.0	8.0	8.0	20	60	4
KUM-4W-D6.0	9.0	10.0	22	75	4
KUM-4W-D8.0	10.0	10.0	25	75	4
KUM-4W-D10.0	11.0	12.0	26	75	4
KUM-4W-D12.0	12.0	12.0	30	75	4
KUM-4W-D14.0	16.0	16.0	45	100	4
KUM-4W-D16.0	20.0	20.0	45	100	4

Usinagem geral até 55 HRC

2 cortes
Fresa de topo reto com haste paralela



2 cortes
Fresa de topo reto com haste paralela longa



Cobertura

ALTiN

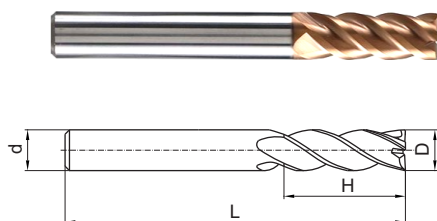
	D ≤ 12	0 ~ -0.020
	12 < D	0 ~ -0.030

Código	Dimensões				
	D	d	H	L	Z
KUM-2E-D1.0S	1.0	4.0	3	50	2
KUM-2E-D1.5S	1.5	4.0	4	50	2
KUM-2E-D2.0S	2.0	4.0	5	50	2
KUM-2E-D2.5S	2.5	4.0	5	50	2
KUM-2E-D3.0S	3.0	4.0	8	50	2
KUM-2E-D4.0S	4.0	4.0	10	50	2
KUM-2E-D 2.0P	2.0	2.0	5	50	2
KUM-2E-D 3.0P	3.0	3.0	8	50	2
KUM-2E-D 5.0P	5.0	5.0	13	50	2
KUM-2E-D1.0	1.0	6.0	3	50	2
KUM-2E-D1.5	1.5	6.0	4	50	2
KUM-2E-D2.0	2.0	6.0	6	50	2
KUM-2E-D2.5	2.5	6.0	8	50	2
KUM-2E-D3.0	3.0	6.0	8	50	2
KUM-2E-D3.5	3.5	6.0	10	50	2
KUM-2E-D4.0	4.0	6.0	11	50	2
KUM-2E-D4.5	4.5	6.0	11	50	2
KUM-2E-D5.0	5.0	6.0	13	50	2
KUM-2E-D5.5	5.5	6.0	15	50	2
KUM-2E-D6.0	6.0	6.0	15	50	2
KUM-2E-D7.0	7.0	8.0	20	60	2
KUM-2E-D8.0	8.0	8.0	20	60	2
KUM-2E-D9.0	9.0	10.0	22	75	2
KUM-2E-D10.0	10.0	10.0	25	75	2
KUM-2E-D11.0	11.0	12.0	26	75	2
KUM-2E-D12.0	12.0	12.0	30	75	2
KUM-2E-D14.0	14.0	14.0	45	100	2
KUM-2E-D16.0	16.0	16.0	45	100	2
KUM-2E-D18.0	18.0	18.0	45	100	2
KUM-2E-D20.0	20.0	20.0	45	100	2

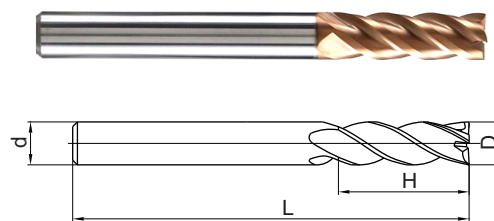
Código	Dimensões				
	D	d	H	L	Z
KUM-2EL-D4.0S	4.0	4.0	16	75	2
KUM-2EL-D3.0P	3.0	3.0	12	75	2
KUM-2EL-D5.0P	5.0	5.0	15	75	2
KUM-2EL-D3.0	3.0	6.0	12	75	2
KUM-2EL-D4.0	4.0	6.0	15	75	2
KUM-2EL-D5.0	5.0	6.0	20	75	2
KUM-2EL-D6.0	6.0	6.0	25	75	2
KUM-2EL-D8.0	8.0	8.0	28	75	2
KUM-2EL-D10.0	10.0	10.0	40	100	2
KUM-2EL-D12.0	12.0	12.0	45	100	2
KUM-2EX-D4.0S	4.0	4.0	20	100	2
KUM-2EX-D3.0P	3.0	3.0	15	100	2
KUM-2EX-D5.0P	5.0	5.0	25	100	2
KUM-2EX-D6.0	6.0	6.0	30	100	2
KUM-2EX-D8.0	8.0	8.0	35	100	2

Usinagem geral até 55 HRC

4 cortes
Fresa de topo reto com haste paralela



4 cortes
Fresa de topo reto com haste paralela longa



Cobertura

AlTiN

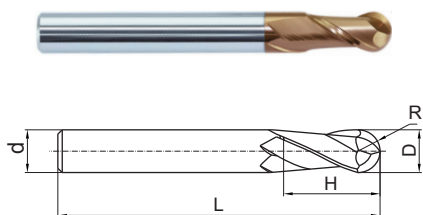
	D ≤ 12	0 ~ -0.020
	12 < D	0 ~ -0.030

Código	Dimensões				
	D	d	H	L	Z
KUM-4E-D1.0S	1.0	4.0	3	50	4
KUM-4E-D1.5S	1.5	4.0	4	50	4
KUM-4E-D2.0S	2.0	4.0	5	50	4
KUM-4E-D2.5S	2.5	4.0	8	50	4
KUM-4E-D3.0S	3.0	4.0	8	50	4
KUM-4E-D4.0S	4.0	4.0	10	50	4
KUM-4E-D 2.0P	2.0	2.0	6	50	4
KUM-4E-D 3.0P	3.0	3.0	8	50	4
KUM-4E-D 5.0P	5.0	5.0	13	50	4
KUM-4E-D 7.0P	7.0	7.0	20	60	4
KUM-4E-D1.0	1.0	6.0	3	50	4
KUM-4E-D1.5	1.5	6.0	4	50	4
KUM-4E-D2.0	2.0	6.0	6	50	4
KUM-4E-D2.5	2.5	6.0	8	50	4
KUM-4E-D3.0	3.0	6.0	8	50	4
KUM-4E-D3.5	3.5	6.0	10	50	4
KUM-4E-D4.0	4.0	6.0	11	50	4
KUM-4E-D4.5	4.5	6.0	11	50	4
KUM-4E-D5.0	5.0	6.0	13	50	4
KUM-4E-D5.5	5.5	6.0	16	50	4
KUM-4E-D6.0	6.0	6.0	15	50	4
KUM-4E-D7.0	7.0	8.0	18	60	4
KUM-4E-D8.0	8.0	8.0	20	60	4
KUM-4E-D9.0	9.0	10.0	23	75	4
KUM-4E-D10.0	10.0	10.0	25	75	4
KUM-4E-D11.0	11.0	12.0	28	75	4
KUM-4E-D12.0	12.0	12.0	30	75	4
KUM-4E-D14.0	14.0	14.0	45	100	4
KUM-4E-D16.0	16.0	16.0	45	100	4
KUM-4E-D18.0	18.0	18.0	45	100	4
KUM-4E-D20.0	20.0	20.0	45	100	4

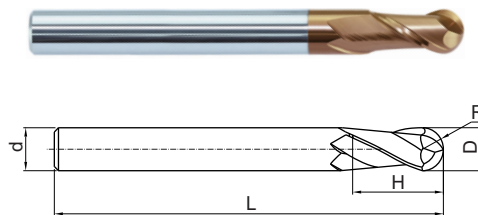
Código	Dimensões				
	D	d	H	L	Z
KUM-4EL-D1.0S	1.0	4.0	3	75	4
KUM-4EL-D1.5S	1.5	4.0	5	75	4
KUM-4EL-D2.0S	2.0	4.0	6	75	4
KUM-4EL-D3.0S	3.0	4.0	12	75	4
KUM-4EL-D4.0S	4.0	4.0	15	75	4
KUM-4EL-D5.0P	5.0	5.0	20	75	4
KUM-4EL-D3.0	3.0	6.0	12	75	4
KUM-4EL-D4.0	4.0	6.0	16	75	4
KUM-4EL-D5.0	5.0	6.0	20	75	4
KUM-4EL-D6.0	6.0	6.0	25	75	4
KUM-4EL-D8.0	8.0	8.0	25	75	4
KUM-4EL-D10	10.0	10.0	40	100	4
KUM-4EL-D12	12.0	12.0	45	100	4
KUM-4EX-D3.0S	3	4	15	100	4
KUM-4EX-D4.0S	4	4	20	100	4
KUM-4EX-D3.0P	3	3	15	100	4
KUM-4EX-D5.0P	5	5	30	100	4
KUM-4EX-D5.0	5	6	30	100	4
KUM-4EX-D6.0	6	6	30	100	4
KUM-4EX-D8.0	8	8	35	100	4

Usinagem geral até 55 HRC

2 cortes
Fresa de topo esférico com haste paralela



2 cortes- Fresa de topo esférico com haste paralela longa



Cobertura

ALTiN

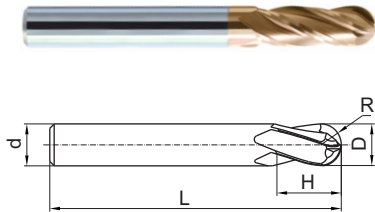
	D ≤ 12	0 ~ -0.020
	12 < D	0 ~ -0.030

Código	Dimensões					
	D	R	d	H	L	Z
KUM-2B-R0.5S	1.0	0.50	4.0	2	50	2
KUM-2B-R0.75S	1.5	0.75	4.0	3	50	2
KUM-2B-R1.0S	2.0	1.00	4.0	4	50	2
KUM-2B-R1.25S	2.5	1.25	4.0	5	50	2
KUM-2B-R1.5S	3.0	1.50	4.0	6	50	2
KUM-2B-R2.0S	4.0	2.00	4.0	8	50	2
KUM-2B-R2.5P	5.0	2.50	5.0	10	50	2
KUM-2B-R0.5	1.0	0.50	6.0	2	50	2
KUM-2B-R0.75	1.5	0.75	6.0	3	50	2
KUM-2B-R1.0	2.0	1.00	6.0	4	50	2
KUM-2B-R1.25	2.5	1.25	6.0	5	50	2
KUM-2B-R1.5	3.0	1.50	6.0	6	50	2
KUM-2B-R1.75	3.5	1.75	6.0	8	50	2
KUM-2B-R2.0	4.0	2.00	6.0	8	50	2
KUM-2B-R2.5	5.0	2.50	6.0	10	50	2
KUM-2B-R2.75	5.5	2.75	6.0	12	50	2
KUM-2B-R3.0	6.0	3.00	6.0	12	50	2
KUM-2B-R3.5	7.0	3.50	8.0	14	60	2
KUM-2B-R4.0	8.0	4.00	8.0	16	60	2
KUM-2B-R4.5	9.0	4.50	10.0	18	75	2
KUM-2B-R5.0	10.0	5.00	10.0	20	75	2
KUM-2B-R6.0	12.0	6.00	12.0	24	75	2
KUM-2B-R7.0	14.0	7.00	14.0	28	75	2
KUM-2B-R8.0	16.0	8.00	16.0	32	100	2
KUM-2B-R10.0	20.0	10.00	20.0	40	100	2

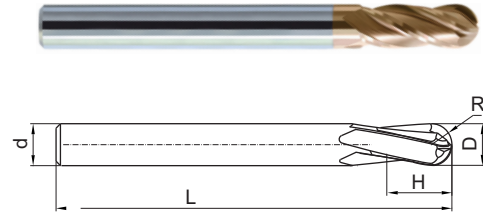
Código	Dimensões					
	D	R	d	H	L	Z
KUM-2BL-R1.0	2.0	1.00	6.0	4.0	75	2
KUM-2BL-R1.25	2.5	1.25	6.0	5.0	75	2
KUM-2BL-R1.5	3.0	1.50	6.0	6.0	75	2
KUM-2BL-R1.75	3.5	1.75	6.0	8.0	75	2
KUM-2BL-R2.0	4.0	2.00	6.0	8.0	75	2
KUM-2BL-R2.5	5.0	2.50	6.0	10.0	75	2
KUM-2BL-R2.75	5.5	2.75	6.0	12.0	75	2
KUM-2BL-R3.0	6.0	3.00	6.0	12.0	75	2
KUM-2BL-R3.5	7.0	3.50	8.0	14.0	75	2
KUM-2BL-R4.0	8.0	4.00	8.0	25.0	75	2
KUM-2BL-R4.5	9.0	4.50	10.0	18.0	100	2
KUM-2BL-R5.0	10.0	5.00	10.0	20.0	100	2
KUM-2BL-R6.0	12.0	6.00	12.0	24.0	100	2
KUM-2BL-R7.0	14.0	7.00	14.0	28.0	100	2
KUM-2BL-R8.0	16.0	8.00	16.0	32.0	150	2
KUM-2BL-R10.0	20.0	10.00	20.0	40.0	150	2
KUM-2BX-R4.0	8.0	4.0	8.0	16.0	100	2

Usinagem geral até 55 HRC

4 cortes
Fresa de topo esférico com haste paralela



4 cortes- Fresa de topo esférico com haste paralela longa



Cobertura

AlTiN

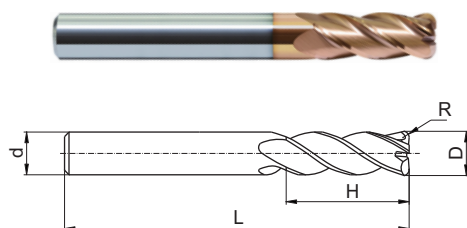
	D ≤ 12	0 ~ -0.020
	12 < D	0 ~ -0.030

Código	Dimensões					
	D	R	d	H	L	Z
KUM-4B-R1.5	3.0	1.5	6.0	6	50	4
KUM-4B-R2.0	4.0	2.0	6.0	8	50	4
KUM-4B-R2.5	5.0	2.5	6.0	10	50	4
KUM-4B-R3.0	6.0	3.0	6.0	12	50	4
KUM-4B-R4.0	8.0	4.0	8.0	16	60	4
KUM-4B-R5.0	10.0	5.0	10.0	20	75	4
KUM-4B-R6.0	12.0	6.0	12.0	24	75	4
KUM-4B-R7.0	14.0	7.0	14.0	28	75	4
KUM-4B-R8.0	16.0	8.0	16.0	32	100	4
KUM-4B-R9.0	18.0	9.0	18.0	36	100	4
KUM-4B-R10.0	20.0	10.0	20.0	40	100	4

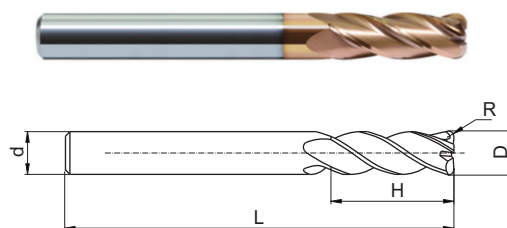
Código	Dimensões					
	D	R	d	H	L	Z
KUM-4BL-R1.5	3.0	1.5	6.0	6	75	4
KUM-4BL-R2.0	4.0	2.0	6.0	8	75	4
KUM-4BL-R2.5	5.0	2.5	6.0	10	75	4
KUM-4BL-R3.0	6.0	3.0	6.0	12	75	4
KUM-4BL-R4.0	8.0	4.0	8.0	16	100	4
KUM-4BL-R5.0	10.0	5.0	10.0	20	100	4
KUM-4BL-R6.0	12.0	6.0	12.0	24	100	4
KUM-4BL-R7.0	14.0	7.0	14.0	28	100	4
KUM-4BL-R8.0	16.0	8.0	16.0	32	100	4
KUM-4BL-R9.0	18.0	9.0	18.0	36	100	4
KUM-4BL-R10.0	20.0	10.0	20.0	40	100	4

Usinagem geral até 55 HRC

4 cortes- Fresa de topo reto com raio e haste paralela



4 cortes- Fresa de topo reto com raio e haste paralela longa



Cobertura

AlTiN

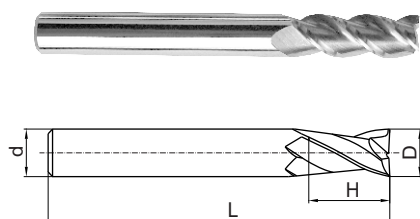
	D ≤ 12	0 ~ -0.020
	12 < D	0 ~ -0.030

Código	Dimensões					
	D	R	d	H	L	Z
KUM-4R-D3.0R0.5S	3.0	0.5	4.0	8	50	4
KUM-4R-D3.0R0.2	3.0	0.2	4.0	8	50	4
KUM-4R-D4.0R0.3	4.0	0.3	4.0	10	50	4
KUM-4R-D4.0R0.5	4.0	0.5	4.0	10	50	4
KUM-4R-D5.0R0.5P	5.0	0.5	5.0	13	50	4
KUM-4R-D5.0R0.5	5.0	0.5	6.0	13	50	4
KUM-4R-D5.0R1.0	5.0	1.0	6.0	13	50	4
KUM-4R-D6.0R0.5	6.0	0.5	6.0	15	50	4
KUM-4R-D6.0R1.0	6.0	1.0	6.0	15	50	4
KUM-4R-D8.0R0.5	8.0	0.5	8.0	20	60	4
KUM-4R-D8.0R1.0	8.0	1.0	8.0	20	60	4
KUM-4R-D10.0R0.5	10.0	0.5	10.0	25	75	4
KUM-4R-D10.0R1.0	10.0	1.0	10.0	25	75	4
KUM-4R-D10.0R2.0	10.0	2.0	10.0	25	75	4
KUM-4R-D10.0R3.0	10.0	3.0	10.0	25	75	4
KUM-4R-D12.0R0.5	12.0	0.5	12.0	30	75	4
KUM-4R-D12.0R1.0	12.0	1.0	12.0	30	75	4
KUM-4R-D12.0R2.0	12.0	2.0	12.0	30	75	4
KUM-4R-D12.0R3.0	12.0	3.0	12.0	30	75	4

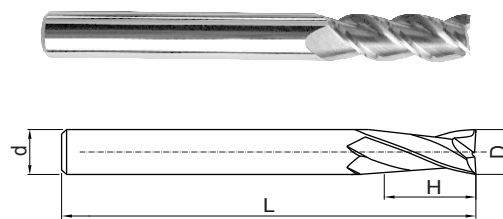
Código	Dimensões					
	D	R	d	H	L	Z
KUM-4RL-D4.0R0.5	4.0	0.5	4.0	16	75	4
KUM-4RL-D4.0R1.0	4.0	1.0	4.0	16	75	4
KUM-4RL-D6.0R0.5	6.0	0.5	6.0	25	75	4
KUM-4RL-D6.0R1.0	6.0	1.0	6.0	25	75	4
KUM-4RL-D8.0R0.5	8.0	0.5	8.0	28	75	4
KUM-4RL-D8.0R1.0	8.0	1.0	8.0	28	75	4
KUM-4RL-D10.0R0.5	10.0	0.5	10.0	40	100	4
KUM-4RL-D10.0R1.0	10.0	1.0	10.0	40	100	4
KUM-4RL-D10.0R2.0	10.0	2.0	10.0	40	100	4
KUM-4RL-D12.0R0.5	12.0	0.5	12.0	45	100	4
KUM-4RL-D12.0R1.0	12.0	1.0	12.0	45	100	4
KUM-4RL-D12.0R2.0	12.0	2.0	12.0	45	100	4
KUM-4RL-D16.0R1.0	16.0	1.0	16.0	50	150	4
KUM-4RL-D16.0R2.0	16.0	2.0	16.0	50	150	4

Usinagem geral ligas de alumínio

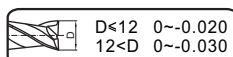
3 cortes
Fresa de topo reto com haste paralela



3 cortes
Fresa de topo reto com haste paralela longa



Sem cobertura



Código	Dimensões				
	D	d	H	L	Z
KAL-3E-D1.0S	1.0	4.0	3	50	3
KAL-3E-D1.5S	1.5	4.0	4	50	3
KAL-3E-D2.0S	2.0	4.0	6	50	3
KAL-3E-D2.5S	2.5	4.0	8	50	3
KAL-3E-D3.0S	3.0	4.0	9	50	3
KAL-3E-D4.0S	4.0	4.0	12	50	3
KAL-3E-D 5.0P	5.0	5.0	15	50	3
KAL-3E-D1.0	1.0	4.0	3	50	3
KAL-3E-D1.5	1.5	4.0	4	50	3
KAL-3E-D2.0	2.0	4.0	6	50	3
KAL-3E-D2.5	2.5	4.0	7	50	3
KAL-3E-D3.0	3.0	6.0	9	50	3
KAL-3E-D4.0	4.0	6.0	12	50	3
KAL-3E-D5.0	5.0	6.0	15	50	3
KAL-3E-D6.0	6.0	6.0	18	60	3
KAL-3E-D8.0	8.0	8.0	24	60	3
KAL-3E-D10.0	10.0	10.0	30	75	3
KAL-3E-D12.0	12.0	12.0	36	75	3
KAL-3E-D16.0	16.0	16.0	45	100	3
KAL-3E-D20.0	20.0	20.0	45	100	3

Código	Dimensões				
	D	d	H	L	Z
KAL-3EL-D3.0P	3.0	3.0	12	75	3
KAL-3EL-D4.0	4.0	4.0	20	75	3
KAL-3EL-D5.0	5.0	6.0	25	75	3
KAL-3EL-D6.0	6.0	6.0	30	75	3
KAL-3EL-D8.0	8.0	8.0	35	75	3
KAL-3EL-D10.0	10.0	10.0	40	100	3
KAL-3EL-D12.0	12.0	12.0	45	100	3
KAL-3EL-D16.0	16.0	16.0	65	150	3
KAL-3EL-D20.0	20.0	20.0	70	150	3
KAL-3XL-D10.0	10.0	10	50	150	3



UnitedCut ★ TOOLS