



**APX**®  
**TECHNOLOGIE**























**KATALOG WYROBÓW**  
**CATALOGUE OF PRODUCTS**  
**06/07**



**Oprawki zaciskowe/Collet chucks**  
**Trzpień frezarskie/Milling arbors**  
**Kły obrotowe/Live centers for lathes**  
**Tulejki redukcyjne/Reducing adapters**

# Spis treści

## Contents

	Przedmowa/Preface	<b>2</b>		Trzpień frezarskie – półfabrykaty Blank Adapters	<b>16</b>
	Normy/Norms	<b>3</b>		Tulejki zaciskowe Collets, sets of collets	<b>17</b>
	Tuleje redukcyjne do narzędzi z chwytem Morse'a Reducing Adapters for tools with Morse Taper	<b>4</b>		Oprawki zaciskowe do tulejek ER DIN 6499 do narzędzi z uchwytem walcowym Collet Chucks ER for collets ER DIN 6499 for tools with cylindrical shank	<b>18</b>
	Tuleje redukcyjne do narzędzi z chwytem Morse'a z płetwą wg DIN 228-B Reducing Adapters for tools with Morse Taper shank and tang DIN 228-B	<b>5</b>		Komplety tulejek zaciskowych z trzpieniem w kasecie drewnianej Sets of Collets with adapter and wrench type in wooden case	<b>20</b>
	Tuleje redukcyjne do narzędzi z chwytem Morse'a z gwintem wg DIN 228-A Reducing Adapters for tools with Morse Taper shank and drawbar thread DIN 228-A	<b>6</b>		Oprawki zaciskowe do tulejek PTEz50 do narzędzi z chwytem walcowym Collets Chucks for collets PTEz50 for tools with cylindrical shank	<b>22</b>
	Tuleje redukcyjne Reducing Adapters	<b>7</b>		Oprawki zaciskowe do tulejek ER DIN 6499 do narzędzi z uchwytem walcowym Collet Chucks ER for collets ER DIN 6499 for tools with cylindrical shank	<b>23</b>
	Trzpień zabierakowe Shell Mill Adapters	<b>8</b>		Oprawki zaciskowe do tulejek ER Collet Chucks for collets ER	<b>23</b>
	Trzpień frezarskie uniwersalne krótkie do frezów z rowkiem wpustowym lub rowkiem zabierakowym DIN 138 Combination Shell Mill Adapters for cutters with keyway or driving slot DIN 138	<b>9</b>		Aksesoria Accessories	<b>24</b>
	Trzpień frezarskie do głowic frezarskich Adapters for indexable milling cutters	<b>10</b>		Trzpień do uchwytów wiertarskich ze stożkiem DIN 238 Drill Chuck Adapters for drill chucks taper DIN 238	<b>25</b>
	Trzpień z uchwytem wiertarskim bezkluczykowym CNC – Integral taper precision drill chucks	<b>11</b>		Kły tokarskie Live Centers for lathes	<b>26</b>
	Trzpień frezarskie do uchwytów wiertarskich ze stożkiem DIN 238 Drill Chuck Adapters for drill chucks taper DIN 238	<b>12</b>		Końcówki ściągające Pull studs	<b>27</b>
	Oprawki zaciskowe do narzędzi z chwytem walcowym Weldon DIN 1835-B End Mill Adapters for cutters with cylindrical shank and Weldon flat DIN 1835-B	<b>13</b>		Ustawiaki frezarskie Milling Setters	<b>28</b>
				Części zamienne Spare parts	<b>28</b>

# Przedmowa

## Preface

### 1. Uwagi ogólne:

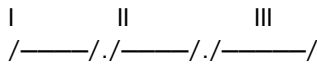
Wybrane produkty mogą być wykonane dla różnych standardów przepłukiwania przez wrzeciono: A, AD, AD+B.

Dopuszczalna prędkość obrotowa dla wykonania standardowego wynosi 10.000 obr./min.

Na życzenie możliwe jest wyważenie produktów do prędkości obrotowych do 20.000 obr./min.

### 2. Zasady posługiwania się systemem kodowym, użytym w niniejszym katalogu.

Kod danego wyrobu składa się z trzech członów, których znaczenie przedstawiono poniżej.



I. Oznacza typ i wielkość stożka mocującego trzpień w gnieździe obrabiarki.

1. Występują trzy rodzaje stożków w zależności od normy.

**A/** typ oznaczony jako **ISO** norma **DIN-2080**

**B/** typ oznaczony jako **DIN** norma **DIN-69871**

**C/** typ oznaczony jako **BT** norma **MAS 403 BT**

2. Stożki mocujące uszeregowane są także według wielkości i tak występują trzy podstawowe wielkości oznaczone kodem **30**, **40** i **50**.

Przykładowe oznaczenie stożka to **ISO40**.

II. Oznacza długość części mocującej danego trzpienia tj. odległość pomiędzy wymiarem nominalnym stożka, a płaszczyzną bazową mocowanego narzędzia,

np. **A100** oznacza, że część mocująca trzpienia wystaje 100 mm z wrzeciona obrabiarki.

III. Oznacza przeznaczenie danego trzpienia tj. do mocowania jakiego narzędzia przeznaczony jest dany trzpień. Stosuje się tu oznaczenie literowo-cyfrowe, np. **MK3P** oznacza gniazdo Morse'a 3 z płetwą.

Inne użyte skróty rodzaju części mocującej w zależności od przeznaczenia znajdują się na każdej stronie katalogu.

Przykłady:

- ER** - do tulejek zaciskowych typu ER
- WE** - typ WELDON + rozmiar otworu np. WE20
- B12** - do uchwytu wiertarskiego np. B12
- MK (1-5)** - redukcja na Morse'a
- D16C** - do głowicy frezarskiej Ø 16 ze sprzęgłem (C)
- D16S** - do głowicy frezarskiej Ø 16 z kamieniami zabierakowymi (S)
- FV** - do narzędzi ze śrubą mocującą
- P** - do narzędzi z płetwą

Przykładowe pełne oznaczenie trzpienia:

**BT40.A37.WE20** oznacza

I. Trzpień o stożku 7:24 według normy MAS-BT o rozmiarze 40.

II. Długość części chwytowej wynosi 37 mm.

III. Część chwytowa typu WELDON o otworze mocującym 20 mm.

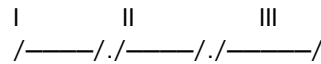
### 1. General remarks:

The selected adapters can be executed in different modes of coolant's flushing: A, AD, AD+B.

The approved spindle speed for standard products is 10.000 rev/min; on request they can be balanced up to 20.000 rev/min.

### 2. Description of the coding system used in this catalogue

Code of product described in this catalogue consists of three sections, which meaning is explained below.



I. Describes type and size of the taper.

1. There are three types of tapers according to the different norms:

**A/** type described as **ISO** - as per norm **DIN-2080**

**B/** type described as **DIN** - as per norm **DIN-69871**

**C/** type described as **BT** - as per norm **MAS 403 BT**

2. Tapers are diversified also by size; and there are three basic sizes described with the numbers: **30**, **40** and **50**.

Example: **ISO40**.

II. Describes the length of the dominant dimension in defined type of the adapter. In majority of cases it is the dimension from the nominal surface of the taper and the basic surface of the mounted tool.

III. Describes the destination of the defined adapter; means to which tool it is dedicated. We are using here the numerical-letter's description. For example: **MK3P** means adapter for Morse's 3 with tang.

Other abbreviations used for description of each type are on the further pages.

Examples:

- ER** - for collets' chucks type ER
- WE** - type WELDON + size of the hole; for example: WE20
- B12** - for drill's chuck for ex. B12
- MK (1-5)** - reduction for Morse
- D16C** - for indexable milling cutters Ø 16 with clutch (C)
- D16S** - for indexable milling cutters Ø 16 with driving slot (S)
- FV** - for the tools with mounting screw
- P** - for the tools with tang

Example of the full description of the adapter:

**BT40.A37.WE20** means:

I. Taper 7:24 according to the norm MAS-BT, size 40.

II. Length of the chucking part is 37 mm.

III. Chucking part type WELDON with the hole 20 mm.

# Normy Norms

Charakterystyka techniczna wyrobów:

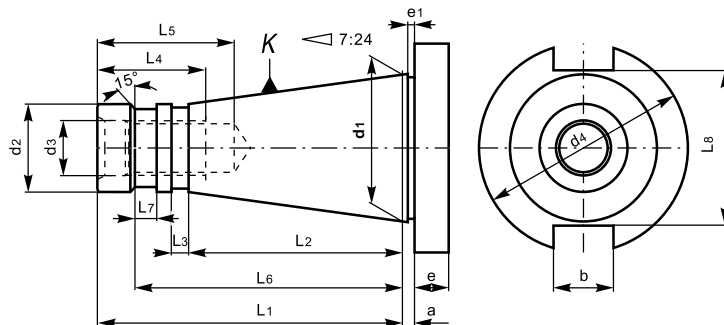
- materiał: stal stopowa chromowo-manganowa
- nawęglane na głębokość 0,7 mm
- hartowane i precyzyjnie szlifowane
- twardość powierzchni  $58 \pm 2$  HRC
- tolerancja kąta stożka AT3

Technical characteristics of products:

- Manufactured of chrome-manganese steel.
- Carbureted up to 0,7 mm depth.
- Hardened and precision ground.
- Surface hardness HRC  $58 \pm 2$
- Taper angle tolerance AT3

DIN 2080

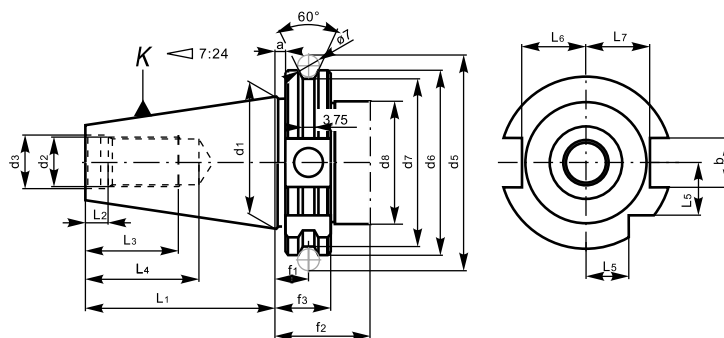
chwyt ze stożkiem 7:24  
tool shank with taper 7:24



7:24	a±0,2	bH12	d1	d2	d3	d4	e	e1	L1	L2	L3	L4	L5	L6	L7	L8
30	1,6	16,1	31,75	17,4	M12	50,0	8	1,6	68,4	48,4	3	24	33,5	-	-	32,4
40	1,6	16,1	44,45	25,3	M16	63,0	10	1,6	93,4	65,4	5	30	42,5	82	7,0	45,0
50	3,2	25,7	69,85	39,6	M24	97,5	12	3,2	126,8	-	-	45	61,5	115	13,3	70,6

DIN 69871-A

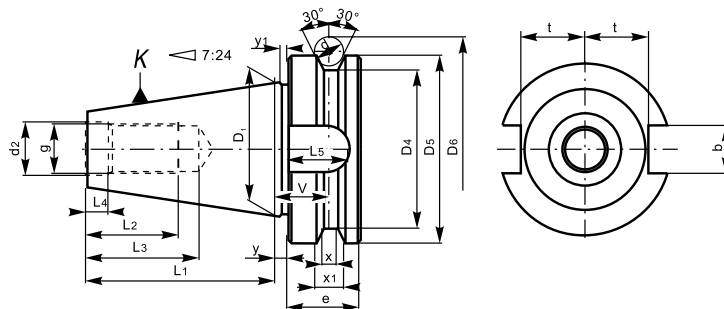
chwyt ze stożkiem 7:24 do wymiany automatycznej  
tool shank with taper 7:24 for automatic tool's change



7:24	a	bH12	d1	d2	d3	d5	d6	d7	d8max	f1	f2	f3	L1	L2	L3	L4	L5	L6	L7
30	3,2	16,1	31,75	M12	13	59,30	50,00	44,30	45	11,1	35	19,1	47,80	5,5	24	33,5	15	16,4	19
40	3,2	16,1	44,45	M16	17	72,30	63,55	56,25	50	11,1	35	19,1	68,40	8,2	32	42,5	18,5	22,8	25
50	3,2	25,7	69,85	M24	25	107,25	97,50	91,25	80	11,1	35	19,1	101,75	11,5	47	61,5	30	35,5	37,7

MAS 403-BT

chwyt ze stożkiem 7:24 do wymiany automatycznej  
tool shank with taper 7:24 for automatic tool's change



7:24	D1	L1	d2	g	L2	L3	L4	bH12	L5	t	D4	D5	e	v	x	x1	y	y1
30	31,75	48,4	12,5	M12	24	34	7	16,1	17	16,3	38	46	20	13,6	4	8	2	2
40	44,45	65,4	17,9	M16	30	43	9	16,1	21	22,6	53	63	25	16,6	5	10	2	2
50	69,85	101,8	25,0	M24	45	62	13	25,7	31	35,4	85	100	35	23,2	7	15	3	3

**Tuleje redukcyjne do narzędzi z chwytem Morse'a**  
**Reducing Adapters for tools with Morse Taper**

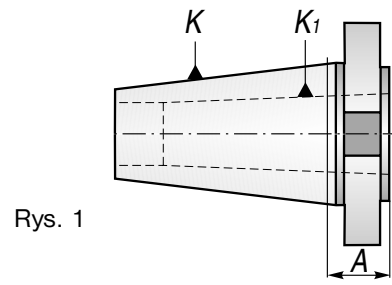


DIN 2080

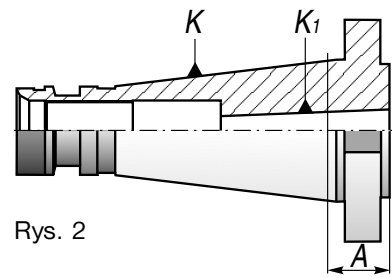
**TYP/TYPE ISO-FV**

**1655**

K 7:24	K <sub>1</sub> Morse	A	Rys.	Waga/Weight kg	Kod/Code
30	2	18	1	0,57	ISO30.A18.MK2FV
30	3	72	1	0,46	ISO30.A72.MK3FV
40	1	14	2	0,62	ISO40.A14.MK1FV
40	2	14	1	0,59	ISO40.A14.MK2FV
40	3	14	1	0,52	ISO40.A14.MK3FV
40	4	43	1	0,57	ISO40.A43.MK4FV
40	4	67	1	0,85	ISO40.A67.MK4FV
50	1	17	2	2,70	ISO50.A17.MK1FV
50	2	21	1	2,52	ISO50.A21.MK2FV
50	3	21	1	2,40	ISO50.A21.MK3FV
50	4	21	1	2,15	ISO50.A21.MK4FV
50	5	65	1	2,65	ISO50.A65.MK5FV



Rys. 1



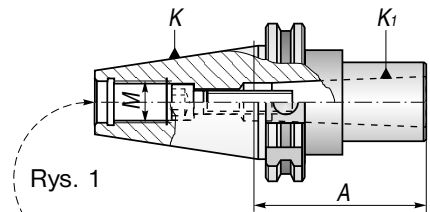
Rys. 2

DIN 69871-A

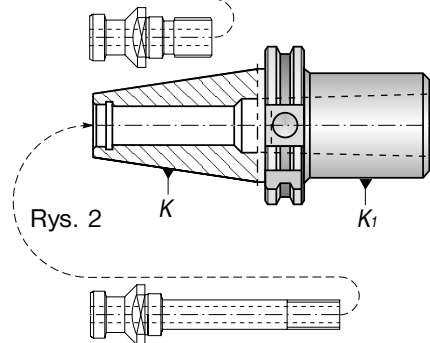
**TYP/TYPE DIN-FV**

**1682**

K 7:24	K <sub>1</sub> Morse	A	M	Rys.	Waga/Weight kg	Kod/Code
40	1	45	M16	1	0,90	DIN40.A45.MK1FV
40	2	60	M16	1	1,00	DIN40.A60.MK2FV
40	3	75	-	2	1,10	DIN40.A75.MK3FV
40	4	85	-	2	1,50	DIN40.A85.MK4FV
50	1	45	M24	1	3,00	DIN50.A45.MK1FV
50	2	45	M24	1	2,80	DIN50.A45.MK2FV
50	3	60	M24	1	3,20	DIN50.A60.MK3FV
50	4	75	M24	1	3,20	DIN50.A75.MK4FV
50	5	75	-	2	3,00	DIN50.A75.MK5FV



Rys. 1



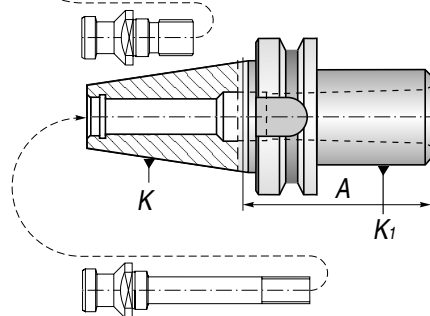
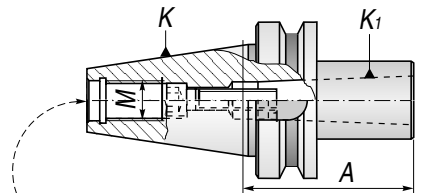
Rys. 2

MAS 403-BT

**TYP/TYPE BT-FV**

**1663**

K 7:24	K <sub>1</sub> Morse	A	M	Rys.	Waga/Weight kg	Kod/Code
30	1	45	M12	1	0,30	BT30.A45.MK1FV
30	2	60	-	2	0,40	BT30.A60.MK2FV
40	1	45	M16	1	0,90	BT40.A45.MK1FV
40	2	60	M16	1	1,20	BT40.A60.MK2FV
40	3	75	-	2	1,00	BT40.A75.MK3FV
40	4	85	-	2	1,50	BT40.A85.MK4FV
50	1	45	M24	1	3,00	BT50.A45.MK1FV
50	2	45	M24	1	3,00	BT50.A45.MK2FV
50	3	60	M24	1	3,10	BT50.A60.MK3FV
50	4	75	M24	1	3,10	BT50.A75.MK4FV
50	5	75	-	2	3,00	BT50.A75.MK5FV



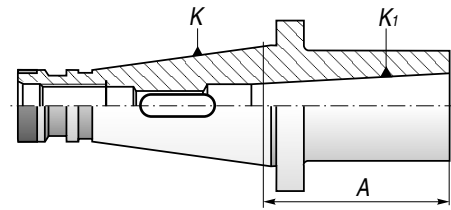
**Tuleje redukcyjne do narzędzi z chwytem Morse'a z płetwą wg DIN 228-B**  
**Reducing Adapters for tools with Morse Taper shank and tang DIN 228-B**



**DIN 2080**

**TYP/TYPE ISO-MKP**

**1679**



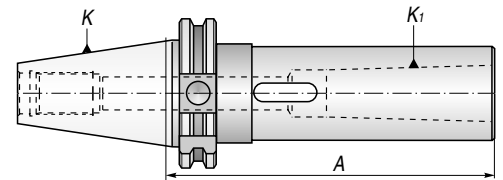
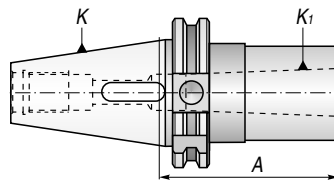
K 7:24	K <sub>1</sub> Morse	A	Waga/Weight kg	Kod/Code
30	1	50	0,35	ISO30.A50.MK1P
30	2	50	0,40	ISO30.A50.MK2P
30	3	72	0,60	ISO30.A72.MK3P
40	1	50	0,90	ISO40.A50.MK1P
40	2	50	0,90	ISO40.A50.MK2P
40	3	65	1,00	ISO40.A65.MK3P
40	4	95	1,50	ISO40.A95.MK4P
50	1	45	3,00	ISO50.A45.MK1P
50	2	60	3,00	ISO50.A60.MK2P
50	3	65	3,20	ISO50.A65.MK3P
50	4	70	3,20	ISO50.A70.MK4P
50	5	105	3,20	ISO50.A105.MK5P

K 7:24	K <sub>1</sub> Morse	A	Waga/Weight kg	Kod/Code
40	1	92	1,10	ISO40.A92.MK1P
40	2	109	1,25	ISO40.A109.MK2P
40	3	129	1,50	ISO40.A129.MK3P
40	4	152	2,25	ISO40.A152.MK4P
50	1	96	3,30	ISO50.A96.MK1P
50	2	113	3,30	ISO50.A113.MK2P
50	3	133	3,45	ISO50.A133.MK3P
50	4	163	3,70	ISO50.A163.MK4P
50	5	193	3,70	ISO50.A193.MK5P

**DIN 69871-A**

**TYP/TYPE DIN-MKP**

**1681**



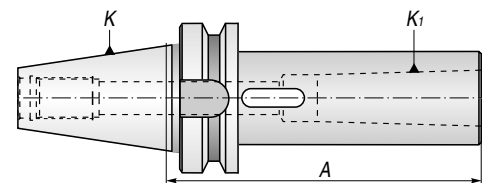
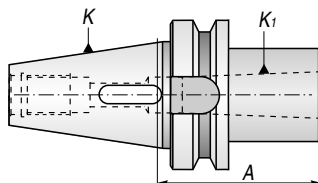
K 7:24	K <sub>1</sub> Morse	A	Waga/Weight kg	Kod/Code
30	1	50	0,30	DIN30.A50.MK1P
30	2	60	0,40	DIN30.A60.MK2P
30	3	80	0,60	DIN30.A80.MK3P
40	1	50	0,90	DIN40.A50.MK1P
40	2	50	0,90	DIN40.A50.MK2P
40	3	70	1,00	DIN40.A70.MK3P
40	4	95	1,50	DIN40.A95.MK4P
50	1	45	3,00	DIN50.A45.MK1P
50	2	60	3,00	DIN50.A60.MK2P
50	3	65	3,20	DIN50.A65.MK3P
50	4	95	3,50	DIN50.A95.MK4P
50	5	105	3,50	DIN50.A105.MK5P

K 7:24	K <sub>1</sub> Morse	A	Waga/Weight kg	Kod/Code
40	1	120	1,30	DIN40.A120.MK1P
40	2	120	1,30	DIN40.A120.MK2P
40	3	135	2,00	DIN40.A135.MK3P
40	4	165	2,30	DIN40.A165.MK4P
50	1	120	3,50	DIN50.A120.MK1P
50	2	135	3,50	DIN50.A135.MK2P
50	3	155	3,50	DIN50.A155.MK3P
50	4	180	3,80	DIN50.A180.MK4P
50	5	215	3,90	DIN50.A215.MK5P

**MAS 403-BT**

**TYP/TYPE BT-MKP**

**1661**



K 7:24	K <sub>1</sub> Morse	A	Waga/Weight kg	Kod/Code
30	1	50	0,30	BT30.A50.MK1P
30	2	60	0,40	BT30.A60.MK2P
30	3	79	0,60	BT30.A79.MK3P
40	1	50	0,90	BT40.A50.MK1P
40	2	50	1,20	BT40.A50.MK2P
40	3	70	1,00	BT40.A70.MK3P
40	4	95	1,50	BT40.A95.MK4P
50	1	45	3,00	BT50.A45.MK1P
50	2	60	3,00	BT50.A60.MK2P
50	3	65	3,20	BT50.A65.MK3P
50	4	95	3,30	BT50.A95.MK4P
50	5	105	3,20	BT50.A105.MK5P

K 7:24	K <sub>1</sub> Morse	A	Waga/Weight kg	Kod/Code
40	1	120	1,30	BT40.A120.MK1P
40	2	120	1,40	BT40.A120.MK2P
40	3	135	2,00	BT40.A135.MK3P
40	4	165	2,30	BT40.A165.MK4P
50	1	120	3,50	BT50.A120.MK1P
50	2	135	3,50	BT50.A135.MK2P
50	3	155	3,50	BT50.A155.MK3P
50	4	180	3,80	BT50.A180.MK4P
50	5	215	3,90	BT50.A215.MK5P

**Tuleje redukcyjne do narzędzi z chwytem Morse'a z gwintem wg DIN 228-A**  
**Reducing Adapters for tools with Morse Taper shank and drawbar**  
**thread DIN 228-A**

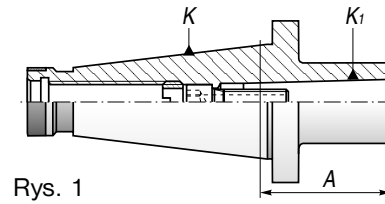


DIN 2080

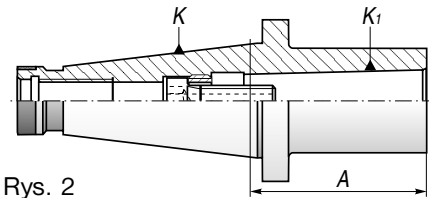
**TYP/TYPE ISO-MKS**

**1676**

K 7:24	K <sub>1</sub> Morse	A	Rys.	Waga/Weight kg	Kod/Code
30	1	50	1	0,45	ISO30.A50.MK1S
30	2	50	2	0,48	ISO30.A50.MK2S
30	3	78	2	0,68	ISO30.A78.MK3S
40	1	50	1	0,90	ISO40.A50.MK1S
40	2	50	1	0,90	ISO40.A50.MK2S
40	3	65	2	1,10	ISO40.A65.MK3S
40	4	95	2	1,50	ISO40.A95.MK4S
50	1	45	1	3,00	ISO50.A45.MK1S
50	2	45	1	3,00	ISO50.A45.MK2S
50	3	60	1	3,20	ISO50.A60.MK3S
50	4	65	1	3,40	ISO50.A65.MK4S
50	5	120	2	3,60	ISO50.A120.MK5S



Rys. 1



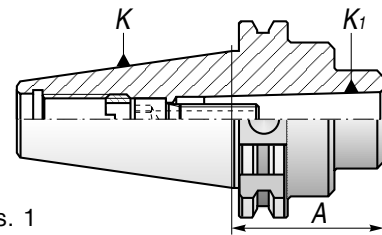
Rys. 2

DIN 69871-A

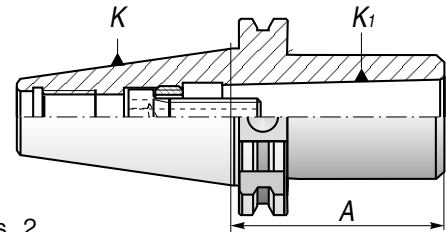
**TYP/TYPE DIN-MKS**

**1695**

K 7:24	K <sub>1</sub> Morse	A	Rys.	Waga/Weight kg	Kod/Code
30	1	50	1	0,44	DIN30.A50.MK1S
30	2	60	2	0,53	DIN30.A60.MK2S
30	3	85	2	0,74	DIN30.A85.MK3S
40	1	50	1	0,85	DIN40.A50.MK1S
40	2	50	1	0,85	DIN40.A50.MK2S
40	3	70	2	1,00	DIN40.A70.MK3S
40	4	95	2	1,40	DIN40.A95.MK4S
50	1	45	1	2,60	DIN50.A45.MK1S
50	2	60	1	2,65	DIN50.A60.MK2S
50	3	65	1	2,90	DIN50.A65.MK3S
50	4	95	1	3,00	DIN50.A95.MK4S
50	5	120	2	3,40	DIN50.A120.MK5S



Rys. 1



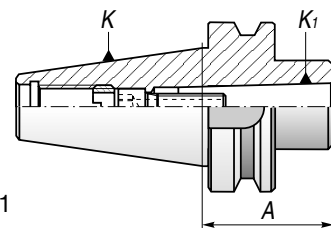
Rys. 2

MAS 403-BT

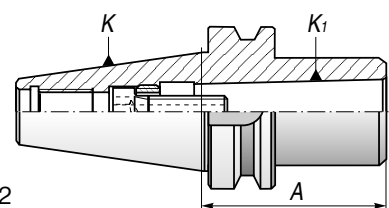
**TYP/TYPE BT-MKS**

**1694**

K 7:24	K <sub>1</sub> Morse	A	Rys.	Waga/Weight kg	Kod/Code
30	1	50	1	0,45	BT30.A50.MK1S
30	2	60	2	0,54	BT30.A60.MK2S
30	3	80	2	0,75	BT30.A80.MK3S
40	1	50	1	0,60	BT40.A50.MK1S
40	2	50	1	0,65	BT40.A50.MK2S
40	3	70	2	1,00	BT40.A70.MK3S
40	4	95	2	1,40	BT40.A95.MK4S
50	1	45	1	2,80	BT50.A45.MK1S
50	2	60	1	2,95	BT50.A60.MK2S
50	3	65	1	3,00	BT50.A65.MK3S
50	4	90	1	3,10	BT50.A90.MK4S
50	5	120	2	3,40	BT50.A120.MK5S



Rys. 1



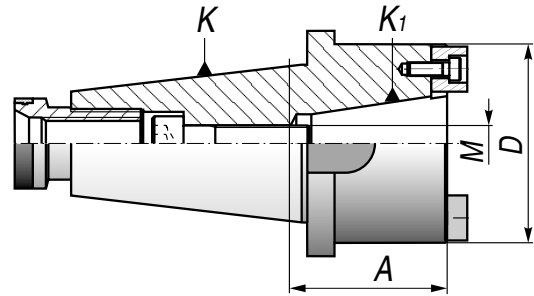
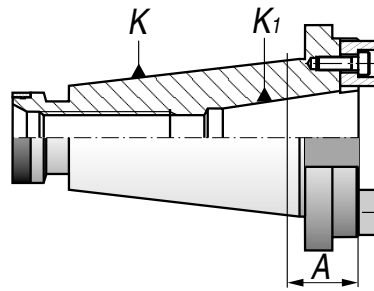
Rys. 2



**DIN 2080**

**TYP/TYPE ISO-ISO**

**1699**

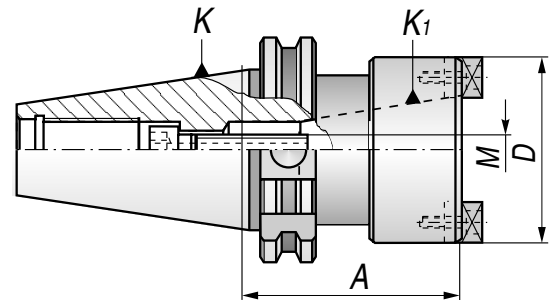


K	K <sub>1</sub>	A	Rys.	D	M	Waga/Weight		Kod/Code
7:24	7:24					kg		
50	40	27	1	88	M16	2,20		ISO50.A27.ISO40
50	40	65	2	88	M16	2,70		ISO50.A65.ISO40

**DIN 69871-A**

**TYP/TYPE DIN-ISO**

**1684**

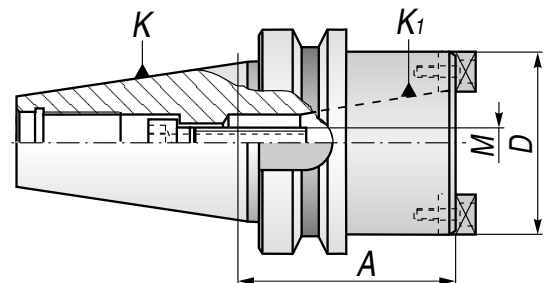


K	K <sub>1</sub>	A	D	M	Waga/Weight		Kod/Code
7:24	7:24				kg		
50	40	80	88	M16	3,00		DIN50.A80.ISO40

**MAS 403-BT**

**TYP/TYPE BT-ISO**

**1660**



K	K <sub>1</sub>	A	D	M	Waga/Weight		Kod/Code
7:24	7:24				kg		
50	40	80	88	M16	3,20		BT50.A80.ISO40



# Trzpienie zabierakowe Shell Mill Adapters

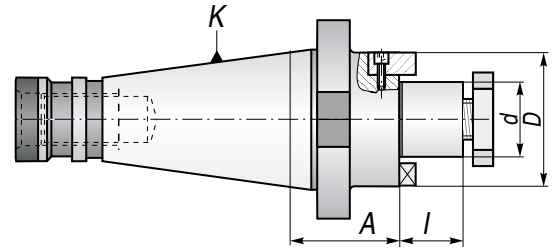


DIN 2080

## TYP/TYPE ISO-DS

**7311**

7:24	d	A	I	D	Waga/Weight kg	Kod/Code
30	16	35	17	32	0,50	ISO30.A35.D16S
30	22	35	19	40	0,58	ISO30.A35.D22S
30	27	35	21	48	0,63	ISO30.A35.D27S
30	32	35	24	58	0,78	ISO30.A35.D32S
40	16	37	17	32	0,95	ISO40.A37.D16S
40	22	37	19	40	1,00	ISO40.A37.D22S
40	27	37	21	48	1,15	ISO40.A37.D27S
40	32	37	24	58	1,28	ISO40.A37.D32S
40	40	37	27	70	1,85	ISO40.A37.D40S
50	22	40	19	40	3,00	ISO50.A40.D22S
50	27	40	21	48	3,25	ISO50.A40.D27S
50	32	40	24	58	3,40	ISO50.A40.D32S
50	40	40	27	70	3,60	ISO50.A40.D40S
50	50	40	30	90	3,95	ISO50.A40.D50S



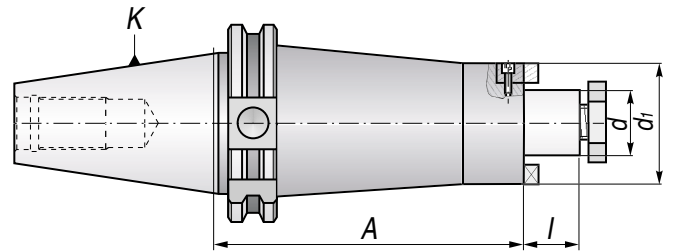
7:24	d	A	I	D	Waga/Weight kg	Kod/Code
40	16	90	17	32	1,50	ISO40.A90.D16S
40	22	90	19	40	1,60	ISO40.A90.D22S
40	27	90	21	48	1,60	ISO40.A90.D27S
40	32	90	24	58	1,90	ISO40.A90.D32S
40	40	90	27	70	2,40	ISO40.A90.D40S
50	22	100	19	40	3,40	ISO50.A100.D22S
50	27	100	21	48	3,70	ISO50.A100.D27S
50	32	100	24	58	4,10	ISO50.A100.D32S
50	40	100	27	70	4,30	ISO50.A100.D40S
50	50	100	30	90	4,80	ISO50.A100.D50S

DIN 69871-A

## TYP/TYPE DIN-DS

**7369**

7:24	d	A	I	D	Waga/Weight kg	Kod/Code
30	16	35	17	32	0,50	DIN30.A35.D16S
30	22	35	19	40	0,58	DIN30.A35.D22S
30	27	35	21	48	0,63	DIN30.A35.D27S
30	32	35	24	58	0,78	DIN30.A35.D32S
40	16	60	17	32	1,10	DIN40.A60.D16S
40	22	60	19	40	1,20	DIN40.A60.D22S
40	27	60	21	48	1,40	DIN40.A60.D27S
40	32	60	24	58	1,50	DIN40.A60.D32S
40	40	60	27	70	1,90	DIN40.A60.D40S
50	16	60	17	32	2,80	DIN50.A60.D16S
50	22	60	19	40	3,00	DIN50.A60.D22S
50	27	60	21	48	3,25	DIN50.A60.D27S
50	32	60	24	58	3,40	DIN50.A60.D32S
50	40	60	27	70	3,60	DIN50.A60.D40S
50	50	60	30	90	4,00	DIN50.A60.D50S



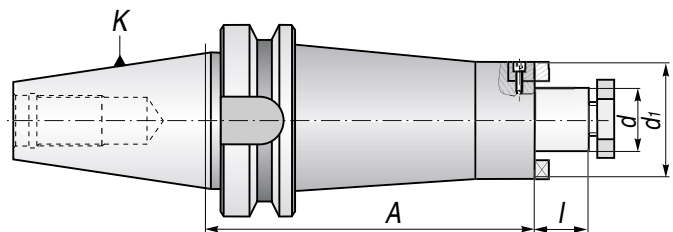
7:24	d	A	I	D	Waga/Weight kg	Kod/Code
40	16	120	17	32	1,70	DIN40.A120.D16S
40	22	120	19	40	1,90	DIN40.A120.D22S
40	27	120	21	48	2,20	DIN40.A120.D27S
40	32	120	24	58	2,40	DIN40.A120.D32S
50	16	110	17	32	3,15	DIN50.A110.D16S
50	22	110	19	40	3,40	DIN50.A110.D22S
50	27	110	21	48	3,70	DIN50.A110.D27S
50	32	110	24	58	4,10	DIN50.A110.D32S
50	40	110	27	70	4,30	DIN50.A110.D40S

MAS 403-BT

## TYP/TYPE BT-DS

**7388**

7:24	d	A	I	D	Waga/Weight kg	Kod/Code
30	16	43	17	32	0,50	BT30.A43.D16S
30	22	43	19	40	0,58	BT30.A43.D22S
30	27	43	21	48	0,63	BT30.A43.D27S
30	32	43	24	58	0,78	BT30.A43.D32S
40	16	52	17	32	1,10	BT40.A52.D16S
40	22	52	19	40	1,20	BT40.A52.D22S
40	27	52	21	48	1,40	BT40.A52.D27S
40	32	52	24	58	1,50	BT40.A52.D32S
40	40	60	27	70	1,90	BT40.A60.D40S
50	16	65	17	32	2,80	BT50.A65.D16S
50	22	65	19	40	3,00	BT50.A65.D22S
50	27	65	21	48	3,25	BT50.A65.D27S
50	32	65	24	58	3,40	BT50.A65.D32S
50	40	78	27	70	3,60	BT50.A78.D40S
50	50	78	30	90	4,00	BT50.A78.D50S



7:24	d	A	I	D	Waga/Weight kg	Kod/Code
40	16	120	17	32	1,70	BT40.A120.D16S
40	22	120	19	40	1,90	BT40.A120.D22S
40	27	120	21	48	2,20	BT40.A120.D27S
40	32	120	24	58	2,40	BT40.A120.D32S
50	16	110	17	32	3,15	BT50.A110.D16S
50	22	110	19	40	3,40	BT50.A110.D22S
50	27	110	21	48	3,40	BT50.A110.D27S
50	32	110	24	58	4,10	BT50.A110.D32S
50	40	110	27	70	4,30	BT50.A110.D40S

**Trzpienie frezarskie uniwersalne krótkie do frezów z rowkiem wpustowym lub rowkiem zabierakowym DIN 138**  
**Combination Shell Mill Adapters for cutters with keyway or driving slot DIN 138**

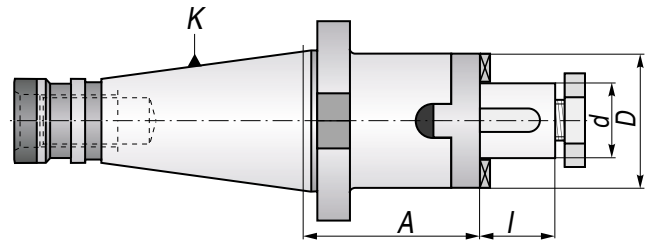


DIN 2080

**TYP/TYPE ISO-DC**

**7332**

7:24	d	A	I	D	Waga/Weight kg	Kod/Code
30	16	50	17	32	0,65	ISO30.A50.D16C
30	22	50	19	40	0,85	ISO30.A50.D22C
30	27	50	21	48	0,95	ISO30.A50.D27C
30	32	50	24	58	1,10	ISO30.A50.D32C
40	16	52	17	32	1,10	ISO40.A52.D16C
40	22	52	19	40	1,30	ISO40.A52.D22C
40	27	52	21	48	1,60	ISO40.A52.D27C
40	32	52	24	58	1,85	ISO40.A52.D32C
40	40	52	27	70	2,05	ISO40.A52.D40C
50	16	55	17	32	2,98	ISO50.A55.D16C
50	22	55	19	40	3,05	ISO50.A55.D22C
50	27	55	21	48	3,25	ISO50.A55.D27C
50	32	55	24	58	3,50	ISO50.A55.D32C
50	40	55	27	70	3,85	ISO50.A55.D40C
50	50	55	30	90	4,05	ISO50.A55.D50C

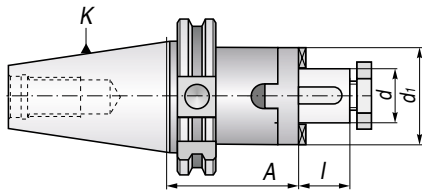


7:24	d	A	I	D	Waga/Weight kg	Kod/Code
30	16	35	17	32	0,53	ISO30.A35.D16C
30	22	35	19	40	0,65	ISO30.A35.D22C
30	27	35	21	48	0,82	ISO30.A35.D27C
40	16	37	17	32	0,98	ISO40.A37.D16C
40	22	37	19	40	1,12	ISO40.A37.D22C
40	27	37	21	48	1,30	ISO40.A37.D27C
40	32	41	24	58	1,54	ISO40.A41.D32C
40	40	45	27	70	1,95	ISO40.A45.D40C
30	16	73	17	32	0,75	ISO30.A73.D16C
30	22	73	19	40	1,00	ISO30.A73.D22C
30	27	73	21	48	1,30	ISO30.A73.D27C
40	16	75	17	32	1,20	ISO40.A75.D16C
40	22	75	19	40	1,50	ISO40.A75.D22C
40	27	75	21	48	1,80	ISO40.A75.D27C
40	32	75	24	58	2,20	ISO40.A75.D32C
40	40	75	27	70	3,00	ISO40.A75.D40C
50	16	78	17	32	3,10	ISO50.A78.D16C
50	22	78	19	40	3,30	ISO50.A78.D22C
50	27	78	21	48	3,70	ISO50.A78.D27C
50	32	78	24	58	4,10	ISO50.A78.D32C
50	40	78	27	70	4,90	ISO50.A78.D40C
50	50	78	30	90	6,30	ISO50.A78.D50C

DIN 69871-A

**TYP/TYPE DIN-DC**

**7301**



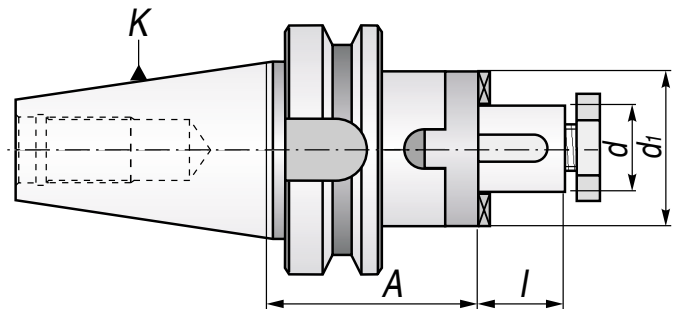
7:24	d	A	I	D	Waga/Weight kg	Kod/Code
40	16	55	17	32	1,00	DIN40.A55.D16C
40	22	55	19	40	1,10	DIN40.A55.D22C
40	27	55	21	48	1,25	DIN40.A55.D27C
40	32	60	24	58	1,55	DIN40.A60.D32C
40	40	60	27	70	1,80	DIN40.A60.D40C
50	16	55	17	32	2,80	DIN50.A55.D16C
50	22	55	19	40	2,95	DIN50.A55.D22C
50	27	55	21	48	3,20	DIN50.A55.D27C
50	32	55	24	58	3,45	DIN50.A55.D32C
50	40	55	27	70	3,80	DIN50.A55.D40C
50	50	70	30	90	4,05	DIN50.A70.D50C

MAS 403-BT

**TYP/TYPE BT-DC**

**7361**

7:24	d	A	I	D	Waga/Weight kg	Kod/Code
40	16	55	17	32	1,20	BT40.A55.D16C
40	22	55	19	40	1,40	BT40.A55.D22C
40	27	55	21	48	1,70	BT40.A55.D27C
40	32	60	24	58	1,95	BT40.A60.D32C
40	40	60	27	70	2,15	BT40.A60.D40C
50	16	70	17	32	3,00	BT50.A70.D16C
50	22	70	19	40	3,15	BT50.A70.D22C
50	27	70	21	48	3,35	BT50.A70.D27C
50	32	70	24	58	3,60	BT50.A70.D32C
50	40	70	27	70	3,95	BT50.A70.D40C
50	50	70	30	90	4,15	BT50.A70.D50C



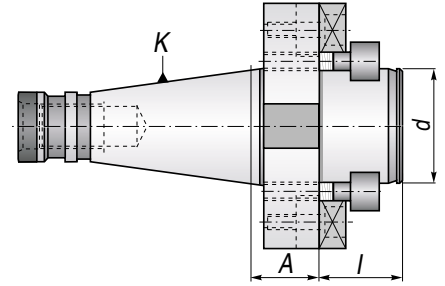
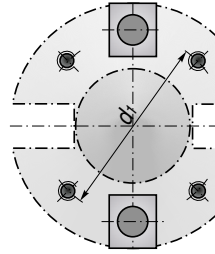
**Trzpienie frezarskie do głowic frezarskich**  
**Adapters for indexable milling cutters**



DIN 2080

**TYP/TYPE ISO-DF 2824**

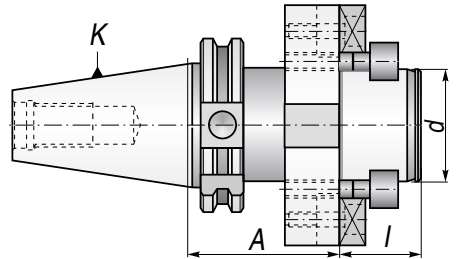
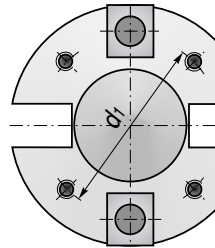
7:24	d	d <sub>1</sub>	A	Waga/Weight		Kod/Code
				l	kg	
40	40	66	30	30	1,30	ISO40.A30.D40DF
40	50	101	30	40	1,50	ISO40.A30.D50DF
40	60	101	30	40	2,00	ISO40.A30.D60DF
50	40	66	30	30	2,80	ISO50.A30.D40DF
50	50	101	30	40	3,00	ISO50.A30.D50DF
50	60	101	30	40	4,50	ISO50.A30.D60DF



DIN 69871-A

**TYP/TYPE DIN-DF 2827**

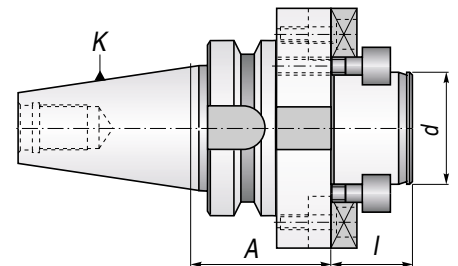
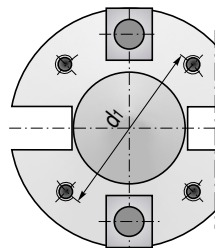
7:24	d	d <sub>1</sub>	A	Waga/Weight		Kod/Code
				l	kg	
40	40	66,7	60	30	1,50	DIN40.A60.D40DF
40	60	101,6	60	40	2,00	DIN40.A60.D60DF
50	40	66,7	70	30	2,90	DIN50.A70.D40DF
50	60	101,6	70	40	4,40	DIN50.A70.D60DF



MAS 403-BT

**TYP/TYPE BT-DF 2826**

7:24	d	d <sub>1</sub>	A	Waga/Weight		Kod/Code
				l	kg	
40	40	66,7	60	30	1,50	BT40.A60.D40DF
40	60	101,6	60	40	2,00	BT40.A60.D60DF
50	40	66,7	70	30	2,90	BT50.A70.D40DF
50	60	101,6	80	40	4,40	BT50.A80.D60DF



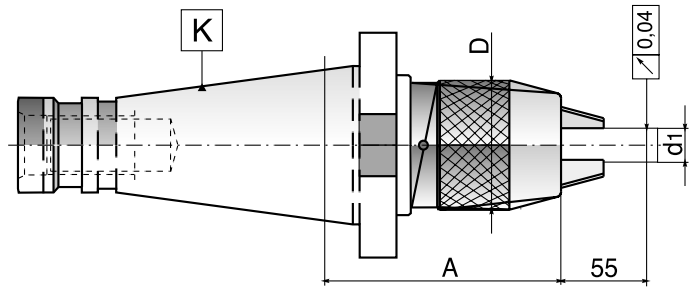
**Trzpień z uchwytem wiertarskim bezkluczykowym  
CNC – Integral taper precision drill chucks**



**DIN 2080**

**TYP/TYPE ISO-UW**

**7657**

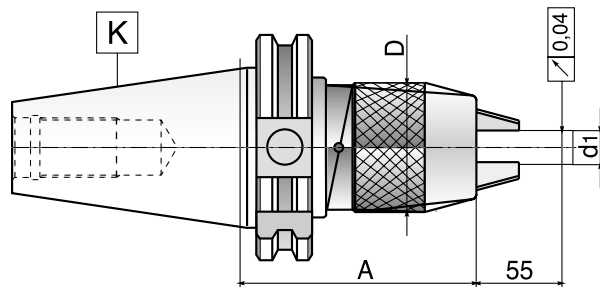


7:24	d <sub>1</sub>	D	A	Waga/Weight kg	Kod/Code
40	1-13	50	88	2,00	ISO40.A88.D13UW
40	1-16	57	99	2,40	ISO40.A99.D16UW
50	1-13	50	85	4,60	ISO50.A85.D13UW
50	1-16	57	89	5,20	ISO50.A89.D16UW

**DIN 69871-A**

**TYP/TYPE DIN-UW**

**7655**

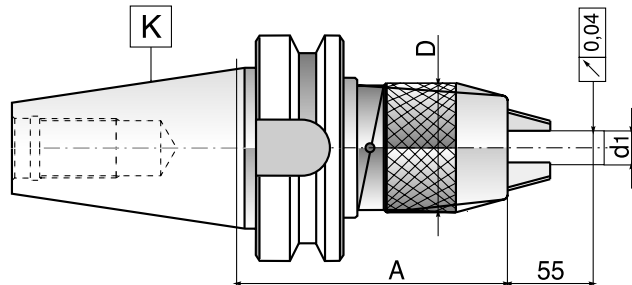


7:24	d <sub>1</sub>	D	A	Waga/Weight kg	Kod/Code
40	1-13	50	87	2,00	DIN40.A87.D13UW
40	1-16	57	106	2,40	DIN40.A106.D16UW
50	1-13	50	87	4,60	DIN50.A87.D13UW
50	1-16	57	90	5,20	DIN50.A90.D16UW

**MAS 403-BT**

**TYP/TYPE BT-UW**

**7656**



7:24	d <sub>1</sub>	D	A	Waga/Weight kg	Kod/Code
40	1-13	50	95	2,00	BT40.A95.D13UW
40	1-16	57	100	2,40	BT40.A100.D16UW
50	1-13	50	105	4,60	BT50.A105.D13UW
50	1-16	57	110	5,20	BT50.A110.D16UW

**Trzpienie frezarskie do uchwytów wiertarskich ze stożkiem DIN 238**  
**Drill Chuck Adapters for drill chucks taper DIN 238**

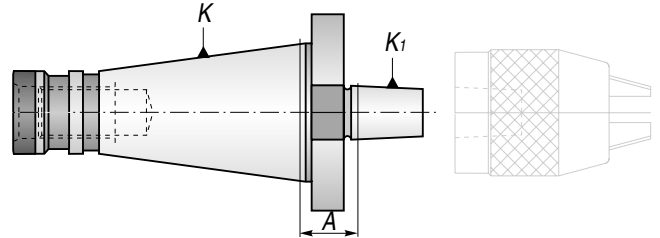


DIN 2080

**TYP/TYPE ISO-B**

**5370**

7:24	DIN	A	Waga/Weight kg	Kod/Code
30	B10	15	0,60	ISO30.A15.B10
30	B12	15	0,60	ISO30.A15.B12
30	B16	15	0,60	ISO30.A15.B16
30	B18	15	0,60	ISO30.A15.B18
30	B22	15	0,60	ISO30.A15.B22
40	B12	17	1,00	ISO40.A17.B12
40	B16	17	1,00	ISO40.A17.B16
40	B18	17	1,00	ISO40.A17.B18
40	B22	17	1,00	ISO40.A17.B22
40	B24	17	1,00	ISO40.A17.B24
50	B16	20	2,70	ISO50.A20.B16
50	B18	20	2,70	ISO50.A20.B18
50	B22	20	2,70	ISO50.A20.B22
50	B24	20	2,70	ISO50.A20.B24

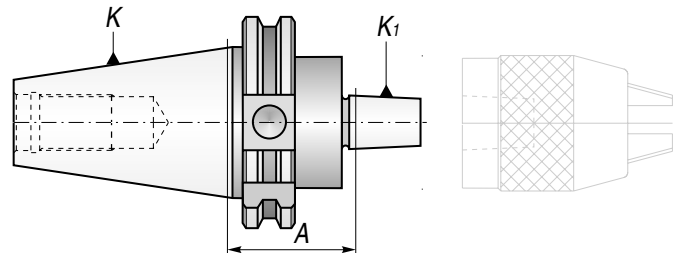


DIN 69871-A

**TYP/TYPE DIN-B**

**5374**

7:24	DIN	A	Waga/Weight kg	Kod/Code
30	B12	25	0,60	DIN30.A25.B12
30	B16	25	0,60	DIN30.A25.B16
40	B12	40	1,10	DIN40.A40.B12
40	B16	40	1,10	DIN40.A40.B16
40	B18	40	1,10	DIN40.A40.B18
50	B16	40	2,70	DIN50.A40.B16
50	B18	40	2,70	DIN50.A40.B18

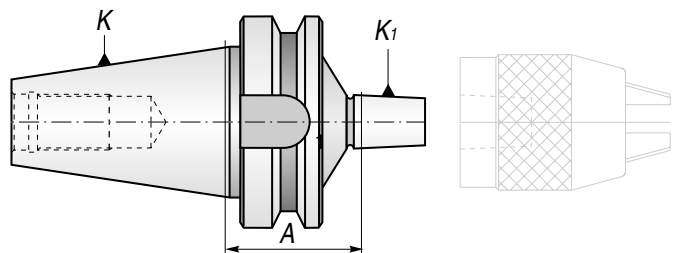


MAS 403-BT

**TYP/TYPE BT-B**

**5373**

7:24	DIN	A	Waga/Weight kg	Kod/Code
30	B12	30	0,60	BT30.A30.B12
30	B16	30	0,60	BT30.A30.B16
40	B12	40	1,20	BT40.A40.B12
40	B16	42	1,20	BT40.A42.B16
40	B18	42	1,20	BT40.A42.B18
50	B16	45	2,70	BT50.A45.B16
50	B18	45	2,70	BT50.A45.B18



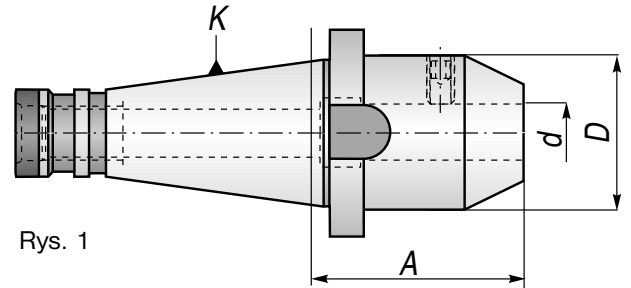
**Oprawki zaciskowe do narzędzi z chwytem walcowym Weldona DIN 1835-B**  
**End Mill Adapters for cutters with cylindrical shank and Weldon**  
**flat DIN 1835-B**



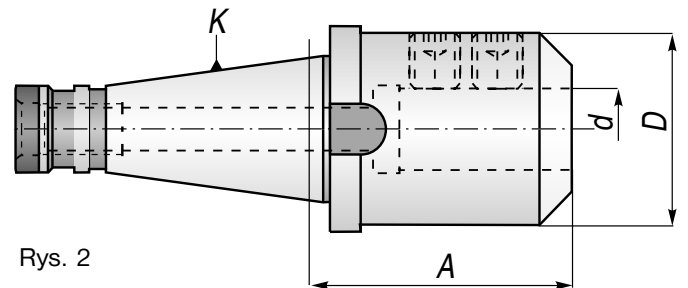
**TYP/TYPE ISO-WE**

**7620**

7:24	d	A	Rys.	Waga/Weight		Kod/Code
				D	kg	
30	6	40	1	25	0,50	ISO30.A40.WE06
30	8	40	1	28	0,50	ISO30.A40.WE08
30	10	40	1	35	0,60	ISO30.A40.WE10
30	12	40	1	42	0,60	ISO30.A40.WE12
30	16	50	1	48	0,90	ISO30.A50.WE16
30	20	63	1	52	1,00	ISO30.A63.WE20
30	25	68	2	63	1,20	ISO30.A68.WE25
40	6	50	1	25	0,80	ISO40.A50.WE06
40	8	50	1	28	0,80	ISO40.A50.WE08
40	10	50	1	35	0,90	ISO40.A50.WE10
40	12	50	1	42	1,00	ISO40.A50.WE12
40	14	50	1	44	1,30	ISO40.A50.WE14
40	16	63	1	48	1,40	ISO40.A63.WE16
40	20	63	1	52	1,40	ISO40.A63.WE20
40	25	80	2	63	2,00	ISO40.A80.WE25
40	32	80	2	72	2,30	ISO40.A80.WE32
40	32	100	2	72	2,50	ISO40.A100.WE32
50	6	63	1	25	3,30	ISO50.A63.WE06
50	8	63	1	28	3,30	ISO50.A63.WE08
50	10	63	1	35	3,60	ISO50.A63.WE10
50	12	63	1	42	3,80	ISO50.A63.WE12
50	14	63	1	44	3,90	ISO50.A63.WE14
50	16	63	1	48	4,10	ISO50.A63.WE16
50	18	63	1	50	4,20	ISO50.A63.WE18
50	20	63	1	52	4,30	ISO50.A63.WE20
50	25	80	2	65	5,00	ISO50.A80.WE25
50	32	81	2	70	5,30	ISO50.A81.WE32
50	40	91	2	90	5,60	ISO50.A91.WE40
50	50	110	2	97	6,10	ISO50.A110.WE50
50	63	115	2	97	6,10	ISO50.A115.WE63

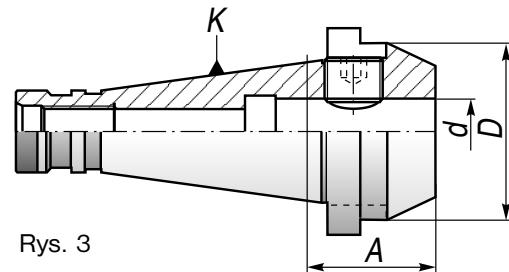


Rys. 1



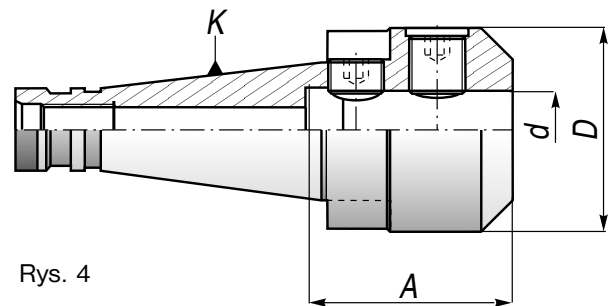
Rys. 2

7:24	d	A	Rys.	Waga/Weight		Kod/Code
				D	kg	
40	6	25	3	25	0,70	ISO40.A25.WE06
40	8	25	3	28	0,70	ISO40.A25.WE08
40	10	27	3	35	0,80	ISO40.A27.WE10
40	12	29	3	42	0,90	ISO40.A29.WE12
40	14	30	3	44	1,15	ISO40.A30.WE14
40	16	31	3	48	1,25	ISO40.A31.WE16
40	20	35	3	52	1,25	ISO40.A35.WE20
40	25	60	4	65	1,80	ISO40.A60.WE25
40	32	70	4	72	2,10	ISO40.A70.WE32
50	20	36	3	52	4,00	ISO50.A36.WE20
50	25	60	4	65	4,70	ISO50.A60.WE25
50	32	70	4	70	5,00	ISO50.A70.WE32



Rys. 3

7:24	d	A	Rys.	Waga/Weight		Kod/Code
				D	kg	
50	6	130	1	25	3,80	ISO50.A130.WE06
50	8	130	1	28	3,90	ISO50.A130.WE08
50	10	130	1	35	4,10	ISO50.A130.WE10
50	12	130	1	42	4,20	ISO50.A130.WE12
50	16	130	1	48	5,00	ISO50.A130.WE16
50	16	160	1	48	5,50	ISO50.A160.WE16
50	16	200	1	48	5,80	ISO50.A200.WE16
50	20	130	1	52	5,30	ISO50.A130.WE20
50	25	130	2	65	5,80	ISO50.A130.WE25
50	25	160	2	65	6,4	ISO50.A160.WE25
50	32	100	2	70	5,50	ISO50.A100.WE32
50	32	130	2	72	6,10	ISO50.A130.WE32
50	32	160	2	72	6,80	ISO50.A160.WE32
50	40	100	2	90	6,20	ISO50.A100.WE40



Rys. 4

DIN 2080

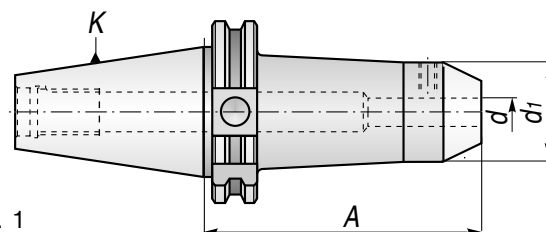
**Oprawki zaciskowe do narzędzi z chwytem walcowym Weldon DIN 1835-B**  
**End Mill Adapters for cutters with cylindrical shank and Weldon**  
**flat DIN 1835-B**



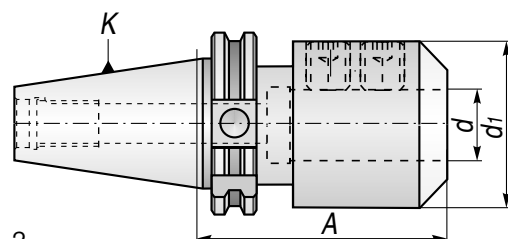
**TYP/TYPE DIN-WE**

**7625**

7:24	d	A	Rys.	Waga/Weight		Kod/Code
				d <sub>1</sub>	kg	
30	6	50	1	25	0,50	DIN30.A50.WE06
30	8	50	1	28	0,50	DIN30.A50.WE08
30	10	50	1	35	0,60	DIN30.A50.WE10
30	12	50	1	42	0,60	DIN30.A50.WE12
30	16	63	1	44	0,90	DIN30.A63.WE16
30	20	63	1	44	1,00	DIN30.A63.WE20
40	6	50	1	25	0,90	DIN40.A50.WE06
40	8	50	1	28	0,90	DIN40.A50.WE08
40	10	50	1	35	1,00	DIN40.A50.WE10
40	12	50	1	42	1,10	DIN40.A50.WE12
40	14	50	1	44	1,30	DIN40.A50.WE14
40	16	63	1	44,5	1,40	DIN40.A63.WE16
40	18	63	1	50	1,50	DIN40.A63.WE18
40	20	63	1	44,5	1,40	DIN40.A63.WE20
40	25	100	2	63	2,00	DIN40.A100.WE25
40	32	100	2	72	2,30	DIN40.A100.WE32
50	6	63	1	25	3,30	DIN50.A63.WE06
50	8	63	1	28	3,30	DIN50.A63.WE08
50	10	63	1	35	3,60	DIN50.A63.WE10
50	12	63	1	42	3,80	DIN50.A63.WE12
50	14	63	1	44	3,90	DIN50.A63.WE14
50	16	63	1	48	4,10	DIN50.A63.WE16
50	18	63	1	50	4,10	DIN50.A63.WE18
50	20	63	1	52	4,40	DIN50.A63.WE20
50	25	80	2	65	5,00	DIN50.A80.WE25
50	32	100	2	72	5,30	DIN50.A100.WE32
50	40	120	2	90	5,60	DIN50.A120.WE40
50	50	130	2	100	6,10	DIN50.A130.WE50



Rys. 1



Rys. 2

7:24	d	A	Rys.	Waga/Weight		Kod/Code
				d <sub>1</sub>	kg	
40	6	30	1	25	0,80	DIN40.A30.WE06
40	8	30	1	28	0,80	DIN40.A30.WE08
40	10	32	1	35	0,90	DIN40.A32.WE10
40	12	34	1	42	1,00	DIN40.A34.WE12
40	14	34	1	44	1,15	DIN40.A34.WE14
40	16	35	1	44	1,25	DIN40.A35.WE16
40	20	35	1	44,5	1,20	DIN40.A35.WE20
40	25	60	2	44,5	1,80	DIN40.A60.WE25
40	32	70	2	72	2,10	DIN40.A70.WE32
50	20	35	1	52	4,00	DIN50.A35.WE20
50	25	60	2	69,9	4,70	DIN50.A60.WE25
50	32	70	2	69,9	5,00	DIN50.A70.WE32
50	40	100	2	80	5,50	DIN50.A100.WE40

7:24	d	A	Rys.	Waga/Weight		Kod/Code
				d <sub>1</sub>	kg	
40	6	100	1	25	1,10	DIN40.A100.WE06
40	6	130	1	25	1,30	DIN40.A130.WE06
40	8	100	1	28	1,20	DIN40.A100.WE08
40	8	130	1	28	1,40	DIN40.A130.WE08
40	10	100	1	35	1,50	DIN40.A100.WE10
40	10	130	1	35	1,70	DIN40.A130.WE10
40	12	100	1	42	1,70	DIN40.A100.WE12
40	12	130	1	42	1,90	DIN40.A130.WE12
40	14	63	1	44	1,40	DIN40.A63.WE14
50	6	130	1	25	4,40	DIN50.A130.WE06
50	8	130	1	28	4,20	DIN50.A130.WE08
50	10	130	1	35	4,40	DIN50.A130.WE10
50	12	130	1	42	4,50	DIN50.A130.WE12
50	16	100	1	48	4,70	DIN50.A100.WE16
50	16	130	1	48	5,10	DIN50.A130.WE16
50	20	130	1	52	5,20	DIN50.A130.WE20
50	25	130	2	65	5,10	DIN50.A130.WE25
50	32	130	2	72	6,00	DIN50.A130.WE32
50	32	160	2	72	6,50	DIN50.A160.WE32

DIN 69871-A

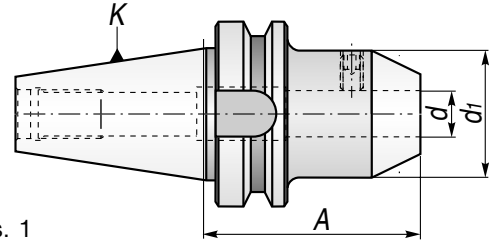
**Oprawki zaciskowe do narzędzi z chwytem walcowym Weldon DIN 1835-B**  
**End Mill Adapters for cutters with cylindrical shank and Weldon**  
**flat DIN 1835-B**



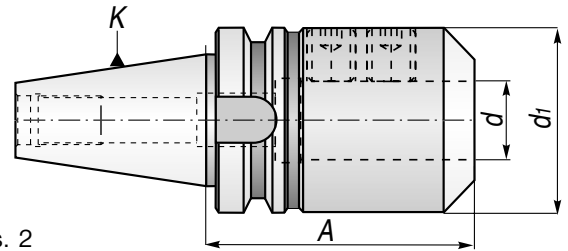
**TYP/TYPE BT-WE**

**7624**

7:24	d	A	Rys.	Waga/Weight		Kod/Code
				d <sub>1</sub>	kg	
30	6	50	1	25	0,50	BT30.A50.WE06
30	8	50	1	28	0,50	BT30.A50.WE08
30	10	50	1	35	0,60	BT30.A50.WE10
30	12	50	1	42	0,60	BT30.A50.WE12
30	16	63	1	48	0,90	BT30.A63.WE16
30	20	63	1	52	1,00	BT30.A63.WE20
40	6	50	1	25	0,90	BT40.A50.WE06
40	8	50	1	28	0,90	BT40.A50.WE08
40	10	63	1	35	1,00	BT40.A63.WE10
40	12	63	1	42	1,10	BT40.A63.WE12
40	14	63	1	44	1,30	BT40.A63.WE14
40	16	63	1	48	1,40	BT40.A63.WE16
40	20	63	1	50	1,40	BT40.A63.WE20
40	25	90	2	63	2,00	BT40.A90.WE25
40	32	100	2	72	2,30	BT40.A100.WE32
50	6	63	1	25	3,30	BT50.A63.WE06
50	8	63	1	28	3,30	BT50.A63.WE08
50	10	63	1	35	3,60	BT50.A63.WE10
50	12	80	1	42	3,80	BT50.A80.WE12
50	14	80	1	44	3,90	BT50.A80.WE14
50	16	80	1	48	4,10	BT50.A80.WE16
50	20	80	1	52	4,30	BT50.A80.WE20
50	25	100	2	63	5,00	BT50.A100.WE25
50	32	105	2	72	5,30	BT50.A105.WE32
50	40	120	2	90	5,60	BT50.A120.WE40
50	50	130	2	100	6,10	BT50.A130.WE50

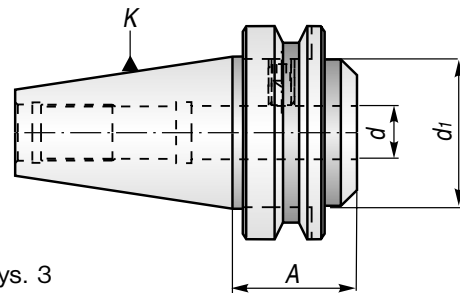


Rys. 1

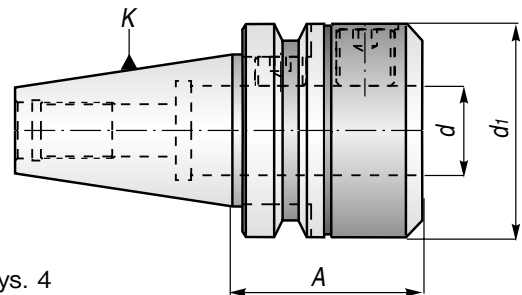


Rys. 2

7:24	d	A	Rys.	Waga/Weight		Kod/Code
				d <sub>1</sub>	kg	
40	6	35	3	25	0,80	BT40.A35.WE06
40	8	35	3	28	0,80	BT40.A35.WE08
40	10	37	3	35	0,90	BT40.A37.WE10
40	12	37	3	42	1,00	BT40.A37.WE12
40	14	37	3	44	1,15	BT40.A37.WE14
40	16	37	3	48	1,25	BT40.A37.WE16
40	20	37	3	50	1,20	BT40.A37.WE20
40	25	60	4	63	1,80	BT40.A60.WE25
40	32	65	4	72	2,10	BT40.A65.WE32
50	20	40	3	52	4,00	BT50.A40.WE20
50	25	60	4	63	4,70	BT50.A60.WE25
50	32	70	4	72	5,00	BT50.A70.WE32



Rys. 3



Rys. 4

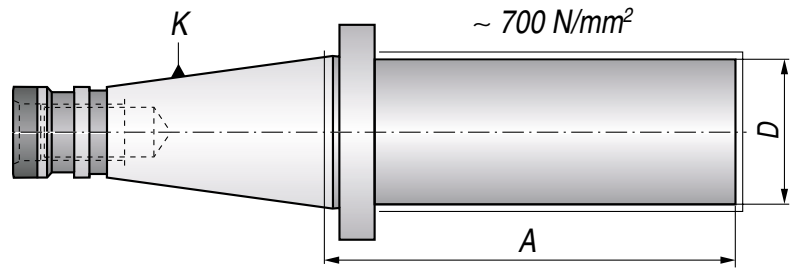
**MAS 403-BT**





**TYP/TYPE ISO-PF**

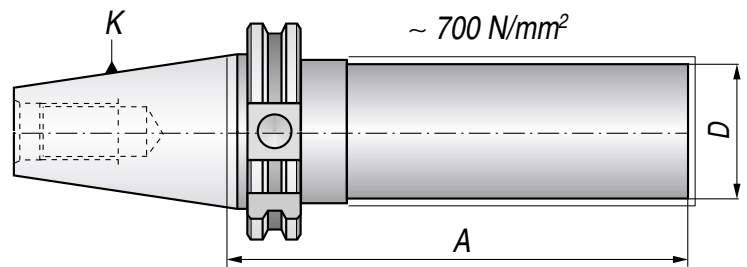
**2190**



7:24	d	A	Waga/Weight kg	Kod/Code
40	40	280	3,7	ISO40.A280.D40PF
40	63	280	7,7	ISO40.A280.D63PF
50	50	330	6,6	ISO50.A330.D50PF
50	80	330	15,6	ISO50.A330.D80PF

**TYP/TYPE DIN-PF**

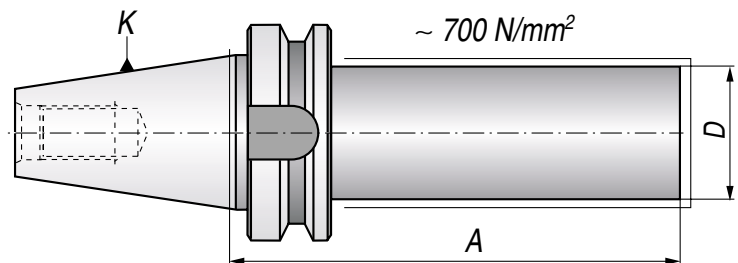
**2191**



7:24	d	A	Waga/Weight kg	Kod/Code
40	40	280	3,6	DIN40.A280.D40PF
40	63	280	7,6	DIN40.A280.D63PF
50	50	330	6,4	DIN50.A330.D50PF
50	80	330	15,4	DIN50.A330.D80PF

**TYP/TYPE BT-PF**

**2192**



7:24	d	A	Waga/Weight kg	Kod/Code
40	40	280	3,6	BT40.A280.D40PF
40	63	280	7,6	BT40.A280.D63PF
50	50	330	6,4	BT50.A330.D50PF
50	80	330	15,4	BT50.A330.D80PF

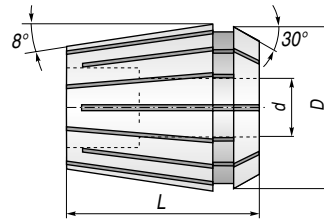
**Tulejki zaciskowe**  
**Collets, sets of collets**



**TYP/TYPE ER**

**7618**

ER	d	D	L	Kod/Code
16	3	17	27,5	ER16D3
16	4	17	27,5	ER16D4
16	5	17	27,5	ER16D5
16	6	17	27,5	ER16D6
16	7	17	27,5	ER16D7
16	8	17	27,5	ER16D8
16	9	17	27,5	ER16D9
16	10	17	27,5	ER16D10
20	3	21	31,5	ER20D3
20	4	21	31,5	ER20D4
20	5	21	31,5	ER20D5
20	6	21	31,5	ER20D6
20	7	21	31,5	ER20D7
20	8	21	31,5	ER20D8
20	9	21	31,5	ER20D9
20	10	21	31,5	ER20D10
20	11	21	31,5	ER20D11
20	12	21	31,5	ER20D12
20	13	21	31,5	ER20D13
25	3	26	34	ER25D3
25	4	26	34	ER25D4
25	5	26	34	ER25D5
25	6	26	34	ER25D6
25	7	26	34	ER25D7
25	8	26	34	ER25D8
25	9	26	34	ER25D9
25	10	26	34	ER25D10
25	11	26	34	ER25D11
25	12	26	34	ER25D12
25	13	26	34	ER25D13
25	14	26	34	ER25D14
25	15	26	34	ER25D15
25	16	26	34	ER25D16
32	3	33	40	ER32D3
32	4	33	40	ER32D4
32	5	33	40	ER32D5
32	6	33	40	ER32D6
32	7	33	40	ER32D7
32	8	33	40	ER32D8
32	9	33	40	ER32D9
32	10	33	40	ER32D10
32	11	33	40	ER32D11
32	12	33	40	ER32D12
32	13	33	40	ER32D13
32	14	33	40	ER32D14
32	15	33	40	ER32D15
32	16	33	40	ER32D16
32	17	33	40	ER32D17
32	18	33	40	ER32D18
32	19	33	40	ER32D19
32	20	33	40	ER32D20
40	4	41	46	ER40D4
40	5	41	46	ER40D5
40	6	41	46	ER40D6
40	7	41	46	ER40D7
40	8	41	46	ER40D8
40	9	41	46	ER40D9
40	10	41	46	ER40D10
40	11	41	46	ER40D11
40	12	41	46	ER40D12
40	13	41	46	ER40D13
40	14	41	46	ER40D14
40	15	41	46	ER40D15
40	16	41	46	ER40D16
40	17	41	46	ER40D17
40	18	41	46	ER40D18
40	19	41	46	ER40D19
40	20	41	46	ER40D20
40	21	41	46	ER40D21
40	22	41	46	ER40D22
40	23	41	46	ER40D23
40	24	41	46	ER40D24
40	25	41	46	ER40D25
40	26	41	46	ER40D26



ER	Zakres Range	Ilość sztuk Collets quantity	Kod/Code
ER16	2-10	8	ER16.KPL.8TUL
ER20	2-13	11	ER20.KPL.11TUL
ER25	2-16	14	ER25.KPL.14TUL
ER32	2-20	18	ER32.KPL.18TUL
ER40	2-26	24	ER40.KPL.24TUL

**DIN 6499**

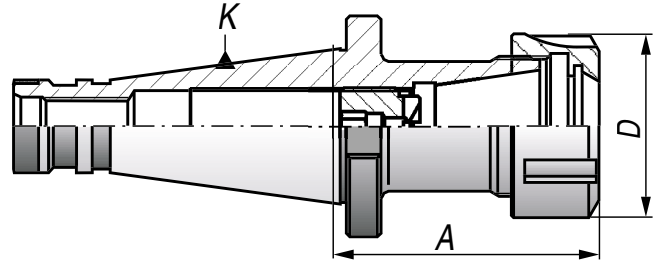
**Oprawki zaciskowe do tulejek ER DIN 6499 do narzędzi z uchwytem walcowym**  
**Collet Chucks ER for collets ER DIN 6499 for tools with cylindrical shank**



DIN 2080

**TYP/TYPE ISO-ER 7616**

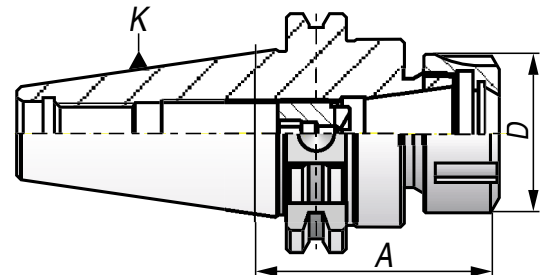
7:24	ER	A	Range Zakres	D	Waga/Weight kg	Kod/Code
30	ER16	50	2-10	32	0,6	ISO30.A50.ER16
30	ER32	50	2-20	50	0,6	ISO30.A50.ER32
40	ER25	60	2-16	42	1,0	ISO40.A60.ER25
40	ER32	60	2-20	50	1,2	ISO40.A60.ER32
40	ER32	100	2-20	50	1,5	ISO40.A100.ER32
40	ER32	130	2-20	50	1,8	ISO40.A130.ER32
40	ER40	60	3-26	63	1,2	ISO40.A60.ER40
50	ER32	70	2-20	50	3,1	ISO50.A70.ER32
50	ER32	130	2-20	50	3,9	ISO50.A130.ER32
50	ER40	70	3-26	63	3,2	ISO50.A70.ER40
50	ER40	130	3-26	63	4,3	ISO50.A130.ER40



DIN 69871-A

**TYP/TYPE DIN-ER 7617**

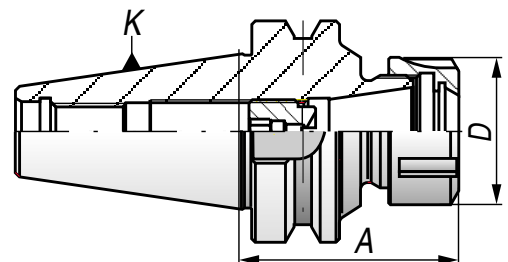
7:24	ER	A	Range Zakres	D	Waga/Weight kg	Kod/Code
30	ER16	60	2-10	32	0,6	DIN30.A60.ER16
30	ER32	60	2-20	50	0,9	DIN30.A60.ER32
40	ER25	60	2-16	42	1,0	DIN40.A60.ER25
40	ER32	70	2-20	50	1,2	DIN40.A70.ER32
40	ER32	100	2-20	50	1,5	DIN40.A100.ER32
40	ER32	130	2-20	50	1,8	DIN40.A130.ER32
40	ER40	70	3-26	63	1,4	DIN40.A70.ER40
50	ER32	70	2-20	50	3,6	DIN50.A70.ER32
50	ER32	130	2-20	50	4,7	DIN50.A130.ER32
50	ER40	80	3-26	63	4,2	DIN50.A80.ER40
50	ER40	130	3-26	63	5,0	DIN50.A130.ER40



MAS 403-BT

**TYP/TYPE BT-ER 7626**

7:24	ER	A	Range Zakres	D	Waga/Weight kg	Kod/Code
30	ER16	60	2-10	32	0,6	BT30.A60.ER16
30	ER32	60	2-20	50	0,9	BT30.A60.ER32
40	ER25	60	2-16	42	1,3	BT40.A60.ER25
40	ER32	70	2-20	50	1,6	BT40.A70.ER32
40	ER32	100	2-20	50	1,5	BT40.A100.ER32
40	ER32	130	2-20	50	1,8	BT40.A130.ER32
40	ER40	70	3-26	63	1,9	BT40.A70.ER40
50	ER32	70	2-20	50	3,5	BT50.A70.ER32
50	ER32	130	2-20	50	4,3	BT50.A130.ER32
50	ER40	80	3-26	63	4,1	BT50.A80.ER40
50	ER40	130	3-26	63	4,3	BT50.A130.ER40



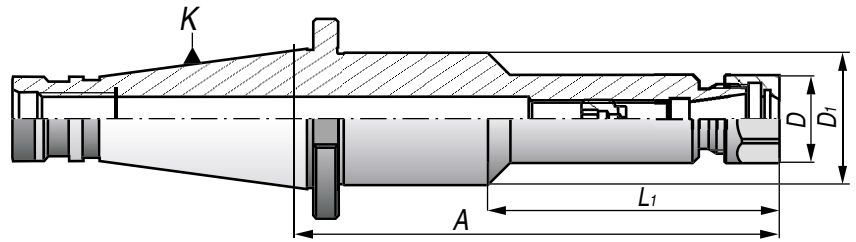
**Oprawki zaciskowe przedłużone do tulejek ER DIN 6499 do narzędzi z uchwytem walcowym**  
**Collet Chucks ER – long for collets ER DIN 6499 for tools with cylindrical shank**



DIN 2080

**TYP/TYPE ISO-ERS**

**7616-S**

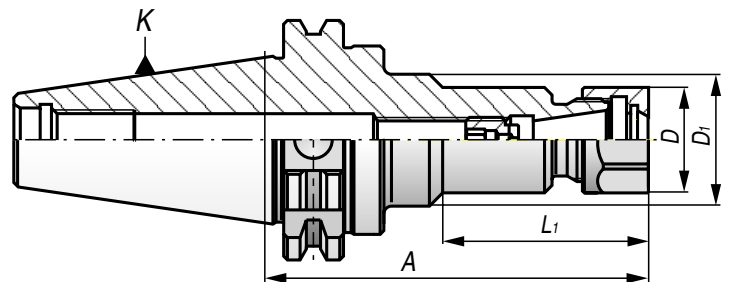


7:24	Collet Tulejka	A	Range Zakres	L	D	D <sub>1</sub>	Waga/Weight kg	Kod/Code
40	ER16	100	2-10	-	28	-	1,1	ISO40.A100.ER16S
40	ER16	150	2-10	85	28	40	1,7	ISO40.A150.ER16S
50	ER16	100	2-10	-	28	-	2,9	ISO50.A100.ER16S
50	ER16	150	2-10	85	28	40	3,3	ISO50.A150.ER16S

DIN 69871-A

**TYP/TYPE DIN-ERS**

**7617-S**

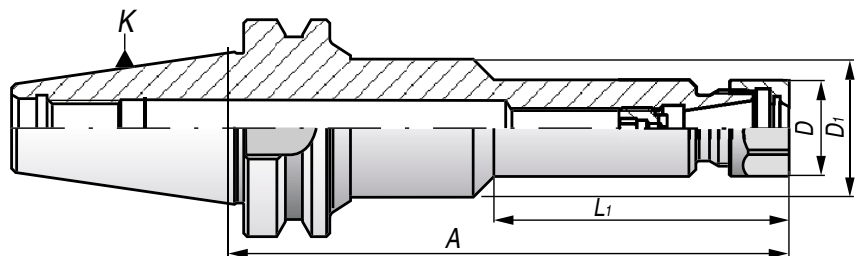


7:24	Collet Tulejka	A	Range Zakres	L	D	D <sub>1</sub>	Waga/Weight kg	Kod/Code
40	ER16	100	2-10	-	28	-	1,1	DIN40.A100.ER16S
40	ER16	150	2-10	85	28	40	1,6	DIN40.A150.ER16S
50	ER16	100	2-10	-	28	-	3,0	DIN50.A100.ER16S
50	ER16	150	2-10	85	28	40	3,3	DIN50.A150.ER16S

MAS 403-BT

**TYP/TYPE BT-ERS**

**7626-S**



7:24	Collet Tulejka	A	Range Zakres	L	D	D <sub>1</sub>	Waga/Weight kg	Kod/Code
40	ER16	100	2-10	-	28	-	1,1	BT40.A100.ER16S
40	ER16	150	2-10	85	28	40	1,6	BT40.A150.ER16S
50	ER16	100	2-10	-	28	-	3,0	BT50.A100.ER16S
50	ER16	150	2-10	85	28	40	3,3	BT50.A150.ER16S

## Komplety tulejek zaciskowych z trzpieniem w kasecie drewnianej Sets of Collets with adapter and wrench type in wooden case



DIN 2080

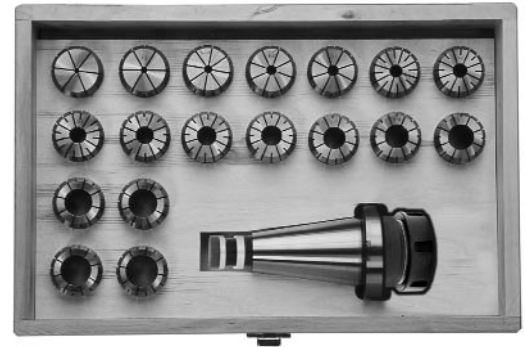
### TYP/TYPE ISO-ER-KPL

**7616**

### TYP/TYPE ISO-KPLS

7:24	ER	A	Zakres Range	Ilość sztuk Full set	Kod/Code
30	ER16	50	3-10	8	ISO30.A50.ER16.KP8
30	ER32	50	3-20	18	ISO30.A50.ER32.KP18
40	ER25	60	3-16	14	ISO40.A60.ER25.KP14
40	ER32	60	3-20	18	ISO40.A60.ER32.KP18
40	ER32	60	6-20	8	ISO40.A60.ER32.KP8
40	ER32	130	3-20	18	ISO40.A130.ER32.KP18
40	ER40	60	3-26	23	ISO40.A60.ER40.KP23
50	ER32	70	3-20	18	ISO50.A70.ER32.KP18
50	ER32	70	6-20	8	ISO50.A70.ER32.KP8
50	ER32	130	3-20	18	ISO50.A130.ER32.KP18
50	ER40	70	3-26	23	ISO50.A70.ER40.KP23
50	ER40	70	6-25	8	ISO50.A70.ER40.KP8
50	ER40	130	3-26	23	ISO50.A130.ER40.KP23

7:24	ER	A	Zakres Range	Ilość sztuk Full set	Kod/Code
30	ER16	100	2-10	8	ISO40.A100.ER16.KP8S
30	ER16	150	2-10	8	ISO40.A150.ER16.KP8S
40	ER16	100	2-10	8	ISO50.A100.ER16.KP8S
40	ER16	150	2-10	8	ISO50.A150.ER16.KP8S



DIN 69871-A

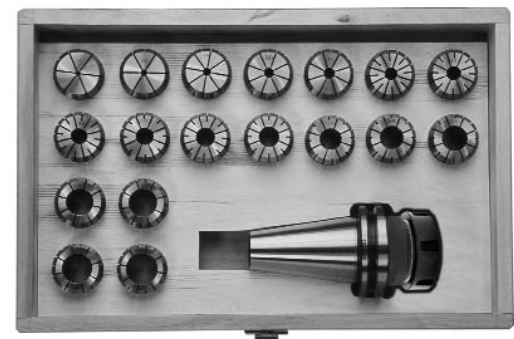
### TYP/TYPE DIN-ER-KPL

**7617**

### TYP/TYPE DIN-KPLS

7:24	ER	A	Zakres Range	Ilość sztuk Full set	Kod/Code
30	ER16	60	3-10	8	DIN30.A60.ER16.KP8
30	ER32	60	3-20	18	DIN30.A60.ER32.KP18
40	ER25	60	3-16	14	DIN40.A60.ER25.KP14
40	ER32	70	3-20	18	DIN40.A70.ER32.KP18
40	ER32	60	6-20	8	DIN40.A70.ER32.KP8
40	ER32	130	3-20	18	DIN40.A130.ER32.KP18
40	ER40	70	3-26	23	DIN40.A70.ER40.KP23
50	ER32	70	3-20	18	DIN50.A70.ER32.KP18
50	ER32	70	6-20	8	DIN50.A70.ER32.KP8
50	ER32	130	3-20	18	DIN50.A130.ER32.KP18
50	ER40	80	3-26	23	DIN50.A80.ER40.KP23
50	ER40	70	6-25	8	DIN50.A80.ER40.KP8
50	ER40	130	3-26	23	DIN50.A130.ER40.KP23

7:24	ER	A	Zakres Range	Ilość sztuk Full set	Kod/Code
30	ER16	100	2-10	8	DIN40.A100.ER16.KP8S
30	ER16	150	2-10	8	DIN40.A150.ER16.KP8S
40	ER16	100	2-10	8	DIN50.A100.ER16.KP8S
40	ER16	150	2-10	8	DIN50.A150.ER16.KP8S



MAS 403-BT

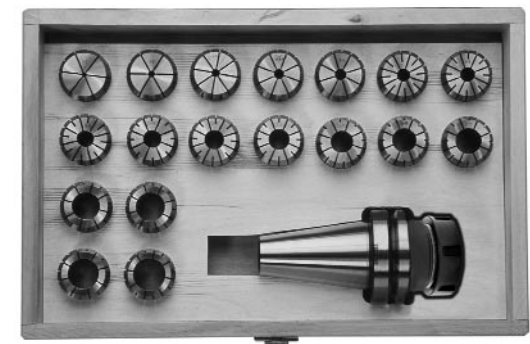
### TYP/TYPE BT-ER-KPL

**7626**

### TYP/TYPE BT-KPLS

7:24	ER	A	Zakres Range	Ilość sztuk Full set	Kod/Code
30	ER16	60	3-10	8	BT30.A60.ER16.KP8
30	ER32	60	3-20	18	BT30.A60.ER32.KP18
40	ER25	60	3-16	14	BT40.A60.ER25.KP14
40	ER32	70	3-20	18	BT40.A70.ER32.KP18
40	ER32	60	6-20	8	BT40.A70.ER32.KP8
40	ER32	130	3-20	18	BT40.A130.ER32.KP18
40	ER40	70	3-26	23	BT40.A70.ER40.KP23
50	ER32	70	3-20	18	BT50.A70.ER32.KP18
50	ER32	70	6-20	8	BT50.A70.ER32.KP8
50	ER32	130	3-20	18	BT50.A130.ER32.KP18
50	ER40	80	3-26	23	BT50.A80.ER40.KP23
50	ER40	70	6-25	8	BT50.A80.ER40.KP8
50	ER40	130	3-26	23	BT50.A130.ER40.KP23

7:24	ER	A	Zakres Range	Ilość sztuk Full set	Kod/Code
30	ER16	100	2-10	8	BT40.A100.ER16.KP8S
30	ER16	150	2-10	8	BT40.A150.ER16.KP8S
40	ER16	100	2-10	8	BT50.A100.ER16.KP8S
40	ER16	150	2-10	8	BT50.A150.ER16.KP8S



## Komplety tulejek zaciskowych z trzpieniem w kasecie drewnianej Set of Collets with adapter and wrench type in wooden case



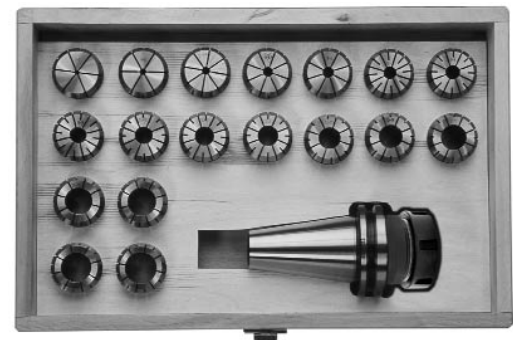
### TYP/TYPE ISO-PTEz-KPL

7:24	PTEz	A	Zakres Range	Ilość sztuk Full set	Kod/Code
ISO 40	PTEz50	60	6-20	8	ISO40.A60.PTEz50.KPL8S
ISO 40	PTEz50	60	3-20	18	ISO40.A60.PTEz50.KPL18S
ISO 50	PTEz50	70	3-20	8	ISO50.A70.PTEz50.KPL8S
ISO 50	PTEz50	70	6-20	18	ISO50.A70.PTEz50.KPL18S



### TYP/TYPE MK-PTEz-KPL

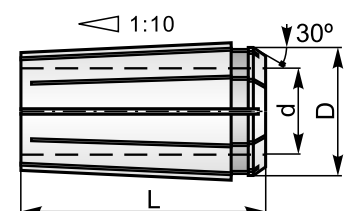
MK	PTEz	A	Zakres Range	Ilość sztuk Full set	Kod/Code
3	PTEz50	70	6-20	8	MK3.A70.PTEz50.KPL8S
3	PTEz50	70	3-20	18	MK3.A70.PTEz50.KPL18S
4	PTEz50	70	6-20	8	MK4.A70.PTEz50.KPL8S
4	PTEz50	70	3-20	18	MK4.A70.PTEz50.KPL18S



## Oprawki zaciskowe Collet, sets of collets



PTEz	d	D	L	Kod/Code	PTEz	d	D	L	Kod/Code
50	3	28,3	50	PTEz50D3	50	17	28,3	50	PTEz50D17
50	4	28,3	50	PTEz50D4	50	18	28,3	50	PTEz50D18
50	5	28,3	50	PTEz50D5	50	19	28,3	50	PTEz50D19
50	6	28,3	50	PTEz50D6	50	20	28,3	50	PTEz50D20
50	6,3	28,3	50	PTEz50D6,3					
50	7	28,3	50	PTEz50D7					
50	8	28,3	50	PTEz50D8					
50	9	28,3	50	PTEz50D9					
50	10	28,3	50	PTEz50D10					
50	11	28,3	50	PTEz50D11					
50	12	28,3	50	PTEz50D12					
50	13	28,3	50	PTEz50D13					
50	14	28,3	50	PTEz50D14					
50	15	28,3	50	PTEz50D15					
50	16	28,3	50	PTEz50D16					

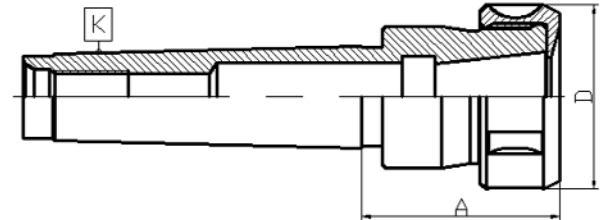


**Oprawki zaciskowe do tulejek PTEz50 do narzędzi z chwytem walcowym**  
**Collets Chucks for collets PTEz50 for tools with cylindrical shank**



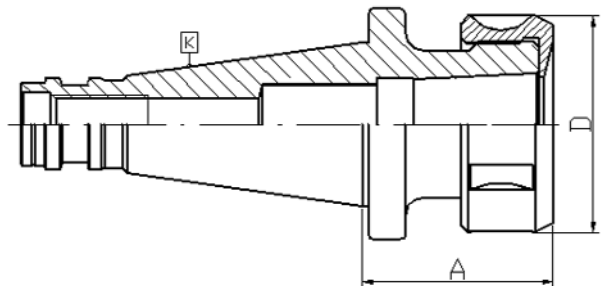
**TYP/TYPY MK-PTEz50**

MK	Collet Tulejka	A	Range Zakres	D	Waga/Weight kg	Kod/Code
3	PTEz50	70	3-20	58	0,8	MK3.A70.PTEz50
4	PTEz50	70	3-20	58	0,9	MK4.A70.PTEz50



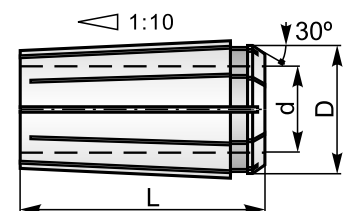
**TYP/TYPY ISO-PTEz50**

7:24	Collet Tulejka	A	Range Zakres	D	Waga/Weight kg	Kod/Code
ISO 40	PTEz50	60	3-20	58	1,2	ISO40.A60.PTEz50
ISO 50	PTEz50	70	3-20	58	3,2	ISO50.A70.PTEz50



**TYP/TYPY EO-B**

EO	d	D	L	Kod/Code	EO	d	D	L	Kod/Code
16	5,0±4,5	25,50	40	E016D5	25	16,0±15,5	35,05	52	E025D16
16	6,0±5,5	25,50	40	E016D6	25	17,0±16,5	35,05	52	E025D17
16	7,0±6,5	25,50	40	E016D7	25	18,0±17,5	35,05	52	E025D18
16	8,0±7,5	25,50	40	E016D8	25	19,0±18,5	35,05	52	E025D19
16	9,0±8,5	25,50	40	E016D9	25	20,0±19,5	35,05	52	E025D20
16	10,0±9,5	25,50	40	E016D10	25	21,0±20,5	35,05	52	E025D21
16	11,0±10,5	25,50	40	E016D11	25	22,0±21,5	35,05	52	E025D22
16	12,0±11,5	25,50	40	E016D12	25	23,0±22,5	35,05	52	E025D23
16	13,0±12,5	25,50	40	E016D13	25	24,0±23,5	35,05	52	E025D24
16	14,0±13,5	25,50	40	E016D14	25	25,0±24,5	35,05	52	E025D25
16	15,0±14,5	25,50	40	E016D15					
16	16,0±15,5	25,50	40	E016D16					
25	6,0±5,5	35,05	52	E025D6					
25	7,0±6,5	35,05	52	E025D7					
25	8,0±7,5	35,05	52	E025D8					
25	9,0±8,5	35,05	52	E025D9					
25	10,0±9,5	35,05	52	E025D10					
25	11,0±10,5	35,05	52	E025D11					
25	12,0±11,5	35,05	52	E025D12					
25	13,0±12,5	35,05	52	E025D13					
25	14,0±13,5	35,05	52	E025D14					
25	15,0±14,5	35,05	52	E025D15					



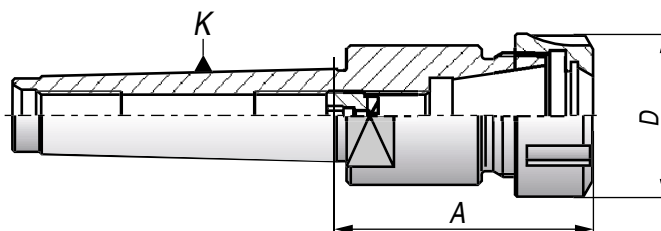
**Oprawki zaciskowe do tulejek ER DIN 6499 do narzędzi z uchwytem walcowym**  
**Collet Chucks ER for collets ER DIN 6499 for tools with cylindrical shank**



**TYP/TYPE MK-ER**

**7711**

7:24	Collet Tulejka	A	Range Zakres	D	Waga/Weight kg	Kod/Code
2	ER16	63	3-10	32	0,35	MK2.A63.ER16
2	ER25	69	3-16	42	0,5	MK2.A69.ER25
2	ER32	74	3-20	50	0,6	MK2.A74.ER32
3	ER16	63	3-10	32	0,5	MK3.A63.ER16
3	ER25	69	3-16	42	0,65	MK3.A69.ER25
3	ER32	74	3-20	50	0,8	MK3.A74.ER32
4	ER25	82	3-16	42	0,75	MK4.A82.ER25
4	ER32	84	3-20	50	0,9	MK4.A84.ER32
4	ER40	73	3-26	63	1,05	MK4.A73.ER40
5	ER32	66	3-20	50	1,1	MK5.A66.ER32
5	ER40	68	3-26	63	1,25	MK5.A68.ER40



DIN 228

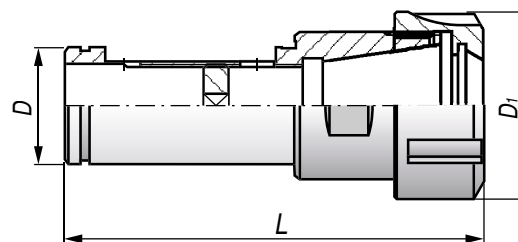
**Oprawki zaciskowe do tulejek ER**  
**Collet Chucks for collets ER**



**TYP/TYPE D-ER**

**7815**

7:24	Collet Tulejka	Range Zakres	L	D <sub>1</sub>	Waga/Weight kg	Kod/Code
32	ER32	2-20	110	50	0,6	D32.L110.ER32
40	ER32	2-20	117	50	0,9	D40.L117.ER32

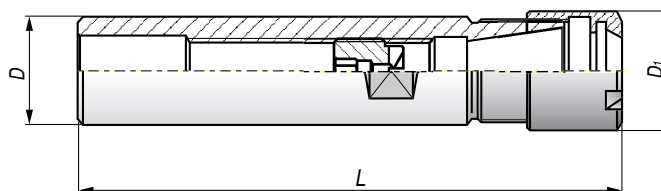


DIN 1835

**TYP/TYPE D-ER**

**7812**

7:24	Collet Tulejka	Range Zakres	L	Ilość sztuk Full set	Kod/Code
16	ER16	2-10	160	8	DS16.L160.ER16
20	ER16	2-10	100	8	DS20.L100.ER16
20	ER16	2-10	160	8	DS20.L160.ER16





**PODSTAWKA MONTAŻOWA**  
**MOUNTING FIXTURES**

Typ trzpienia  
Tape adapters

Kod/Code

SK 30 TBK 30  
SK 40 TBK 40  
SK 50 TBK 50

HSK 40 TBRL 40  
HSK 50 TBRL 50  
HSK 63 TBRL 63  
HSK 80 TBRL 80  
HSK 100 TBRL 100

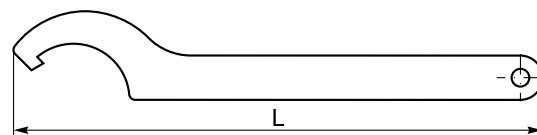


**KLUCZE DO OPRAW**  
**COLLET CHUCKS**



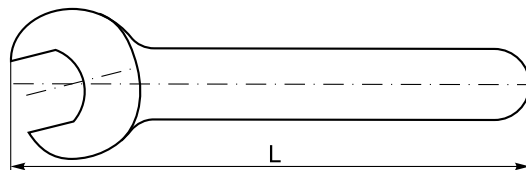
**STANDARD I**

Spannzange Collet	L	Kod/Code
ER16	158	CH16H
ER20	158	CH20H
ER25	183	CH25H
ER32	204	CH32H
ER40	252	CH40H



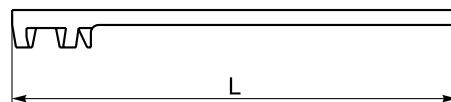
**HEXA**

Spannzange Collet	L	Kod/Code
ER16	170	CH16SE



**SPEZIAL/SPECIAL MINI**

Spannzange Collet	L	Kod/Code
ER16	119	CH16SM



**STANDARD II**

Spannzange Collet	L	Kod/Code
ER25	200	CH25S
ER32	250	CH32S
ER40	280	CH40S



**Trzpienie do uchwytów wiertarskich ze stożkiem DIN 238**  
**Drill Chuck Adapters for drill chucks taper DIN 238**

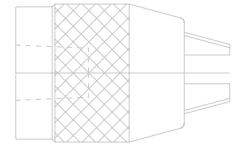
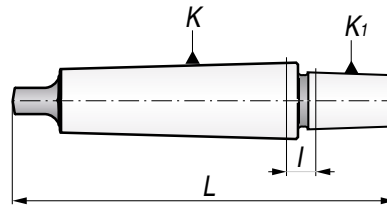


DIN 228

**TYP/TYPE MK-B**

**5361**

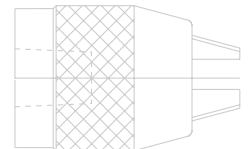
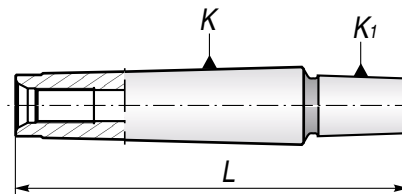
Morse	DIN	L	I	Waga/Weight kg	Kod/Code
1	B10	86,0	6,0	0,05	MK1.L86.B10
1	B12	89,0	5,0	0,06	MK1.L89.B12
1	B16	99,0	8,0	0,09	MK1.L99.B16
1	B18	107,0	8,0	0,11	MK1.L107.B18
2	B10	105,0	12,0	0,13	MK2.L105.B10
2	B12	106,0	9,0	0,14	MK2.L106.B12
2	B16	112,0	8,0	0,16	MK2.L112.B16
2	B18	119,0	7,0	0,18	MK2.L119.B18
2	B22	130,0	9,5	0,25	MK2.L130.B22
3	B10	121,0	9,0	0,25	MK3.L121.B10
3	B12	127,0	11,0	0,28	MK2.L127.B12
3	B16	134,0	11,0	0,31	MK3.L134.B16
3	B18	140,0	9,0	0,33	MK3.L140.B18
3	B22	147,0	17,5	0,38	MK3.L147.B22
3	B24	157,0	17,5	0,44	MK3.L157.B24
4	B12	152,5	13,0	0,56	MK4.L152.5.B12
4	B16	158,0	11,5	0,60	MK4.L158.0.B16
4	B18	166,5	12,0	0,63	MK4.L166.6.B18
4	B22	176,0	13,0	0,71	MK4.L176.0.B22
4	B24	186,0	13,0	0,76	MK4.L186.0.B24
5	B12	186,5	15,0	1,36	MK5.L186.5.B12
5	B16	193,0	14,5	1,40	MK5.L193.0.B16
5	B18	200,5	14,0	1,43	MK5.L200.5.B18
5	B22	208,5	13,5	1,51	MK5.L208.5.B22
5	B24	221,0	16,0	1,56	MK5.L221.0.B24



**TYP/TYPE MK-J**

**5363**

Morse	DIN	L	Waga/Weight kg	Kod/Code
1	J0	80,5	0,07	MK1.L80.5.J0
1	J1	83,8	0,10	MK1.L83.8.J1
1	J2	90,5	0,08	MK1.L90.5.J2
1	J3	100,5	0,12	MK1.L100.5.J3
1	J33	95,0	0,08	MK1.L95.0.J33
1	J6	95,0	0,09	MK1.L95.J6
2	J0	95,5	0,11	MK2.L90.5.J0
2	J1	102,5	0,13	MK2.L102.5.J1
2	J2	106,0	0,14	MK2.L106.0.J2
2	J3	112,5	0,19	MK2.L112.5.J3
2	J33	107,0	0,17	MK2.L107.0.J33
2	J4	128,5	0,24	MK2.L128.5.J4
2	J6	107,0	0,18	MK2.L107.0.J6
3	J1	120,5	0,27	MK3.L120.5.J1
3	J2	127,0	0,29	MK3.L127.0.J2
3	J3	131,5	0,37	MK3.L131.5.J3
3	J33	126,0	0,33	MK3.L126.0.J33
3	J4	146,0	0,47	MK3.L146.0.J4
3	J5	153,0	0,63	MK3.L153.0.J5
3	J6	129,0	0,30	MK3.L129.0.J6
4	J2	151,5	0,58	MK4.L151.5.J2
4	J3	160,5	0,65	MK4.L160.5.J3
4	J33	155,0	0,60	MK4.L155.0.J33
4	J4	170,0	0,78	MK4.L170.0.J4
4	J5	175,5	0,95	MK4.L175.5.J5
4	J6	155,0	0,61	MK4.L155.0.J6
5	J3	193,5	1,53	MK5.L193.5.J3
5	J33	189,5	1,50	MK5.L189.5.J33
5	J4	203,5	1,67	MK5.L203.5.J4
5	J5	209,5	1,84	MK5.L209.5.J5
5	J6	187,0	1,49	MK5.L187.0.J6



DIN 228



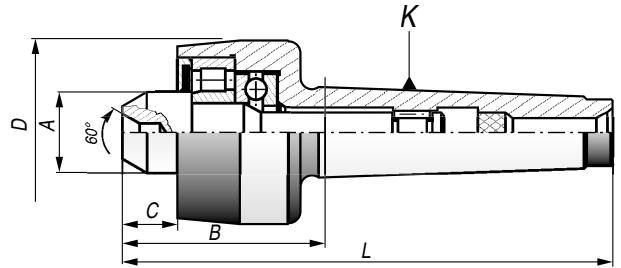
**Kieł tokarski obrotowy z końcówką wewnętrzną/Live centers for Lathes with internal end**

**TYP/TYPE KMK-W 8809**

Do toczenia i szlifowania.  
Dokładność zapewniona dzięki zastosowaniu specjalnych tocznych łożysk wałeczkowych.  
Stal stopowa, utwardzona i szlifowana.  
Konstrukcja zamknięta, przeciwpyłowa.  
Stożek Morse'a DIN 228.

For turning and grinding.  
Accuracy guaranteed by the use of special bearings.  
Alloy steel, hardened and ground.  
Closed, anti-powder construction.  
Morse taper DIN 228.

Morse	A	B	C	D	L	Waga/Weight kg	Kod/Code
1	15	44.5	12.5	38	98	0.26	KMK1.A15.W
2	18	51.0	16.5	40	115	0.40	KMK2.A18.W
3	25	66.0	19.3	56	147	0.95	KMK3.A25.W
4	28	67.0	17.3	64	170	1.57	KMK4.A28.W
5	41	94.0	31.3	85	223	3.59	KMK5.A41.W
6	63	131.0	43.8	130	313	10.96	KMK6.A63.W



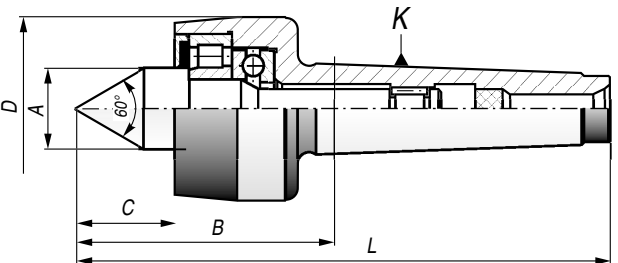
**Kieł tokarski obrotowy/Live centers for lathes**

**TYP/TYPE KMK-P 8811**

Do toczenia i szlifowania.  
Dokładność zapewniona dzięki zastosowaniu specjalnych tocznych łożysk wałeczkowych.  
Stal stopowa, utwardzona i szlifowana.  
Konstrukcja zamknięta, przeciwpyłowa.  
Stożek Morse'a DIN 228.

For turning and grinding.  
Accuracy guaranteed by the use of special bearings.  
Alloy steel, hardened and ground.  
Closed, anti-powder construction.  
Morse taper DIN 228.

Morse	A	B	C	D	L	Waga/Weight kg	Kod/Code
1	15	50.0	18.0	38	103.5	0.26	KMK1.A16.P
2	18	56.5	22.0	40	120.5	0.40	KMK2.A18.P
3	25	75.0	28.5	56	156.0	0.95	KMK3.A25.P
4	28	81.5	31.5	64	184.0	1.58	KMK4.A28.P
5	41	107.5	45.0	85	237.0	3.60	KMK5.A41.P
6	63	151.5	64.0	130	333.5	11.00	KMK6.A63.P
7	75	196.5	73.5	150	447.0	16.50	KMK7.A75.P



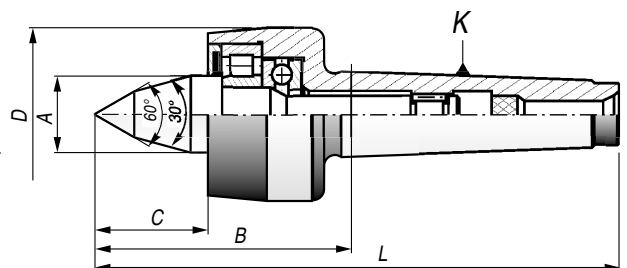
**Kieł tokarski obrotowy wydłużony/Live Centers for Lathes – long type**

**TYP/TYPE KMK-DŁ 8814**

Do toczenia i szlifowania.  
Dokładność zapewniona dzięki zastosowaniu specjalnych tocznych łożysk wałeczkowych.  
Stal stopowa, utwardzona i szlifowana.  
Konstrukcja zamknięta, przeciwpyłowa.  
Stożek Morse'a DIN 228.

For turning and grinding.  
Accuracy guaranteed by the use of special bearings.  
Alloy steel, hardened and ground.  
Closed, anti-powder construction.  
Morse taper DIN 228.

Morse	A	B	C	D	L	Waga/Weight kg	Kod/Code
2	18.0	72.5	33.0	40	136.5	0.41	KMK2.A18,0.DŁ
3	24.8	87.8	41.8	56	166.8	0.97	KMK3.A24,8.DŁ
4	28.0	98.3	48.8	64	200.8	1.61	KMK4.A28,0.DŁ
5	40.7	129.3	67.3	85	258.8	3.73	KMK5.A40,7.DŁ
6	62.4	178.3	91.8	130	360.5	11.45	KMK6.A62,4.DŁ



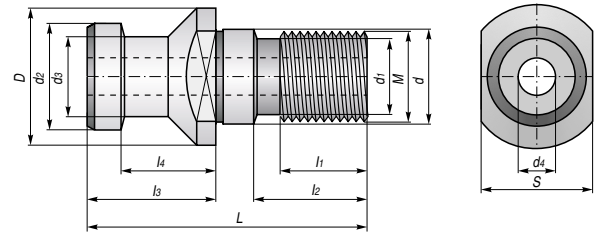
**Końcówki ściągające „grzybki”**  
**Pull studs**



DIN 69872-A

**TYP/TYPE PS-DIN**

**9882**

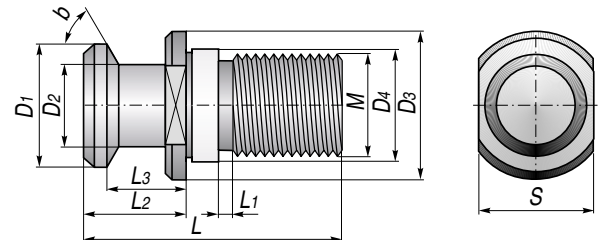


7:24	L	D	d	d1	d2	d3	d4	M	L1	L2	L3	L4	S	Kod/Code
30	44	17	18	10,0	13	9	-	M12	10	15	24	19	14	PS30.L44.DIN
40	54	23	17	13,5	19	14	7,0	M16	15	21	26	20	19	PS40.L54.DIN
40	85	23	17	8,5	19	14	4,0	M10	10	52	26	20	19	PS40.L85.DIN
40	110	23	17	10,0	19	14	5,0	M12	12	77	26	20	19	PS40.L110.DIN
40	86	23	17	13,5	19	14	7,0	M16	15	53	26	20	19	PS40.L86.DIN
40	111	23	17	13,5	19	14	7,0	M16	15	78	26	20	19	PS40.L111.DIN
40	108	23	17	13,5	19	14	7,0	M16	15	75	26	20	19	PS40.L108.DIN
45	65	30	21	16,0	23	17	9,5	M20	21	27	30	23	24	PS45.L65.DIN
50	74	36	25	20,0	28	21	11,5	M24	23	30	34	25	30	PS50.L74.DIN
60	90	52	32	26,0	40	30	14	M30	31	38	40	30	46	PS50.L90.DIN

MAS 403-BT B

**TYP/TYPE PS-BT**

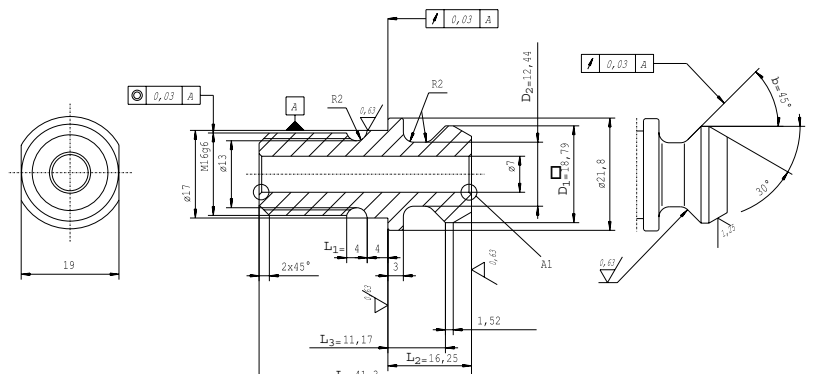
**9883**



7:24	L	b	M	L1	L2	L3	D1	D2	D3	D4	S	Kod/Code
40	60	45°	M16	4	35	28	15	10	23	17	19	PS40.L60.K45.BT
40	60	60°	M16	4	35	28	15	10	23	17	19	PS40.L60.K60.BT
40	60	90°	M16	4	35	28	15	10	23	17	19	PS40.L60.K90.BT
40	120	45°	M12	64	35	28	15	10	23	17	19	PS40.L120.K45.BT
40	120	60°	M12	64	35	28	15	10	23	17	19	PS40.L120.K60.BT
40	120	90°	M12	64	35	28	15	10	23	17	19	PS40.L120.K90.BT
40	125	45°	M16	69	35	28	15	10	23	17	19	PS40.L125.K45.BT
40	125	60°	M16	69	35	28	15	10	23	17	19	PS40.L125.K60.BT
40	125	90°	M16	69	35	28	15	10	23	17	19	PS40.L125.K90.BT
50	85	45°	M24	8	45	35	23	17	38	25	30	PS50.L85.K45.BT
50	85	60°	M24	8	45	35	23	17	38	25	30	PS50.L85.K60.BT
50	85	90°	M24	8	45	35	23	17	38	25	30	PS50.L85.K90.BT
50	125	45°	M24	48	45	35	23	17	38	25	30	PS50.L125.K45.BT
50	125	60°	M24	48	45	35	23	17	38	25	30	PS50.L125.K60.BT
50	125	90°	M24	48	45	35	23	17	38	25	30	PS50.L125.K90.BT

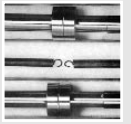
**TYP/TYPE PS-MA (MAZAK)**

**9885**



7:24	L	b	M	L1	L2	L3	D1	D2	D3	D4	S	Kod/Code
40	41,25	45°	M16	4	16,25	11,17	18,8	12,4	-	-	-	PS40.L41,25.MA

# Ustawiacz frezarskie Miling setters



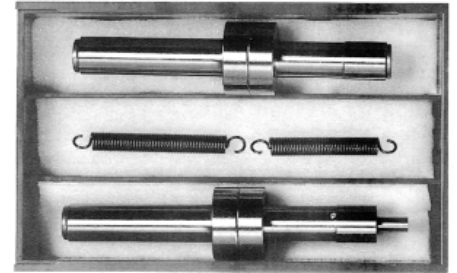
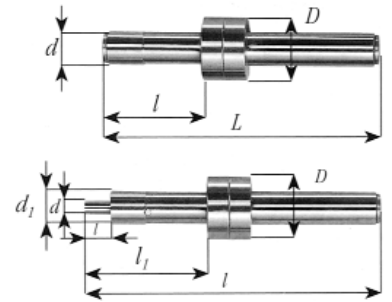
## TYP/TYPE UST

1910

Dokładność 0,005 mm  
Opakowanie plastikowe

Accuracy 0,005 mm  
Plastic box

Opis	D	d	d1	l	l1	L	Waga/Weight kg	Kod/Code
Ustawiacz średnicy 10mm Setter of dia. 10 mm	19	10	-	30	-	82	0,04	UST10.L82.K
Sprężynka 5 x 35 mm do ust. Ø 10 Spring 5 x 35 for set Ø 10							-	UST10.L35.S5
Ustawiacz średnicy 10/4 Setter of dia. 10/4 mm	19	4	10	8	37	90	0,06	UST04.L90.K
Sprężynka do ustawiacza 10/4 Spring 5 x 35 for set. Ø 10/4							-	UST04.L28.S6
kaseć do kompletu ustawiaków Box for the set of setters							0,24	UST.OPK



## Części zamienne Spare parts

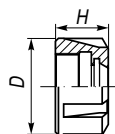
### NAKRĘTKA ER CLAMPING NUTS

9883

Typ/Type N.ER.S



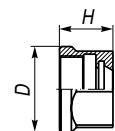
Tulejka Collet	DIN 6499	D	H	Kod/Code
ER16	D16	32	17,5	N.ER16.S
ER20	D20	35	19,0	N.ER20.S
ER25	D25	42	20,0	N.ER25.S
ER32	D32	50	22,5	N.ER32.S
ER40	D40	63	25,5	N.ER40.S



Typ/Type N.ER.SW

9883-D

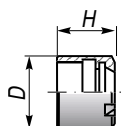
Tulejka Collet	D	H	Kod/Code
ER16	28	17,5	N.ER16.SW



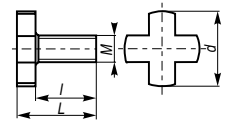
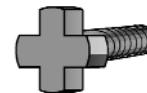
Typ/Type N.ER.MINI

9883-S

Tulejka Collet	D	H	Kod/Code
ER16	22	18	N.ER16.MINI

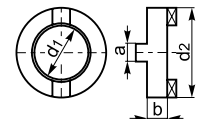
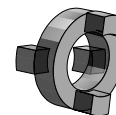


### ŚRUBA KRZYŻOWA LOCKING SCREW



Otwór/Hole Ø	M	l	d	L	Kod/Code
16	M8	16	20	22	SR.08.K
22	M10	18	28	25	SR.10.K
27	M12	22	35	30	SR.12.K
32	M16	26	42	35	SR.16.K
40	M20	30	52	40	SR.20.K
50	M24	36	63	48	SR.24.K

### ZABIERAK DRIVE TANG



d1	d2	a	b	Kod/Code	Kode/Code
16	32	8	10	U-1364/0	0642 985 844 300
22	40	10	12	U-1365/0	0642 985 844 311
27	48	12	12	U-1366/0	0642 985 844 323
32	58	14	14	U-1366/0	0642 985 844 335
40	70	16	14	U-1368/0	0642 985 844 347
50	90	18	16	U-1369/0	0642 985 844 359

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