

KINTEK®

DRIVEN TOOLS FOR CNC LATHES

PORTAUTENSILI ROTANTI VDI PER TORNI CNC



DRIVEN TOOLS FOR CNC LATHES

PORTAUTENSILI ROTANTI VDI
PER TORNI CNC 

ANGETRIEBENE WERKZEUGHALTER
FÜR CNC-DREHMASCHINEN 

PORTE-OUTILS TOURNANTS VDI
POUR TOURS CNC 

ПРИВОДНЫЕ ТОКАРНЫЕ ГОЛОВКИ
ПО ДЛЯ СТАНКОВ С ЧПУ 

标准的 CNC 数控车床驱动工具 

DIN 5480 Pag. 252-253

DIN 5482 Pag. 254-255

DIN 1809 Pag. 256-257

TOEM BARUFFALDI Pag. 258-259

HAAS Pag. 260-261

OKUMA - BMT60 Pag. 262-263
LB2000 EX M - LB2500 EX M - LB3000 EX M

OKUMA - BMT60 Pag. 264-266
LB4000 EX M

MAZAK Pag. 267

MORI SEIKI - BMT60 Pag. 268-269

NAKAMURA-TOME - BMT44 Pag. 270-271

NAKAMURA-TOME - BMT55 Pag. 272-273

NAKAMURA-TOME - BMT65 Pag. 274-275

DOOSAN - BMT45-BMT55-BMT65 Pag. 276-277



DRIVEN TOOLHOLDERS

We would like to inform you that you can consult the availability of the driven toolholders for each type of machine tool directly from the website WWW.KINTEK.IT
Here are only some examples:



PORTAUTENSILI MOTORIZZATI

Vi informiamo che potete consultare la disponibilità di portautensili motorizzati per ogni tipologia di macchina utensile direttamente dal sito WWW.KINTEK.IT
Qui di seguito solo alcuni esempi:



ANGETRIEBENE WERKZEUGE

Wir möchten informieren, sie können nach der verfügbarkeit der angetriebenen werkzeughalter für jede typologie von werkzeugmaschine direkt aus der webseite WWW.KINTEK.IT fragen.
Hier sind nur einige beispiele:



PORTE-OUTIL TOURNANTS

Nous vous informons que vous pouvez rechercher la disponibilité des porte-outils tournants pour chaque typologie de machine-outil directement à la page WWW.KINTEK.IT
Voilà seulement quelques exemples:



ПРИВОДНЫЕ ИНСТРУМЕНТЫ

Мы хотели бы Вас проинформировать, что Вы можете получить у нас консультацию по наличию и других приводных головок любого типа на нашем сайте WWW.KINTEK.IT

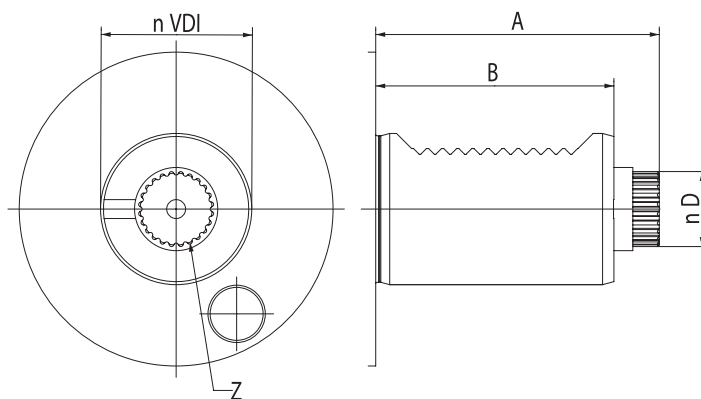


驱动刀柄

您可以通过访问网站 WWW.KINTEK.IT 了解每种机器所配驱动工具柄的全部产品, 举例如下

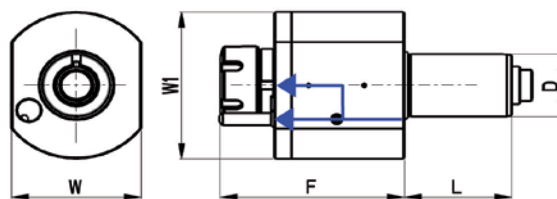
DIN 5480

VDI	A	B	D	Z
20	51	35	10,8	12
25	57	48	13,8	16
30	67	55	15,8	18
40	75	63	19,8	24
50	93	78	23,8	18



AXIAL DRILLING AND MILLING HEAD PORTAUTENSILE MOTORIZZATO ASSIALE
 AXIAL BOHR- UND FRÄSKOPF TÊTE DE PERÇAGE ET FRAISAGE
 АКСИАЛЬНАЯ СВЕРЛИЛЬНО-ФРЕЗЕРНАЯ ГОЛОВКА 轴向钻头

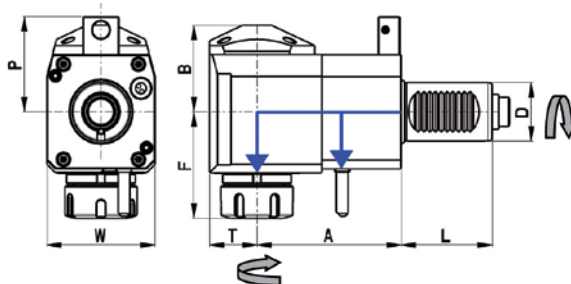
DIN 5480 SAUTER



CODE N.	D	CLAMPING APPLICATION	INTERNAL COOLING	F	L	W	W1	MAX TORQUE (Nm)	MAX SPEED (Rpm)	i	P BAR
116-43001	30	ER25	no	87	55	64	68	28	6000	1:1	-
116-43002	30	ER25	yes	87	55	64	68	28	6000	1:1	20
116-44001	40	ER25	no	105	63	80	86	50	6000	1:1	-
116-44002	40	ER25	yes	105	63	80	86	50	6000	1:1	20
116-44003	40	ER32	no	108	63	80	86	50	6000	1:1	-
116-44004	40	ER32	yes	108	63	80	86	50	6000	1:1	20

RADIAL DRILLING AND MILLING HEAD PORTAUTENSILE MOTORIZZATO RADIALE
 RADIAL BOHR- UND FRÄSKOPF TÊTE DE PERÇAGE ET FRAISAGE RADIAL
 РАДИАЛЬНАЯ СВЕРЛИЛЬНО-ФРЕЗЕРНАЯ ГОЛОВКА 径向钻头头

DIN 5480 SAUTER

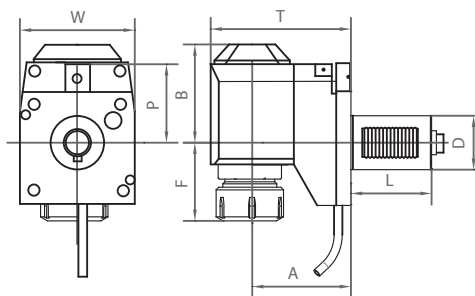


CODE N.	D	CLAMPING APPLICATION	INTERNAL COOLING	DIRECTION	A	B	F	L	P	T	W	MAX TORQUE (Nm)	MAX SPEED (rpm)	i	P BAR
116-43003	30	ER25	no	right	55	48	63	55	56	29	64	28	6000	1:1	-
116-43004	30	ER25	yes	right	55	51	63	55	56	29	64	28	6000	1:1	20
116-43005	30	ER25	no	right	85	48	63	55	56	29	64	28	6000	1:1	-
116-43006	30	ER25	yes	right	85	51	63	55	56	29	64	28	6000	1:1	20
116-46001	30	ER25	no	right	100	48	63	55	56	29	64	28	6000	1:1	-
116-46002	30	ER25	yes	right	100	51	63	55	56	29	64	28	6000	1:1	20
116-44005	40	ER25	no	right	80	59	70	63	65	36	75	50	6000	1:1	-
116-44006	40	ER25	yes	right	80	62	70	63	65	36	75	50	6000	1:1	20
116-44007	40	ER25	no	right	100	59	70	63	65	36	75	50	6000	1:1	-
116-44008	40	ER25	yes	right	100	62	70	63	65	36	75	50	6000	1:1	20
116-44009	40	ER32	no	right	80	59	74	63	65	36	75	50	6000	1:1	-
116-44010	40	ER32	yes	right	80	62	74	63	65	36	75	50	6000	1:1	20
116-44011	40	ER32	no	right	100	59	74	63	65	36	75	50	6000	1:1	-
116-44012	40	ER32	yes	right	100	62	74	63	65	36	75	50	6000	1:1	20

* Left version on enquiry * A richiesta la versione sinistra * Linksausführung auf Anfrage * Versione gauche sur demande * Левое исполнение по запросу * 左边版本可查。

OFFSET RADIAL DRILLING AND MILLING HEAD PORTAUTENSILE MOTORIZZATO RADIALE ARRETRATO
 RADIAL BOHR- UND FRÄSKOPF, ZURÜCKGESETZT TÊTE DE PERÇAGE ET FRAISAGE RADIALE, ARRIÈRE
 РАДИАЛЬНАЯ СВЕРЛИЛЬНО-ФРЕЗЕРНАЯ ГОЛОВКА СО СМЕЩЕНИЕМ 径向钻头头, 偏移

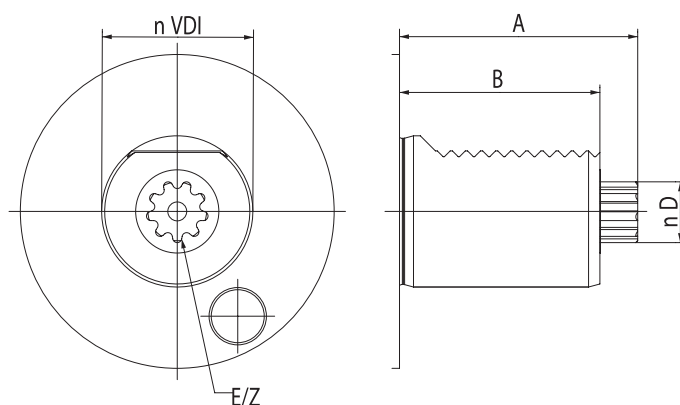
DIN 5480



CODE N.	D	ER	COOLING	A	B	F	L	P	T	W	MAX TORQUE (Nm)	Nmax	i	P BAR
116-43008	30	ER25	EXT	75	71	40	55	56	104	64	28	6000	1:1	-
116-43009	30	ER25	EXT+INT	75	74	40	55	56	104	64	28	6000	1:1	20
116-44014	40	ER25	EXT	120	92	37	63	65	156	75	50	6000	1:1	-
116-44015	40	ER25	EXT+INT	120	95	37	63	65	156	75	50	6000	1:1	20
116-44016	40	ER32	EXT	120	92	41	63	65	156	75	50	6000	1:1	-
116-44017	40	ER32	EXT+INT	120	95	41	63	65	156	75	50	6000	1:1	20

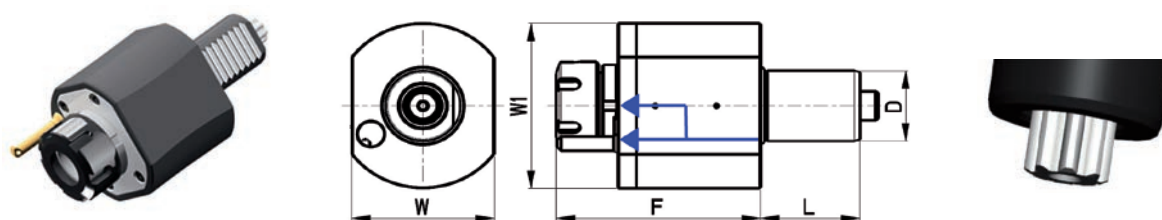
DIN 5482

VDI	A	B	D	E	Z
30	55	45	14,5	B15X12	8
40	63	53	16,5	B17X14	9
50	93	78	19,5	B20X17	11
60	108	94	24,5	B25X22	14



AXIAL DRILLING AND MILLING HEAD PORTAUTENSILE MOTORIZZATO ASSIALE
 AXIAL BOHR- UND FRÄSKOPF TÊTE DE PERÇAGE ET FRAISAGE
 АКСИАЛЬНАЯ СВЕРЛИЛЬНО-ФРЕЗЕРНАЯ ГОЛОВКА 轴向钻头

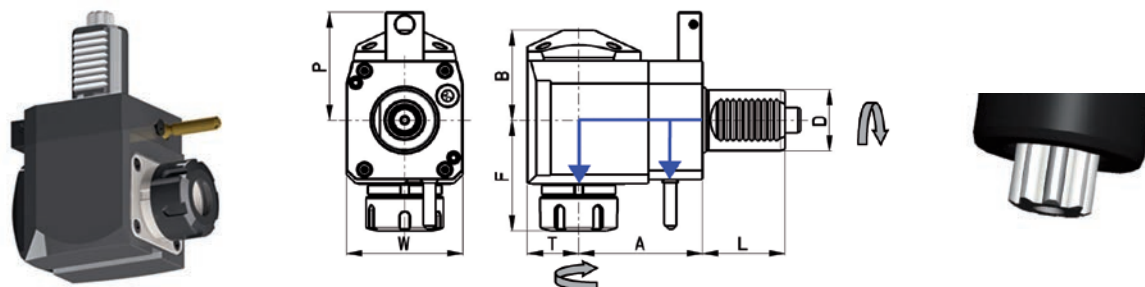
DIN 5482 SAUTER



CODE N.	D	CLAMPING APPLICATION	INTERNAL COOLING	F	L	W	W1	MAX TORQUE (Nm)	MAX SPEED (Rpm)	i	P BAR
116-43010	30	ER25	no	87	45	64	68	28	6000	1:1	-
116-43011	30	ER25	yes	87	45	64	68	28	6000	1:1	20
116-44018	40	ER25	no	105	53	80	86	50	6000	1:1	-
116-44019	40	ER25	yes	105	53	80	86	50	6000	1:1	20
116-44020	40	ER32	no	108	53	80	86	50	6000	1:1	-
116-44021	40	ER32	yes	108	53	80	86	50	6000	1:1	20

RADIAL DRILLING AND MILLING HEAD PORTAUTENSILE MOTORIZZATO RADIALE
 RADIAL BOHR- UND FRÄSKOPF TÊTE DE PERÇAGE ET FRAISAGE RADIAL
 РАДИАЛЬНАЯ СВЕРЛИЛЬНО-ФРЕЗЕРНАЯ ГОЛОВКА 径向钻头

DIN 5482 SAUTER



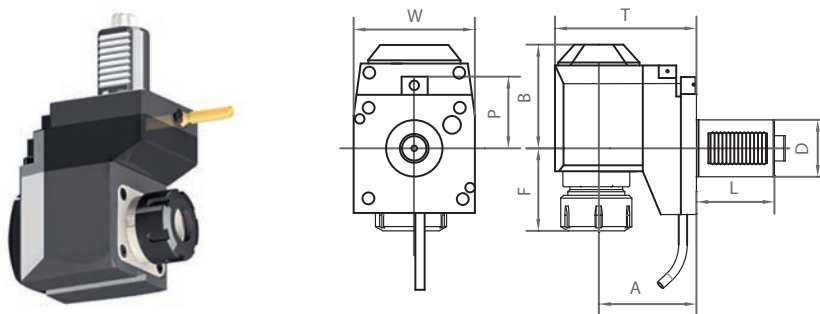
CODE N.	D	CLAMPING APPLICATION	INTERNAL COOLING	DIRECTION	A	B	F	L	P	T	W	MAX TORQUE (Nm)	MAX SPEED (rpm)	i	P BAR
116-43012	30	ER25	no	right	55	48	63	45	48	26	64	28	6000	1:1	-
116-43013	30	ER25	yes	right	55	51	63	45	48	26	64	28	6000	1:1	20
116-44022	40	ER25	no	right	80	59	70	53	71	33	75	50	6000	1:1	-
116-44023	40	ER25	yes	right	80	62	70	53	71	33	75	50	6000	1:1	20
116-44024	40	ER32	no	right	80	59	74	53	71	33	75	50	6000	1:1	-
116-44025	40	ER32	yes	right	80	62	74	53	71	33	75	50	6000	1:1	20

* Left version on enquiry * A richiesta la versione sinistra * Linksausführung auf Anfrage * Versione gauche sur demande * Левое исполнение по запросу * 左边版本可查。

09

OFFSET RADIAL DRILLING AND MILLING HEAD PORTAUTENSILE MOTORIZZATO RADIALE ARRETRATO
 RADIAL BOHR- UND FRÄSKOPF, ZURÜCKGESETZT TÊTE DE PERÇAGE ET FRAISAGE RADIALE, ARRIÈRE
 РАДИАЛЬНАЯ СВЕРЛИЛЬНО-ФРЕЗЕРНАЯ ГОЛОВКА СО СМЕЩЕНИЕМ 径向钻头, 偏移

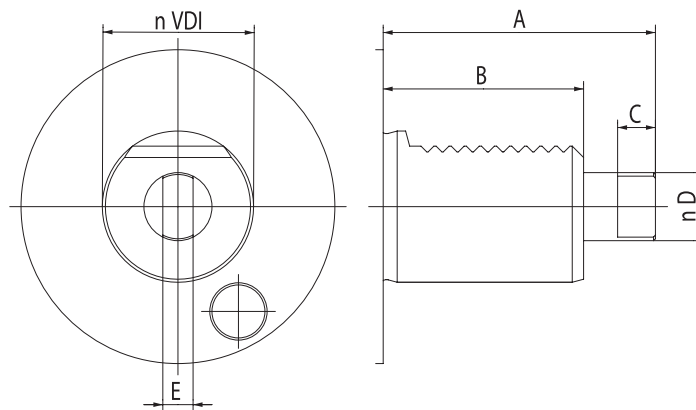
DIN 5482



CODE N.	D	ER	INTERNAL COOLING	A	B	F	L	P	T	W	MAX TORQUE (Nm)	Nmax	i	P BAR
116-43015	30	ER25	no	75	71	40	45	48	104	64	28	6000	1:1	-
116-43016	30	ER25	yes	75	74	40	45	48	104	64	28	6000	1:1	20
116-46003	40	ER25	no	120	92	37	53	71	156	75	50	6000	1:1	-
116-46004	40	ER25	yes	120	95	37	53	71	156	75	50	6000	1:1	20
116-46005	40	ER32	no	120	92	41	53	71	156	75	50	6000	1:1	-
116-46006	40	ER32	yes	120	95	41	53	71	156	75	50	6000	1:1	20

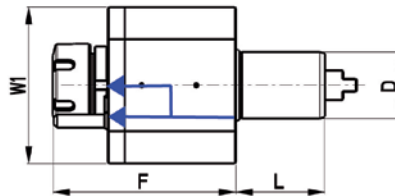
DIN 1809

VDI	A	B	C	D	E
20	48	35	6,5	10	5
30	62	45	8	12	6
40	72	53	10	18	8
50	91	78	13	24	13
60	107	94	16	29	14



AXIAL DRILLING AND MILLING HEAD PORTAUTENSILE MOTORIZZATO ASSIALE
 AXIAL BOHR- UND FRÄSKOPF TÊTE DE PERÇAGE ET FRAISAGE
 АКСИАЛЬНАЯ СВЕРЛИЛЬНО-ФРЕЗЕРНАЯ ГОЛОВКА 轴向钻头

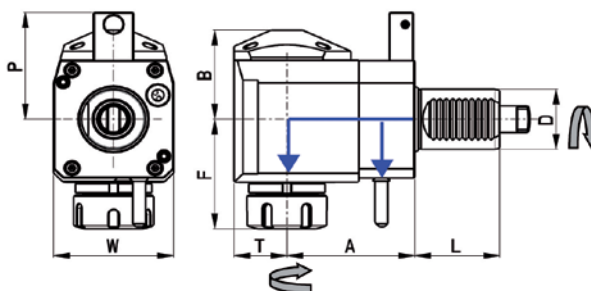
DIN1809 - DUPLOMATIC



CODE N.	D	CLAMPING APPLICATION	INTERNAL COOLING	F	L	W	W1	MAX TORQUE (Nm)	MAX SPEED (Rpm)	i	P BAR
116-43017	30	ER25	no	87	45	64	68	28	6000	1:1	-
116-43018	30	ER25	yes	87	45	64	68	28	6000	1:1	20
116-44026	40	ER25	no	105	53	80	86	50	6000	1:1	-
116-44027	40	ER25	yes	105	53	80	86	50	6000	1:1	20
116-44028	40	ER32	no	108	53	80	86	50	6000	1:1	-
116-44029	40	ER32	yes	108	53	80	86	50	6000	1:1	20
116-44030	40	ER32	no	95	53	80	86	50	6000	1:1	-
116-44031	40	ER32	yes	95	53	80	86	50	6000	1:1	20

RADIAL DRILLING AND MILLING HEAD PORTAUTENSILE MOTORIZZATO RADIALE
 RADIAL BOHR- UND FRÄSKOPF TÊTE DE PERÇAGE ET FRAISAGE RADIAL
 РАДИАЛЬНАЯ СВЕРЛИЛЬНО-ФРЕЗЕРНАЯ ГОЛОВКА 径向钻头头

DIN1809 - DUPLOMATIC



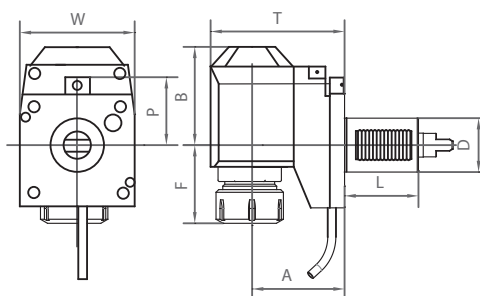
CODE N.	D	CLAMPING APPLICATION	INTERNAL COOLING	DIRECTION	A	B	F	L	P	T	W	MAX TORQUE (Nm)	MAX SPEED (rpm)	i	P BAR
116-43019	30	ER25	no	right	55	48	63	45	48	29	64	28	6000	1:1	-
116-43020	30	ER25	yes	right	55	51	63	45	48	29	64	28	6000	1:1	20
116-44032	40	ER25	no	right	80	59	70	53	71	36	75	50	6000	1:1	-
116-44033	40	ER25	yes	right	80	62	70	53	71	36	75	50	6000	1:1	20
116-44034	40	ER32	no	right	80	59	74	53	71	36	75	50	6000	1:1	-
116-44035	40	ER32	yes	right	80	62	74	53	71	36	75	50	6000	1:1	20
116-44036	40	ER25	no	left	100	59	70	53	-	36	75	50	6000	1:1	-
116-44037	40	ER25	yes	left	100	62	70	53	-	36	75	50	6000	1:1	20
116-44038	40	ER32	no	left	100	59	74	53	-	36	75	50	6000	1:1	-
116-44039	40	ER32	yes	left	100	62	74	53	-	36	75	50	6000	1:1	20

* Left version on enquiry * A richiesta la versione sinistra * Linksausführung auf Anfrage * Versione gauche sur demande * Левое исполнение по запросу * 左边版本可查。

09

OFFSET RADIAL DRILLING AND MILLING HEAD PORTAUTENSILE MOTORIZZATO RADIALE ARRETRATO
 RADIAL BOHR- UND FRÄSKOPF, ZURÜCKGESETZT TÊTE DE PERÇAGE ET FRAISAGE RADIALE, ARRIÈRE
 РАДИАЛЬНАЯ СВЕРЛИЛЬНО-ФРЕЗЕРНАЯ ГОЛОВКА СО СМЕЩЕНИЕМ 径向钻头头, 偏移

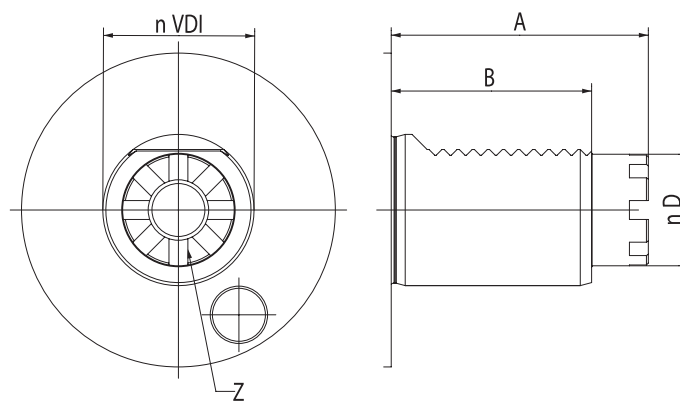
DIN 1809



CODE N.	D	ER	INTERNAL COOLING	A	B	F	L	P	T	W	MAX TORQUE (Nm)	Nmax	i	P BAR
116-43022	30	ER25	no	75	71	40	45	48	104	64	28	6000	1:1	-
116-43023	30	ER25	yes	75	74	40	45	48	104	64	28	6000	1:1	20
116-46007	40	ER25	no	120	92	37	53	71	156	75	50	4000	1:1	-
116-46008	40	ER25	yes	120	95	37	53	71	156	75	50	4000	1:1	20
116-46009	40	ER32	no	120	92	41	53	71	156	75	50	4000	1:1	-
116-46010	40	ER32	yes	120	95	41	53	71	156	75	50	4000	1:1	20

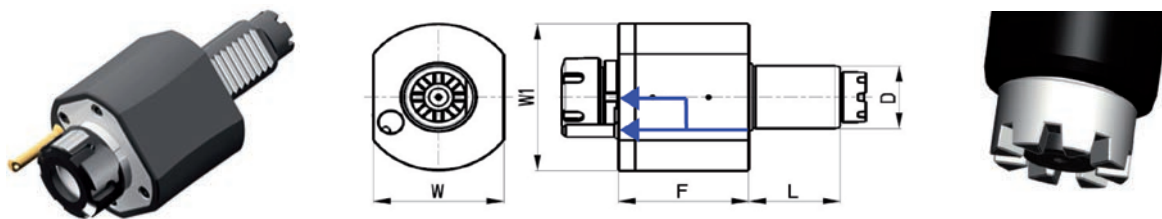
TOEM BARUFFALDI

VDI	A	B	D	Z
20	44	35	19	6
30	59	45/53	24	6
40	68	53	32	8
50	84	70	40	8
60	100	83	43	8



AXIAL DRILLING AND MILLING HEAD PORTAUTENSILE MOTORIZZATO ASSIALE
 AXIAL BOHR- UND FRÄSKOPF TÊTE DE PERÇAGE ET FRAISAGE
 АКСИАЛЬНАЯ СВЕРЛИЛЬНО-ФРЕЗЕРНАЯ ГОЛОВКА 轴向钻头

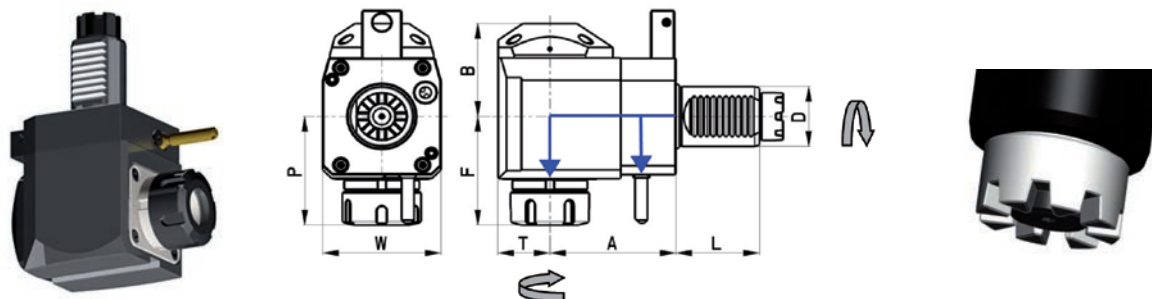
TOEM BARUFFALDI



CODE N.	D	CLAMPING APPLICATION	INTERNAL COOLING	F	L	W	W1	MAX TORQUE (Nm)	MAX SPEED (Rpm)	i	Z	P BAR
116-43024	30	ER25	no	87	45	64	68	28	6000	1:1	6	-
116-43025	30	ER25	yes	87	45	64	68	28	6000	1:1	6	20
116-44044	40	ER25	no	105	53	80	86	50	6000	1:1	8	-
116-44045	40	ER25	yes	105	53	80	86	50	6000	1:1	8	20
116-44046	40	ER32	no	108	53	80	86	50	6000	1:1	8	-
116-44047	40	ER32	yes	108	53	80	86	50	6000	1:1	8	20

RADIAL DRILLING AND MILLING HEAD PORTAUTENSILE MOTORIZZATO RADIALE
 RADIAL BOHR- UND FRÄSKOPF TÊTE DE PERÇAGE ET FRAISAGE RADIAL
 РАДИАЛЬНАЯ СВЕРЛИЛЬНО-ФРЕЗЕРНАЯ ГОЛОВКА 径向钻头

TOEM BARUFFALDI

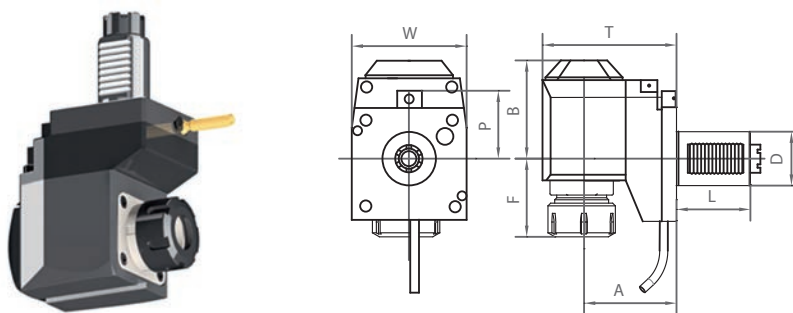


CODE N.	D	CLAMPING APPLICATION	INTERNAL COOLING	DIRECTION	A	B	F	L	P	T	W	MAX TORQUE (Nm)	MAX SPEED (rpm)	i	Z	P BAR
116-43026	30	ER25	no	right	55	48	63	45	48	29	64	28	6000	1:1	6	-
116-43027	30	ER25	yes	right	55	51	63	45	48	29	64	28	6000	1:1	6	20
116-44048	40	ER25	no	right	80	59	70	53	71	36	75	50	6000	1:1	8	-
116-44049	40	ER25	yes	right	80	62	70	53	71	36	75	50	6000	1:1	8	20
116-44050	40	ER32	no	right	80	59	74	53	71	36	75	50	6000	1:1	8	-
116-44051	40	ER32	yes	right	80	62	74	53	71	36	75	50	6000	1:1	8	20

* Left version on enquiry * A richiesta la versione sinistra * Linksausführung auf Anfrage * Versione gauche sur demande * Левое исполнение по запросу * 左边版本可查。

OFFSET RADIAL DRILLING AND MILLING HEAD PORTAUTENSILE MOTORIZZATO RADIALE ARRETRATO
 RADIAL BOHR- UND FRÄSKOPF, ZURÜCKGESETZT TÊTE DE PERÇAGE ET FRAISAGE RADIALE, ARRIÈRE
 РАДИАЛЬНАЯ СВЕРЛИЛЬНО-ФРЕЗЕРНАЯ ГОЛОВКА СО СМЕЩЕНИЕМ 径向钻头, 偏移

TOEM BARUFFALDI

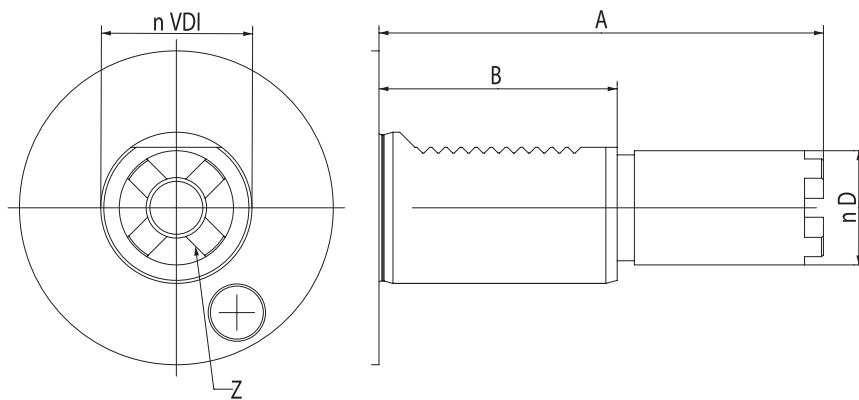


CODE N.	D	ER	INTERNAL COOLING	A	B	F	L	P	T	W	MAX TORQUE (Nm)	Nmax	i	Z	P BAR
116-43029	30	ER25	no	75	71	40	45	48	104	64	28	6000	1:1	6	-
116-43030	30	ER25	yes	75	74	40	45	48	104	64	28	6000	1:1	6	20
116-46011	40	ER25	no	120	92	37	53	71	156	75	50	6000	1:1	-	-
116-46012	40	ER25	yes	120	95	37	53	71	156	75	50	6000	1:1	-	20
116-46013	40	ER32	no	120	92	41	53	71	156	75	50	6000	1:1	-	-
116-46014	40	ER32	yes	120	95	41	53	71	156	75	50	6000	1:1	-	20

09

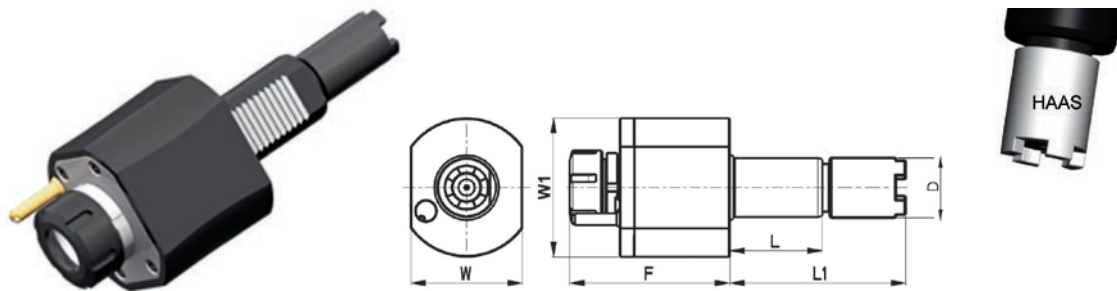
HAAS

VDI	A	B	D	Z	TYPE
40	104,85	63	30,2	4	1
40	117,55	63	30,2	4	2
40	130,25	63	30,2	4	3



AXIAL DRILLING AND MILLING HEAD PORTAUTENSILE MOTORIZZATO ASSIALE
 AXIAL BOHR- UND FRÄSKOPF TÊTE DE PERÇAGE ET FRAISAGE
 АКСИАЛЬНАЯ СВЕРЛИЛЬНО-ФРЕЗЕРНАЯ ГОЛОВКА 轴向钻头

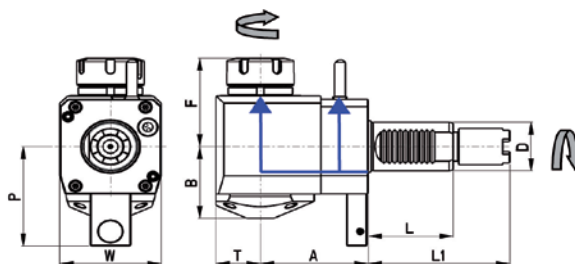
STEPED - HAAS



CODE N.	D	CLAMPING APPLICATION	INTERNAL COOLING	F	L	L1	W	W1	MAX TORQUE (Nm)	MAX SPEED (Rpm)	i	P BAR
116-44056	40	ER25	no	105	63	104,85	80	86	50	6000	1:1	-
116-44057	40	ER25	yes	105	63	104,85	80	86	50	6000	1:1	20
116-44058	40	ER32	no	108	63	104,85	80	86	50	6000	1:1	-
116-44059	40	ER32	yes	108	63	104,85	80	86	50	6000	1:1	20
116-44060	40	ER25	no	105	63	117,55	80	86	50	6000	1:1	-
116-44061	40	ER25	yes	105	63	117,55	80	86	50	6000	1:1	20
116-44062	40	ER32	no	108	63	117,55	80	86	50	6000	1:1	-
116-44063	40	ER32	yes	108	63	117,55	80	86	50	6000	1:1	20
116-44064	40	ER25	no	105	63	130,25	80	86	50	6000	1:1	-
116-44065	40	ER25	yes	105	63	130,25	80	86	50	6000	1:1	20
116-44066	40	ER32	no	108	63	130,25	80	86	50	6000	1:1	-
116-44067	40	ER32	yes	108	63	130,25	80	86	50	6000	1:1	20

RADIAL DRILLING AND MILLING HEAD PORTAUTENSILE MOTORIZZATO RADIALE
 RADIAL BOHR- UND FRÄSKOPF TÊTE DE PERÇAGE ET FRAISAGE RADIAL
 РАДИАЛЬНАЯ СВЕРЛИЛЬНО-ФРЕЗЕРНАЯ ГОЛОВКА 径向钻头头

STEPPED - HAAS

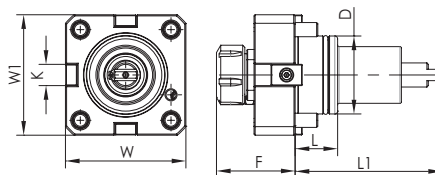


CODE N.	D	CLAMPING APPLICATION	INTERNAL COOLING	DIRECTION	A	B	F	L	L1	P	T	W	MAX TORQUE (Nm)	MAX SPEED (rpm)	i
116-47001	40	ER25	no	left	69	59	70	63	104,85	82	36	75	60	6000	1:1
116-47002	40	ER25	yes	left	69	62	70	63	104,85	82	36	75	50	6000	1:1
116-47003	40	ER32	no	left	69	59	74	63	104,85	82	36	75	50	6000	1:1
116-47004	40	ER32	yes	left	69	62	74	63	104,85	82	36	75	50	6000	1:1
116-47005	40	ER25	no	left	69	59	70	63	117,55	82	36	75	50	6000	1:1
116-47006	40	ER25	yes	left	69	62	70	63	117,55	82	36	75	50	6000	1:1
116-47007	40	ER32	no	left	69	59	74	63	117,55	82	36	75	50	6000	1:1
116-47008	40	ER32	yes	left	69	62	74	63	117,55	82	36	75	50	6000	1:1
116-47009	40	ER32	no	left	69	59	70	63	130,25	82	36	75	50	6000	1:1
116-47010	40	ER25	yes	left	69	62	70	63	130,25	82	36	75	50	6000	1:1
116-47011	40	ER25	no	left	69	59	74	63	130,25	82	36	75	50	6000	1:1
116-47012	40	ER32	yes	left	69	62	74	63	130,25	82	36	75	50	6000	1:1
116-44068	40	ER25	no	left	80	59	70	63	104,85	82	36	75	50	6000	1:1
116-44069	40	ER25	yes	left	80	62	70	63	104,85	82	36	75	50	6000	1:1
116-44070	40	ER32	no	left	80	59	74	63	104,85	82	36	75	50	6000	1:1
116-44071	40	ER32	yes	left	80	62	74	63	104,85	82	36	75	50	6000	1:1
116-44072	40	ER25	no	left	80	59	70	63	117,55	82	36	75	50	6000	1:1
116-44073	40	ER25	yes	left	80	62	70	63	117,55	82	36	75	50	6000	1:1
116-44074	40	ER32	no	left	80	59	74	63	117,55	82	36	75	50	6000	1:1
116-44075	40	ER32	yes	left	80	62	74	63	117,55	82	36	75	50	6000	1:1
116-44076	40	ER25	no	left	80	59	70	63	130,25	82	36	75	50	6000	1:1
116-44077	40	ER25	yes	left	80	62	70	63	130,25	82	36	75	50	6000	1:1
116-44078	40	ER32	no	left	80	59	74	63	130,25	82	36	75	50	6000	1:1
116-44079	40	ER32	yes	left	80	62	74	63	130,25	82	36	75	50	6000	1:1

09

AXIAL DRILLING AND MILLING HEAD PORTAUTENSILE MOTORIZZATO ASSIALE
 AXIAL BOHR- UND FRÄSKOPF TÊTE DE PERÇAGE ET FRAISAGE
 АКСИАЛЬНАЯ СВЕРЛИЛЬНО-ФРЕЗЕРНАЯ ГОЛОВКА 轴向钻头头

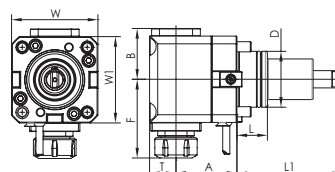
BMT65



CODE N.	BMT	ER	D	F	K	L	L1	W	W1	MAX: SPEED (Rpm)	i	MAX: TORQUE Nm	INTERNAL COOLING
124-06501	65	ER32	65	75	18	32	112	94	94	6000	1:1	70	no
124-06508	65	ER32	65	75	18	32	112	94	94	6000	1:1	70	yes

RADIAL DRILLING AND MILLING HEAD PORTAUTENSILE MOTORIZZATO RADIALE
 RADIAL BOHR- UND FRÄSKOPF TÊTE DE PERÇAGE ET FRAISAGE RADIAL
 РАДИАЛЬНАЯ СВЕРЛИЛЬНО-ФРЕЗЕРНАЯ ГОЛОВКА 径向钻头头

BMT65

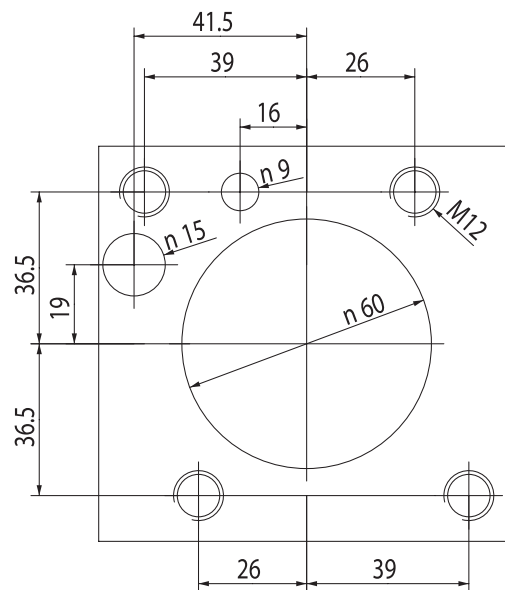


CODE N.	BMT	ER	D	A	B	F	L	L1	T	W	W1	MAX: SPEED (Rpm)	i	MAX: TORQUE Nm	INTERNAL COOLING	P BAR
124-06502	65	ER32	65	72	59	110	32	112	36	94	94	6000	1:1	40	no	-
124-06512	65	ER32	65	72	59	110	32	110	38	94	94	6000	1:1	40	yes	20

OKUMA - BMT60

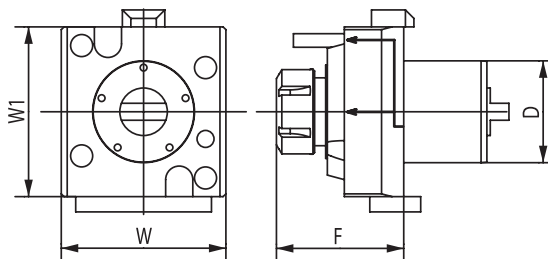
LB2000 EX M - LB2500 EX M - LB3000 EX M

CONNECTION TURRET OKUMA BMT60



AXIAL DRILLING AND MILLING HEAD PORTAUTENSILE MOTORIZZATO ASSIALE
 AXIAL BOHR- UND FRÄSKOPF TÊTE DE PERÇAGE ET FRAISAGE
 АКСИАЛЬНАЯ СВЕРЛИЛЬНО-ФРЕЗЕРНАЯ ГОЛОВКА 轴向钻头

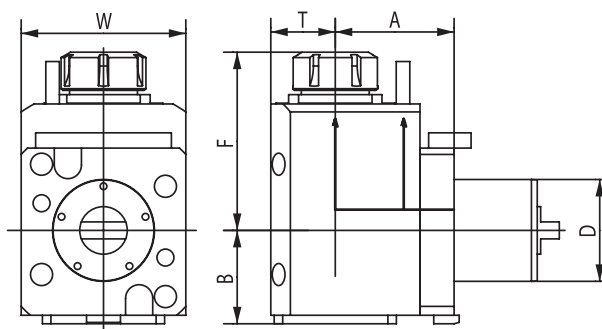
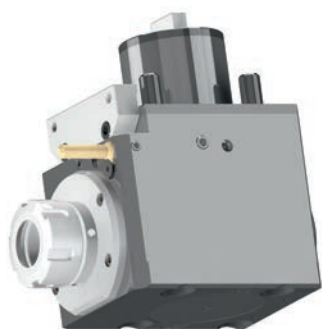
OKUMA BMT60



CODE N.	D	ER	INTERNAL COOLING	F	W	W1	TORQUE (Nm)	Nmax (rpm)	RATIO	P (bar)
124-06005	60	ER32	no	87	97	100	70	6000	1:1	-
124-06006	60	ER32	yes	87	97	100	70	6000	1:1	20

RADIAL DRILLING AND MILLING HEAD PORTAUTENSILE MOTORIZZATO RADIALE
 RADIAL BOHR- UND FRÄSKOPF TÊTE DE PERÇAGE ET FRAISAGE RADIAL
 РАДИАЛЬНАЯ СВЕРЛИЛЬНО-ФРЕЗЕРНАЯ ГОЛОВКА 径向钻头

OKUMA BMT60

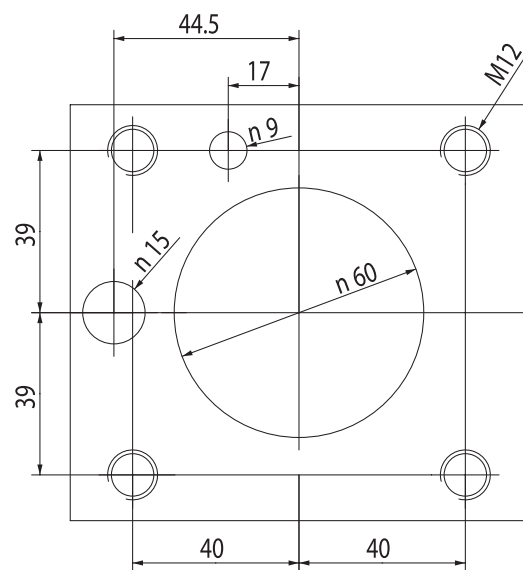


CODE N.	D	ER	INTERNAL COOLING	DIRECTION	A	B	F	T	W	TORQUE (Nm)	Nmax (rpm)	RATIO	P (bar)
124-06007	60	ER32	no	right/left	70	59	111	38	94	70	6000	1:1	-
124-06008	60	ER32	yes	right/left	70	59	111	38	94	70	6000	1:1	20

OKUMA - BMT60

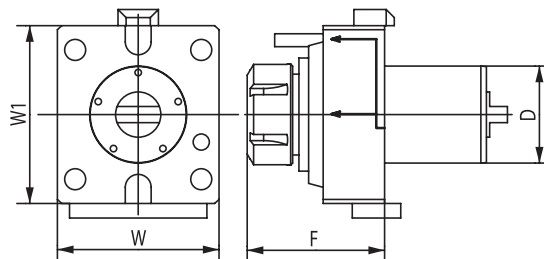
LB4000 EX M

CONNECTION TURRET OKUMA BMT60



AXIAL DRILLING AND MILLING HEAD PORTAUTENSILE MOTORIZZATO ASSIALE
 AXIAL BOHR- UND FRÄSKOPF TÊTE DE PERÇAGE ET FRAISAGE
 АКСИАЛЬНАЯ СВЕРЛИЛЬНО-ФРЕЗЕРНАЯ ГОЛОВКА 轴向钻头

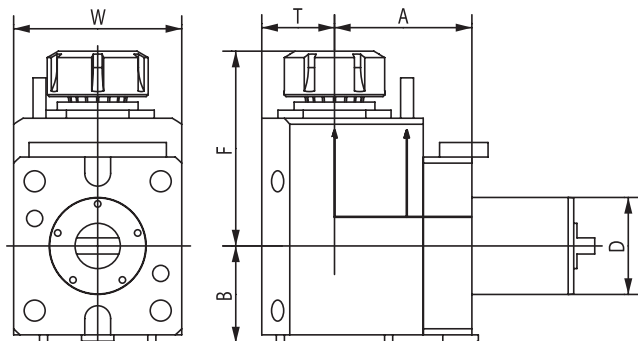
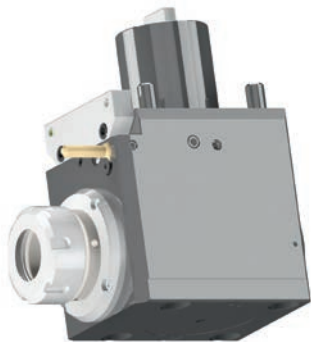
OKUMA BMT60



CODE N.	D	ER	INTERNAL COOLING	F	W	W1	TORQUE (Nm)	Nmax (rpm)	RATIO	P (bar)
124-06009	60	ER40	no	82	100	110	80	6000	1:1	-
124-06010	60	ER40	yes	82	100	110	80	6000	1:1	20

RADIAL DRILLING AND MILLING HEAD PORTAUTENSILE MOTORIZZATO RADIALE
 RADIAL BOHR- UND FRÄSKOPF TÊTE DE PERÇAGE ET FRAISAGE RADIAL
 РАДИАЛЬНАЯ СВЕРЛИЛЬНО-ФРЕЗЕРНАЯ ГОЛОВКА 径向钻头

OKUMA BMT60

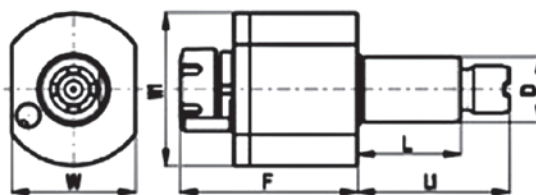


CODE N.	D	ER	INTERNAL COOLING	DIRECTION	A	B	F	T	W	TORQUE (Nm)	Nmax (rpm)	RATIO	P (bar)
124-06011	60	ER40	no	right/left	85	64	121	44	100	80	6000	1:1	-
124-06012	60	ER40	yes	right/left	85	64	121	44	100	80	6000	1:1	20

09

AXIAL DRILLING AND MILLING HEAD PORTAUTENSILE MOTORIZZATO ASSIALE
 AXIAL BOHR- UND FRÄSKOPF TÊTE DE PERÇAGE ET FRAISAGE
 АКСИАЛЬНАЯ СВЕРЛИЛЬНО-ФРЕЗЕРНАЯ ГОЛОВКА 轴向钻头

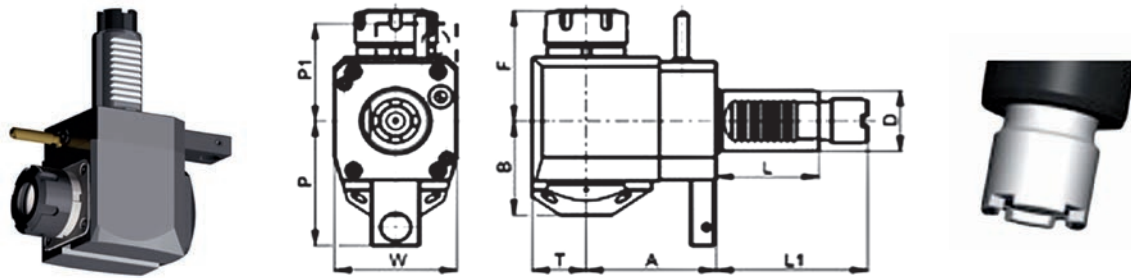
STEPPED - OKUMA



CODE N.	D	TOOLGRIP	INTERNAL COOLING	F	L	L1	W	W1	TORQUE Nm	SPEED rpm	RATIO	P BAR
116-43031	30	ER25	no	87	55	69	64	68	28	6000	1:1	-
116-43032	30	ER25	yes	87	55	69	64	68	28	6000	1:1	20
116-44098	40	ER25	no	105	63	93	80	86	50	6000	1:1	-
116-44099	40	ER25	yes	105	63	93	80	86	50	6000	1:1	20
116-54001	40	ER32	no	108	63	93	80	86	50	6000	1:1	-
116-54002	40	ER32	yes	108	63	93	80	86	50	6000	1:1	20
116-54003	40	ER25	no	105	63	101	80	86	50	6000	1:1	-
116-54004	40	ER25	yes	105	63	101	80	86	50	6000	1:1	20
116-54005	40	ER32	no	108	63	101	80	86	50	6000	1:1	-
116-54006	40	ER32	yes	108	63	101	80	86	50	6000	1:1	20

RADIAL DRILLING AND MILLING HEAD PORTAUTENSILE MOTORIZZATO RADIALE
 RADIAL BOHR- UND FRÄSKOPF TÊTE DE PERÇAGE ET FRAISAGE RADIAL
 РАДИАЛЬНАЯ СВЕРЛИЛЬНО-ФРЕЗЕРНАЯ ГОЛОВКА 径向钻铣头

STEPPED - OKUMA

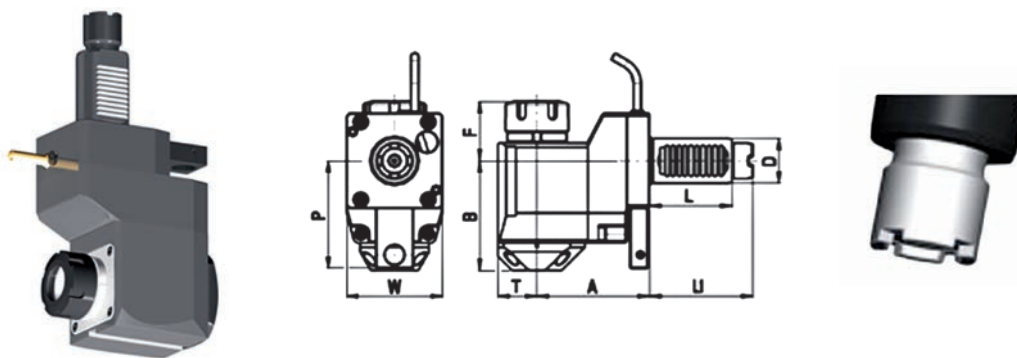


CODE N.	D	TOOLGRIP	INTERNAL COOLING	DIRECTION	A	B	F	L	L1	P	T	W
116-43033	30	ER25	no	right	85	48	63	55	69	-	29	64
116-43034	30	ER25	yes	right	85	51	63	55	69	-	29	64
116-43035	30	ER25	no	left	55	48	63	55	69	72	29	64
116-43036	30	ER25	yes	left	55	51	63	55	69	72	29	64
116-54007	40	ER25	no	left	80	59	70	63	93	82	36	75
116-54008	40	ER25	yes	left	80	62	70	63	93	82	36	75
116-54009	40	ER32	no	left	80	59	74	63	93	82	36	75
116-54010	40	ER32	yes	left	80	62	74	63	93	82	36	75
116-54011	40	ER25	no	left	80	59	70	63	101	82	36	75
116-54012	40	ER25	yes	left	80	62	70	63	101	82	36	75
116-54013	40	ER32	no	left	80	59	74	63	101	82	36	75
116-54014	40	ER32	yes	left	80	62	74	63	101	82	36	75
116-54015	40	ER25	no	right	80	59	70	63	93	-	36	75
116-54016	40	ER25	yes	right	80	62	70	63	93	-	36	75
116-54017	40	ER32	no	right	80	59	74	63	93	-	36	75
116-54018	40	ER32	yes	right	80	62	74	63	93	-	36	75

09

OFFSET RADIAL DRILLING AND MILLING HEAD PORTAUTENSILE MOTORIZZATO RADIALE ARRETRATO
 RADIAL BOHR- UND FRÄSKOPF TÊTE DE PERÇAGE ET FRAISAGE RADIAL
 РАДИАЛЬНАЯ СВЕРЛИЛЬНО-ФРЕЗЕРНАЯ ГОЛОВКА 径向钻铣头

STEPPED - OKUMA

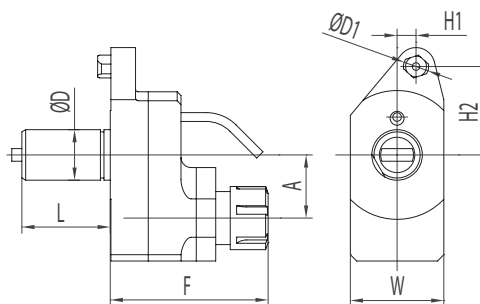


CODE N.	D	TOOLGRIP	INTERNAL COOLING	DIRECTION	A	B	F	L	L1	P	T	W	TORQUE Nm	SPEED rpm	P BAR	
116-43038	30	ER25	no	left	75	71	40	55	69	72	29	64	28	6000	1:1	-
116-43039	30	ER25	yes	left	75	74	40	55	69	72	29	64	28	6000	1:1	20
116-48001	40	ER25	no	left	120	92	37	63	93	82	36	75	50	6000	1:1	-
116-48002	40	ER25	yes	left	120	95	37	63	93	82	36	75	50	6000	1:1	20
116-48003	40	ER32	no	left	120	92	41	63	93	82	36	75	50	6000	1:1	-
116-48004	40	ER32	yes	left	120	95	41	63	93	82	36	75	50	6000	1:1	20
116-48005	40	ER25	no	left	120	92	37	63	101	82	36	75	50	6000	1:1	-
116-48006	40	ER25	yes	left	120	95	37	63	101	82	36	75	50	6000	1:1	20
116-48007	40	ER32	no	left	120	92	41	63	101	82	36	75	50	6000	1:1	-
116-48008	40	ER32	yes	left	120	95	41	63	101	82	36	75	50	6000	1:1	20

MAZAK

AXIAL DRILLING AND MILLING HEAD PORTAUTENSILE MOTORIZZATO ASSIALE
 AXIAL BOHR- UND FRÄSKOPF TÊTE DE PERÇAGE ET FRAISAGE
 АКСИАЛЬНАЯ СВЕРЛИЛЬНО-ФРЕЗЕРНАЯ ГОЛОВКА 轴向钻铣头

MAZAK

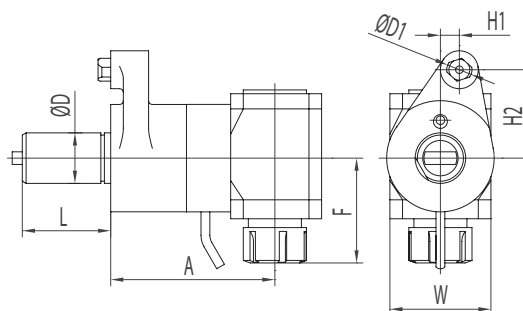


CODE N.	D	ER	A	D1	F	H1	H2	L	W	N max	I
116-54019	40	ER32	50	20	121	15	70	70	74	-	1:1

09

RADIAL DRILLING AND MILLING HEAD PORTAUTENSILE MOTORIZZATO RADIALE
 RADIAL BOHR- UND FRÄSKOPF TÊTE DE PERÇAGE ET FRAISAGE RADIAL
 РАДИАЛЬНАЯ СВЕРЛИЛЬНО-ФРЕЗЕРНАЯ ГОЛОВКА 径向钻铣头

MAZAK

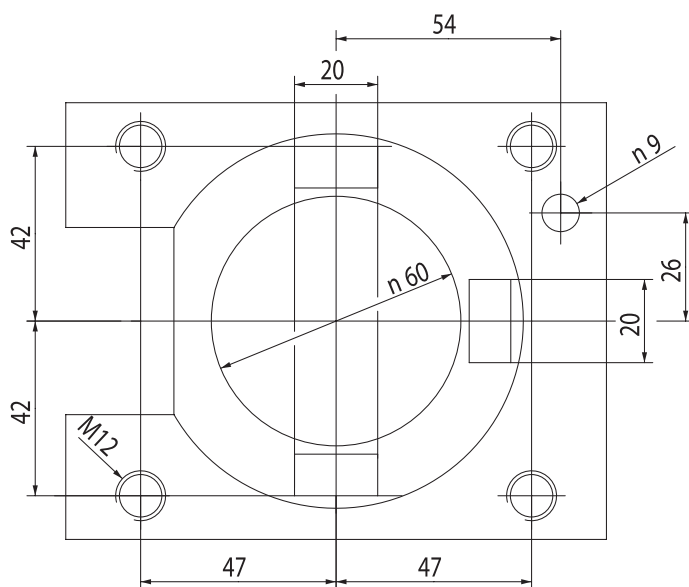


CODE N.	D	ER	A	D1	F	H1	H2	L	W	N	I
116-54020	40	ER32	130	20	83	15	70	70	80	-	1:1

MORI SEIKI - BMT60

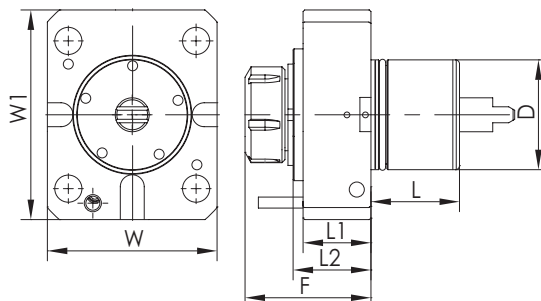
NL 1500/2000/2500/3000
NLX 1500/2000/2500/3000
NT 3250/4200/4250/4300/5400
NZL 2500

CONNECTION TURRET MORI SEIKI BMT60



AXIAL DRILLING AND MILLING HEAD PORTAUTENSILE MOTORIZZATO ASSIALE
 AXIAL BOHR- UND FRÄSKOPF TÊTE DE PERÇAGE ET FRAISAGE
 АКСИАЛЬНАЯ СВЕРЛИЛЬНО-ФРЕЗЕРНАЯ ГОЛОВКА 轴向钻头

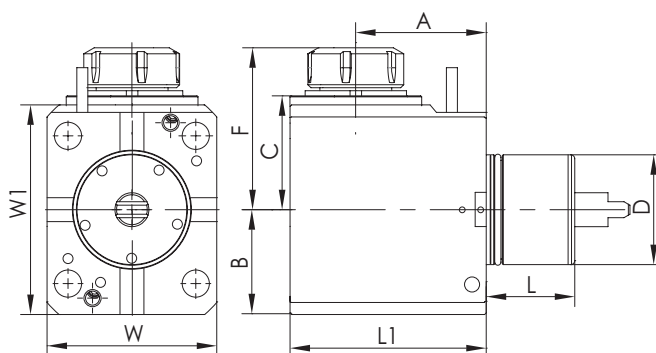
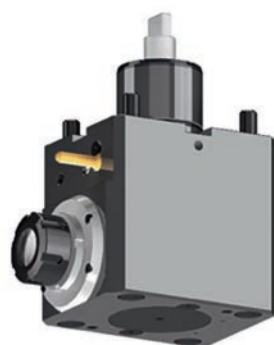
MORI SEIKI NL2000



CODE N.	ER	D	F	L	L1	L2	W	W1	TORQUE (Nm)	Nmax (rpm)	I	INTERNAL COOLING	P (bar)
124-06001	ER32	60	89	53	48,5	58	108	130	70	6000	1:1	no	-
124-06003	ER32	60	89	53	48,5	58	108	130	70	6000	1:1	yes	20

RADIAL DRILLING AND MILLING HEAD PORTAUTENSILE MOTORIZZATO RADIALE
 RADIAL BOHR- UND FRÄSKOPF TÊTE DE PERÇAGE ET FRAISAGE RADIAL
 РАДИАЛЬНАЯ СВЕРЛИЛЬНО-ФРЕЗЕРНАЯ ГОЛОВКА 径向钻头

MORI SEIKI NL2000



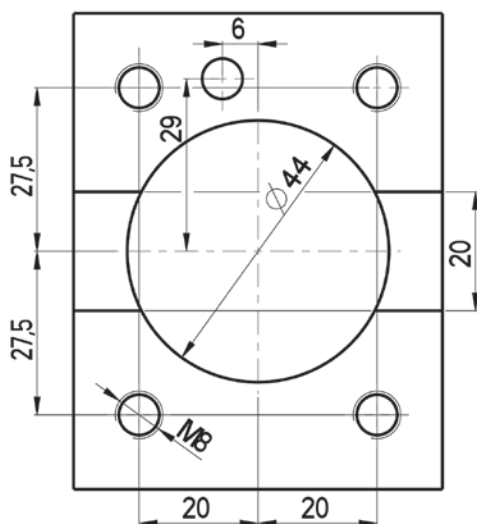
CODE N.	ER	D	F	L	L1	A	B	C	W	W1	TORQUE (Nm)	Nmax (rpm)	I	INTERNAL COOLING	P (bar)
124-06002	ER32	60	107	53	128	90	65	78	108	130	70	6000	1:1	no	-
124-06004	ER32	60	107	53	128	90	65	78	108	130	70	6000	1:1	yes	20

NAKAMURA-TOME - BMT44

MURATA MURATEC MT100

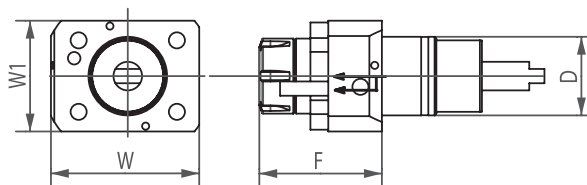
NAKAMURA-TOME
NTY3 / SUPER NTMX / NTMXL / WT100

CONNECTION TURRET NAKAMURA-TOME BMT44



AXIAL DRILLING AND MILLING HEAD PORTAUTENSILE MOTORIZZATO ASSIALE
 AXIAL BOHR- UND FRÄSKOPF TÊTE DE PERÇAGE ET FRAISAGE
 АКСИАЛЬНАЯ СВЕРЛИЛЬНО-ФРЕЗЕРНАЯ ГОЛОВКА 轴向钻头

NAKAMURA-TOME

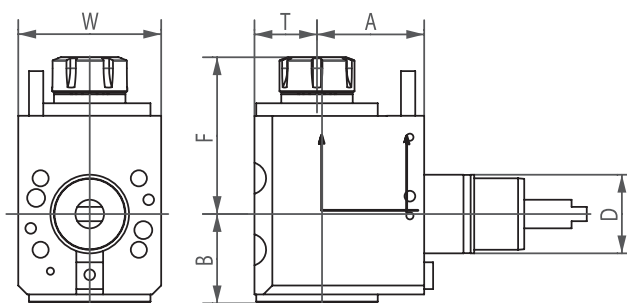
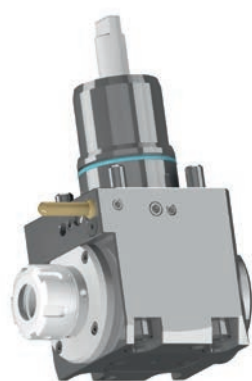


CODE N.	D	ER	INTERNAL COOLING	F	W	W1	TORQUE (Nm)	Nmax (rpm)	RATIO	P (bar)
124-04401	44	ER25	no	68.6	83	62	40	6000	1:1	-
124-04402	44	ER25	yes	68.6	83	62	40	6000	1:1	20

RADIAL DRILLING AND MILLING HEAD PORTAUTENSILE MOTORIZZATO RADIALE
 RADIAL BOHR- UND FRÄSKOPF TÊTE DE PERÇAGE ET FRAISAGE RADIAL
 РАДИАЛЬНАЯ СВЕРЛИЛЬНО-ФРЕЗЕРНАЯ ГОЛОВКА 径向钻头

09

NAKAMURA-TOME



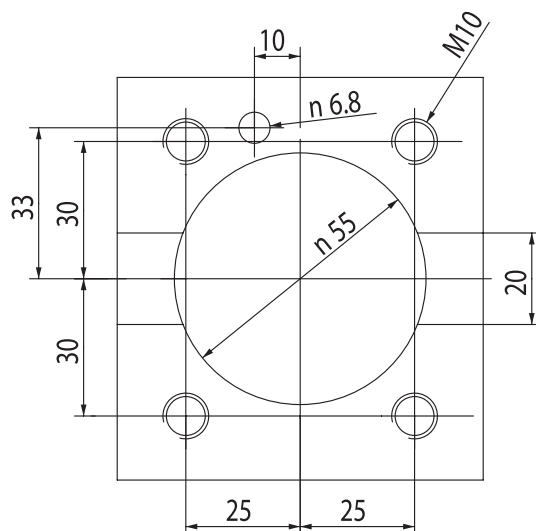
CODE N.	D	ER	INTERNAL COOLING	DIRECTION	A	B	F	T	W	TORQUE (Nm)	Nmax (rpm)	RATIO	P (bar)
124-04403	44	ER25	no	right/left	60	50,3	87,8	35	80	28	6000	1:1	-
124-04404	44	ER25	yes	right/left	60	50,3	87,8	35	80	28	6000	1:1	20

NAKAMURA-TOME - BMT55

NAKAMURA-TOME AS-200 / NTM 3 / NTY3-250
SC-150M / SC-200MY / SC-250M / SuperNTJ
TMC-20 IIM/ML / TW-10 / TW-20 / WT-20 IIM/MY
WT150 / WT-250 / WTS-150 / WTW-150 / WY-250

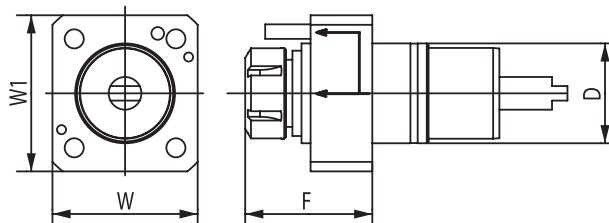
CMZ TX52/66

CONNECTION TURRET NAKAMURA-TOME BMT55



AXIAL DRILLING AND MILLING HEAD PORTAUTENSILE MOTORIZZATO ASSIALE
 AXIAL BOHR- UND FRÄSKOPF TÊTE DE PERÇAGE ET FRAISAGE
 АКСИАЛЬНАЯ СВЕРЛИЛЬНО-ФРЕЗЕРНАЯ ГОЛОВКА 轴向钻头

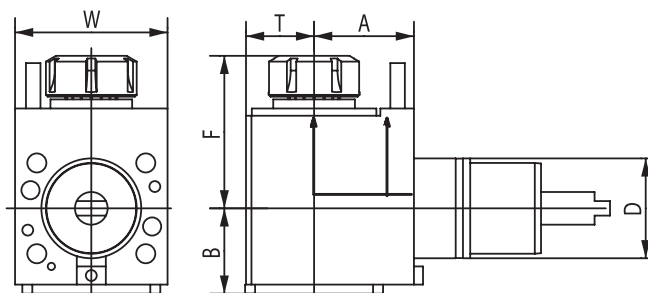
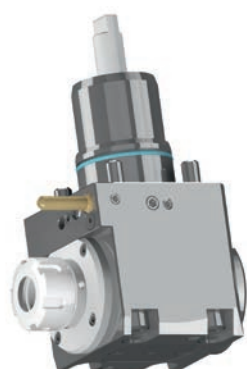
NAKAMURA-TOME



CODE N.	D	ER	INTERNAL COOLING	F	W	W1	TORQUE (Nm)	Nmax (rpm)	RATIO	P (bar)
124-05507	55	ER25	no	78	80	86	50	6000	1:1	-
124-05508	55	ER25	yes	78	80	86	50	6000	1:1	20

RADIAL DRILLING AND MILLING HEAD PORTAUTENSILE MOTORIZZATO RADIALE
 RADIAL BOHR- UND FRÄSKOPF TÊTE DE PERÇAGE ET FRAISAGE RADIAL
 РАДИАЛЬНАЯ СВЕРЛИЛЬНО-ФРЕЗЕРНАЯ ГОЛОВКА 径向钻头

NAKAMURA-TOME

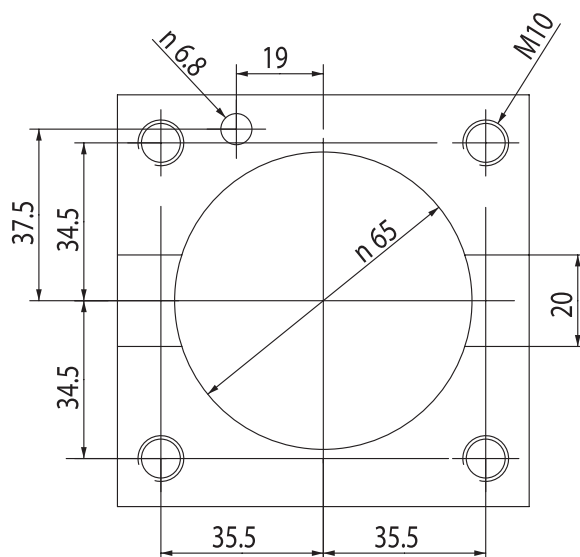


CODE N.	D	ER	INTERNAL COOLING	DIRECTION	A	B	F	T	W	TORQUE (Nm)	Nmax (rpm)	RATIO	P (bar)
124-05509	55	ER25	no	right/left	55	50,3	74,8	35	84	28	6000	1:1	-
124-05510	55	ER25	yes	right/left	55	50,3	74,8	35	84	28	6000	1:1	20

NAKAMURA-TOME - BMT65

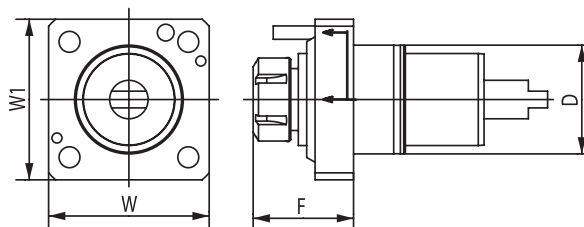
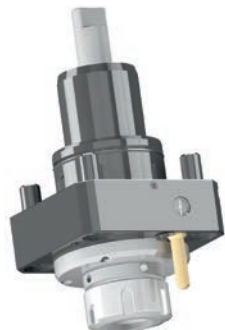
NAKAMURA-TOME WT300 / SC300 / TW20
TMC-200M / TMC-300M / SUPER NTX
TW20M / MY / MM / MMY / MMY (12 stations)
TW30M / MY / MM / MMY / MMY (16 stations)

CONNECTION TURRET NAKAMURA-TOME BMT65



AXIAL DRILLING AND MILLING HEAD PORTAUTENSILE MOTORIZZATO ASSIALE
 AXIAL BOHR- UND FRÄSKOPF TÊTE DE PERÇAGE ET FRAISAGE
 АКСИАЛЬНАЯ СВЕРЛИЛЬНО-ФРЕЗЕРНАЯ ГОЛОВКА 轴向钻头

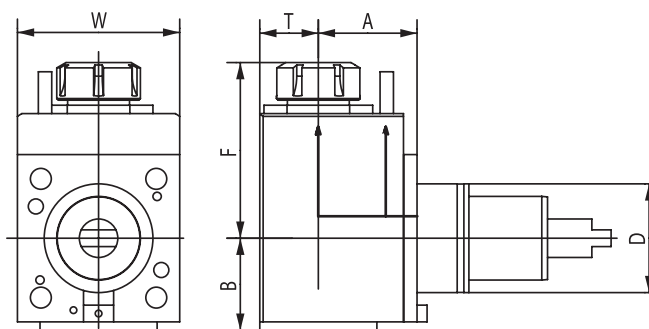
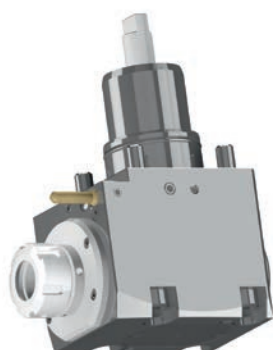
NAKAMURA-TOME



CODE N.	D	ER	INTERNAL COOLING	F	W	W1	TORQUE (Nm)	Nmax (rpm)	RATIO	P (bar)
124-06504	65	ER32	no	75	96	96	70	6000	1:1	-
124-06505	65	ER32	yes	75	96	96	70	6000	1:1	20

RADIAL DRILLING AND MILLING HEAD PORTAUTENSILE MOTORIZZATO RADIALE
 RADIAL BOHR- UND FRÄSKOPF TÊTE DE PERÇAGE ET FRAISAGE RADIAL
 РАДИАЛЬНАЯ СВЕРЛИЛЬНО-ФРЕЗЕРНАЯ ГОЛОВКА 径向钻头

NAKAMURA-TOME



CODE N.	D	ER	INTERNAL COOLING	DIRECTION	A	B	F	T	W	TORQUE (Nm)	Nmax (rpm)	RATIO	P (bar)
124-06506	65	ER32	no	right/left	65	59	110	38	96	70	6000	1:1	-
124-06507	65	ER32	yes	right/left	65	59	110	38	96	70	6000	1:1	20

DOOSAN - BMT45-BMT55-BMT65

DOOSAN BMT45

DOOSAN

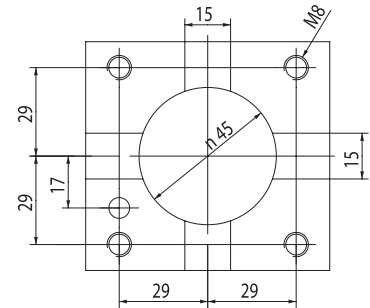
LYNX 2100MA/220 (LMSA,LMSC)
 220 (LSYA,LSYC), 220 (M,LM)
 LYNX 220 (MA,LMA,MC,LMC)
 220 (YA,YC,LYA,LYC)
 PUMA MX1600 (T,ST)

HARDINGE

BMT45

SMEC

PL1600 (M,CM)



**CONNECTION
 TURRET
 DOOSAN BMT45**

DOOSAN BMT55

DOOSAN

LYNX 300 (M)
 PUMA 1500/2000/2500 (M,S,Y)
 PUMA 2100 (Y,LY,SY,LSY)
 PUMA 2100/2600/3100 M/Y/MS/SY
 PUMA 230/240/280 (M,LM,S)
 PUMA GT2100M
 PUMA H250TM
 PUMA MX2100 (ST/LST)
 PUMA TL2000/2500 (M,LM)

HARDINGE

BMT55

HWACHEON

CUTEX-160

SMEC/SAMSUNG

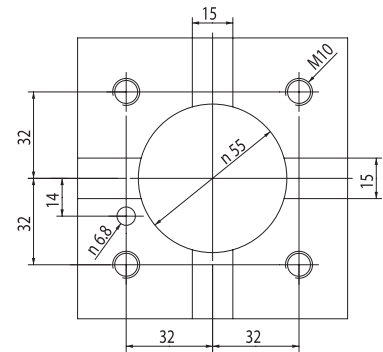
SL 20MC

HYUNDAI WIA

SKT-180TTSY

VICTOR

VTURN-A16/A20 (YSCM)



**CONNECTION
 TURRET
 DOOSAN BMT55**

DOOSAN BMT65

DOOSAN

PUMA 2100/2600 (M,LM,MS,LMS)
 PUMA 2100/2600 (Y,LY,SY,LSY)
 PUMA 300 (M,MS,MB,MC)
 PUMA 3100 (M,LM,LY,XLM,XLY,ULM,ULY)
 PUMA MX2000/2500
 PUMA MX2600 (T,ST)
 PUMA TT2500 (MS/SY)
 PUMA V400 (M)
 PUMA VT450 (M,2SP)

HYUNDAI WIA

L2100SY
 SKT-200/250TTSY
 SKT-250/300 (L,M)
 SKT-250/300 (MS)

MAXSIN

BMT65

SMEC/SAMSUNG

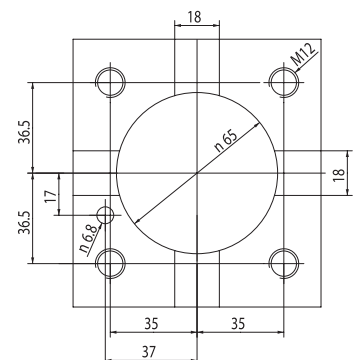
SL 25 / SL35

TONGTAI

TMT2000

VICTOR

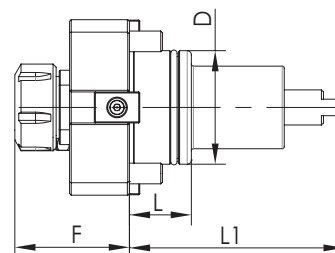
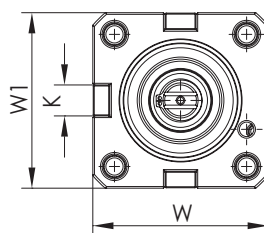
VTURN-A26 (YSCM)



**CONNECTION
 TURRET
 DOOSAN BMT65**

AXIAL DRILLING AND MILLING HEAD PORTAUTENSILE MOTORIZZATO ASSIALE
 AXIAL BOHR- UND FRÄSKOPF TÊTE DE PERÇAGE ET FRAISAGE
 АКСИАЛЬНАЯ СВЕРЛИЛЬНО-ФРЕЗЕРНАЯ ГОЛОВКА 轴向钻头

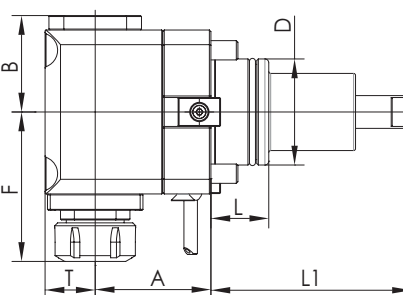
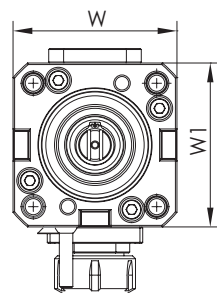
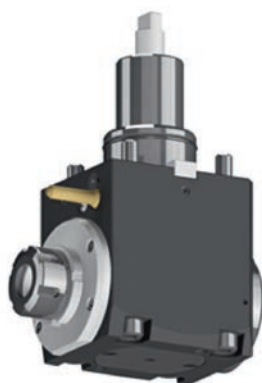
BMT



CODE N.	BMT	ER	D	F	K	L	L1	W	W1	MAX: SPEED (Rpm)	I	MAX: TORQUE Nm	INTERNAL COOLING
124-04501	45	ER25	45	67,6	15	40	84	78,5	75	6000	1:1	50	no
124-04502	45	ER25	45	67,6	15	40	84	78,5	75	6000	1:1	50	yes
124-05501	55	ER25	55	71	15	30	104	85	85	6000	1:1	50	no
124-06509	55	ER25	55	71	15	30	104	85	85	6000	1:1	50	yes
124-06501	65	ER32	65	75	18	32	112	94	94	6000	1:1	70	no
124-06508	65	ER32	65	75	18	32	112	94	94	6000	1:1	70	yes

RADIAL DRILLING AND MILLING HEAD PORTAUTENSILE MOTORIZZATO RADIALE
 RADIAL BOHR- UND FRÄSKOPF TÊTE DE PERÇAGE ET FRAISAGE RADIAL
 РАДИАЛЬНАЯ СВЕРЛИЛЬНО-ФРЕЗЕРНАЯ ГОЛОВКА 径向钻头

BMT



CODE N.	BMT	ER	D	A	B	F	L	L1	T	W	W1	MAX: SPEED (Rpm)	I	MAX: TORQUE Nm	INTERNAL COOLING	P BAR
124-04503	45	ER25	45	65	57	97,6	40	84	36,5	75	83	6000	1:1	50	no	-
124-04504	45	ER25	45	65	57	97,6	40	84	36,5	75	83	6000	1:1	50	yes	20
124-05502	55	ER25	55	70	57	86	30	104	26	85	85	6000	1:1	25	no	-
124-06510	55	ER25	55	70	57	86	30	104	26	85	85	6000	1:1	25	yes	20
124-05511	55	ER25	55	85	57	98	-	-	36,5	85	-	-	-	-	no	-
124-05512	55	ER25	55	85	57	98	-	-	36,5	85	-	-	-	-	yes	20
124-05513	55	ER32	55	85	57	101	-	-	36,5	85	-	-	-	-	no	-
124-05514	55	ER32	55	85	57	101	-	-	36,5	85	-	-	-	-	yes	20
124-06502	65	ER32	65	72	59	110	32	112	36	94	94	6000	1:1	40	no	-
124-06512	65	ER32	65	72	59	110	32	110	38	94	94	6000	1:1	40	yes	20
124-06513	65	ER32	65	100	59	111	-	-	38	94	-	-	-	-	no	-
124-06514	65	ER32	65	100	59	111	-	-	38	94	-	-	-	-	yes	20