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SWISS  QUALITY

URMA Systems

URMA Tools

Reaming & Boring



Ø 0.2 - 2'400 mm		
Ø 0.2 - 40 mm	FINISHING	
Ø 19.5 - 153 mm	ROUGHING	
Ø 18 - 153 mm	FINISHING	
Ø 49 - 297 mm	ROUGHING + FINISHING	
Ø 150 - 805 mm	ROUGHING + FINISHING	
Ø 500 - 2'400 mm	ROUGHING + FINISHING	
Ø 20 - 51 mm		

Index

●

Item de estoque
Stock standard

○

Índice B, disponibilidade sob consulta
Index B, availability on request

Índice geral

Table of contents

Alpha-/Beta-Modul System	Alpha-/Beta-Modul System		7
DigiTec	DigiTec		11
MicroMax	MicroMax		19
VersaMax - Modelo 14	VersaMax - Type 14		29
VersaMax - Modelo 25 / Modelo A25	VersaMax - Type 25 / Type A25		39
IntraMax	IntraMax		51
MegaMax	MegaMax		69
SuperMegaMax	SuperMegaMax		81
Sistema LBS	LBS-System		89
Componentes modulares	Modular components		97
Adaptadores	Adaptor toolholders		115
Ferramentas especiais	Special tools		121
Estudo de usinagem	Machining study		125
Instruções de uso	Manuals		129
WinTool	WinTool		137

URMA System

Alpha-/Beta-Modul System

Ø 0.2 - 2'400 mm

Alpha-Modul-System

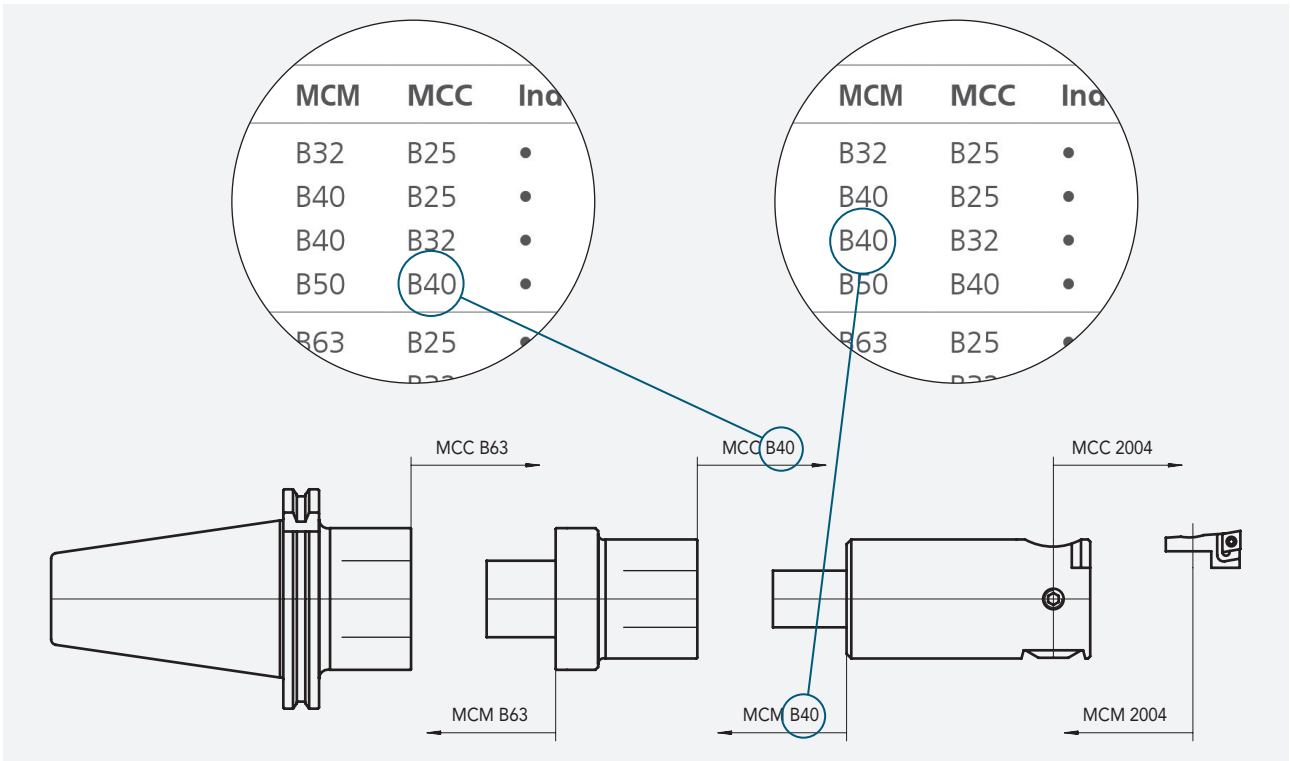


Conexão com rosca axial

- grande estabilidade
- simétrico, permitindo altas velocidades
- fácil manuseio
- adaptação para Beta-Modul

Axial threaded connection

- high stability
- mass symmetry allows high revolutions per minute
- simpler handling
- adaptor for Beta-Modul



Ø 0.2 - 2'400 mm

Beta-Modul-System



Sistema com travamento lateral

- grande flexibilidade
- compatível com outros sistemas
- sistema de pino e parafuso com faces cônicas permitindo montagem rígida
- fácil manuseio
- adaptação para Alpha-Modul

With side lock system

- high flexibility
- compatible to other systems
- large surface area of conical drive key allows for higher torque transmission
- simpler handling
- adaptor for Alpha-Modul

Utilização dos códigos de montagem URMA

- MCC código de montagem em direção do corte
MCM código de montagem em direção ao suporte

MCC e MCM mostram os diferentes acoplamentos para montagem dos componentes. Estes códigos devem ser correspondentes (exemplo página 8).

Handling of URMA match codes

- MCC match code towards cutting edges
MCM match code towards machine

MCC and MCM show the different couplings to mount the tool components. These match codes have to correspond (example page 8).

URMA Systems
DigiTec

Ø 0.2 - 2'400 mm

DigiTec

O sistema de mandrilamento digital acessível!

The digital fine boring system at a fair price!



Tecnologia Digital para toda família de mandrilamento URMA de Ø 0.3 up to 2'400 mm

- somente uma unidade de controle para toda a família DigiTec
- não requer cuidados especiais para reduzir risco de falhas
- baterias e display estão alojados em um controle manual
- excelente relação preço-performance permite conversão de cabeçotes convencionais - versão 2011

Digital-Technology for the entire URMA fine boring head family from Ø 0.2 up to 2'400 mm

- only one control unit for the entire DigiTec family
- no maintenance and minimal risk of failure
- battery and display are located in the handheld control unit.
- excellent price-performance ratio upgrade possible on the fine boring heads - version 2011

Ø 0.2 - 2'400 mm

...ajuste de milésimos mesmo em máquina - fácil e sem correção de ajuste!

...adjustable in microns, even in the machine - easy and faultless!



outras vantagens

- maior precisão no ajuste de deslocamento
- grande display digital, sem erros de ajuste
- manuseio seguro, mesmo em más condições de iluminação (área de trabalho na máquina)
- fácil seleção mm/polegada ou diâmetro / raio
- hybrid - os cabeçotes permitem ajustes de maneira convencional pelo anel graduado

further advantages

- highest precision through direct measuring of the movement
- large digital display reduces setup error
- safe handling, even under poor lighting conditions (machine tool workspace, etc.)
- easy to switch metric/Inch or Diameter/Radius
- «Hybrid» usage - the boring heads also work conventionally with scale

Ø 7.3 - 25 mm

Tool-Set
Tool-Set



DIGITEC

Conteúdo
Content

Order Number	Descrição	Description	Details	Amount
05 42 30-D	Cabeçote micrométrico	Fine boring head DigiTec	ø 2-40 mm	1
H06 06 07	Barra em metal duro	Carbide boring bar	ø 7.3-11 mm l = 24-48 mm	1
HW/C06 10 12	Barra em metal duro	Carbide boring bar	ø 11.8-16 mm l = 50-80 mm	1
W/C06 16 15	Barra para mandrilamento	Boring bar	ø 15-20 l = 45 mm	1
07 00 06	Redução	Reducer	ø 6 mm	1
07 00 10	Redução	Reducer	ø 10 mm	1
06 16 20	Barra para mandrilamento	Boring bar	20-25 mm l = 60 mm	1
W/C20 02 06	Suporte de inserto para acabamento	Fine boring insert holder		1
C00 20 01	Piças de reposição (fixação de insertos)	Spare parts (insert clamping screw)		3
C00 20 10	Piças de reposição (fixação de insertos)	Spare parts (insert clamping screw)		3
CPGT060202FXUT150	Inserto em cermet	Insert cermet		10
WCGT020102FYUT150	Inserto em cermet	Insert cermet		10
92 00 25-D	Indicador digital para DigiTec	Display unit for DigiTec		1
DIGI 00 05	Estojo	Empty case		1
05 42 30-D 17 05 42 30-D 37 05 42 30-D 57	Adaptadores a escolher: D10 41 16 DIN 69871-A/40 T10 41 16 MAS-BT-A/40 HSA10 63 17 HSK63-A	Adapter to choose: D10 41 16 DIN 69871-A/40 T10 41 16 MAS-BT-A/40 HSA10 63 17 HSK63-A		

DIGITEC

Indicador para cabeçotes digitais
Display unit for digital fine boring heads

Indicador para DigiTec
Display unit for DigiTec

Order Number	L	B	H	kg	Index
92 00 25-D	120	80	25	0.185*	•

* acompanham baterias e
battery included



SPARE PARTS



9V E-Block
Z92 00 25 12

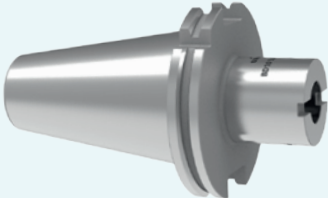
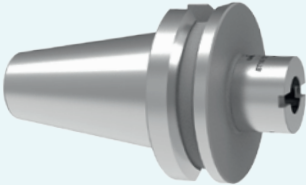
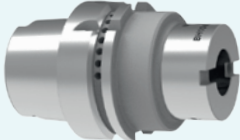
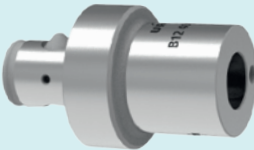
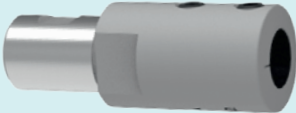
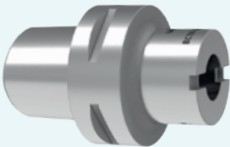
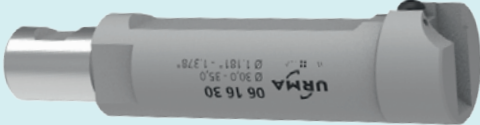
URMA Systems
MicroMax

Ø 0.2 - 40 mm

Ø 0.2 - 40 mm

MicroMax

DIGITEC

page 104 - 113	page 100 - 101	from page 22	page 24	page 24
				
			page 25	page 25
				
			page 26	
				
			page 26	page 27
				

Ø 0.2 - 40 mm



DIGITEC

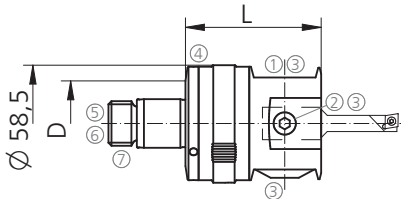
Cabeçote micrométrico 1 µm/ø *, com ou sem blanceamento ajustável

Fine boring head 1 µm/ø *, with or without balancing features

Cabeçote micrométrico, balanceável

Fine boring head, balanceable

Alpha	Order Number	L	D	kg	SW	MCM	MCC	Index
42	05 42 30-D	67	42	1,3	50	42	Z16	●
42	05 42 30	67	42	1,3	50	42	Z16	●

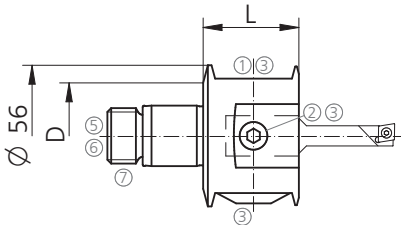


Indicador digital para cabeçotes micrométricos página 17
DigiTec display unit for digital fine boring heads page 17

Cabeçote micrométrico não balanceável

Non balanceable fine boring head

Alpha	Order Number	L	D	kg	SW	MCM	MCC	Index
42	05 42 40-D	38	42	0,7	50	42	Z16	●
42	05 42 40	38	42	0,7	50	42	Z16	●



Indicador digital para cabeçotes micrométricos página 17
DigiTec display unit for digital fine boring heads page 17

SPARE PARTS

Alpha	①	②	③	④	⑤	⑥	⑦
42	Z00 05 01	Z00 23 01	G00 02 06	G00 02 03	G00 02 04	G00 02 07	Z00 22 42

Ø 0.2 - 40 mm



DIGITEC

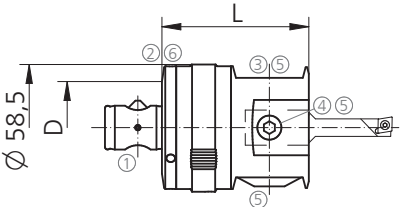
Cabeçote micrométrico 1 µm/ø *, com ou sem blanceamento ajustável

Fine boring head 1 µm/ø *, with or without balancing features

Cabeçote micrométrico, balanceável

Fine boring head, balanceable

Beta	Order Number	L	D	kg	MCM	MCC	Index
40	B05 40 30 067-D	67	42	1,3	B40	Z16	●
40	B05 40 30 067	67	42	1,3	B40	Z16	●



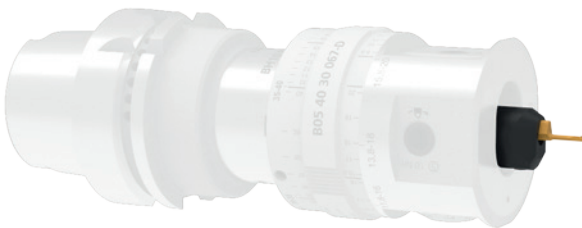
Indicador digital para cabeçotes micrométricos página 17
DigiTec display unit for digital fine boring heads page 17

* Somente na versão DigiTec (-D) conectado ao display (página 17) caso contrário ajustável 10 µm/ø
Only with DigiTec version (-D) in connection with the display (page 17) otherwise 10 µm/ø adjustable

SPARE PARTS

Beta	①	②	③	④	⑤	⑥
40	Z00 40 21	Z00 40 23	Z00 05 01	Z00 23 01	G00 02 06	G00 02 03

Ø 0.2 - 6 mm



Barras para mandrilamento

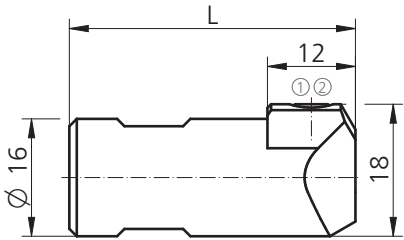
Boring bars

Redução para mini-barras de mandrilamento
Reducer for mini-boring bars

Ø 0,3 - 6 mm

Order Number	L	MCM	MCC	Index
B105.0016.U1.01	39	Z16	B105	●

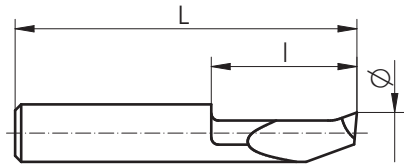
Atenção: Verificar sentido de rotação!
Attention: Note the direction of cutting!



Mini-barras de mandrilamento em metal duro
Carbide mini-boring bars

Ø 0,3 - 6 mm

Order Number	Ø-range	L	I	MCM	Index
L105.1802.0.02MG12	0.2 - 0.8	23	1,0	B105	●
L105.1802.0.03MG12	0,3 - 0,9	23	1,0	B105	●
L105.1803.0.07MG12	0,7 - 2,3	23	2,0	B105	●
R105.1805.1.1TN35	1,0 - 3,4	25	6,0	B105	●
R105.1809.1.2TN35	2,0 - 6,0	25	9	B105	●



SPARE PARTS

B105..	①	②
	6.075T15	G00 20 03

Ø 5.8 - 22.5 mm



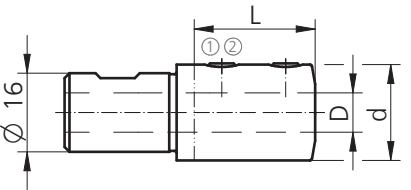
Barras de mandrilamento com corpo em metal duro com profundidade até 8xD

Boring bars with carbide shank for boring depths up to 8xD

Redução
Reducers

Ø 5,8 - 22,5 mm

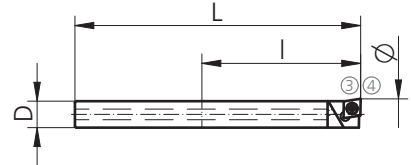
Order Number	L	D	d	MCM	MCC	Index
07 00 05	17	5	16	Z16	ZS5	●
07 00 06	17	6	16	Z16	ZS6	●
07 00 08	22	8	19	Z16	ZS8	●
07 00 10	25	10	22	Z16	ZS10	●
07 00 12	31	12	22	Z16	ZS12	●



Barras de mandrilamento com corpo em metal duro
Boring bars with carbide shanks

Ø 5,8 - 22,5 mm

Order Number	Ø-range	L	I	D	Inserts	MCM	MCC	Index
H06 05 06	5,8 - 10	65	20-40	5	WC... 0201	ZS5	WC02	●
H06 06 07	7,3 - 11	70	24-48	6	WC... 0201	ZS6	WC02	●
HW/C06 08 09	8,8 - 13	90	40-64	8	CC../CP.. 0602	ZS8	CP06	●
HW/C06 10 12	11,8 - 16	105	50-80	10	CC../CP.. 0602	ZS10	CP06	●
HW/C06 12 14	13,8 - 18	120	60-96	12	CC../CP.. 0602	ZS12	CP06	●
HW/C06 16 16	15,8 - 20	130	100	16	CC../CP.. 0602	ZS16	CP06	●
HW/C06 16 18	18,3 - 22,5	145	115	16	CC../CP.. 0602	ZS16	CP06	●

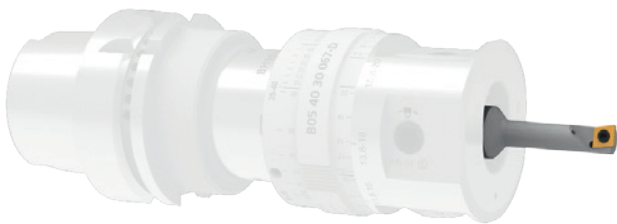


Suporte de inserto com alojamento combinado na página 27
Insert holder with combined insert pocket see page 27

SPARE PARTS

D	①	②	③	④
5-6	C00 07 01	G00 02 03	C00 20 10	G00 20 01
8-10	C00 25 03	G00 02 04	C00 20 04	G00 20 05
10-12	C00 07 02	G00 02 04	C00 20 01	G00 20 05
16			C00 20 01	G00 20 05

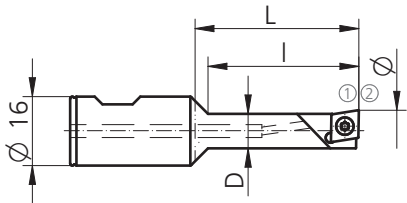
Ø 10 - 40 mm



Barras de mandrilamento com corpo em aço
Boring bars with steel shank

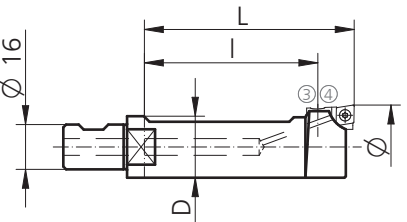
Barras de mandrilamento Ø 20 - 40 mm
Boring bars

Order Number	Ø-range	L	I	D	Inserts	MCM	MCC	Index
W/C06 16 10	10 - 15	38	35	8	CC../CP.. 0602..	Z16	CP06	●
W/C06 16 15	15 - 20	48	45	12,5	CC../CP.. 0602..	Z16	CP06	●
W06 16 10	10 - 15	38	35	8	CC.. 0602..	Z16	CC06	●
W06 16 15	15 - 20	48	45	12,5	CC.. 0602..	Z16	CC06	●



Barras de mandrilamento Ø 20 - 40 mm
Boring bars

Order Number	Ø-range	L	I	D	MCM	MCC	Index
06 16 20	20 - 25	60	47	17	Z16	2002	●
06 16 25	25 - 30	75	62	22	Z16	2002	●
06 16 30	30 - 35	75	62	27	Z16	2002	●
06 16 35	35 - 40	75	62	32	Z16	2002	●



SPARE PARTS

①	②	③	④
C00 20 01	G00 20 05	C00 25 11	G00 20 07

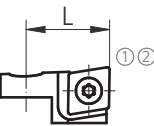
Ø 10 - 40 mm



Suportes de insertos
Insert holders

Suportes de insertos Ø 20 - 40 mm
Insert holders

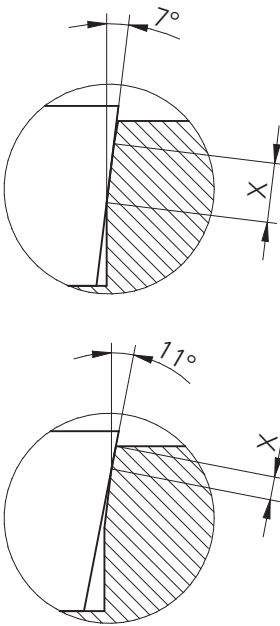
Order Number	L	Inserts	MCM	MCC	Index
W/C20 02 06	13	CC../CP.. 0602..	2002	CP06	●
W20 02 06	13	CC.. 0602..	2002	CC06	●
WW20 02 06	13	Wiper CC.. 0602..	2002	CC06	●



Suporte de inserto com alojamento combinado
Insert holder with combined insert pocket

Os suportes de insertos W/C... e as barras HW/C06... foram desenhados para fixar insertos com ângulo de encosto de 7° (CCGT...) e 11° (CPGT...). Para garantir a acomodação perfeita dos insertos, recomendamos o uso de classes precisas (CCG... ou CPG...).

Insert holders type W/C... and boring bars HW/C06... are designed to hold inserts with 7° (CCGT...) as well as 11° (CPGT...) clearance angle. We highly recommend to use only precision (ground) inserts (CCG... or CPG...) on such holders to guarantee a perfect fit.



SPARE PARTS

①	②
C00 20 04	G00 20 05

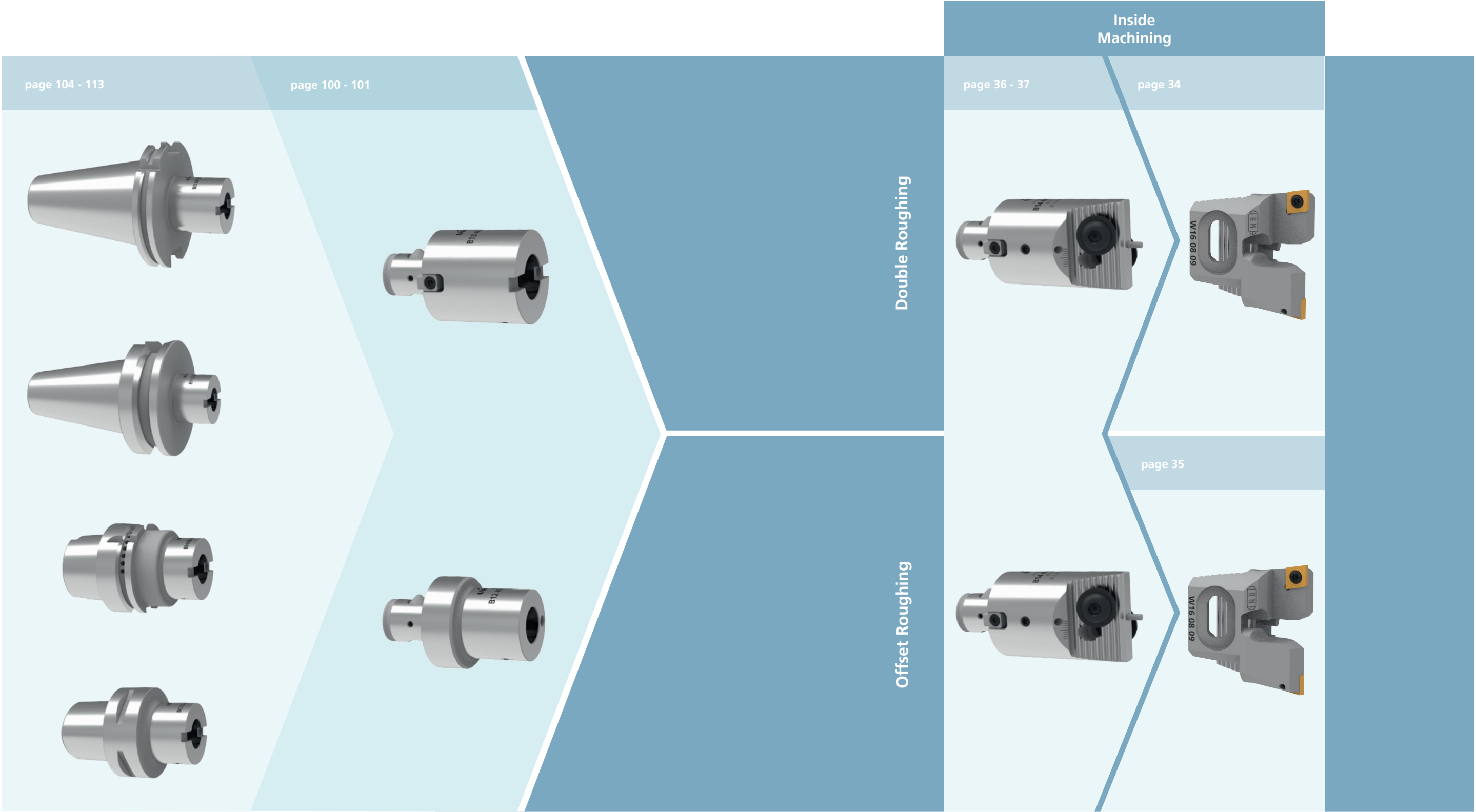
URMA Systems

VersaMax - Type 14

Ø 19.5 - 153 mm

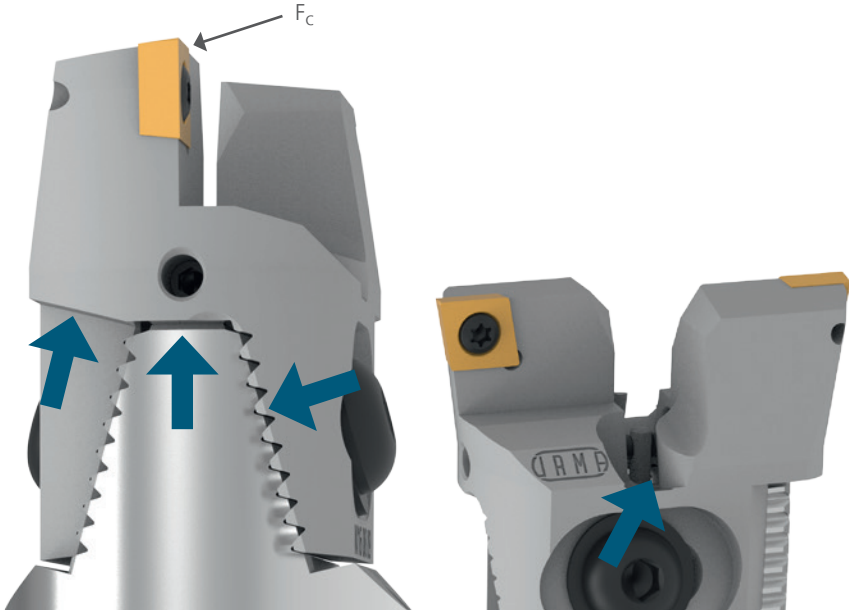
Ø 19.5 - 153 mm

VersaMax - Type 14



Ø 19.5 - 153 mm

Benefícios do cabeçote duplo corte URMA patenteado
Advantages of the patented URMA double cutter head



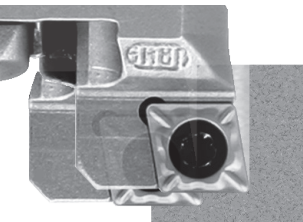
Desenho patenteado que direciona as forças de corte diretamente para o corpo da ferramenta, garantido maior estabilidade, versatilidade e:

- Desbaste duplo corte
- Desbaste com corte defasado
- Ajuste radial individual
- Insertos ISO standard
- Passagem para refrigeração interna
- Grande estabilidade
- Fácil manuseio
- Robustez

Patented design to direct cutting forces (F_c) directly into the body and guarantee highest stability, versatility and allows:

- Double cutter roughing
- Offset roughing
- Individual radial adjustment
- ISO-Standard inserts
- Coolant through
- High reliability
- Simple handling
- Optimized stability

Desbaste "Offset"
Offset Roughing



Desbaste com cortes axial e radial defasados "Offset", para grandes profundidades de corte (Detalhes na página 35)

Axial and radial offset roughing for larger cutting depth
(consider only one cutting edge for the feed rate per minute calculation, details page 35)

Ø 19.5 - 153 mm



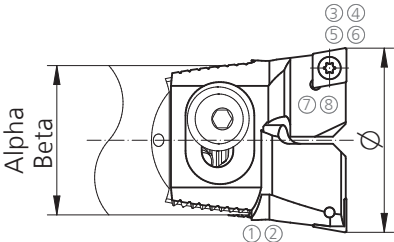
Suportes de insertos

Insert holders

Suportes de insertos 90°

Insert holders 90°

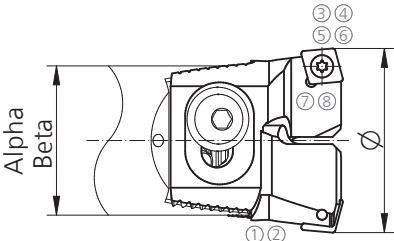
Alpha	Beta	Order Number	Ø-range	kg	Inserts	MCM	MCC	Index
18,5		W16 01 06	19,5 - 25	0,1	CC.. 0602..	1418	CC06	●
18,5		W16 02 06	22,5 - 30	0,1	CC.. 0602..	1418	CC06	●
24,5	25	W16 04 06	29 - 39	0,1	CC.. 0602..	1424	CC06	●
32	32	W16 06 09	38 - 51	0,1	CC.. 09T3..	1432	CC09	●
42	40	W16 08 09	50 - 67	0,1	CC.. 09T3..	1442	CC09	●
55	63	W16 10 13	66 - 88	0,2	CC.. 1204..	1455	CC12	●
55	63	W16 10 12P	66 - 88	0,2	CN.. 1204..	1455	CN12	●
72	80	W16 12 12P	87 - 116	0,5	CN.. 1204..	1472	CN12	●
72	80	W16 12 16P	87 - 116	0,5	CN.. 1606..	1472	CN16	●
94	100	W16 14 16P	115 - 153	1,3	CN.. 1606..	1494	CN16	●



Suportes de insertos 75°

Insert holders 75°

Alpha	Beta	Order Number	Ø-range	kg	Inserts	MCM	MCC	Index
18,5		W18 02 06	22,5 - 30	0,1	CC.. 0602..	1418	CC06	●
24,5	25	W18 04 06	29 - 39	0,1	CC.. 0602..	1424	CC06	●
32	32	W18 06 09	38 - 51	0,1	CC.. 09T3..	1432	CC09	●
42	40	W18 08 09	50 - 67	0,1	CC.. 09T3..	1442	CC09	●
55	63	W18 10 12P	66 - 88	0,2	CN.. 1204..	1455	CN12	●
72	80	W18 12 16P	87 - 116	0,5	CN.. 1606..	1472	CN16	●
94	100	W18 14 16P	115 - 153	1,3	CN.. 1606..	1494	CN16	●



⑦⑧ Não incluído na entrega
Not included in the delivery

SPARE PARTS

Alpha	Beta	①	②	③	④	⑤	⑥	⑦	⑧
18,5		G00 02 01	C00 02 10	C00 20 01	G00 20 05				
24,5	25	G00 02 01	C00 02 11	C00 20 01	G00 20 05				
32	32	G00 02 02	C00 02 12	C00 20 02	G00 20 03				
42	40	G00 02 03	C00 02 13	C00 20 02	G00 20 03				
55	63	G00 02 03	C00 02 14	C00 20 05	G00 20 03				
55	63	G00 02 03	C00 02 14		G00 20 03	A00 12 11	Z00 12 02	A00 02 17	A00 32 07
72	80	G00 02 04	C00 02 15		G00 20 03	A00 12 11	Z00 12 02	A00 02 17	A00 32 07
72	80	G00 02 04	C00 02 15		G00 20 03	A00 12 12	Z00 16 03	A00 02 16	A00 32 08
94	100	G00 02 05	C00 02 16		G00 20 03	A00 12 12	Z00 16 03	A00 02 16	A00 32 08

Ø 22.5 - 153 mm



Suportes de insertos offset para desbaste

Insert holders for offset roughing

Insertos defasados no diâmetro e altura

Equilíbrio no esforço de corte por inserto

Dobro da capacidade na profundidade de corte

Inserts offset in diameter and height

Equal chip load

Double cutting depth capacity with half the feed rate

Suportes de insertos 90°

Insert holders 90°

Alpha	Beta	Order Number	Order Number	Ø-range	kg	Inserts	a _{p max}	x	MCM	MCC	Index
18,5		WV16 02 06	W16 02 06	22,5 - 30	0,1	CC.. 0602..	2-3	0,2	1418	CC06	●
24,5	25	WV16 04 06	W16 04 06	29 - 39	0,1	CC.. 0602..	2-3	0,2	1424	CC06	●
32	32	WV16 06 09	W16 06 09	38 - 51	0,1	CC.. 09T3..	3-4	0,2	1432	CC09	●
42	40	WV16 08 09	W16 08 09	50 - 67	0,2	CC.. 09T3..	3-4	0,25	1442	CC09	●
55	63	WV16 10 12P	W16 10 12P	66 - 88	0,5	CN.. 1204..	4-6	0,3	1455	CN12	●
72	80	WV16 12 12P	W16 12 12P	87 - 116	1,2	CN.. 1204..	4-6	0,3	1472	CN12	●
94	100	WV16 14 16P	W16 14 16P	115 - 153	3,0	CN.. 1606..	6-8	0,4	1494	CN16	●

Formula $a_p = \frac{D_A - D_i}{4}$

⑦⑧ Não incluído na entrega
Not included in the delivery

SPARE PARTS

Alpha	Beta	①	②	③	④	⑤	⑥	⑦	⑧
18,5		G00 02 01	C00 02 10	C00 20 01	G00 20 05				
24,5	25	G00 02 01	C00 02 11	C00 20 01	G00 20 05				
32	32	G00 02 02	C00 02 12	C00 20 02	G00 20 03				
42	40	G00 02 03	C00 02 13	C00 20 02	G00 20 03				
55	63	G00 02 03	C00 02 14		G00 20 03	A00 12 11	Z00 12 02	A00 02 17	A00 32 07
72	80	G00 02 04	C00 02 15		G00 20 03	A00 12 11	Z00 12 02	A00 02 17	A00 32 07
94	100	G00 02 05	C00 02 16		G00 20 03	A00 12 12	Z00 16 03	A00 02 16	A00 32 08

Ø 19.5 - 153 mm



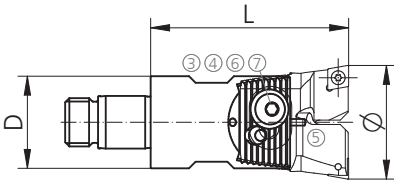
Cabeças duplo corte

Double cutter heads

Cabeças duplo corte

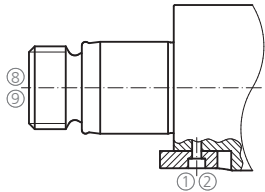
Double cutter heads

Alpha	Order Number	Ø-range	L	D	kg	SW	MCM	MCC	Index
18,5	14 18 00	19,5 - 30	40	18,5	0,1	17	18,5	1418	●
24,5	14 24 00	29 - 39	50	24,5	0,2	22	24,5	1424	●
32	14 32 00	38 - 51	65	32	0,3	27	32	1432	●
42	14 42 00	50 - 67	90	42	0,6	36	42	1442	●
55	14 55 00	66 - 88	115	55	1,3	46	55	1455	●
72	14 72 00*	87 - 116	150	72	2,9	60	72	1472	●
94	14 94 00*	115 - 153	195	94	6,3	75	94	1494	●



⑨ Não incluído na entrega
Not included in the delivery

* fornecido com chaveta
supplied with a driving key



SPARE PARTS

Alpha	①	②	③	④	⑤	⑥	⑦	⑧	⑨
18,5									
24,5			B00 22 01		C00 12 01	K00 02 01	G00 20 23		
32			B00 22 02		C00 12 01	K00 02 02	G00 20 24		
42			B00 22 03	G00 02 05	C00 12 08	K00 02 03			
55			B00 22 04	G00 02 06	C00 12 04	K00 02 04			
72	Z00 00 72	C00 22 11	B00 22 05	G00 02 07	C00 12 05	K00 02 05			
94	Z00 00 94	C00 24 17	B00 22 06	G00 02 08	C00 12 06	K00 02 06	Z00 14 74	53 74 96	
			B00 22 07	G00 02 10	C00 12 07	K00 02 07	Z00 14 96	53 74 96	

Ø 29 - 153 mm



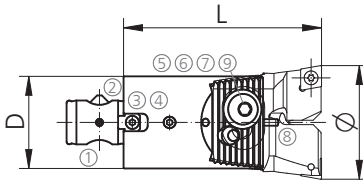
Cabeças duplo corte

Double cutter heads

Cabeças duplo corte

Double cutter heads

Beta	Order Number	Ø-range	L	D	kg	MCM	MCC	Index
25	B14 25 00 050	29 - 39	50	25	0,2	B25	1424	●
32	B14 32 00 065	38 - 51	65	32	0,3	B32	1432	●
40	B14 40 00 090	50 - 67	90	42	0,6	B40	1442	●
63	B14 63 00 100	66 - 88	100	63	1,5	B63	1455	●
80	B14 80 00 115	87 - 116	115	80	2,5	B80	1472	●
100	B14 100 00 145	115 - 153	145	100	4,4	B100	1494	●



SPARE PARTS

Beta	①	②	③	④	⑤	⑥	⑦	⑧	⑨
25									
32	Z00 25 21	Z00 25 23			B00 22 02		C00 12 01	K00 02 02	G00 20 24
40	Z00 32 21	Z00 32 23			B00 22 03	G00 02 05	C00 12 08	K00 02 03	
63	Z00 40 21	Z00 40 23	Z00 40 25	C00 22 58	B00 22 04	G00 02 06	C00 12 04	K00 02 04	
80	Z00 63 21	Z00 63 23	Z00 63 25	C00 22 05	B00 22 05	G00 02 07	C00 12 05	K00 02 05	
100	Z00 80 21	Z00 80 23	Z00 80 25	C00 22 07	B00 22 06	G00 02 08	C00 12 06	K00 02 06	
	Z00 100 21	Z00 100 23	Z00 100 25	C00 22 71	B00 22 07	G00 02 10	C00 12 07	K00 02 07	

URMA Systems

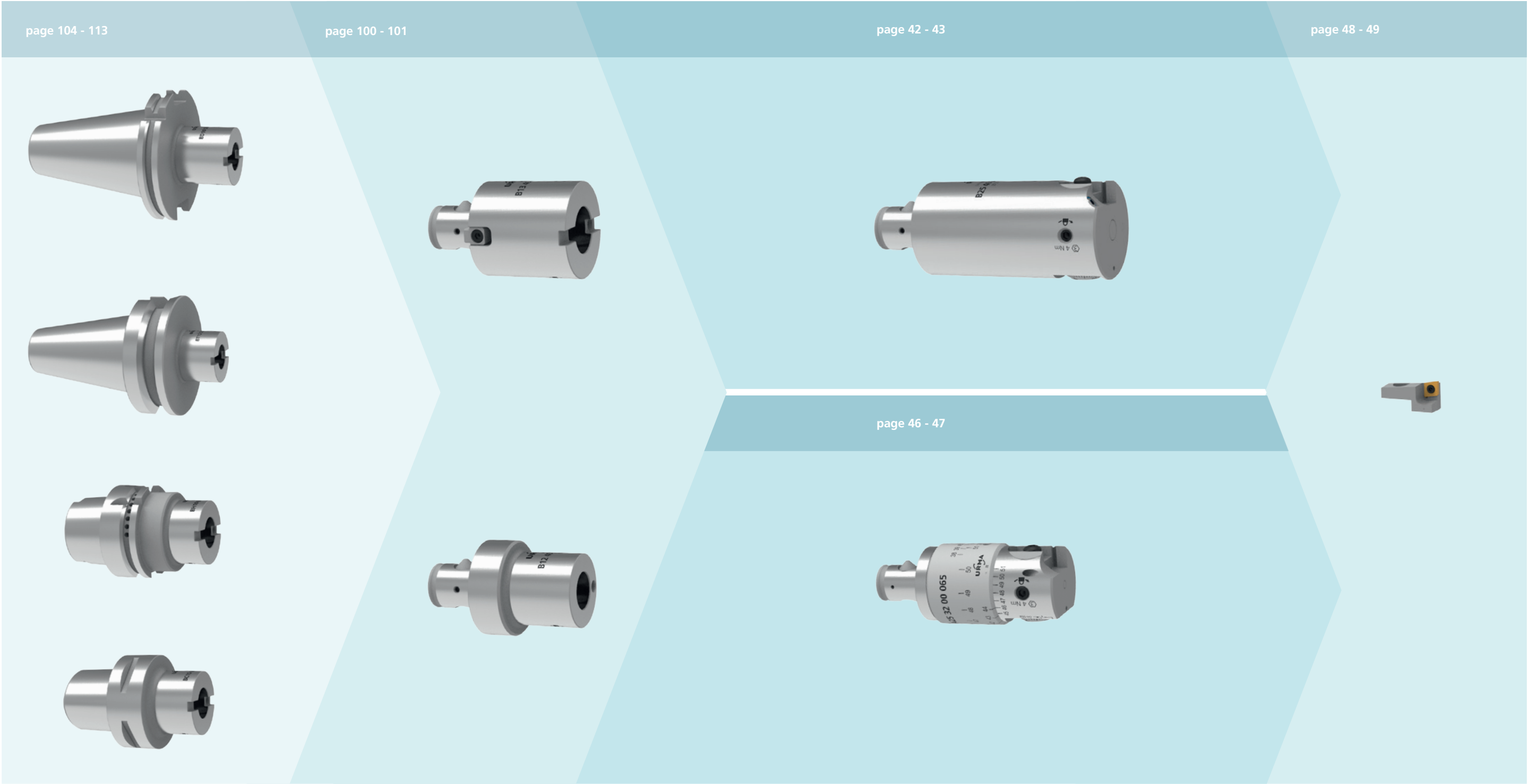
VersaMax - Type 25 / A25

Ø 18 - 153 mm

VersaMax - Type 25 / Type A25

Ø 18 - 153 mm

DIGITEC



Ø 18 - 153 mm



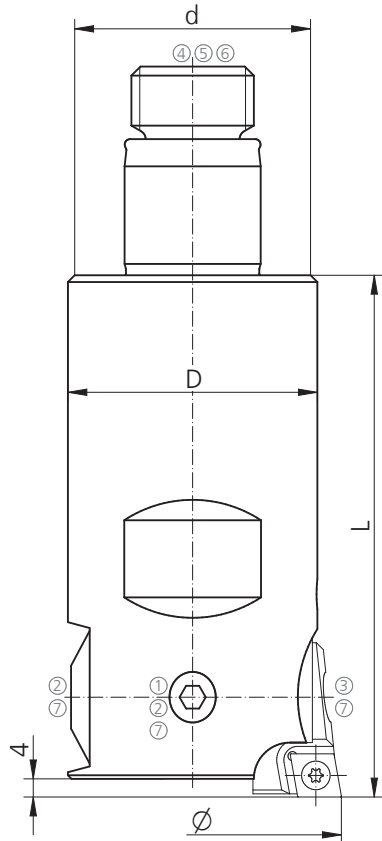
DIGITEC

Cabeças micrométricas 1 µm/Ø *

Fine boring heads 1 µm/Ø *

Cabeças micrométricas
Fine boring heads

Alpha	Order Number	Ø-range	L	D	d	kg	SW	MCM	MCC	Index
24,5	25 24 30-D	29 - 39	50	26	24,5	0,2	22	24,5	2002	●
32	25 32 30-D	38 - 51	65	32	32	0,4	27	32	2004	●
42	25 42 30-D	50 - 67	90	42	42	1	36	42	2004	●
55	25 55 30-D	66 - 88	115	55	55	2,2	46	55	2006	●
72	25 72 30-D	87 - 116	75	72	72	2,5	55	72	2006	●
94	25 94 30-D	115 - 153	95	94	94	5,2	55	94	2006	●
18,5	25 16 00	18 - 22,5	65	16	18,5	0,2	17	18,5	2016	●
18,5	25 08 00	20 - 25	40	19,7	18,5	0,1	17	18,5	2002	●
18,5	25 18 00	22,5 - 30	40	20	18,5	0,1	17	18,5	2002	●
24,5	25 24 30	29 - 39	50	26	24,5	0,2	22	24,5	2002	●
32	25 32 30	38 - 51	65	32	32	0,4	27	32	2004	●
42	25 42 30	50 - 67	90	42	42	1	36	42	2004	●
55	25 55 30	66 - 88	115	55	55	2,2	46	55	2006	●
72	25 72 30	87 - 116	75	72	72	2,5	55	72	2006	●
94	25 94 30	115 - 153	95	94	94	5,2	55	94	2006	●



Indicador digital para cabeçotes micrométricos página 17
DigiTec display unit for digital fine boring heads page 17

* Somente na versão DigiTec (-D) conectado ao display (página 17) caso contrário ajustável 10 µm/Ø
Only with DigiTec version (-D) in connection with the display (page 17) otherwise 10 µm/Ø adjustable

SPARE PARTS

Alpha	Ø-range	①	②	③	④	⑤	⑥	⑦
18,5	18 - 22,5	C00 25 18		C00 25 19	G00 02 04	G00 02 01	Z00 10 18	G00 20 02
18,5	20 - 30	C00 25 01		C00 25 11	G00 02 04	G00 02 01	Z00 10 18	G00 20 07
24,5		C00 25 02		C00 25 11	G00 02 05	G00 02 02	Z00 12 24	G00 20 07
32		C00 25 03	G00 02 04	C00 25 12	G00 02 06	G00 02 03	Z00 16 32	G00 20 03
42		C00 25 04	G00 02 04	C00 25 12	G00 02 07	G00 02 04	Z00 22 42	G00 20 03
55		C00 25 05	G00 02 06	C00 25 13	G00 02 05	G00 02 08	Z00 27 55	
72		C00 25 05	G00 02 06	C00 25 13	G00 02 10	G00 02 08	Z00 15 74	
94		C00 25 05	G00 02 06	C00 25 13	G00 02 10	G00 02 08	Z00 15 96	

Ø 29 - 153 mm



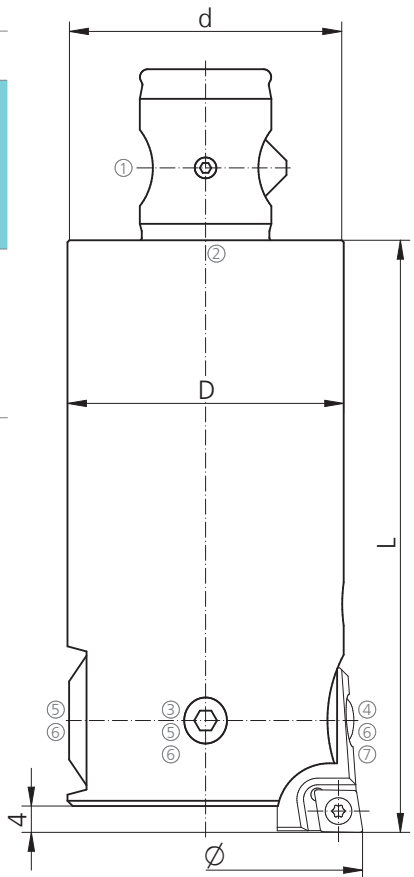
DIGITEC

Cabeças micrométricas 1 µm/Ø *

Fine boring heads 1 µm/Ø *

Cabeças micrométricas
Fine boring heads

Beta	Order Number	Ø-range	L	D	d	kg	MCM	MCC	Index
25	B25 25 30 050-D	29 - 39	50	26	25	0,2	B25	2002	●
32	B25 32 30 065-D	38 - 51	65	32	32	0,4	B32	2004	●
40	B25 40 30 090-D	50 - 67	90	42	40	1	B40	2004	●
63	B25 63 30 100-D	66 - 88	100	63	63	2,5	B63	2006	●
80	B25 80 30 115-D	87 - 116	115	80	80	4,3	B80	2006	●
100	B25 100 30 145-D	115 - 153	145	100	100	9,2	B100	2006	●
25	B25 25 30 050	29 - 39	50	26	25	0,2	B25	2002	●
32	B25 32 30 065	38 - 51	65	32	32	0,4	B32	2004	●
40	B25 40 30 090	50 - 67	90	42	40	1	B40	2004	●
63	B25 63 30 100	66 - 88	100	63	63	2,5	B63	2006	●
80	B25 80 30 115	87 - 116	115	80	80	4,3	B80	2006	●
100	B25 100 30 145	115 - 153	145	100	100	9,2	B100	2006	●



Indicador digital para cabeçotes micrométricos página 17
DigiTec display unit for digital fine boring heads page 17

* Somente na versão DigiTec (-D) conectado ao display (página 17) caso contrário ajustável 10 µm/Ø
Only with DigiTec version (-D) in connection with the display (page 17) otherwise 10 µm/Ø adjustable

SPARE PARTS

Beta	①	②	③	④	⑤	⑥	⑦
25	Z00 25 21	Z00 25 23	C00 25 02	C00 25 11		G00 20 07	
32	Z00 32 21	Z00 32 23	C00 25 03	C00 25 12	G00 02 04	G00 20 03	
40	Z00 40 21	Z00 40 23	C00 25 04	C00 25 12	G00 02 04	G00 20 03	
63	Z00 63 21	Z00 63 23	C00 25 05	C00 25 13	G00 02 06		G00 02 05
80	Z00 80 21	Z00 80 23	C00 25 05	C00 25 13	G00 02 06		G00 02 05
100	Z00 100 21	Z00 100 23	C00 25 05	C00 25 13	G00 02 06		G00 02 05

Benefícios da cabeça micrométrica balanceável

Advantages of balanced fine boring heads

As cabeças micrométricas balanceáveis A25 apresentam desbalanceamento residual U(gmm) até 100 vezes menor em comparação às cabeças standards em trabalhos de alta velocidade! Ao mesmo tempo que é muito simples, confiável e:

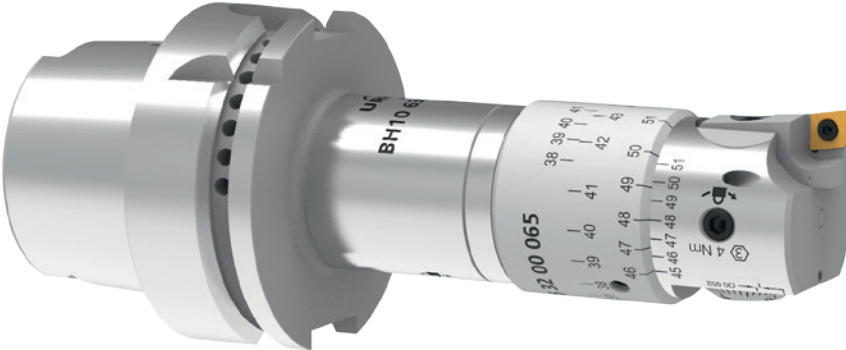
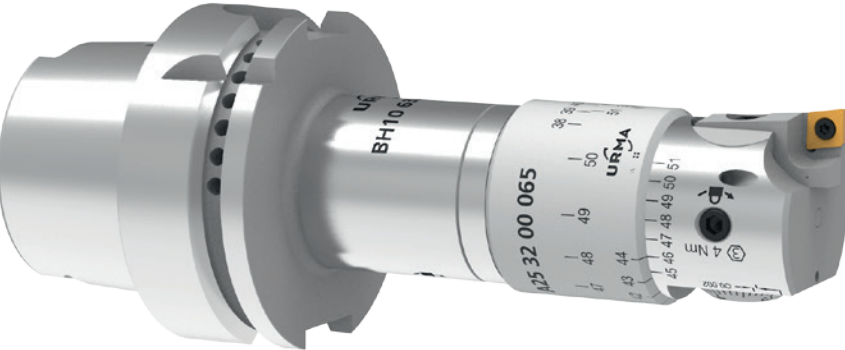
- melhora a qualidade do acabamento
- elimina vibrações
- reduz tolerâncias de circularidade
- aumenta a vida útil do inserto

Um investimento com resultados rápidos!

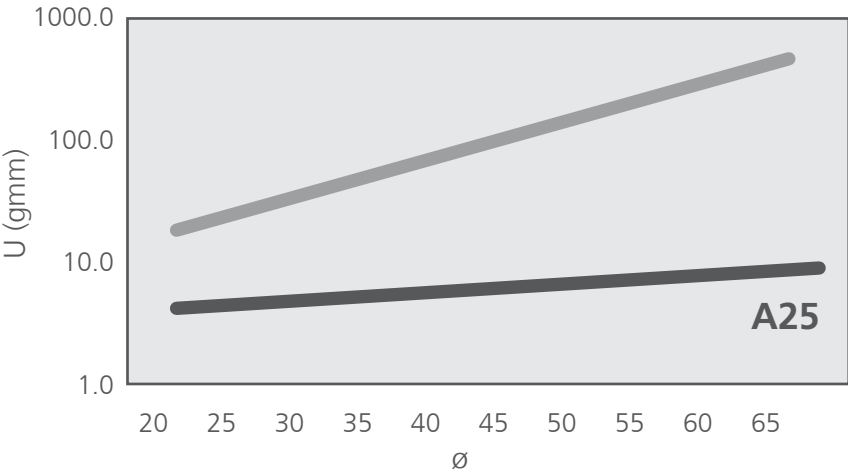
Balancable fine boring heads such as the A25 features up to 100 times less residual imbalance U (gmm) compared to stand-ard fine boring heads and allow remark-ably higher revolutions per minute! At the same time the balancing is most simple, reliable and results in:

- best surface quality
- vibration free machining
- better roundness tolerance
- improved tool life

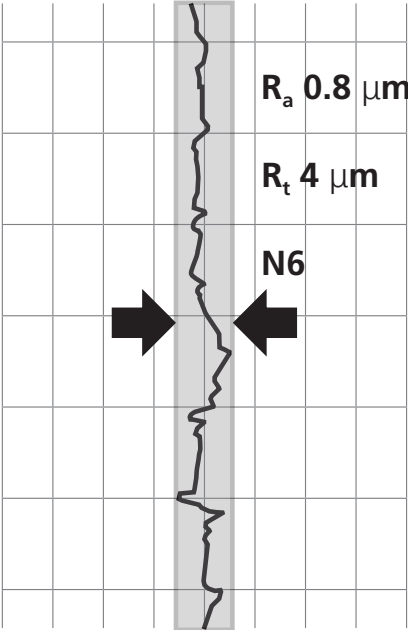
An additional investment that pays back!



Fácil balanceamento
Easy to handle balancing



A25 em comparação à cabeça micrométrica convencional
Comparison A25 to conventional fine boring head



Melhor acabamento
Better surface quality

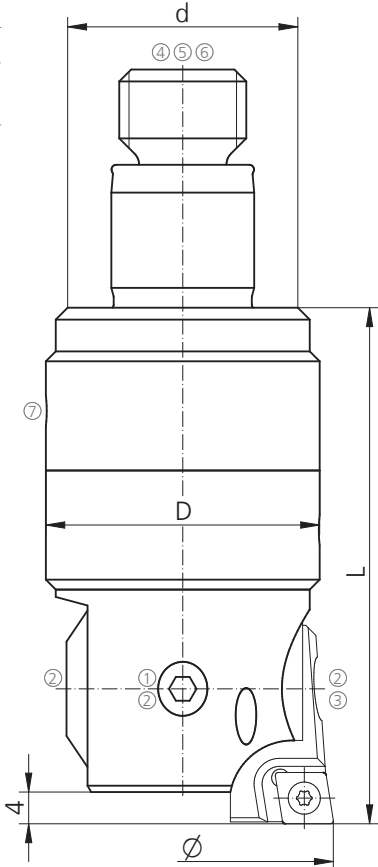
Ø 20 - 30 mm



Cabeças micrométricas balanceáveis 2 µm/Ø
Balanceable fine boring heads 2 µm/Ø

Cabeças micrométricas
Fine boring heads

Alpha	Order Number	Ø-range	L	D	d	kg	SW	MCM	MCC	Index
18,5	A25 08 00	20 - 25	40	19,7	18,5	0,1	17	18,5	2002	●
18,5	A25 18 00	22,5 - 30	40	21	18,5	0,1	17	18,5	2002	●



SPARE PARTS

Alpha	①	②	③	④	⑤	⑥	⑦
18,5	C00 25 01	G00 20 07	C00 25 11	Z00 10 18	G00 02 01	G00 02 04	G00 02 13

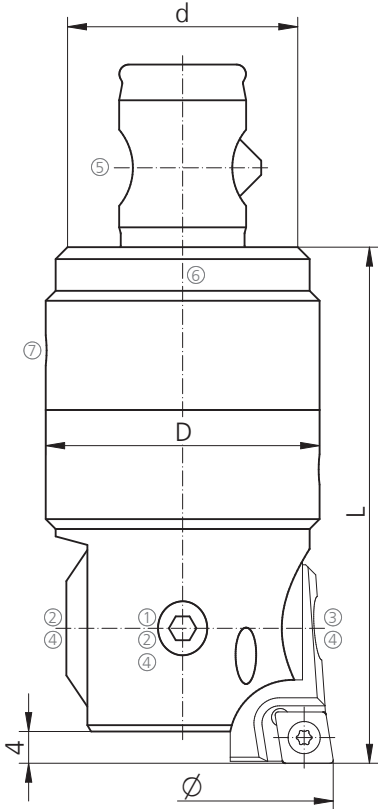
Ø 29 - 67 mm



Cabeças micrométricas balanceáveis 2 µm/Ø
Balanceable fine boring heads 2 µm/Ø

Cabeças micrométricas
Fine boring heads

Beta	Order Number	Ø-range	L	D	d	kg	MCM	MCC	Index
25	A25 25 00 050	29 - 39	50	27	25	0,2	B25	2002	●
32	A25 32 00 065	38 - 51	65	34,5	32	0,4	B32	2004	●
40	A25 40 00 090	50 - 67	90	45	42	1	B42	2004	●



SPARE PARTS

Beta	①	②	③	④	⑤	⑥	⑦
25	C00 25 02		C00 25 11	G00 20 07	Z00 25 21	Z00 25 23	G00 02 01
32	C00 25 03	G00 02 04	C00 25 12	G00 20 03	Z00 32 21	Z00 32 33	G00 02 02
40	C00 25 04	G00 02 04	C00 25 12	G00 20 03	Z00 40 21	Z00 40 23	G00 02 03

Ø 18 - 153 mm

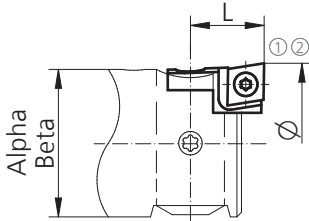


Suportes de inserto para acabamento

Fine boring insert holders

Suporte para insertos ISO com ângulo de encosto combinado 7° e 11°
Combination insert holders for ISO inserts with 7° and 11° clearance angle

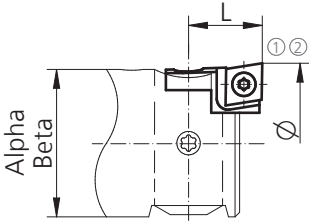
Alpha	Beta	Order Number	Ø-range	L	Inserts	MCM	MCC	Index
18,5		W/C20 16 00 06	18 - 20,5	14	CC../CP.. 0602..	2016	CP06	●
18,5		W/C20 16 01 06	20 - 22,5	14	CC../CP.. 0602..	2016	CP06	●
18,5		W/C20 02 06	20 - 30	13	CC../CP.. 0602..	2002	CP06	●
24,5	25	W/C20 02 06	29 - 39	13	CC../CP.. 0602..	2002	CP06	●
32	32	W/C20 04 06	38 - 51	17	CC../CP.. 0602..	2004	CP06	●
42	40	W/C20 04 06	50 - 67	17	CC../CP.. 0602..	2004	CP06	●
55	63	W/C20 06 06	66 - 88	22	CC../CP.. 0602..	2006	CP06	●
72	80	W/C20 06 06	87 - 116	22	CC../CP.. 0602..	2006	CP06	●
94	100	W/C20 06 06	115 - 153	22	CC../CP.. 0602..	2006	CP06	●



Suporte de inserto com alojamento combinado na página 27
Insert holder with combined insert pocket see page 27

Suporte para insertos ISO com ângulo de encosto 7°
Insert holders for ISO inserts with 7° clearance angle

Alpha	Beta	Order Number	Ø-range	L	Inserts	MCM	MCC	Index
18,5		W20 02 06	20 - 30	13	CC.. 0602..	2002	CC06	●
24,5	25	W20 02 06	29 - 39	13	CC.. 0602..	2002	CC06	●
32	32	W20 04 06	38 - 51	17	CC.. 0602..	2004	CC06	●
42	40	W20 04 06	50 - 67	17	CC.. 0602..	2004	CC06	●
55	63	W20 06 09	66 - 88	22	CC.. 09T3..	2006	CC09	●
72	80	W20 06 09	87 - 116	22	CC.. 09T3..	2006	CC09	●
94	100	W20 06 09	115 - 153	22	CC.. 09T3..	2006	CC09	●



SPARE PARTS

Order Number	①	②
W/C20 02 06	C00 20 04	G00 20 05
W/C20 04 06	C00 20 01	G00 20 05
W/C20 06 06	C00 20 01	G00 20 05
W20 02 06	C00 20 04	G00 20 05
W20 04 06	C00 20 01	G00 20 05
W20 06 09	C00 20 37	G00 20 03

Ø 20 - 153 mm

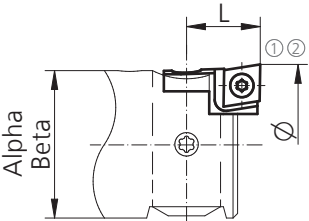


Suportes de insertos para acabamento

Fine boring insert holders

Suporte 95° para insertos Wiper com ângulo de encosto 7°
Insert holders 95° for Wiper inserts with 7° clearance angle

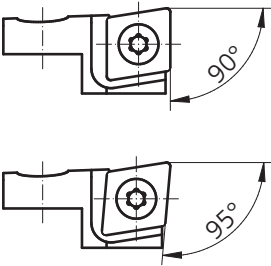
Alpha	Beta	Order Number	Ø-range	L	Inserts	MCM	MCC	Index
18,5		WW20 02 06	20 - 30	13	Wiper CC.. 0602..	2002	CC06	●
24,5	25	WW20 02 06	29 - 39	13	Wiper CC.. 0602..	2002	CC06	●
32	32	WW20 04 06	38 - 51	17	Wiper CC.. 0602..	2004	CC06	●
42	40	WW20 04 06	50 - 67	17	Wiper CC.. 0602..	2004	CC06	●
55	63	WW20 06 09	66 - 88	22	Wiper CC.. 09T3..	2006	CC09	●
72	80	WW20 06 09	87 - 116	22	Wiper CC.. 09T3..	2006	CC09	●
94	100	WW20 06 09	115 - 153	22	Wiper CC.. 09T3..	2006	CC09	●



Insertos Wiper
Wiper inserts

Os insertos Wipers (permitem dobrar o avanço com a mesma qualidade de acabamento ou melhorar o acabamento com o mesmo avanço) somente podem ser utilizados com os suportes de insertos 95°.

The advantages of Wiper inserts (double feed rate at equal surface quality or improved surface quality at equal feed rate) can only be used with insert holders with 95° setting angle.



SPARE PARTS

Order Number	①	②
WW20 02 06	C00 20 04	G00 20 05
WW20 04 06	C00 20 01	G00 20 05
WW20 06 09	C00 20 37	G00 20 03

URMA Systems
IntraMax

Ø 49 - 297 mm

Ø 49 - 297 mm

IntraMax

				Inside Machining	Outside Machining		Axial Grooving		
page 104 - 113	page 100 - 101	page 67	page 62	Double Roughing	page 54	page 63	page 54	58 - 59	60 - 61
				Offset Roughing	page 54		page 54	Twin Head Grooving	
				Roughing Finishing Process (RFP)	page 54 - 55	55	page 54 - 55	55	58 - 59
page 65				Single Head Finishing	page 55		page 55	Single Head Grooving	

DIGITEC

Ø 49 - 297 mm

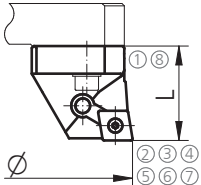
Suporte de insertos para desbaste

Insert holders roughing

Para usinagem interna ou externa
For internal and external machining

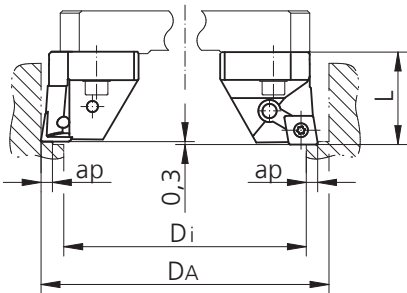
Suporte de insertos
Insert holders

Order Number	Ø-range	L	kg	Inserts	MCM	MCC	Index
W17 02 09 028	49 - 88	28	0,1	CC.. 09T3..	DK2203	CC09	●
W17 01 12 040	87 - 297	40	0,3	CN.. 1204..	DK2201	CN12	●



Suportes de insertos offset para desbaste
Insert holder for offset roughing

Order Number	Ø-range	L	kg	Inserts	a _p	MCM	MCC	Index
WV17 01 12 040	87 - 297	39,7	0,3	CN.. 1204..	4 - 6	DK2201	CN12	●
W17 01 12 040	87 - 297	40	0,3	CN.. 1204..	4 - 6	DK2201	CN12	●



Formula $a_p = \frac{D_A - D_i}{4}$

SPARE PARTS

	①	②	③	④	⑤	⑥	⑦	⑧
W17 02..	C00 02 86		C00 20 02	G00 20 03				G00 02 01
W17 01 (WV)	C00 02 79	Z00 12 02		G00 20 03	A00 12 11	A00 02 17	A00 32 07	G00 02 02

⑥⑦ Não incluído na entrega
Not included in the delivery

Ø 49 - 297 mm

Cabeças micrométricas

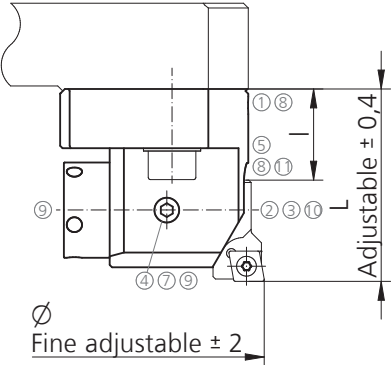
Fine boring heads

Para usinagem interna ou externa
For internal and external machining

Cabeças micrométricas 5 µm/Ø
Fine boring heads 5 µm/Ø

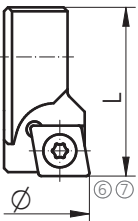
Order Number	Ø-range	L	I	kg	MCM	MCC	Index
23 02 10 028	49 - 88	28	10	0,15	DK2203	2012	●
23 01 30 040-D	87 - 297	40	18	0,4	DK2201	2010	●
23 01 30 040	87 - 297	40	18	0,4	DK2201	2010	●

Com a utilização simultânea de 2 cabeças micrométricas: A_{min} = 53
DigiTec (-D) 1 µm/Ø com display (página 17)
When using of 2 heads simultaneously: A_{min} = 53
DigiTec (-D) 1 µm/Ø with display unit (page 17)



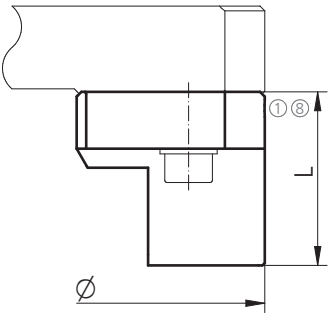
Suporte de insertos para acabamento
Fine boring insert holders

Order Number	Ø-range	L	Inserts	MCM	MCC	Index
W/C20 12 06 000	49 - 88	18	CP..0602../CC..0602..	2012	CP06	●
W/C20 10 06 000	87 - 297	22	CP..0602../CC..0602..	2010	CP06	●
W20 12 06 000	49 - 88	18	CC..0602..	2012	CC06	●
W20 10 06 000	87 - 297	22	CC..0602..	2010	CC06	●
WW20 12 06 000	49 - 88	18	Wiper CC..0602..	2012	CC06	●
WW20 10 06 000	87 - 297	22	Wiper CC..0602..	2010	CC06	●



Contrapeso
Counter weights

Order Number	Ø-range	L	kg	MCM	Index
23 02 10 024	49 - 88	28	0,1	DK2203	●
23 01 10 036	87 - 297	40	0,3	DK2201	●

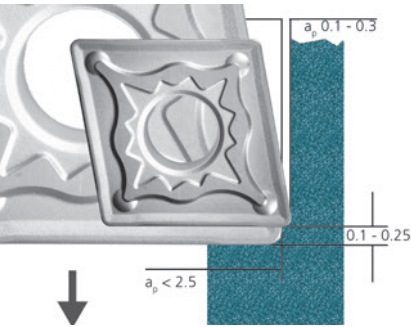


SPARE PARTS

Ø-range	①	②	③	④	⑤	⑥	⑦	⑧	⑨	⑩	⑪
49 - 88	C00 02 86	C00 22 56	K00 02 44	C00 25 01	Z00 23 02		G00 20 07	G00 02 01	G00 02 03		
87 - 297	C00 02 79	C00 22 11	K00 02 01	C00 07 01	Z00 23 02			G00 02 02	G00 02 03	G00 02 04	G00 02 01
W..20						C00 20 01	G00 20 05				

Ø 49 - 297 mm	IntraMax
Ø 49 - 297 mm	MegaMax
Ø 500 - 2'400 mm	SuperMegaMax

Desbaste e acabamento simultâneo (RFP)
Simultaneous single-pass rough and finish (RFP)



Ajuste das lâminas de desbaste e acabamento para RFP
Presetting of roughing and finishing cutting edge



IntraMax configurada para RFP
IntraMax RFP combination

Para desbaste e acabamento simultâneo a ferramenta é preparada com defasagem radial e axial nos insertos. Reduz o tempo de usinagem radicalmente.
(RFP = Roughing-Finishing-Process / processo de desbaste e acabamento)

Pode ser aplicado com os sistemas IntraMax e MegaMax/SuperMegaMax RFP compreendendo uma gama de diâmetros de 49 a 2'400 mm. Recomendamos que a profundidade de corte para o inserto de desbaste em aço seja de a_p 2,5 mm.

- Outras vantagens:
- menor investimento com ferramentas
 - tempo de usinagem menor
 - excelente acabamento
 - tolerâncias IT7 em um ciclo

Simultaneous single-pass roughing and finishing requires radial and axial boring head offset. Cutting time is dramatically reduced.
(RFP = Roughing-Finishing-Process)

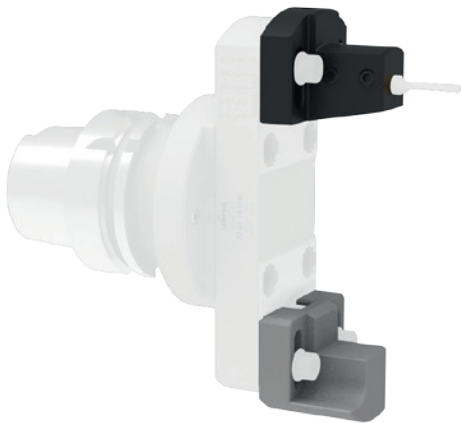
On both systems IntraMax and MegaMax/ SuperMegaMax RFP can be applied and covers the entire diameter range from 49 to 2'400 mm. Recommended cutting depth on the roughing insert is a_p 2,5 mm for steel.

- Further advantages:
- reduced tooling investment
 - shorter cutting time
 - high surface quality
 - IT7 tolerances in one pass

Ø 5 - 45 mm

Canais axiais

Face grooving



Suporte de insertos

Insert holder

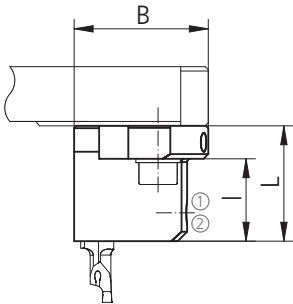
Canais externos

Outer groove

Order Number	L	I	B	Type	Index
BKT105.U90K.01	24,5	17,5	28,5	R105	●

A partir de Ø D_{amin} = 2x (6 mm + f_{inserto}) dois suportes de insertos podem ser usados simultaneamente (veja páginas 60 e 61). Para menores que D_{amin}, somente poderá ser montado um suporte de inserto em conjunto com o contrapeso.

From Ø D_{amin} = 2x (6 mm + f_{insert}) two insert holders can be used simultaneously (f see pages 60 and 61). For smaller D_{amin}, only one insert holder plus counter weight can be used together.



Extensões

Diameter extender

Order Number	Ø-range	Page	Insert holder	Index
1)	5 - 18	65 - 66		●
22 03 06 012	18 - 31	62	BKT105.U90K.01	●
22 03 07 012	31 - 45	62		●

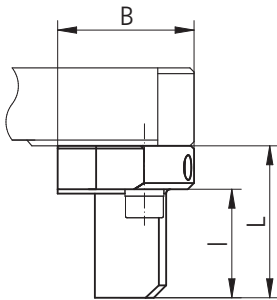
1) Diretamente no adaptador integrado ou intermediário (páginas 65 - 67)

Direct via basic holder or intermediate adaptor (pages 65 - 67)

Contrapeso

Counter weight

Order Number	L	I	B	Index
020.U00K.2040	24,5	17,5	22	●



SPARE PARTS

	①	②
BKT105. ...	6.075T15	G00 20 035

Ø 31 - 242 mm

Suporte de insertos

Insert holder

Canais externos

Outer groove

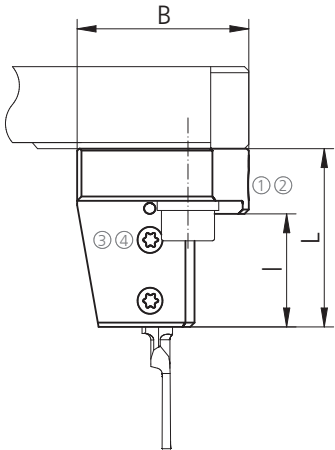
Order Number	L	I	B	Type	Index
BKT105.U90G.01 1)	36,4	24,4	39,5	R105	●
BKT110.U17G.02 2)	41	26	39,5	RA110	●

1) A partir de Ø D_{amin} = 2x (6 mm + f_{inserto}) dois suportes de insertos podem ser usados simultaneamente (veja páginas 60 e 61). Para menores que D_{amin}, somente poderá ser montado um suporte de inserto em conjunto com o contrapeso.

From Ø D_{amin} = 2x (6 mm + f_{insert}) two insert holders can be used simultaneously (f see pages 60 and 61). For smaller D_{amin}, only one insert holder plus counter weight can be used together.

2) A partir de Ø D_{amin} = 2x (13,5 mm + f_{inserto}) dois suportes de insertos podem ser usados simultaneamente (veja página 61). Para menores que D_{amin}, somente poderá ser montado um suporte de inserto em conjunto com o contrapeso.

From Ø D_{amin} = 2x (13,5 mm + f_{insert}) two insert holders can be used simultaneously (f see page 61). For smaller D_{amin}, only one insert holder plus counter weight can be used together.



Extensões

Diameter extender

Order Number	Ø-range	Page	Insert holder	Index
1)	31 - 61	65 - 66		●
22 01 11 018	61 - 91	62		●
22 01 14 018	91 - 122	62	BKT105.U90G.01	●
22 01 17 018	122 - 152	62	BKT110.U17G.02	●
22 01 20 023	152 - 182	62		●
22 01 23 023	182 - 212	62		●
22 01 26 028	212 - 242	62		●

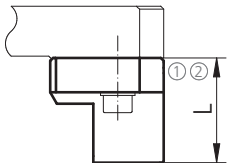
1) Diretamente no adaptador integrado ou intermediário (páginas 65 - 67)

Direct via basic holder or intermediate adaptor (pages 65 - 67)

Contrapeso

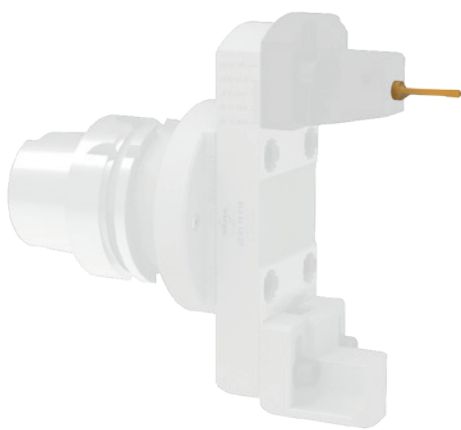
Counter weight

Order Number	Ø-range	L	kg	MCM	Index
23 01 10 036	31 - 242	40	0,3	DK2201	●



SPARE PARTS

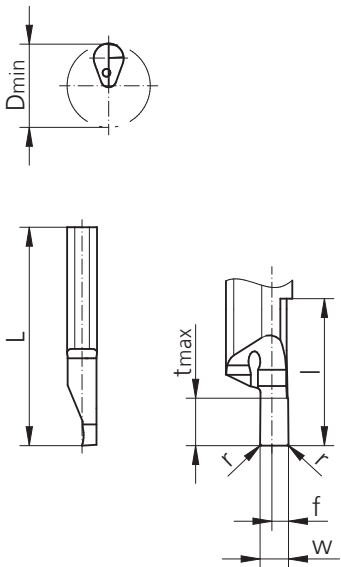
Ø-range	①	②	③	④
31 - 242	C00 02 79	G00 02 02	6.075T15	G00 20 030



Canais axiais (sistema HORN-URMA)
Face grooving (system HORN-URMA)

Insertos modelo 105...8
Inserts type 105...8

Order Number	W ^{+0.05}	f	r	L	l	t _{max}	D _{min}	Type	Classe do metal duro		
									Carbide grades	Index	
R105.0510.1.8	1,0	2,0	0,05	25	10	2,0	5,0	BKT105...	●	●	●
R105.0515.1.8	1,5	2,0	0,05	25	10	3,0	5,0	BKT105...	●	●	●
R105.0520.1.8	2,0	2,0	0,05	25	10	5,0	5,0	BKT105...	●	●	●
R105.0510.2.8	1,0	2,0	0,05	35	15	2,0	5,0	BKT105...	●	●	●
R105.0515.2.8	1,5	2,0	0,05	35	15	3,0	5,0	BKT105...	●	●	●
R105.0520.2.8	2,0	2,0	0,05	35	15	5,0	5,0	BKT105...	●	●	●
R105.0610.1.8	1,0	2,0	0,05	25	10	2,0	6,0	BKT105...	●	●	●
R105.0615.1.8	1,5	2,0	0,05	25	10	3,0	6,0	BKT105...	●	●	●
R105.0620.1.8	2,0	2,0	0,05	25	10	5,0	6,0	BKT105...	●	●	●
R105.0610.2.8	1,0	2,0	0,05	35	15	2,0	6,0	BKT105...	●	●	●
R105.0615.2.8	1,5	2,0	0,05	35	15	3,0	6,0	BKT105...	●	●	●
R105.0620.2.8	2,0	2,0	0,05	35	15	5,0	6,0	BKT105...	●	●	●
R105.0810.1.8	1,0	2,0	0,15	25	10	2,0	8,0	BKT105...	●	●	●
R105.0815.1.8	1,5	2,0	0,15	25	10	3,0	8,0	BKT105...	●	●	●
R105.0820.1.8	2,0	2,0	0,15	25	10	4,0	8,0	BKT105...	●	●	●
R105.0825.1.8	2,5	2,0	0,15	25	10	5,0	8,0	BKT105...	●	●	●
R105.0830.1.8	3,0	2,0	0,15	25	10	6,0	8,0	BKT105...	●	●	●
R105.0810.2.8	1,0	2,0	0,15	35	15	2,0	8,0	BKT105...	●	●	●
R105.0815.2.8	1,5	2,0	0,15	35	15	3,0	8,0	BKT105...	●	●	●
R105.0820.2.8	2,0	2,0	0,15	35	15	4,0	8,0	BKT105...	●	●	●
R105.0825.2.8	2,5	2,0	0,15	35	15	5,0	8,0	BKT105...	●	●	●
R105.0830.2.8	3,0	2,0	0,15	35	15	6,0	8,0	BKT105...	●	●	●



MG12
Metal duro sem cobertura para baixa velocidade de corte em aço, ferro fundido e metais não ferrosos

TI25
Metal duro com cobertura TiCN para média velocidade de corte em aço, ferro fundido e metais não ferrosos

Outras dimensões e perfis sob consulta

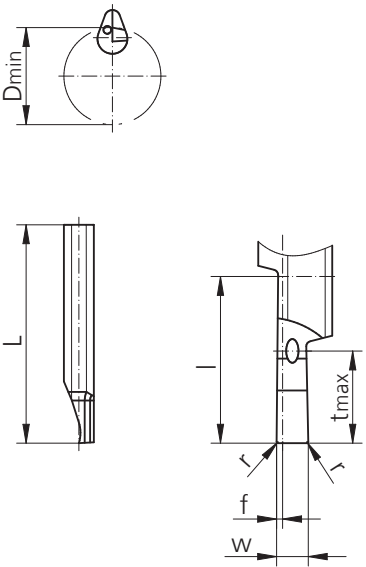
MG12
Uncoated carbide for low cutting speed in steel, cast iron and non-ferrous metals

TI25
TiCN coated carbide for medium cutting speed in steel and non-ferrous metals

Further dimension and insert profiles on demand

Insertos modelo 105...9
Inserts type 105...9

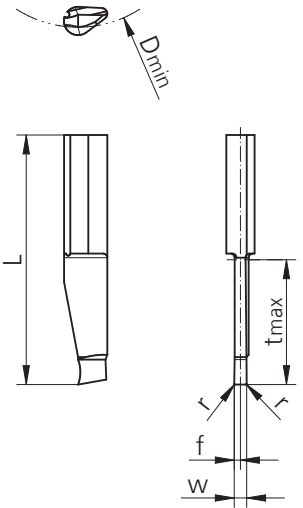
Order Number	W ^{+0.05}	f	r	L	l	t _{max}	D _{min}	Type	Classe do metal duro		
									Carbide grades	Index	
R105.0810.1.9	1,0	0,4	0,15	25	10	2,0	8,0	BKT105...	●	●	●
R105.0815.1.9	1,5	0,4	0,15	25	10	3,0	8,0	BKT105...	●	●	●
R105.0820.1.9	2,0	0,4	0,15	25	10	4,0	8,0	BKT105...	●	●	●
R105.0825.1.9	2,5	0,4	0,15	25	10	5,0	8,0	BKT105...	●	●	●
R105.0830.1.9	3,0	0,4	0,15	25	10	6,0	8,0	BKT105...	●	●	●



Insertos modelo A110
Inserts type A110

Order Number	W ^{+0.05}	f	r	L	t _{max}	D _{min}	Type	Classe do metal duro		
								Carbide grades	Index	
RA110.2030.3.0	3,0	1,5	0,2	50	20	20 - 50*	BKT110...	●	●	●
RA110.2030.5.0	3,0	1,5	0,2	60	30	20 - 50*	BKT110...	●	●	●
RA110.5030.3.0	3,0	1,5	0,2	50	20	>50	BKT110...	●	●	●
RA110.5030.5.0	3,0	1,5	0,2	60	30	>50	BKT110...	●	●	●

* Canais com corte máximo em espessura e profundidade somente possível para D_a = 20 - 50 mm
Face grooving with full width to the full depth only possible between D_a = 20 - 50 mm



Ø 49 - 297 mm

Extensões

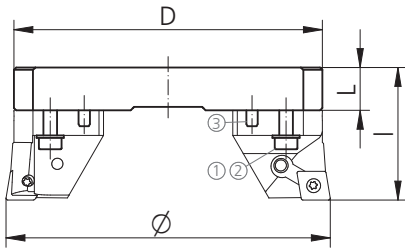
Diameter extenders



Extensões Ø 49 - 88 mm
Diameter extenders

Order Number	Ø-range	L	I	D	kg	MCM	MCC	Index
1)	49 - 62							●
22 03 06 012	62 - 75	12	40	59	0,2	Z2203	DK2203	●
22 03 07 012	75 - 88	12	40	72	0,3	Z2203	DK2203	●

- 1) **Diretamente no adaptador integrado ou intermediário (páginas 65 - 67)**
Direct via basic holder or intermediate adaptor (pages 65 - 67)



Extensões Ø 87 - 297 mm
Diameter extenders

Order Number	Ø-range	L	I	D	kg	MCM	MCC	Index
1)	87 - 117						DK2201	●
22 01 11 018	117 - 147	18	58	110	0,8	Z2201	DK2201	●
22 01 14 018	147 - 177	18	58	140	1	Z2201	DK2201	●
22 01 17 018	177 - 207	18	58	170	1,2	Z2201	DK2201	●
22 01 20 023	207 - 237	23	63	200	1,6	Z2201	DK2201	●
22 01 23 023	237 - 267	23	63	230	1,9	Z2201	DK2201	●
22 01 26 028	267 - 297	28	63	260	2,6	Z2201	DK2201	●

- 1) **Diretamente no adaptador integrado ou intermediário (páginas 65 - 67)**
Direct via basic holder or intermediate adaptor (pages 65 - 67)

SPARE PARTS

Ø-range	①	②	③
49 - 88	C00 22 05	K00 02 01	C00 12 08
87 - 297	C00 22 02	K00 02 20	C00 12 61

Ø 9 - 249 mm

Adaptador intermediário para usinagem externa

Intermediate adaptors for external machining

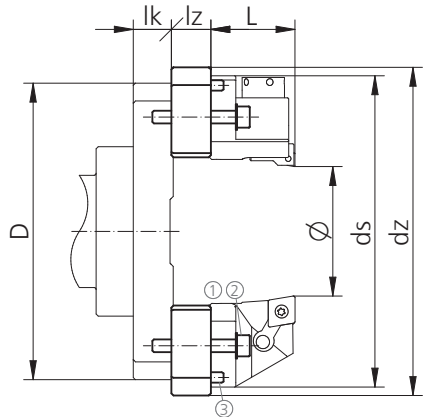
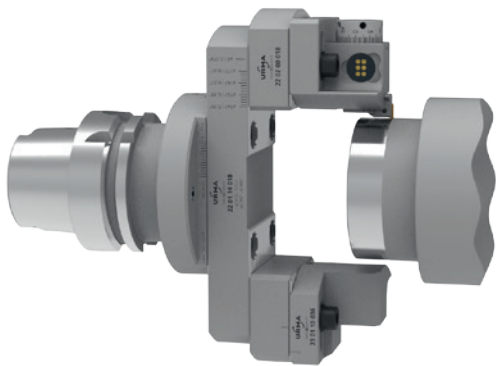


Adaptadores intermediários Ø 9 - 35 mm
Intermediate adaptors

Order Number	Ø-range	D	dz	ds	L	lz	lk	kg	Diameter extender	MCM	MCC	Index
22 04 00 012	9 - 22	59	74	Ø + 56 mm	28	12	12	0,1	22 03 06 012	DK2203	DK2203	●
22 04 00 012	22 - 35	72	87	Ø + 56 mm	28	12	12	0,1	22 03 07 012	DK2203	DK2203	●

Adaptadores intermediários Ø 9 - 249 mm
Intermediate adaptors

Order Number	Ø-range	D	dz	ds	L	lz	lk	kg	Diameter extender	MCM	MCC	Index
22 02 00 018	9 - 39	110	125	Ø + 100 mm	40	18	18	0,25	22 01 11 018	DK2201	DK2201	●
22 02 00 018	39 - 69	140	155	Ø + 100 mm	40	18	18	0,25	22 01 14 018	DK2201	DK2201	●
22 02 00 018	69 - 99	170	185	Ø + 100 mm	40	18	18	0,25	22 01 17 018	DK2201	DK2201	●
22 02 00 018	99 - 129	200	215	Ø + 100 mm	40	18	23	0,25	22 01 20 023	DK2201	DK2201	●
22 02 00 018	129 - 159	230	245	Ø + 100 mm	40	18	23	0,25	22 01 23 023	DK2201	DK2201	●
22 02 00 018	159 - 189	260	275	Ø + 100 mm	40	18	28	0,25	22 01 26 028	DK2201	DK2201	●
22 02 00 018	189 - 219	290	305	Ø + 100 mm	40	18	28	0,25	22 01 29 028	DK2201	DK2201	●
22 02 00 018	219 - 249	320	335	Ø + 100 mm	40	18	28	0,25	22 01 32 028	DK2201	DK2201	●



SPARE PARTS

Ø-range	①	②	③
9 - 35	C00 22 05	K00 02 01	C00 12 08
9 - 249	C00 22 74	K00 02 20	C00 12 61

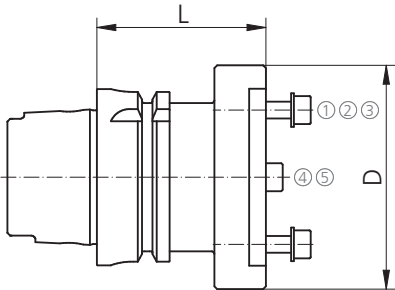
Ø 49 - 297 mm

Adaptadores integrados
Direct adaptors



Adaptadores integrados
Direct adaptors

Order Number		Ø-range	D	L	kg	MCC	Index
D11 41 03 052	SK40 / A	49 - 88	46	52	1,2	Z2203	●
H11 43 03 052	SK40 / B	49 - 88	46	52	1,2	Z2203	●
T11 41 03 052	MAS-BT40	49 - 88	46	52	1,3	Z2203	●
HSKA11 63 03	HSKA-63	49 - 88	46	60	1,3	Z2203	●
D11 41 01 054	SK40 / A	87 - 297	80	54	1,4	Z2201	●
H11 43 01 054	SK40 / B	87 - 297	80	54	1,4	Z2201	●
T11 41 01 054	MAS-BT40	87 - 297	80	54	1,5	Z2201	●
HSKA11 63 01	HSKA-63	87 - 297	80	60	1,4	Z2201	●



SPARE PARTS

Ø-range					
49 - 88	C00 22 05	K00 02 01	G00 02 04		C00 12 08
87 - 207	C00 22 02	K00 02 20	G00 02 06	Z00 21 20	

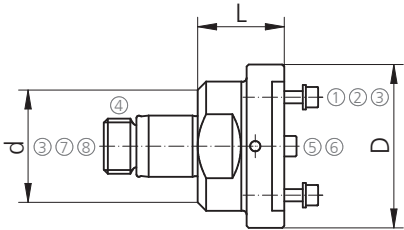
Ø 49 - 297 mm

Adaptadores intermediários
Intermediate adaptors



Adaptadores intermediários
Intermediate adaptors

Alpha	Order Number	Ø-range	L	D	d	kg	MCM	MCC	Index
42	21 42 46 036	49 - 88	36	46	42	0,5	42	Z2203	●
55	21 55 80 042	87 - 297	42	80	55	0,8	55	Z2201	●



SPARE PARTS

Ø-range	①	②	③	④	⑤	⑥	⑦	⑧
49 - 88	C00 22 05	K00 02 01	G00 02 04	Z00 22 42		C00 12 08	G00 02 07	
87 - 297	C00 22 02	K00 02 20	G00 02 06	Z00 27 55	Z00 21 20		G00 02 08	G00 02 05

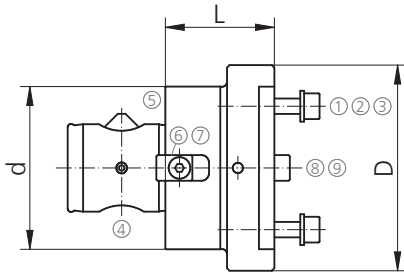
Ø 49 - 297 mm

Adaptadores intermediários
Intermediate adaptors



Adaptadores intermediários
Intermediate adaptors

Beta	Order Number	Ø-range	L	D	d	kg	MCM	MCC	Index
40	B21 40 46 036	49 - 88	36	46	42	0,5	B40	Z2203	●
63	B21 63 80 042	87 - 297	42	80	63	0,8	B63	Z2201	●



SPARE PARTS

Ø-range	①	②	③	④	⑤	⑥	⑦	⑧	⑨
49 - 88	C00 22 05	K00 02 01	G00 02 04	Z00 40 21	Z00 40 23	Z00 40 25	C00 22 58		C00 12 08
87 - 297	C00 22 02	K00 02 20	G00 02 06	Z00 63 21	Z00 63 23	Z00 63 25	C00 22 05	Z00 21 20	

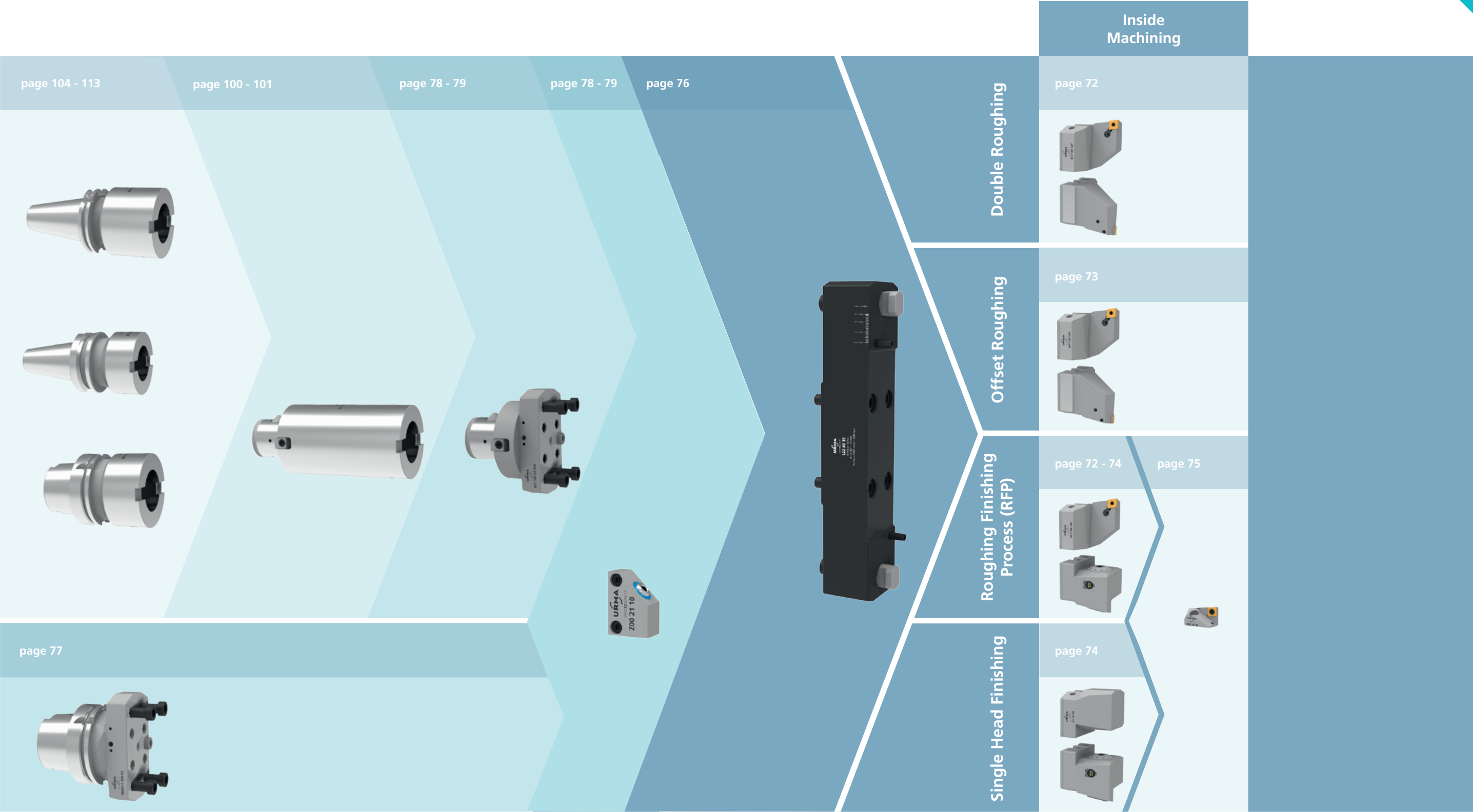
URMA Systems
MegaMax

Ø 150 - 805 mm

Ø 150 - 805 mm

MegaMax

DIGITEC



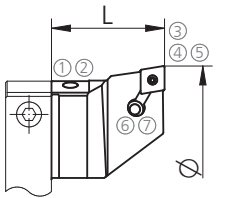
Ø 150 - 805 mm	MegaMax
Ø 500 - 2'400 mm	SuperMegaMax

Suporte de insertos
Insert holders



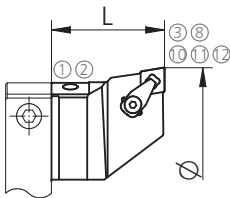
Suporte de insertos 90°
Insert holders 90°

Order Number	Ø-range	L	kg	Inserts	MCM	MCC	Index
W17 00 12P	150 - 2400	75	1,5	CN.. 1204..	K00	CN12	●
W17 00 16P	150 - 2400	75	1,5	CN.. 1606..	K00	CN16	●



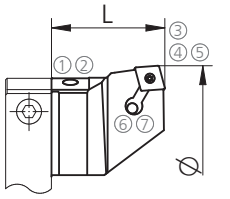
Suporte para insertos em cerâmica 90°
Insert holders 90° for ceramic inserts

Order Number	Ø-range	L	kg	Inserts	MCM	MCC	Index
K17 00 16	150 - 2400	75	1,5	CN.. 1607..	K00	CN1607	●



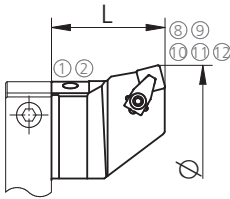
Suporte de insertos 75°
Insert holders 75°

Order Number	Ø-range	L	kg	Inserts	MCM	MCC	Index
W19 00 16P	150 - 2400	75	1,5	CN.. 1606..	K00	CN16	●



Suporte para insertos em cerâmica 75°
Insert holders 75° for ceramic inserts

Order Number	Ø-range	L	kg	Inserts	MCM	MCC	Index
K19 00 15	150 - 2400	75	1,5	SN.. 1507..	K00	SN15	●



⑥⑦ Não incluído na entrega
Not included in the delivery

SPARE PARTS

												
CN.. 1204..	C00 02 17	G00 02 06	A00 12 11	Z00 12 02	G00 20 03	A00 02 17	A00 32 07					G00 02 04
CN.. 1606..	C00 02 17	G00 02 06	A00 12 12	Z00 16 03	G00 20 03	A00 02 16	A00 32 08					
CN.. 1607..	C00 02 17	G00 02 06	A00 12 18					G00 02 05		A00 02 15	A00 42 05	G00 02 04
SN.. 1507..	C00 02 17	G00 02 06						G00 02 05	A00 12 06	A00 02 14	A00 42 05	G00 02 04

Ø 150 - 805 mm	MegaMax
Ø 500 - 2'400 mm	SuperMegaMax

Suportes de insertos offset para desbaste
Insert holders for offset roughing



Insertos deslocados no diâmetro e altura
Equilíbrio no esforço de corte por inserto
Dobro da capacidade na profundidade de corte
Inserts offset in diameter and height
Equal chip load
Double cutting depth capacity

Suporte de insertos 90°
Insert holders 90°

Order Number	Ø-range	L	kg	Inserts	a _p	MCM	MCC	Index
W17 00 12P	150 - 2400	75,0	1,5	CN.. 1204..	6	K00	CN12	●
WV17 00 12P	150 - 2400	74,5	1,5	CN.. 1204..	6	K00	CN12	●
W17 00 16P	150 - 2400	75,0	1,5	CN.. 1606..	8	K00	CN16	●
WV17 00 16P	150 - 2400	74,5	1,5	CN.. 1606..	8	K00	CN16	●
K17 00 16*	150 - 2400	75,0	1,5	CNMX 1607.. T..	8	K00	CN1607	●
KV17 00 16*	150 - 2400	74,5	1,5	CNMX 1607.. T..	8	K00	CN1607	●

* para insertos cerâmicos com travamento Ceramtec
for ceramic inserts with Ceramtec notch type clamping

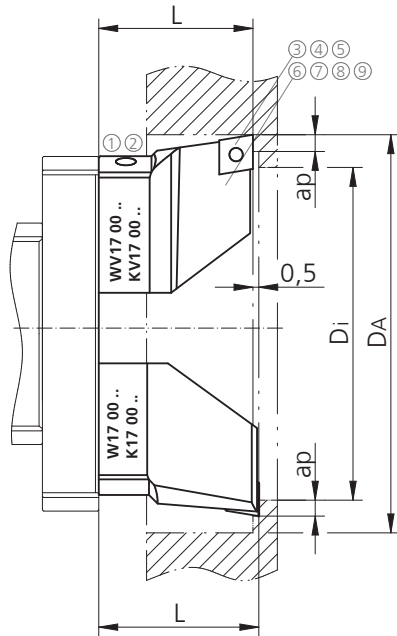
Formula

$$a_p = \frac{D_A - D_i}{4}$$

⑥⑦ Não incluído na entrega
Not included in the delivery

SPARE PARTS

	①	②	③	④	⑤	⑥	⑦	⑧	⑨
									
CN.. 1204..	C00 02 17	G00 02 06	A00 12 11	Z00 12 02	G00 20 03	A00 02 17	A00 32 07		
CN.. 1606..	C00 02 17	G00 02 06	A00 12 12	Z00 16 03	G00 20 03	A00 02 16	A00 32 08		
CN.. 1607..	C00 02 17	G00 02 06	A00 12 18					A00 42 05	A00 02 15



Ø 150 - 805 mm	MegaMax
Ø 500 - 2'400 mm	SuperMegaMax

Cabeça micrométrica
Fine boring head

Cabeça micrométrica 1 µm/ø *
Fine boring head 1 µm/ø *

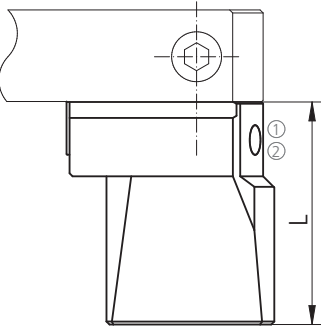
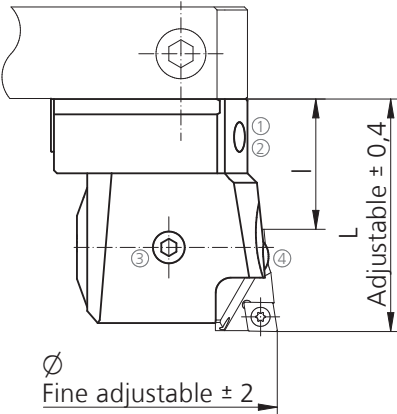
Order Number	Ø-range	L	I	kg	MCM	MCC	Index
23 00 30-D	150 - 2400	77	42	2,3	K00	DK2200	●
23 00 30	150 - 2400	77	42	2,3	K00	DK2200	●

Indicador digital para cabeçotes micrométricos página 17
DigiTec display unit for digital fine boring heads page 17

* Somente na versão DigiTec (-D) conectado ao display (página 17)
caso contrário ajustável 10 µm/ø
Only with DigiTec version (-D) in connection with the display (page 17)
otherwise 10 µm/ø adjustable

Contrapeso
Counter weight

Order Number	Ø-range	L	kg	MCM	Index
23 10 20	150 - 2400	64	2,3	K00	●



SPARE PARTS

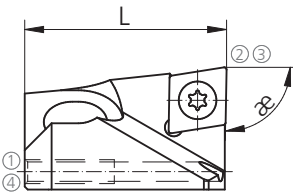
①	②	③	④
C00 02 17	G00 02 06	Z00 23 01	C00 23 01

Ø 150 - 805 mm	MegaMax
Ø 500 - 2'400 mm	SuperMegaMax

Suporte de insertos para acabamento
Fine boring insert holders

Suporte de insertos 90°
Insert holders 90°

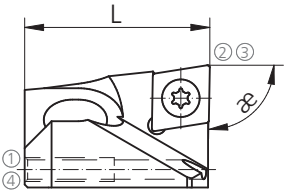
Order Number	Ø-range	L	Inserts	æ	MCM	MCC	Index
W/C20 00 06	150 - 2400	34	CP../CC.. 0602..	90	DK2200	CP06	●
W20 00 09	150 - 2400	34	CC.. 09T3..	90	DK2200	CC09	●
WW20 00 09	150 - 2400	34	WIPER CC.. 09T3	95	DK2200	CC09	●



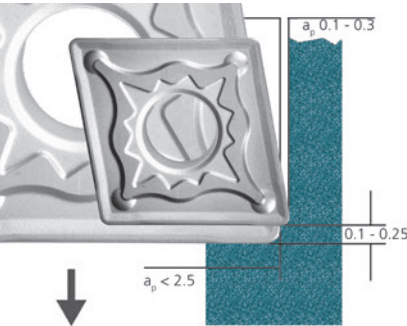
Para desbaste e acabamento simultâneo (RFP)
For simultaneous roughing and finishing (RFP)

Suporte de insertos RFP 90°
RFP Insert holders 90°

Order Number	Ø-range	L	Inserts	æ	MCM	MCC	Index
W20 00 09RFP	150 - 2400	31	CC.. 09T3..	90	DK2200	CC09	●
WW20 00 09RFP	150 - 2400	31	WIPER CC.. 09T3	95	DK2200	CC09	●



RFP = Roughing-Finishing-Process



Ajuste das lâminas de desbaste e acabamento para RFP
Descrição veja página 57
Presetting of roughing and finishing cutting edge
Description see page 57

Para trabalhos em conjunto com o suporte de inserto de desbaste W17 00 12P (página 72)
Simultaneously applicable with roughing insert holder W17 00 12P (page 72)

SPARE PARTS

				
CP../CC.. 0602..	G00 02 02	C00 20 01	G00 20 05	C00 02 12
CC.. 09T3..	G00 02 02	C00 20 02	G00 20 03	C00 02 12

Ø 150 - 805 mm

Extensões

Diameter extenders

Extensões em aço

Diameter extenders made of steel

Order Number	Ø-range	L	I	D	kg	MCM	MCC	Index
22 00 13	150 - 205	30	105	130	1,8	Z2200	K00	●
22 00 18	200 - 255	30	105	180	2,6	Z2200	K00	●
22 00 23	250 - 305	35	110	230	4	Z2200	K00	●

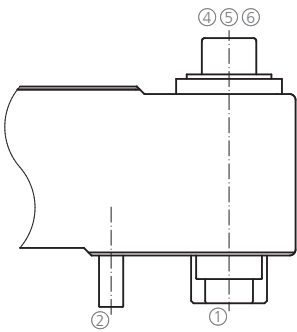
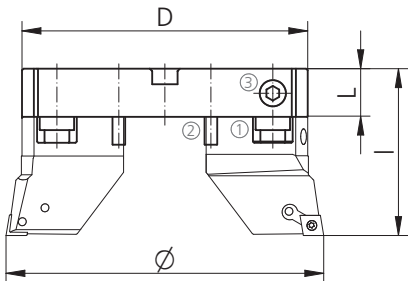
Outras dimensões disponíveis sob consulta

further dimensions available on request

Extensões em alumínio

Diameter extenders made of aluminium

Order Number	Ø-range	L	I	D	kg	MCM	MCC	Index
L22 00 23	250 - 305	55	130	230	2,8	Z2200	K00	●
L22 00 28	300 - 355	55	130	280	3,3	Z2200	K00	●
L22 00 33	350 - 405	55	130	330	3,8	Z2200	K00	●
L22 00 38	400 - 455	55	130	380	4,3	Z2200	K00	●
L22 00 43	450 - 505	55	130	430	4,8	Z2200	K00	●
L22 00 48	500 - 555	65	140	480	6,1	Z2200	K00	●
L22 00 53	550 - 605	65	140	530	6,7	Z2200	K00	●
L22 00 58	600 - 655	65	140	580	7,3	Z2200	K00	●
L22 00 63	650 - 705	65	140	630	8,9	Z2200	K00	●
L22 00 68	700 - 755	65	140	680	9,6	Z2200	K00	●
L22 00 73	750 - 805	65	140	730	10,2	Z2200	K00	●



a partir de Ø = 250
from Ø = 250

SPARE PARTS

D	①	②	③	④	⑤	⑥
130-180	Z00 22 24	Z00 22 21	Z00 22 23			
230 steel	Z00 22 16	Z00 22 21		Z00 22 15	C00 24 04	K00 02 06
230-280	Z00 22 16	Z00 22 21		Z00 22 15	C00 24 04	K00 02 06
480-805	Z00 22 16	Z00 22 21		Z00 22 15	C00 26 09	K00 02 06

Ø 150 - 805 mm

Adaptadores integrados

Direct adaptors

DIN 69871-A/D

Order Number	◀	L	D	kg	MCC	Index
D11 50 02	50	85	130	5,6	Z2200	●

DIN 69871B

Order Number	◀	L	D	kg	MCC	Index
H11 53 02	50	85	130	5,6	Z2200	●

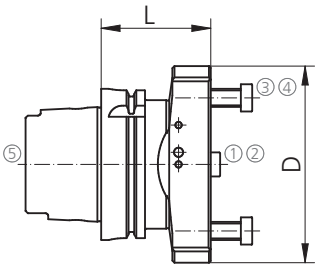
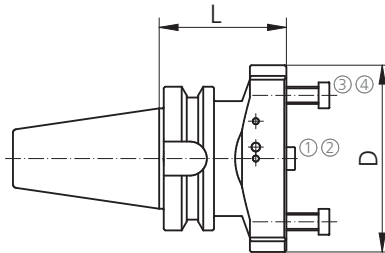
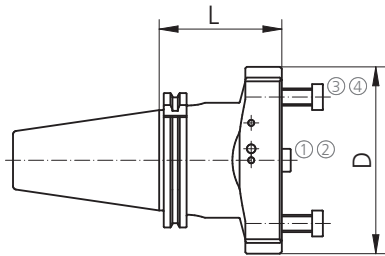
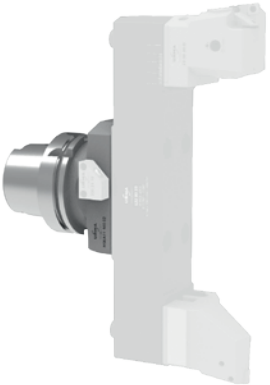
MAS-BT

Order Number	◀	L	D	kg	MCC	Index
T11 51 02	50	88	130	5,6	Z2200	●

DIN 69893A HSK

Order Number	◀	L	D	kg	MCC	Index
HSKA11 100 02*	100	72	130	4,4	Z2200	●

* Tubo para líquido refrigerante não incluso
Coolant tube is not included



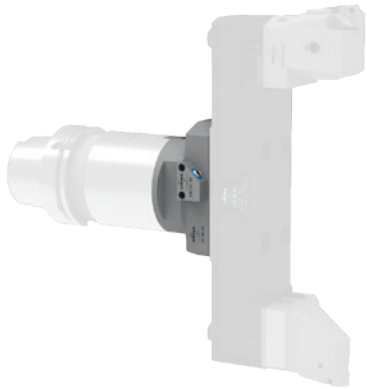
SPARE PARTS

①	②	③	④	⑤
Z00 21 02	C00 22 27	C00 22 03	G00 02 19	H00 100 01

Bico para refrigeração veja páginas 78 - 79
Coolant nozzle see pages 78 and 79

Ø 150 - 805 mm

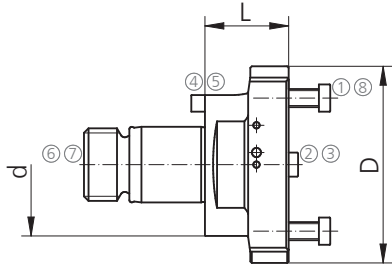
Adaptador intermediário
Intermediate adaptors



Adaptador intermediário
Intermediate adaptors

Alpha	Order Number	L	D	d	MCM	MCC	Index
94	21 94 01	55	130	94	94	Z2200	●

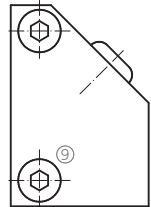
⑦ Não incluído na entrega
Not included in the delivery



Bico para refrigeração
Coolant nozzle

Alpha	Order Number	MCC	Index
94	Z00 21 10	Z0021	●

Necessárias2 peças a cada adaptador intermediário
2 pieces per intermediate adaptor necessary



SPARE PARTS

Alpha	①	②	③	④	⑤	⑥	⑦	⑧	⑨
94	C00 22 03	Z00 21 02	C00 22 27	Z00 00 94	C00 24 17	Z00 14 96	53 74 96	G00 02 19	C00 22 05

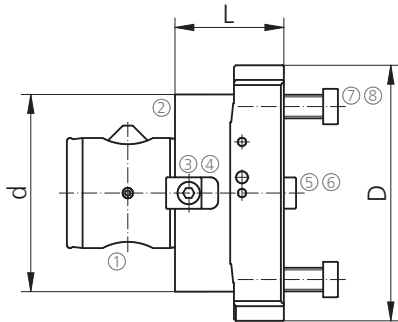
Ø 150 - 805 mm

Adaptador intermediário
Intermediate adaptors



Adaptador intermediário
Intermediate adaptors

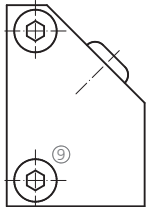
Beta	Order Number	L	D	d	kg	MCM	MCC	Index
100	B21 100 01 055	55	130	100	4,7	B100	Z2200	●



Bico para refrigeração
Coolant nozzle

Beta	Order Number	MCC	Index
100	Z00 21 10	Z0021	●

Necessárias2 peças a cada adaptador intermediário
2 pieces per intermediate adaptor necessary



SPARE PARTS

Beta	①	②	③	④	⑤	⑥	⑦	⑧	⑨
100	Z00 100 21	Z00 100 23	Z00 100 25	C00 22 71	Z00 21 02	C00 22 27	C00 22 03	G00 02 19	C00 22 05

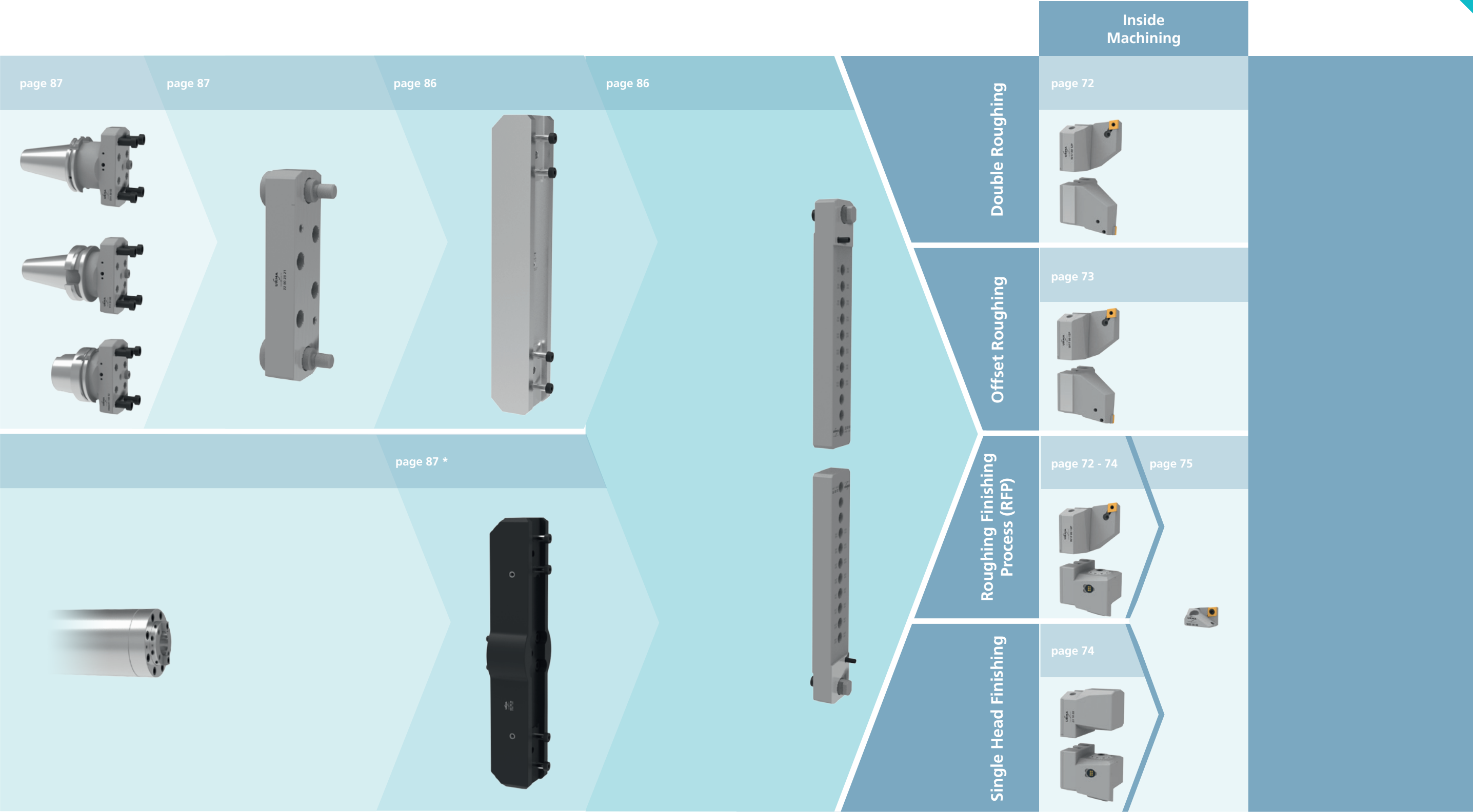
URMA Systems
SuperMegaMax

Ø 500 - 2'400 mm

Ø 500 - 2'400 mm

SuperMegaMax

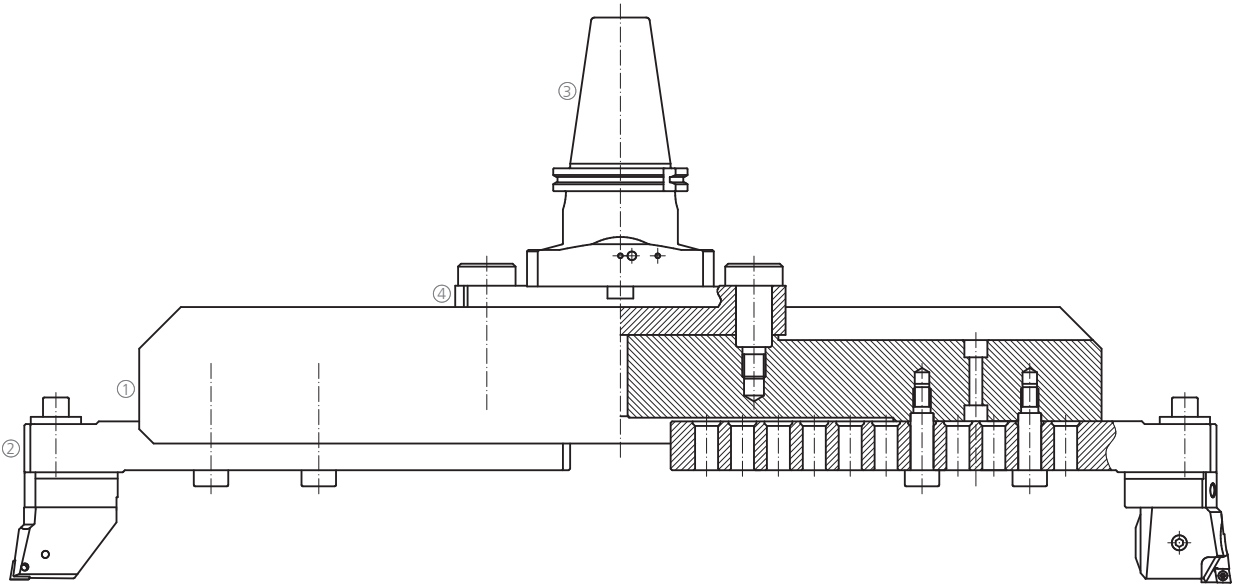
DIGITEC



* a solicitud; certifique de que a ferramenta tenha uma fixação segura no eixo árvore
on request; it is highly recommended to bolt the tools to the spindle nose

Ø 500 - 2'400 mm

Montagem SuperMegaMax
Assembling SuperMegaMax



- ① **Adaptador (alumínio)**
Adaptor (aluminium)
- ② **Extensão**
Diameter extender
- ③ **Porta Ferramentas**
Tool holder
- ④ **Extensão com trava especial**
Diameter extender with special lock stud

solicite dados de corte
cutting data on request

Ø 500 - 2'400 mm



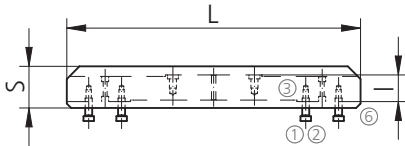
Travessas em alumínio / extensões

Adaptor / Diameter extender

Adaptador (alumínio)

Adaptor (aluminium)

Order Number	Ø-range	L	I	S	kg	Index
21 20 05 *	500 - 700	350	50	65	6	●
21 20 07 *	700 - 900	550	60	75	12	●
21 20 10	800 - 1200	670	60	95	17	●
21 20 11	1200 - 1600	1070	60	95	28	●
21 20 12	1600 - 2000	1470	115	150	64	●
21 20 13	2000 - 2400	1870	115	150	81.5	●

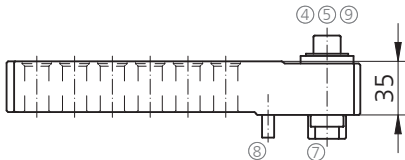


* Montado diretamente no porta ferramentas
Directly assembled to the tool holder

Extensão

Diameter extender

Order Number	Ø-range	kg	Index
22 00 05	500 - 900	6.3	●
22 20 10	800 - 2400	8	○



Informações sobre suporte de insertos p. 72, indicador digital pag. 17, cabeçotes micrométricos pag. 74, suporte de insertos para cabeçotes micrométricos pag. 75, contra eso pag. 74 e tubo de refrigeração pag. 78

Information about insert holder p. 72, display unit p. 17, fine boring heads p. 74, fine boring insert holders p. 75, counterweight p. 74 and coolant nozzle p. 78

SPARE PARTS

	①	②	③	④	⑤	⑥	⑦	⑧	⑨
21 20 05	G00 02 08	C00 23 02							
21 20 07	G00 02 08	C00 23 02							
21 20 10	G00 02 08	C00 23 02							
21 20 11	G00 02 08	C00 23 02							
21 20 12	G00 02 08	C00 23 02	C00 96 13	C00 23 48	Z00 21 13	22 20 13			
21 20 13	G00 02 08	C00 23 02	C00 96 13	C00 22 92	Z00 21 13	22 20 13			
22 00 05				C00 24 04	Z00 22 15		Z00 22 16	Z00 22 21	K00 02 06
22 20 10				C00 24 04	Z00 22 15		Z00 22 16	Z00 22 21	K00 02 06

Ø 500 - 2'400 mm



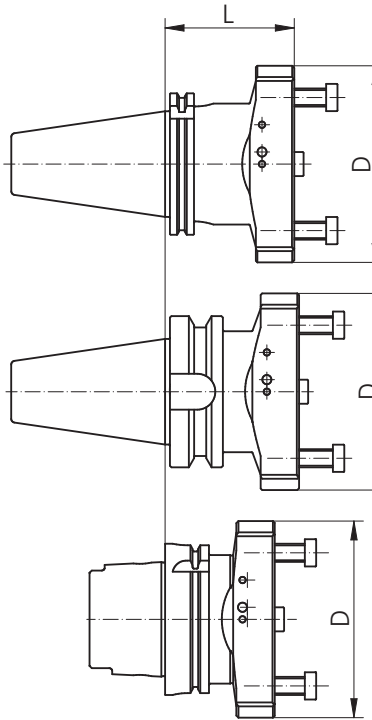
Adaptadores Integrados / extensões

Tool holder / Diameter extender

Porta Ferramentas *

Tool holder *

Order Number	Ø-range		L	D	kg	Index
D11 50 02	500 - 2400	DIN 69871 A	50	85	130	5.6 ●
H11 53 02	500 - 2400	DIN 69871 B	50	85	130	5.6 ●
T11 51 02	500 - 2400	MAS-BT	50	88	130	5.6 ●
HSKA11 100 02	500 - 2400	DIN 69893 A	100	72	130	4.4 ●

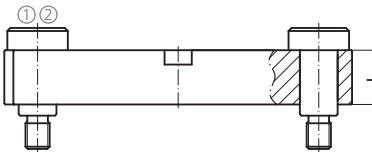


* Certifique se de que a ferramenta tenha uma fixação segura no eixo árvore
Adaptadores sob encomenda
It is highly recommended to bolt the tools to the spindle nose
Adaptors on request

Extensão com trava especial

Diameter extender with special lock stud

Order Number	Ø-range	L	kg	Index
22 00 23 21	800 - 1600	35	5	●
22 00 43 21	1600 - 2400	40	9.7	●



SPARE PARTS

	①	②
Z00 21 21	G00 02 10	

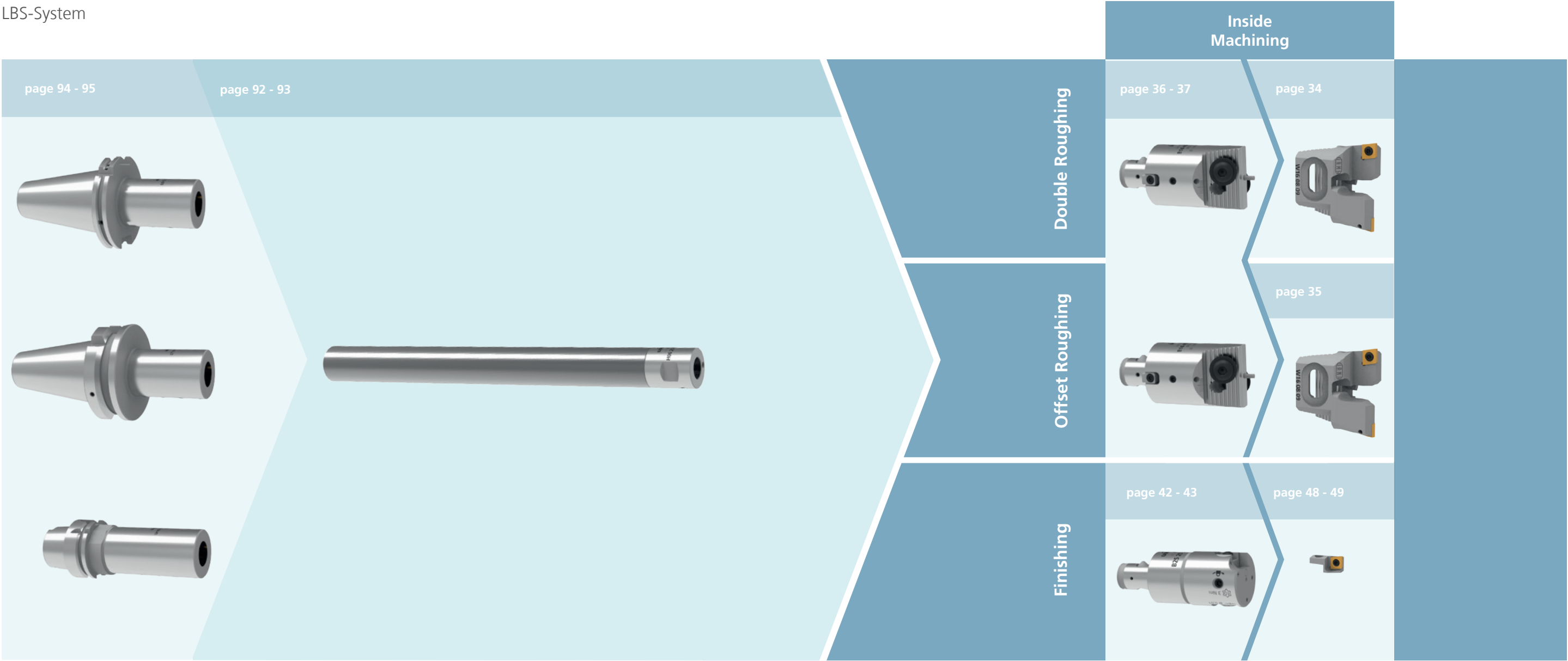
URMA Systems

LBS-System

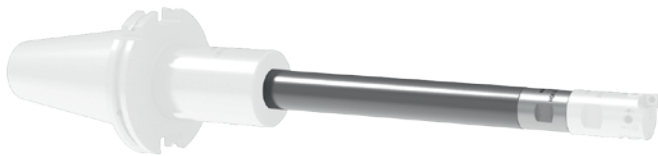
Ø 20 - 51 mm

Ø 20 - 51 mm

Sistema LBS
LBS-System



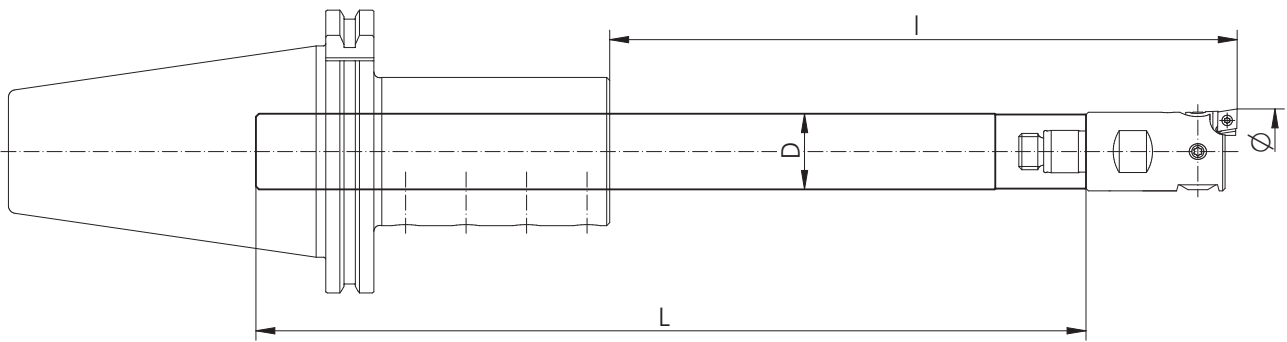
Ø 20 - 51 mm



Barras de mandrilamento em metal duro
Carbide boring bars

Barras de mandrilamento em metal duro
Carbide boring bars

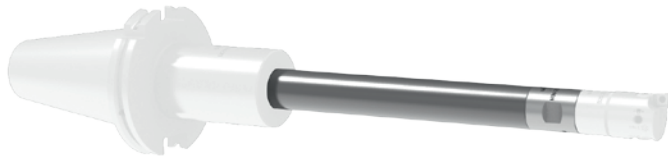
Alpha	Order Number	Ø-range	L	I	D	kg	SW	MCM	MCC	Index
18,5	H06 18 A18 200	20 - 30	200	139 - 185	18,5	0,65	17	ZS18,5	18,5	●
25	H06 25 A24 234	29 - 39	234	167 - 209	25	1,4	22	ZS25	24,5	●
25	H06 25 A24 276	29 - 39	276	209 - 251	25	1,7	22	ZS25	24,5	●
32	H06 32 A32 351	38 - 51	351	240 - 320	32	3,5	27	ZS25	32	●



O Sistema LBS é aplicado para desbaste e acabamento
The LBS-System is suitable for both roughing and finishing

Cabeças micrométricas veja páginas 42 e 46, cabeças duplo corte veja página 36
Suitable fine boring heads see pages 42 and 46, double cutter roughing heads see page 36

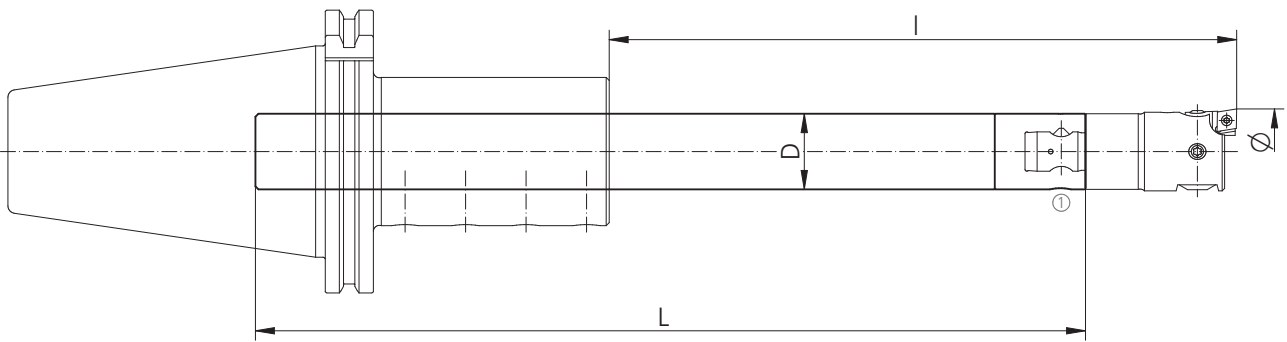
Ø 29 - 51 mm



Barras de mandrilamento em metal duro
Carbide boring bars

Barras de mandrilamento em metal duro
Carbide boring bars

Beta	Order Number	Ø-range	L	I	D	kg	SW	MCM	MCC	Index
25	H06 25 B25 234	29 - 39	234	167 - 209	25	1,4	22	ZS25	B25	●
25	H06 25 B25 276	29 - 39	276	209 - 251	25	1,7	22	ZS25	B25	●
32	H06 32 B32 351	38 - 51	351	240 - 320	32	3,5	27	ZS32	B32	●

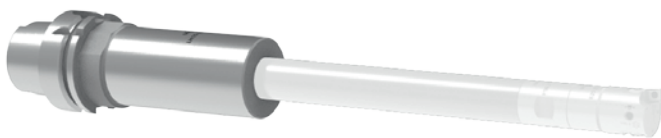


O Sistema LBS é aplicado para desbaste e acabamento
The LBS-System is suitable for both roughing and finishing

Cabeças micrométricas veja páginas 43 e 47, cabeças duplo corte veja página 37
Suitable Fine boring heads see pages 43 and 47, double cutter roughing heads see page 37

SPARE PARTS

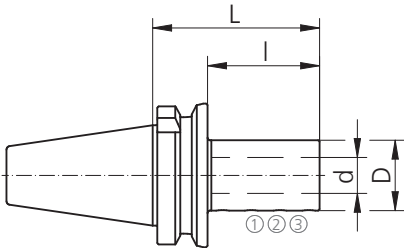
Beta	①
25	Z00 25 24
32	Z00 32 24



LBS-Suportes
LBS-Tool holders

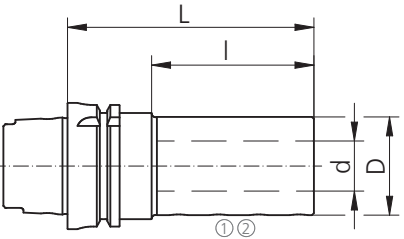
Suportes MAS-BT
Tool holders MAS-BT

Order Number	L	I	D	d		MCC	Index
LT10 41 18 040	67	40	44	18,5	MAS-BT-A/40	ZS18,5	●
LT10 43 18 040	67	40	44	18,5	MAS-BT-B/40	ZS18,5	●
LT10 51 18 060	98	60	44	18,5	MAS-BT-A/50	ZS18,5	●
LT10 53 18 060	98	60	44	18,5	MAS-BT-B/50	ZS18,5	●
LT10 41 25 057	84	57	49	25	MAS-BT-A/40	ZS25	●
LT10 43 25 057	84	57	49	25	MAS-BT-B/40	ZS25	●
LT10 51 25 078	116	78	49	25	MAS-BT-A/50	ZS25	●
LT10 53 25 078	116	78	49	25	MAS-BT-B/50	ZS25	●
LT10 51 32 095	133	95	60	32	MAS-BT-A/50	ZS32	●
LT10 53 32 095	133	95	60	32	MAS-BT-B/50	ZS32	●



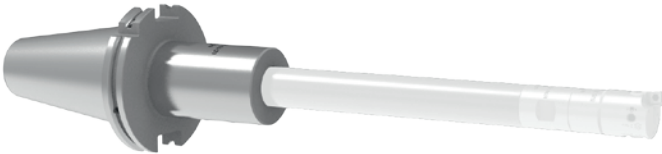
Suportes DIN 69893-A
Tool holders HSK

Order Number	L	I	D	d		MCC	Index
LH10 63 18 101	127	85	44	18,5	HSK 63-A	ZS18,5	●
LH10 63 25 117	143	101	49	25	HSK 63-A	ZS25	●
LH10 100 18 107	152	107	44	18,5	HSK 100-A	ZS18,5	●
LH10 100 25 159	204	159	49	25	HSK 100-A	ZS25	●
LH10 100 32 170	215	170	60	32	HSK 100-A	ZS32	●



SPARE PARTS

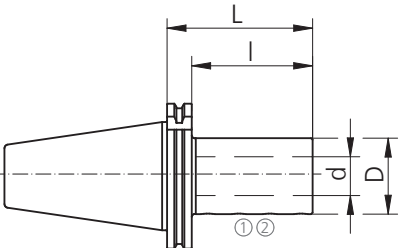
d			
18,5	G00 02 05	C00 96 10	Z00 10 91
25	G00 02 05	C00 96 10	
32	G00 02 06	C00 96 11	



LBS-Suportes
LBS-Tool holders

Suportes DIN 69871
Tool holders DIN 69871

Order Number	L	I	D	d		MCC	Index
LD10 41 18 042	61	42	44	18.5	DIN 69871-A/40	ZS18,5	●
LD10 43 18 042	61	42	44	18.5	DIN 69871-B/40	ZS18,5	●
LD10 50 18 060	79	60	44	18.5	DIN 69817-A/50	ZS18,5	●
LD10 53 18 060	79	60	44	18.5	DIN 69871-B/50	ZS18,5	●
LD10 41 25 059	79	59	49	25	DIN 69871-A/40	ZS25	●
LD10 43 25 059	79	59	49	25	DIN 69871-B/40	ZS25	●
LD10 50 25 078	98	78	49	25	DIN 69871-A/50	ZS25	●
LD10 53 25 078	98	78	49	25	DIN 69871-B/50	ZS25	●
LD10 50 32 095	114	95	60	32	DIN 69871-A/50	ZS32	●
LD10 53 32 095	114	95	60	32	DIN 69871-B/50	ZS32	●



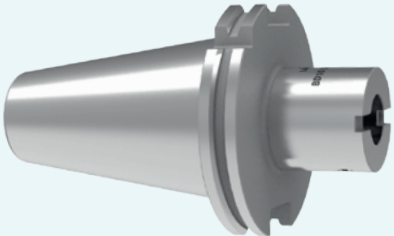
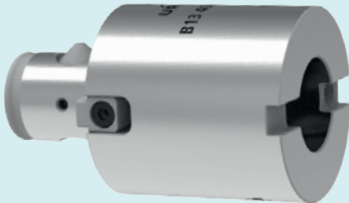
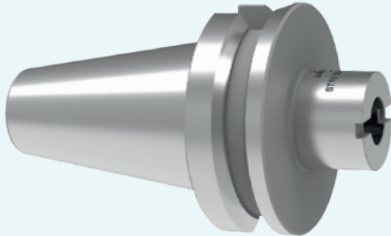
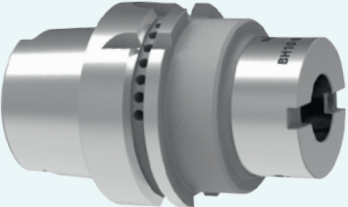
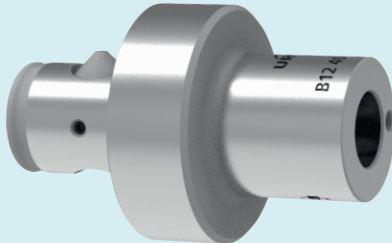
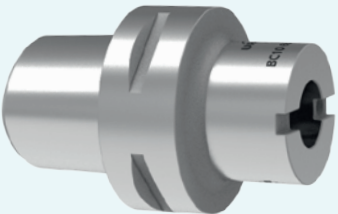
SPARE PARTS

d		
18,5	G00 02 05	C00 96 10
25	G00 02 05	C00 96 10
32	G00 02 06	C00 96 11

URMA Systems

Modular Components

Componentes modulares
Modular components

page 104 - 113	page 100 - 101	DigiTec	page 11
		MicroMax	page 19
		VersaMax - Type 14	page 29
		VersaMax - Type 25 / Type A25	page 39
	page 102 - 103	IntraMax	page 51
		MegaMax	page 69
		SuperMegaMax	page 81

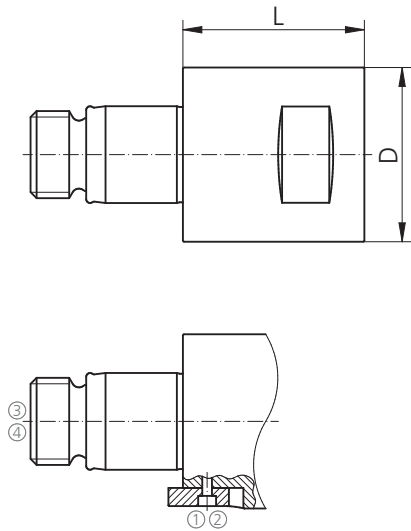


Prolongadores
Extensions

Prolongadores
Extensions

Alpha	Order Number	L	D	kg	SW	MCM	MCC	Index
18,5	13 18 01	25	18,5	0,1	17	18,5	18,5	●
18,5	13 18 11	35	18,5	0,1	17	18,5	18,5	●
24,5	13 24 01	30	24,5	0,1	22	24,5	24,5	●
24,5	13 24 11	45	24,5	0,2	22	24,	24,5	●
32	13 32 01	40	32	0,2	27	32	32	●
32	13 32 11	60	32	0,3	27	32	32	●
42	13 42 01	50	42	0,5	36	42	42	●
42	13 42 11	80	42	0,8	36	42	42	●
55	13 55 01	70	55	1,2	46	55	55	●
55	13 55 11	105	55	1,5	46	55	55	●
72	13 72 01*	75	72	2,2	60	72	72	●
94	13 94 01*	100	94	5,1	75	94	94	●

* **fornecido com chave**
supplied with a driving key



④ **Não incluído na entrega**
Not included in the delivery

SPARE PARTS

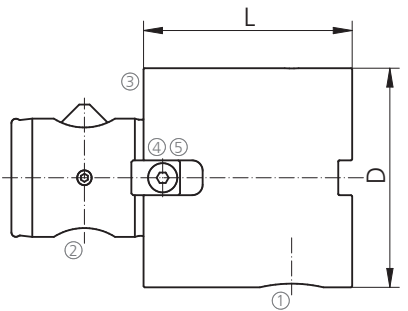
Alpha	Beta	①	②	③	④
					
72	80	Z00 00 72	C00 22 11	Z00 14 74	53 74 96
94	100	Z00 00 94	C00 24 17	Z00 14 96	53 74 96



Prolongadores
Extensions

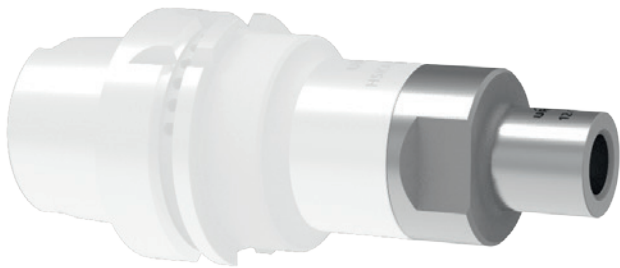
Prolongadores Beta-Beta
Extensions Beta-Beta

Beta	Order Number	L	D	kg	MCM	MCC	Index
25	B13 25 25 045	45	25	0,2	B25	B25	●
25	B13 25 25 070	70	25	0,3	B25	B25	●
32	B13 32 32 035	35	32	0,2	B32	B32	●
32	B13 32 32 070	70	32	0,4	B32	B32	●
40	B13 40 40 045	45	42	0,4	B42	B42	●
40	B13 40 40 070	70	42	0,7	B42	B42	●
50	B13 50 50 065	65	50	1,0	B50	B50	●
50	B13 50 50 100	100	50	1,5	B50	B50	●
63	B13 63 63 060	60	63	1,3	B63	B63	●
63	B13 63 63 125	125	63	2,9	B63	B63	●
80	B13 80 80 080	80	80	2,9	B80	B80	●
80	B13 80 80 160	160	80	6,1	B80	B80	●
100	B13 100 100 080	80	100	4,9	B100	B100	●
100	B13 100 100 180	180	100	10,9	B100	B100	●



SPARE PARTS

Beta	①	②	③	④	⑤
					
25	Z00 25 24	Z00 25 21	Z00 25 23		
32	Z00 32 24	Z00 32 21	Z00 32 23		
40	Z00 40 24	Z00 40 21	Z00 40 23	Z00 40 25	C00 22 58
50	Z00 50 24	Z00 50 21	Z00 50 23	Z00 50 25	C00 22 60
63	Z00 63 24	Z00 63 21	Z00 63 23	Z00 63 25	C00 22 05
80	Z00 80 24	Z00 80 21	Z00 80 23	Z00 80 25	C00 22 07
100	Z00 100 24	Z00 100 21	Z00 100 23	Z00 100 25	C00 22 71



Reduções
Reducers

Reduções
Reducers

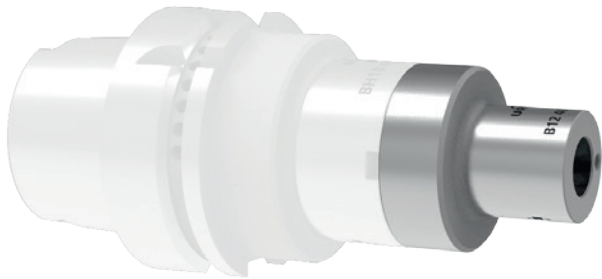
Alpha	Alpha 1	Order Number	L	I	D	d	kg	SW	MCM	MCC	Index
24,5	18,5	12 24 02	30	15	18,5	24,5	0,1	22	24,5	18,5	●
24,5	18,5	12 24 03	55	40	18,5	24,5	0,2	22	24,5	18,5	●
32	18,5	12 32 02	30	15	18,5	32	0,2	27	32	18,5	●
32	24,5	12 32 07	40	25	24,5	32	0,3	27	32	24,5	●
32	24,5	12 32 08	70	55	24,5	32	0,3	27	32	24,5	●
42	18,5	12 42 02	35	15	18,5	42	0,4	36	42	18,5	●
42	24,5	12 42 07	45	25	24,5	42	0,4	36	42	24,5	●
42	32	12 42 12	45	25	32	42	0,4	36	42	32	●
42	32	12 42 13	85	65	32	42	0,7	36	42	32	●
55	18,5	12 55 02	40	15	18,5	55	0,7	46	55	18,5	●
55	24,5	12 55 07	50	25	24,5	55	0,7	46	55	24,5	●
55	32	12 55 12	50	25	32	55	0,7	46	55	32	●
55	42	12 55 17	55	30	42	55	0,8	46	55	42	●
55	42	12 55 18	105	80	42	55	1,3	46	55	42	●
72	42	12 72 17	60	30	42	72	1,6	60	72	42	●
72	55	12 72 22	60	30	55	72	1,7	60	72	55	●
94	55	12 94 22	65	30	55	94	3,1	75	94	55	●
94	72	12 94 27*	80	45	72	94	3,5	75	94	72	●

* fornecido com chaveta
supplied with a driving key

④ Não incluído na entrega
Not included in the delivery

SPARE PARTS

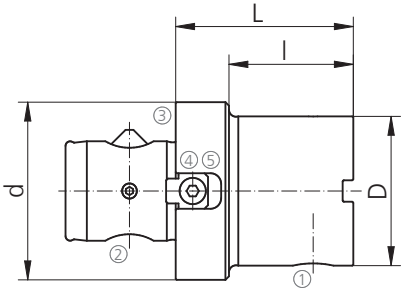
Alpha	①	②	③	④
94	Z00 00 94	C00 24 17	Z00 14 96	53 74 96



Reduções
Reducers

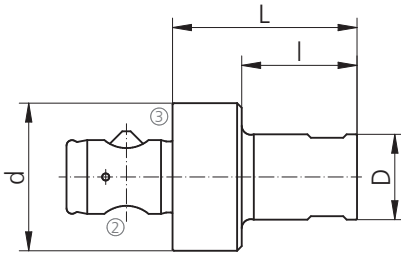
Reduções Beta-Beta
Reducers Beta-Beta

Beta	Beta 1	Order Number	L	I	D	d	kg	SW	MCM	MCC	Index
32	25	B12 32 25 040	40	25	25	32	0,2		B32	B25	●
40	25	B12 40 25 040	40	25	25	42	0,3		B40	B25	●
40	32	B12 40 32 045	45	30	32	42	0,3		B40	B32	●
50	40	B12 50 40 050	50	35	42	50	0,5		B50	B40	●
63	25	B12 63 25 045	45	25	25	63	0,7		B63	B25	●
63	32	B12 63 32 050	50	30	32	63	0,9		B63	B32	●
63	40	B12 63 40 055	55	35	42	63	1,1		B63	B40	●
63	50	B12 63 50 060	60	40	50	63	1,1		B63	B50	●
80	40	B12 80 40 060	60	35	42	80	2,2		B80	B40	●
80	63	B12 80 63 060	60	35	63	80	2,4		B80	B63	●
100	63	B12 100 63 060	60	35	63	100	3,3		B100	B63	●
100	80	B12 100 80 075	75	50	80	100	3,5		B100	B80	●



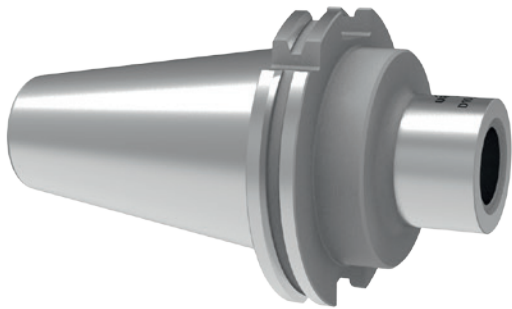
Reduções Beta-Alpha
Reducers Beta-Alpha

Beta	Alpha	Order Number	L	I	D	d	kg	SW	MCM	MCC	Index
25	18,5	B12 25 18 040	40	25	18,5	25	0,1	17	B25	18,5	●
32	18,5	B12 32 18 040	40	25	18,5	32	0,1	17	B32	18,5	●
40	18,5	B12 40 18 040	40	25	18,5	42	0,2	17	B40	18,5	●



SPARE PARTS

Beta	①	②	③	④	⑤
25	Z00 25 24	Z00 25 21	Z00 25 23		
32	Z00 32 24	Z00 32 21	Z00 32 23		
40	Z00 40 24	Z00 40 21	Z00 40 23	Z00 40 25	C00 22 58
50	Z00 50 24	Z00 50 21	Z00 50 23	Z00 50 25	C00 22 60
63	Z00 63 24	Z00 63 21	Z00 63 23	Z00 63 25	C00 22 05
80	Z00 80 24	Z00 80 21	Z00 80 23	Z00 80 25	C00 22 07
100	Z00 100 24	Z00 100 21	Z00 100 23	Z00 100 25	C00 22 71



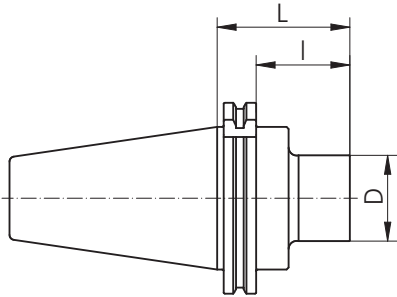
Adaptadores

System adaptors

Conexão com rosca axial
With axial threaded connection

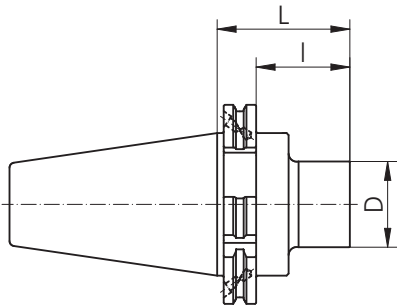
DIN 69871-A/D

Alpha	Order Number		L	I	D	kg	MCC	Index
42	D10 31 16	30	35	16	42	0,8	42	●
18,5	D10 41 03	40	75	40	18,5	1,1	18,5	●
24,5	D10 41 07	40	60	25	24,5	1,1	24,5	●
24,5	D10 41 08	40	90	55	24,5	1,2	24,5	●
32	D10 41 12	40	60	25	32	1,1	32	●
32	D10 41 13	40	100	65	32	1,4	32	●
42	D10 41 16	40	35	16	42	1,2	42	●
42	D10 41 17	40	65	30	42	1,3	42	●
55	D10 41 22	40	65	46	55	1,2	55	●
24,5	D10 50 07	50	60	25	24,5	3,2	24,5	●
32	D10 50 12	50	60	25	32	3,2	32	●
42	D10 50 17	50	65	30	42	4,0	42	●
55	D10 50 22	50	65	30	55	3,3	55	●
72	D10 50 27	50	80	61	72	3,7	72	●
94	D10 50 32	50	85	66	94	4,0	94	●

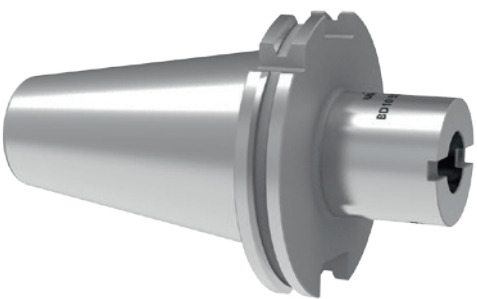
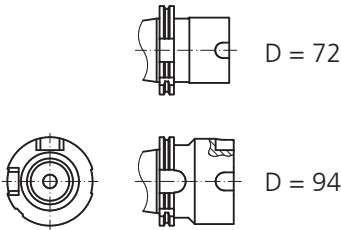


DIN 69871-B

Alpha	Order Number		L	I	D	kg	MCC	Index
42	H10 43 16	40	35	16	42	1,2	42	●
55	H10 43 22	40	65	46	55	1,2	55	●
42	H10 53 17	50	65	30	42	4,0	42	●
55	H10 53 22	50	65	30	55	3,3	55	●
72	H10 53 27	50	80	61	72	3,7	72	●
94	H10 53 32	50	85	66	94	4,0	94	●



D = 72 mm com uma chaveta
D = 94 mm com duas chavetas
D = 72 mm with one driving keyway
D = 94 mm with two driving keyways



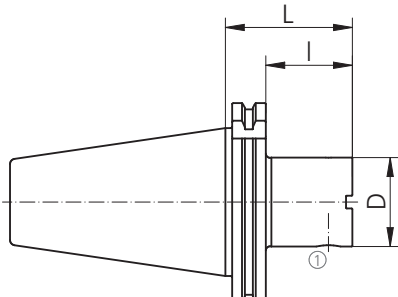
Adaptadores

System adaptors

Com sistema de travamento lateral
With side lock system

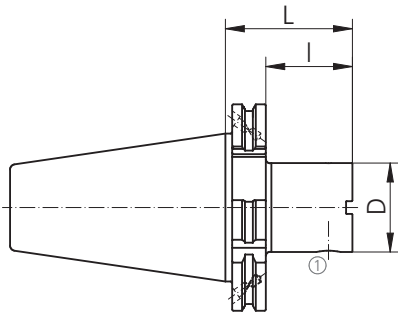
DIN 69871-A/D

Beta	Order Number		L	I	D	kg	MCC	Index
25	BD10 40A 25 050	40	50	31	25	0,8	B25	●
32	BD10 40A 32 050	40	50	31	32	0,9	B32	●
40	BD10 40A 40 035	40	35	16	42	0,9	B40	●
40	BD10 40A 40 050	40	50	31	42	1,1	B40	●
50	BD10 40A 50 050	40	50	31	50	1,2	B50	●
63	BD10 40A 63 065	40	65	46	63	1,5	B63	●
25	BD10 50A 25 060	50	60	41	25	2,8	B25	●
32	BD10 50A 32 060	50	60	41	32	2,9	B32	●
40	BD10 50A 40 060	50	60	41	42	3,0	B40	●
50	BD10 50A 50 060	50	60	41	50	3,2	B50	●
63	BD10 50A 63 060	50	60	41	63	3,3	B63	●
80	BD10 50A 80 070	50	70	51	80	4,0	B80	●
100	BD10 50A 100 115	50	115	96	100	6,9	B100	●



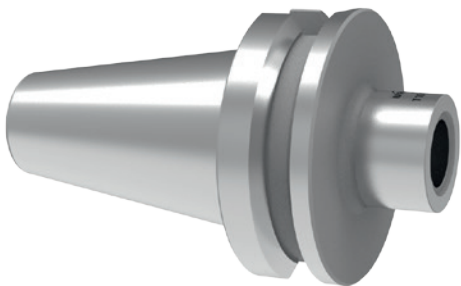
DIN 69871-B

Beta	Order Number		L	I	D	kg	MCC	Index
40	BD10 40B 40 035	40	35	16	42	0,9	B40	●
63	BD10 40B 63 065	40	65	46	63	1,5	B63	●
40	BD10 50B 40 060	50	60	41	42	3,0	B40	●
50	BD10 50B 50 060	50	60	41	50	3,2	B50	●
63	BD10 50B 63 060	50	60	41	63	3,3	B63	●
100	BD10 50B 100 115	50	115	96	100	6,9	B100	●



SPARE PARTS

Beta	
25	Z00 25 24
32	Z00 32 24
40	Z00 40 24
50	Z00 50 24
63	Z00 63 24
80	Z00 80 24
100	Z00 100 24



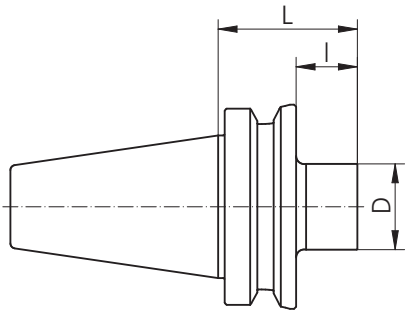
Adaptadores

System adaptors

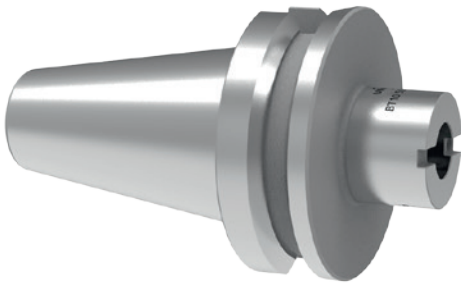
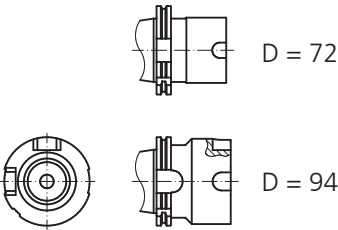
Conexão com rosca axial
With axial threaded connection

MAS-BT-A

Alpha	Order Number		L	I	D	kg	MCC	Index
42	T10 31 16	30	32	10	42	0,8	42	○
18,5	T10 41 03	40	67	40	18,5	1,0	18,5	●
24,5	T10 41 07	40	52	25	24,5	1,0	24,5	●
32	T10 41 12	40	52	25	32	1,0	32	●
42	T10 41 16	40	29	2	42	1,0	42	●
42	T10 41 17	40	57	30	42	1,1	42	●
55	T10 41 22	40	57	30	55	1,2	55	●
32	T10 51 13	50	103	65	32	4,0	32	●
42	T10 51 17	50	68	30	42	3,3	42	●
55	T10 51 22	50	68	30	55	3,8	55	●
72	T10 51 27	50	83	45	72	4,2	72	●
94	T10 51 32	50	88	50	94	4,5	94	●



D = 72 mm com uma chaveta
D = 94 mm com duas chavetas
D = 72 mm with one driving keyway
D = 94 mm with two driving keyways



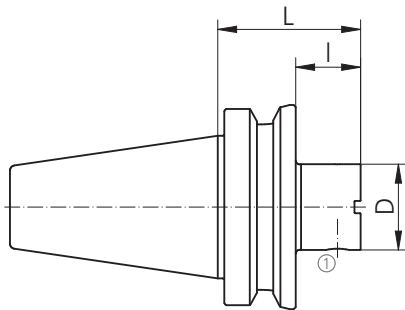
Adaptadores

System adaptors

Com sistema de travamento lateral
With side lock system

MAS-BT-A

Beta	Order Number		L	I	D	kg	MCC	Index
25	BT10 40A 25 060	40	60	33	25	0,8	B25	●
32	BT10 40A 32 060	40	60	33	32	0,9	B32	●
40	BT10 40A 40 028	40	28	1	42	0,9	B40	●
40	BT10 40A 40 060	40	60	33	42	1,2	B40	●
50	BT10 40A 50 060	40	60	33	50	1,3	B50	●
63	BT10 40A 63 055	40	55	28	63	1,4	B63	●
32	BT10 50A 32 070	50	70	32	32	3,7	B32	●
40	BT10 50A 40 070	50	70	32	42	3,9	B40	●
50	BT10 50A 50 070	50	70	32	50	4,1	B50	●
63	BT10 50A 63 080	50	80	42	63	4,3	B63	●
80	BT10 50A 80 100	50	100	62	80	5,5	B80	●
100	BT10 50A 100 110	50	110	72	100	7,0	B100	●



SPARE PARTS

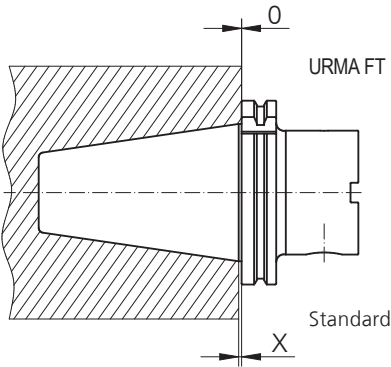
Beta	
25	Z00 25 24
32	Z00 32 24
40	Z00 40 24
50	Z00 50 24
63	Z00 63 24
80	Z00 80 24
100	Z00 100 24

Adaptadores URMA-FT

System adaptors URMA-FT

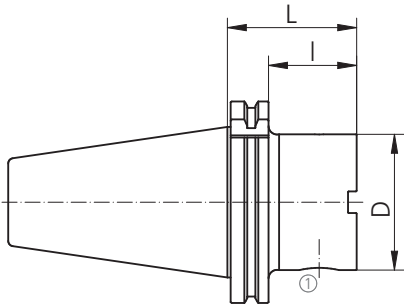
Com sistema de travamento lateral
With side lock system

Para aumentar a rigidez em usinagens de alta performance
Equivalente a sistemas já existentes
For improved rigidity and higher cutting performance
Equivalent to existing systems



DIN 69871-A

Beta	Order Number		L	I	D	kg	MCC	Index
40	BDP10 50A 40 060	50	60	41	42	3,0	B40	●
63	BDP10 50A 63 060	50	60	41	63	3,3	B63	●
80	BDP10 50A 80 070	50	70	51	80	4,0	B80	●
100	BDP10 50A 100 115	50	115	96	100	6,9	B100	●



SPARE PARTS

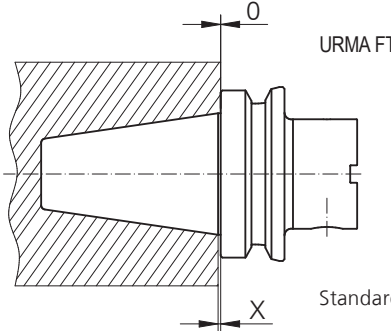
Beta	
40	Z00 40 24
63	Z00 63 24
80	Z00 80 24
100	Z00 100 24

Adaptadores URMA-FT

System adaptors URMA-FT

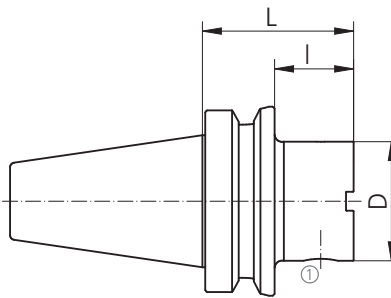
Com sistema de travamento lateral
With side lock system

Para aumentar a rigidez em usinagens de alta performance
Equivalente a sistemas já existentes
For improved rigidity and higher cutting performance
Equivalent to existing systems



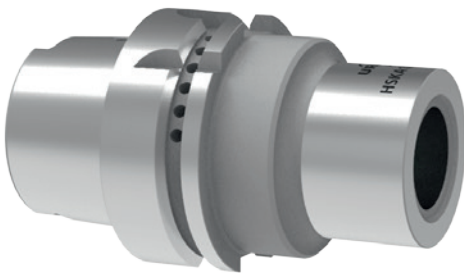
MAS-BT-A

Beta	Order Number		L	I	D	kg	MCC	Index
40	BTP10 40A 40 028	40	28	1	42	0,9	B40	●
63	BTP10 40A 63 055	40	55	28	63	1,5	B63	●
63	BTP10 50A 63 080	50	80	42	63	4,3	B63	●
100	BTP10 50A 100 110	50	110	72	100	7,0	B100	●



SPARE PARTS

Beta	
40	Z00 40 24
63	Z00 63 24
80	Z00 80 24
100	Z00 100 24



Adaptadores

System adaptors

Conexão com rosca axial
With axial threaded connection

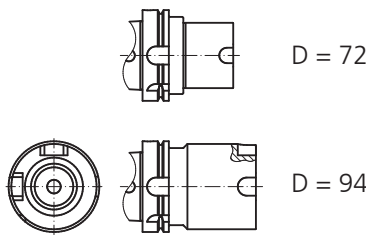
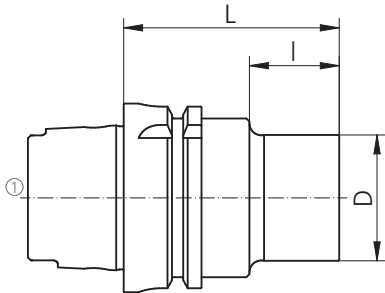
DIN 69893-A

Alpha	Order Number		L	I	D	kg	MCC	Index
18,5	HSKA10 63 02*	63	57	15	18,5	1,0	18,5	●
24,5	HSKA10 63 07*	63	67	25	24,5	1,0	24,5	●
32	HSKA10 63 12*	63	67	25	32	1,1	32	●
42	HSKA10 63 17*	63	72	30	42	1,2	42	●
55	HSKA10 63 21*	63	82	56	55	1,4	55	●
42	HSKA10 100 17*	100	75	30	42	3,0	42	●
55	HSKA10 100 21*	100	85	40	55	3,3	55	●
72	HSKA10 100 26**	100	100	55	72	4,2	72	●
94	HSKA10 100 32**	100	125	96	94	6,0	94	●

* **Tubo de refrigeração não incluso**
Coolant tube is not included

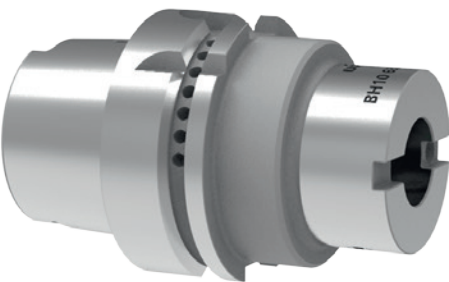
** **Tubo de refrigeração incluso**
Coolant tube included

D = 72 mm com uma chaveta
D = 94 mm com duas chavetas
D = 72 mm with one driving keyway
D = 94 mm with two driving keyways



SPARE PARTS

	①	
		
63	H00 63 01	
100	H00 100 01	



Adaptadores

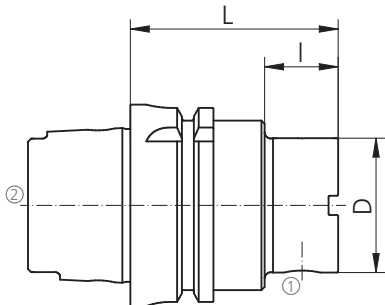
System adaptors

Com sistema de travamento lateral
With side lock system

DIN 69893-A

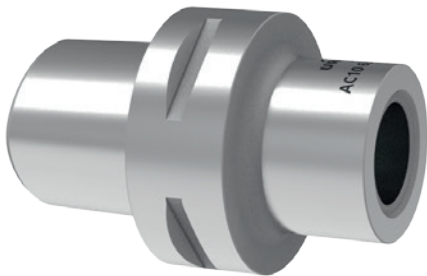
Beta	Order Number		L	I	D	kg	MCC	Index
25	BH10 63A 25 055*	63	55	29	25	0,9	B25	●
32	BH10 63A 32 060*	63	60	34	32	1,0	B32	●
40	BH10 63A 40 065*	63	65	23	42	1,1	B40	●
50	BH10 63A 50 070*	63	70	28	50	1,5	B50	●
63	BH10 63A 63 080*	63	80	54	63	1,5	B63	●
32	BH10 100A 32 060*	100	60	31	32	2,3	B32	●
40	BH10 100A 40 080*	100	80	35	42	3,1	B40	●
50	BH10 100A 50 080*	100	80	35	50	3,2	B50	●
63	BH10 100A 63 080*	100	80	35	63	3,3	B63	●
80	BH10 100A 80 090*	100	90	45	80	4,0	B80	●
100	BH10 100A 100 100*	100	100	71	100	5,0	B100	●

* **Tubo de refrigeração não incluso**
Coolant tube is not included



SPARE PARTS

Beta	①		②
			
25	Z00 25 24	63	H00 63 01
32	Z00 32 24	100	H00 100 01
40	Z00 40 24		
50	Z00 50 24		
63	Z00 63 24		
80	Z00 80 24		
100	Z00 100 24		



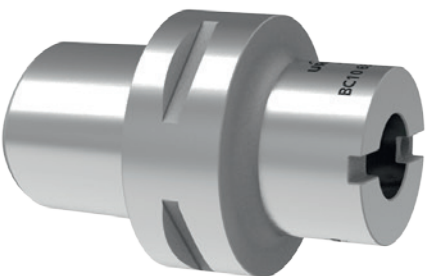
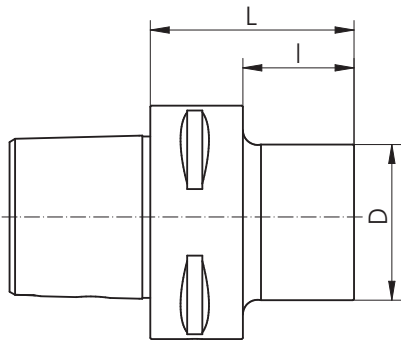
Adaptadores

System adaptors

Conexão com rosca axial
With axial threaded connection

ISO 26623 PSC

Alpha	Order Number		L	I	D	kg	MCC	Index
42	AC10 63 17 055	Size 6	55	30	42	1.0	42	●
55	AC10 63 21 060	Size 6	60	35	55	1.3	55	●



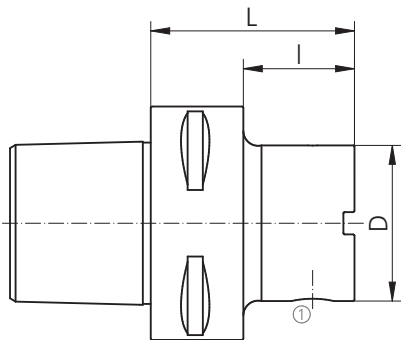
Adaptadores

System adaptors

Com sistema de travamento lateral
With side lock system

ISO 26623 PSC

Beta	Order Number		L	I	D	kg	MCC	Index
40	BC10 63 40 055	Size 6	55	30	42	1.0	B40	●
50	BC10 63 50 060	Size 6	60	35	50	1.2	B50	●
63	BC10 63 63 065	Size 6	65	-	63	1.5	B63	●

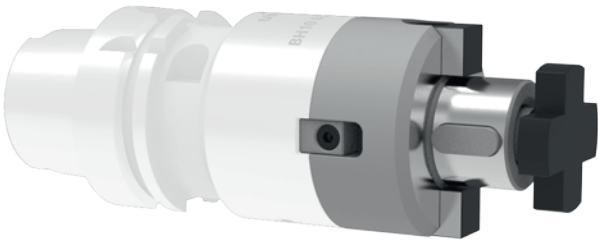


SPARE PARTS

Beta		
40	Z00 40 24	
50	Z00 50 24	
63	Z00 63 24	

URMA Systems

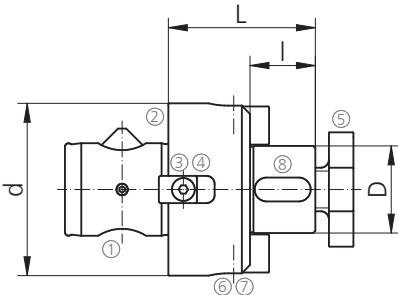
Adaptor Toolholders



Adaptador porta fresas
Shell mill adaptors

Adaptador porta fresas
Shell end mill adaptors

Beta	Order Number	L	I	D	d	kg	MCM	Index
63	B44 63 13 030	30	12	13	63	0,8	B63	○
	B44 63 16 030	30	17	16	63	0,8	B63	○
	B44 63 22 030	30	19	22	63	0,9	B63	○
	B44 63 27 030	30	21	27	63	1	B63	○
	B44 63 32 030	30	24	32	63	1,1	B63	○
	B44 63 40 030	30	27	40	63	1,3	B63	○



SPARE PARTS

D	①	②	③	④	⑤	⑥	⑦	⑧
	Z00 63 21	Z00 63 23	Z00 63 25	C00 22 05				
13					52 01 13	Z00 B44 16 01	C00 22 30	
16					52 01 16	Z00 B44 16 01	C00 22 30	F00 04 13
22					52 01 22	Z00 B44 22 01	C00 22 31	F00 04 14
27					52 01 27	Z00 B44 27 01	C00 22 05	F00 04 15
32					52 01 32	Z00 B44 32 01	C00 22 71	F00 04 16
40					52 01 40	Z00 B44 40 01	C00 22 71	F00 04 17



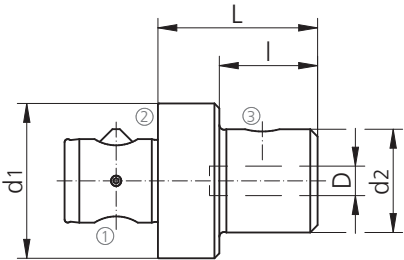
Adaptador porta barras Weldon DIN 1835 B

Weldon adaptors DIN 1835 B

Adaptador porta barras Weldon

Weldon adaptors

Beta	Order Number	L	I	D	d ₁	d ₂	kg	MCM	Index
40	B55 40 06 045	45	30	6	42	25	0,3	B40	○
40	B55 40 08 045	45	30	8	42	28	0,3	B40	○
40	B55 40 10 055	55	40	10	42	35	0,4	B40	○
40	B55 40 12 065	65	65	12	42	42	0,6	B40	○
63	B55 63 06 050	50	25	6	63	25	0,9	B63	○
63	B55 63 08 050	50	25	8	63	28	0,9	B63	○
63	B55 63 10 055	55	30	10	63	35	1	B63	○
63	B55 63 12 065	65	40	12	63	42	1,1	B63	○
63	B55 63 14 065	65	40	14	63	45	1,2	B63	○
63	B55 63 16 065	65	40	16	63	48	1,2	B63	○
63	B55 63 18 065	65	40	18	63	50	1,3	B63	○
63	B55 63 20 065	65	40	20	63	52	1,3	B63	○
63	B55 63 25 075	75	75	25	63	65	1,8	B63	○



SPARE PARTS

Beta	D	①	②	③
40		Z00 40 21	Z00 40 23	
63		Z00 63 21	Z00 63 23	
	6			Z00 55 06
	8			Z00 55 08
	10			Z00 55 10
	12			Z00 55 12
	14			Z00 55 14
	16			Z00 55 16
	18			Z00 55 18
	20			Z00 55 20
	25			Z00 55 25



Adaptador porta pinças

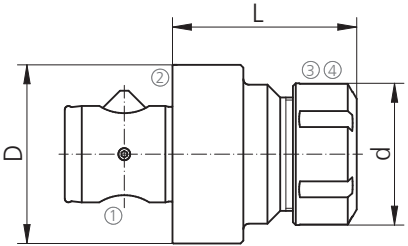
Collet adaptors

Adaptador porta pinças

Collet adaptors

Beta	Order Number	L	D	d	kg	ER/ESX	MCM	Index
40	B60 40 25 065	65	42	42	0,4	25	B40	○
63	B60 63 32 065	65	63	50	1	32	B63	○

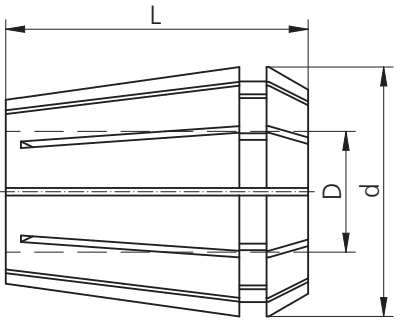
④ Não incluído na entrega
Not included in the delivery



Jogo de pinças

Collet sets

	Order Number	L	D	d	ER/ESX	MCM	Index
	62 25 00	34	1-15	26	25	ER25	○
	62 32 00	40	2,0-20	33	32	ER32	○



Pinças avulsas

Single collets

	Order Number	L	D	d	ER/ESX	MCM	Index
	62 25 dd ¹⁾	34	1-17	26	25	ER25	○
	62 32 dd ¹⁾	40	2,0-20	33	32	ER32	○

¹⁾ indicar diâmetro desejado
indicate required diameter

SPARE PARTS

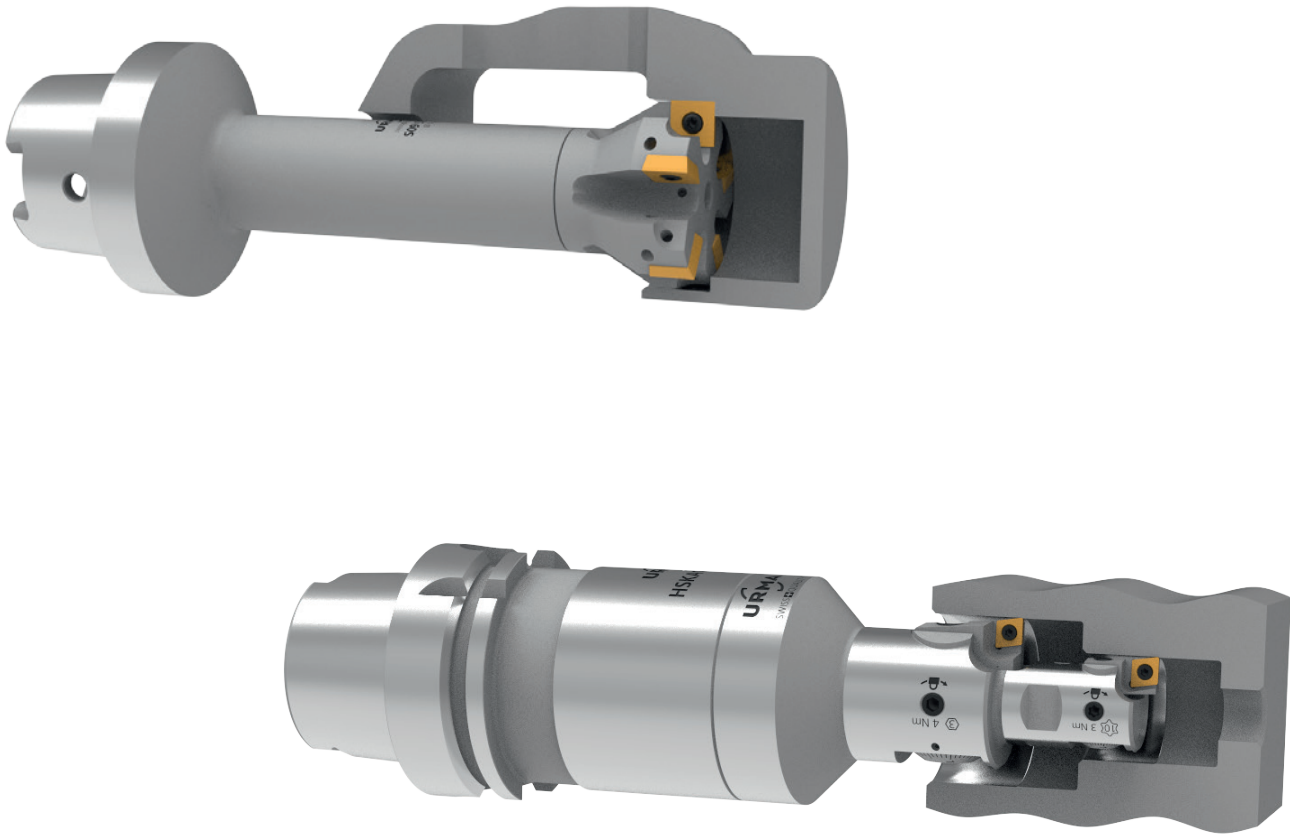
Beta	①	②	③	④
40	Z00 40 21	Z00 40 23	H00 05 05	00 05 05
63	Z00 63 21	Z00 63 23	H00 05 03	00 05 02

URMA Systems

Special Tools

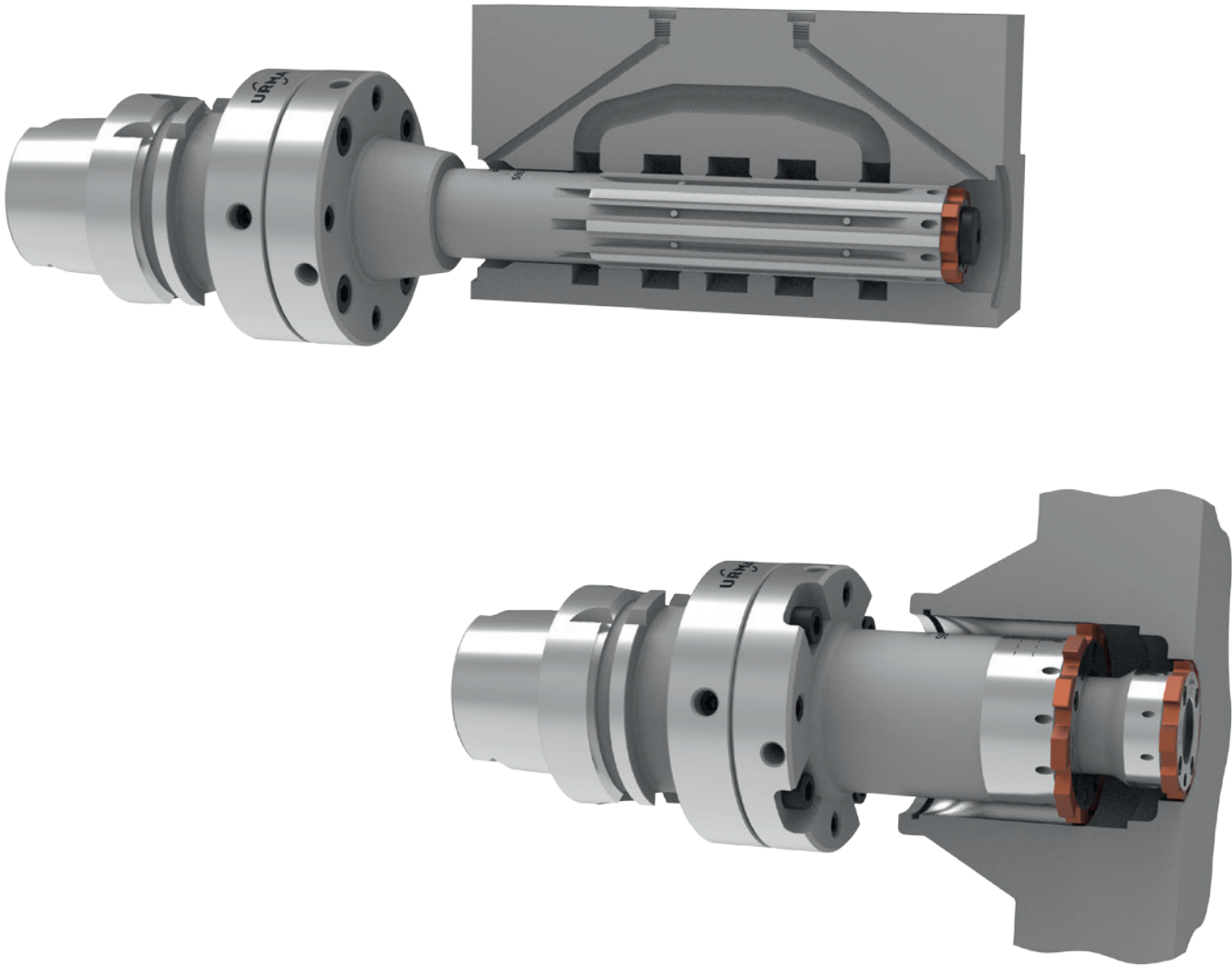
Ferramentas especiais
Special tools

Disponível sob consulta
Available on request



Ferramentas especiais
Special tools

Disponível sob consulta
Available on request



URMA Systems

Machining Study

Estudo de usinagem
Machining study

Cliente * Sender		Number	
Empresa Company		Distribuidor URMA URMA Distributor	
Endereço Address		Contato Contact	
		Departamento Department	
Telefone Telephone	Fax Fax	E-Mail E-Mail	
Máquina Machine-tool			
Máquina Machine type		Potência (kW) Drive power (kW)	
Horizontal * Horizontal	Vertical * Vertical	Ferramenta rotativa * Tool rotating	Estabilidade Stability
Alojamento da árvore * Spindle holder			
Restrições Restrictions due to			
Refrigeração Lubricant			
Óleo * Oil	MMS * ¹⁾ MLS ¹⁾	Emulsão * Emulsion	Proporção de mistura Ratio of mixture
Refrigeração interna * Intern. coolant supply			Pressão de refrigeração (bar) * Coolant pressure (bar)
Produto Workpiece			
Descrição Designation	Desenho n° Drawing number	Material no. * Material number	
Especificação * Specification	Tratamento/Dureza * Treatment condition	Fixação * Strength	
Quantidade de furos / ano * Number of bores per year	N° de peças do lote Batch size		
Usinagem requerida Machining requirements			
Diâmetro do furo * Bore ø	Comprimento do furo * Bore length	Pré furo ø * Pre-machined ø	
Tolerância * Tolerance	Comprimento da ferramenta (xs) Gage length (xs)	Pré usinagem * Method of pre-machining	
Requisitos adicionais de tolerância Additional tolerance requirements	Furo cego * Blind hole	Objetivo de tempo Target time	
Rugosidade da superfície (µm) * Surface quality (µm)	Corte interrompido * Cutting interruption	Objetivo de quantidade Target quantity	
R _a R _z R _t	Tempo de ciclo Cycle time		
Data * Date	Visto * Visa	Anexo: Rascunho da aplicação * Attachement: Your application sketch	

* Campos obrigatórios
Mandatory fields

¹⁾ MLS (Névoa)
Minimal lubrication system (mist coolant)

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customerservice@urma.ch

URMA Systems Manuals

Montagem dos módulos

Assembly of systems Alpha-Modul

1. Soltar parafuso de trava com lado menor da chave hexagonal (sentido anti-horário)

2. Girar o parafuso de fixação com lado maior da chave hexagonal (sentido horário) até o final de curso

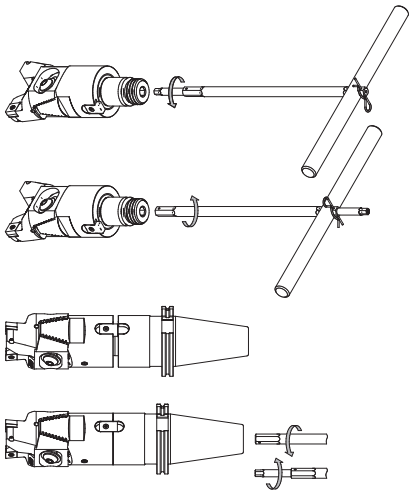
3. Rosquear a cabeça duplo corte ao suporte até que o alojamento e a chaveta se alinharem

4. Girar o parafuso de fixação através do suporte com lado maior da chave hexagonal (sentido anti-horário) até que a chaveta se acomode no alojamento. Apertar o parafuso de trava com o lado menor da chave hexagonal (sentido horário)
1. Loosen locking screw with small hexagonal key (turn counter clock wise)

2. Screw threaded plug with large hexagonal key (clockwise) down to the bottom

3. Screw double cutter head and adaptor together until the slot and key align

4. Screw threaded plug into the adaptor with the large hexagonal key by turning counter clock wise. Tighten the locking screw with the small hexagonal key by turning clock wise



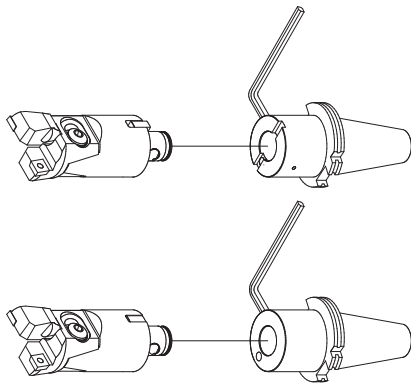
Montagem dos componentes Beta-Modul

Assembly of Beta-Modul components

1. Antes da montagem, certifique-se de que o pino de trava está posicionado corretamente

2. Caso a montagem for feita em adaptadores ABS "standard", a chaveta de arraste deverá ser montada a 180° (válido a partir do módulo 40)
1. Before assembling, check that the floating bolt has been correctly mounted (indentation must point towards the screw)

2. If standard adaptors are being used, the keyway must be turned through 180° (valid from system size 40)



Posicionamento da aresta de corte das cabeças micrométricas

Cutting edge orientation of fine boring heads

Ø 0.2 - 153 mm

MicroMax, VersaMax - Type 25/A25

1. Soltar parafuso de trava e girar o parafuso de fixação até o final de curso.

2. Rosquear a cabeça micrométrica ao suporte até que as faces (suporte e cabeçote) se encostem e defina o ângulo de correção (Alpha)

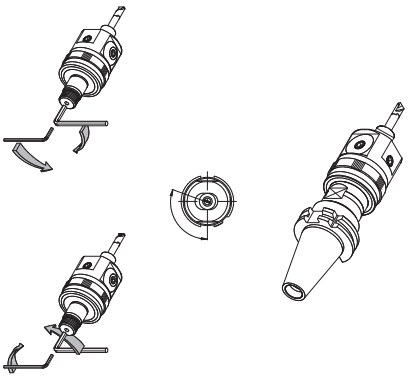
3. Girar o parafuso de fixação 1,5 vezes o ângulo de correção (Alpha). Travar o conjunto novamente

4. A aresta de corte agora está orientada para a posição de parada do adaptador
1. Loosening the locking screw, screw the threaded plug in completely with the spanner

2. Screw in the boring head until both faces boring head and adaptor are in contact - define the correction angle (Alpha)

3. Unscrew the threaded plug with the spanner by about 1,5 times the correction angle (Alpha). Re-tighten the locking screw

4. The cutting edge is now orientated on the stop-position of the adaptor



Balanceando o cabeçote micrométrico

Balancing the fine boring head

Ø 0.2 - 40 mm

MicroMax

1. Soltar o parafuso de trava A no anel de balanceamento

2. Alinhar as duas escalas para ajustar o diâmetro do furo. A escala B corresponde a barras em aço e a escala C a barras em metal duro.

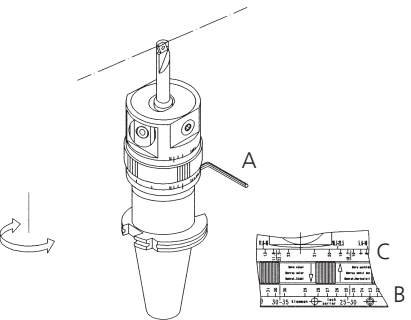
3. Apertar o parafuso de trava novamente

4. O cabeçote micrométrico está balanceado automaticamente para a usinagem do furo desejado
1. Loosen the locking screw A on the balance ring

2. Align the two scales to set the bore diameter. Scale B corresponds with steel boring bars, scale C with carbide boring bars.

3. Re-tighten the locking screw

4. The boring head is now automatically balanced for the required boring diameter



Balanceando o cabeçote micrométrico

Balancing the fine boring head

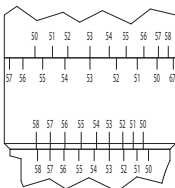
VersaMax - Type A25

Exemplo Ø 53 mm

Para balancear as cabeças A25, simplesmente posicione os anéis graduados no valor do diâmetro desejado e trave-os

Example Ø 53 mm

To balance the A25, simply position the graduated rings to the required diameter value and lock

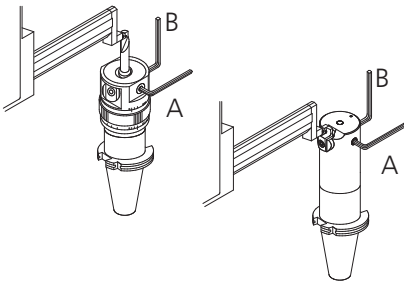


Ajustando as cabeças micrométricas

Pre-setting fine boring heads

MicroMax, VersaMax - Type 25/A25

- | | |
|---|--|
| 1. Soltar o parafuso de trava A | 1. Loosen locking screw A |
| 2. Ajustar o diâmetro desejado usando o anel micrométrico B | 2. Set the boring diameter at the micrometer screw B |
| 3. Travar o sistema novamente A | 3. Re-tighten the locking screw |



Ø 20 - 67 mm

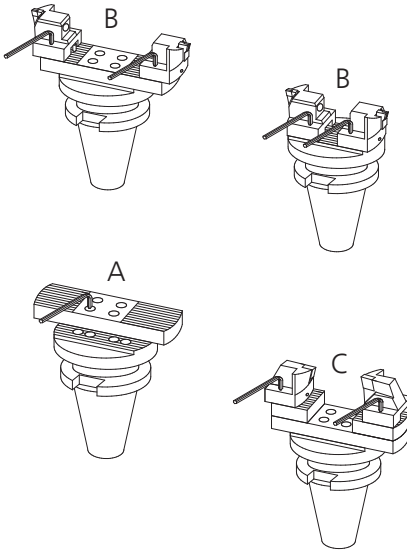
Ø 0.2 - 153 mm

Montagem do sistema IntraMax

Assembly of system IntraMax

IntraMax

- | | |
|--|---|
| 1. Montar o extensor (se necessário) sob o adaptador ou adaptador intermediário com os quatro parafusos A | 1. Mount the diameter adaptor (if needed) onto the adaptor or intermediate adaptor with four screws A |
| 2. Montar os suportes de insertos para desbaste ou cabeçote de acabamento com dois parafusos B cada (normalmente duas cabeças são fixadas na mesma montagem) | 2. Mount the roughing or finishing insert holders with two screws B each (normally, two heads are mounted at the same time) |
| 3. Alinhar os suportes de insertos usando a escala graduada localizada no adaptador e no suporte de inserto ou cabeçote | 3. Align the insert holders using the coarse graduations on the head and the adaptor |
| 4. Para usinagem externa, os adaptadores intermediários deverão ser montados, C | 4. For external machining, the intermediate adaptor must be mounted, C |
| 5. Montar os suportes de insertos para desbaste ou cabeçote de acabamento com dois parafusos C cada | 5. Then mount the roughing or finishing insert holders with two screws C |



Ø 49 - 297 mm

Montagem do sistema
Assembly of system

MegaMax

1.

Os extensores são fixados no adaptador intermediário por quatro parafusos A
2.

Os suportes de insertos para desbaste e o cabeçote de acabamento devem ser montados nos pinos deslizando-os lateralmente e girando-os até a posição de fixação B. Para as extensões d150 - 250mm é necessário que se solte completamente os parafusos laterais de trava C e aperte-os novamente após a montagem dos cabeçotes.
3.

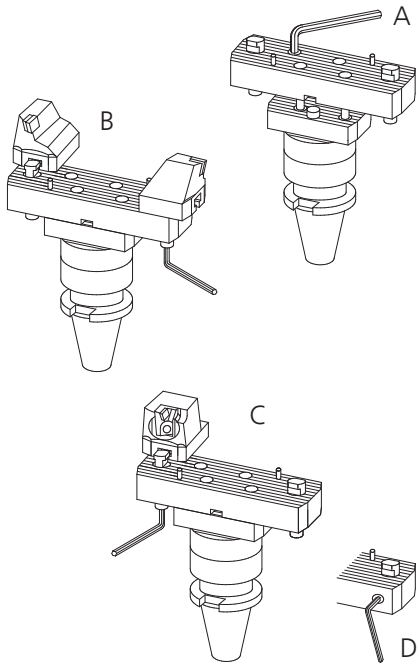
Alinhar os suportes de insertos usando a escala graduada localizada no adaptador e no suporte de inserto ou cabeçote
1.

The diameter extender is fastened to the intermediate adaptor with four bolts A
2.

Roughing insert holders and fine boring heads are slid laterally across the line of the serration and then rotated B. With diameter extenders Ø 150-250 mm it is also necessary to fully unscrew the clamping screws C and refit them after mounting the heads (note taper bore on clamping bolt D).
3.

Align the insert holders using the coarse graduations on the head and the adaptor

Ø 150 - 805 mm



Ajustando os sistemas
Pre-setting the system

IntraMax, MegaMax, SuperMegaMax

1.

Ajustar o diâmetro para a dimensão do pre-setter usando o anel graduado A ou ajustando o parafuso D respectivamente
2.

Travar o conjunto micrométrico E
3.

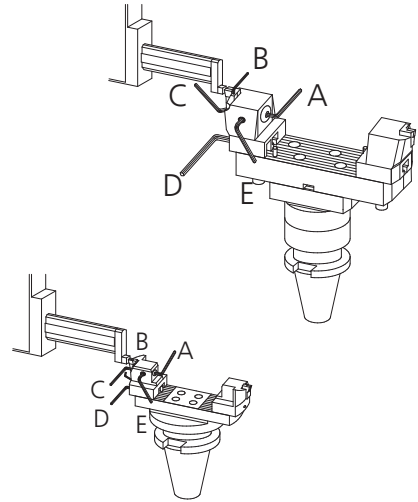
No caso da utilização de dois cabeçotes micrométricos simultaneamente, soltar o inserto C, posicionar o inserto B, e travar conjunto novamente C
1.

Set the boring diameter to the pre-set position using setting dial A or adjusting screw D respectively
2.

Tighten the setting dial locking device E
3.

If two fine boring heads are to be used simultaneously, loosen the fine boring insert using key C, set the blade with key B, and reclamp with the key C

Ø 49 - 2'400 mm



Ajustando o cabeçote duplo corte
Setting the bore diameter on a double cutter

Ø 19.5 - 153 mm

VersaMax - Type 14

1.

Apertar os parafusos de trava até que as molas exerçam uma pequena pressão no suporte A
2.

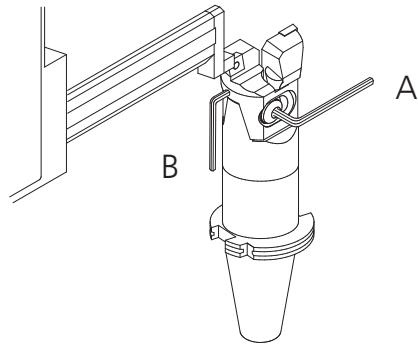
Ajustar os insertos exatamente com a mesma abertura utilizando os parafusos de regulagem B
3.

Apertar firmemente os parafusos de trava A
1.

Gently tighten clamping screws A (spring washer must be fitted)
2.

Set the cutter to the exact diameter with the adjusting screw B
3.

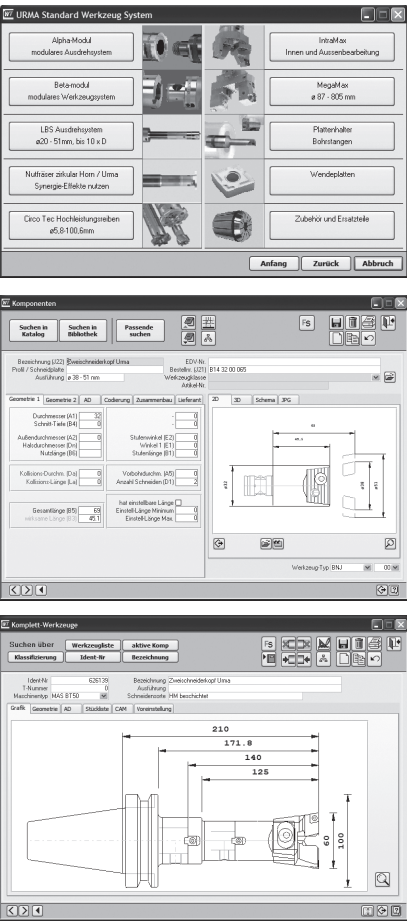
Firmly tighten clamping screw A



URMA Systems
WinTool

WinTool

Gerenciamento e-Tool com catálogo URMA
E-Tool management with URMA catalogue



URMA

600035

Zweischneiderkopf Urma

Machine Typ - no attachment -

Diameter

60

Cutting length

0

Radius

0

Main Arc

0

Length

210

Width

0

Collision Lgt. (Lx)

145.6

Collision Dia.

100

Cutting Width

0

Side Angle

0

Recorded

05.02.2016

Modified

05.02.2016

Weight

5.4

Price

0

Product Code / Sort	Description / Item No.	
1 BT10 50A 00 070 ø 50x70 mm Beta-modul	Aufnahme URMA BT -A	
1 B12 50 40 050 ø 50Mx50 mm Beta-modul	Reduktion URMA	
1 B14 40 00 090 ø 50 - 67 mm	Zweischneiderkopf Urma	
2 W16 08 09 CC., 09T3., ø 50 - 67 mm	Zweischneider Plattenhalter 90	

Cold work tool steel
low alloyed up to 1000 N/mm²

ap

ae

D

z

Vc

fz

S

F

P

T (min)

3

30

60

2

220

0.2

1167

466.8

0

0

O sistema de gerenciamento de ferramentas ‘standard’ integrado ao catálogo URMA fornece dados de componentes e montagem de ferramentas.

Ultimas versões do sotware e catálogos WinTool estão disponíveis em várias linguas para dowload gratuito:
www.wintool.com

The standard tool management system with integrated URMA catalogue delivers tool components and assembled tools.

The latest WinTool software and catalog versions are available in various languages and downloadable for free from:
www.wintool.com



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