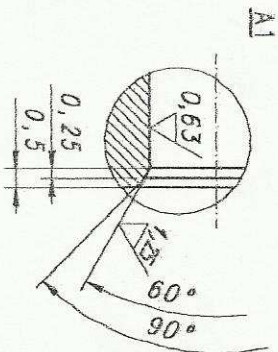
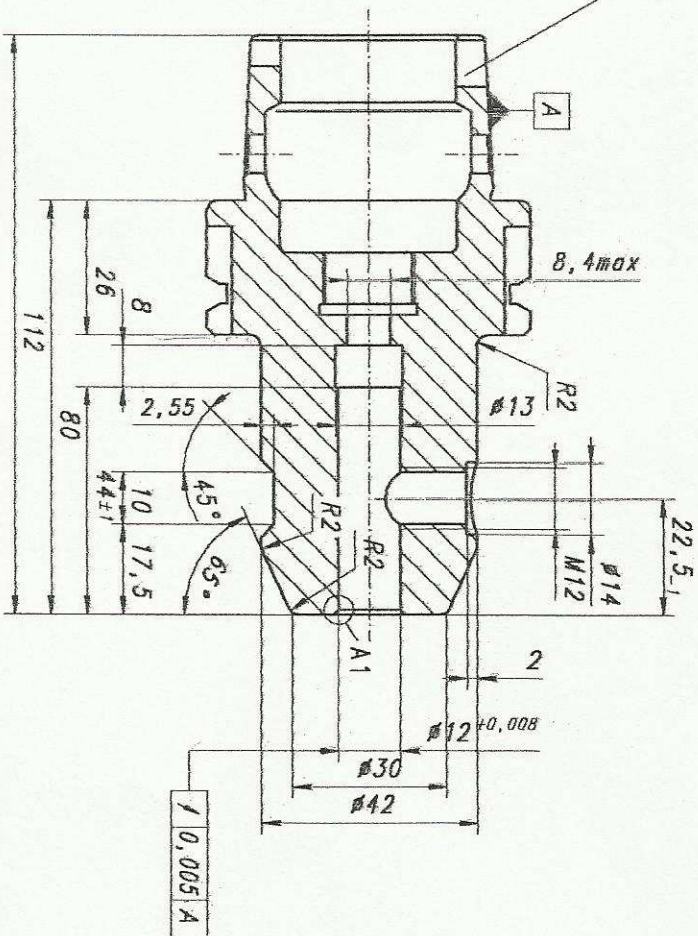


Chwyt HSK-A63 wykonanie wg rys. K3-01518

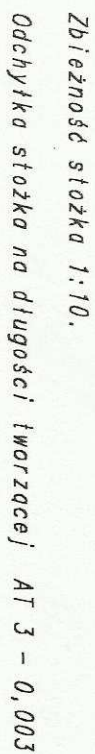
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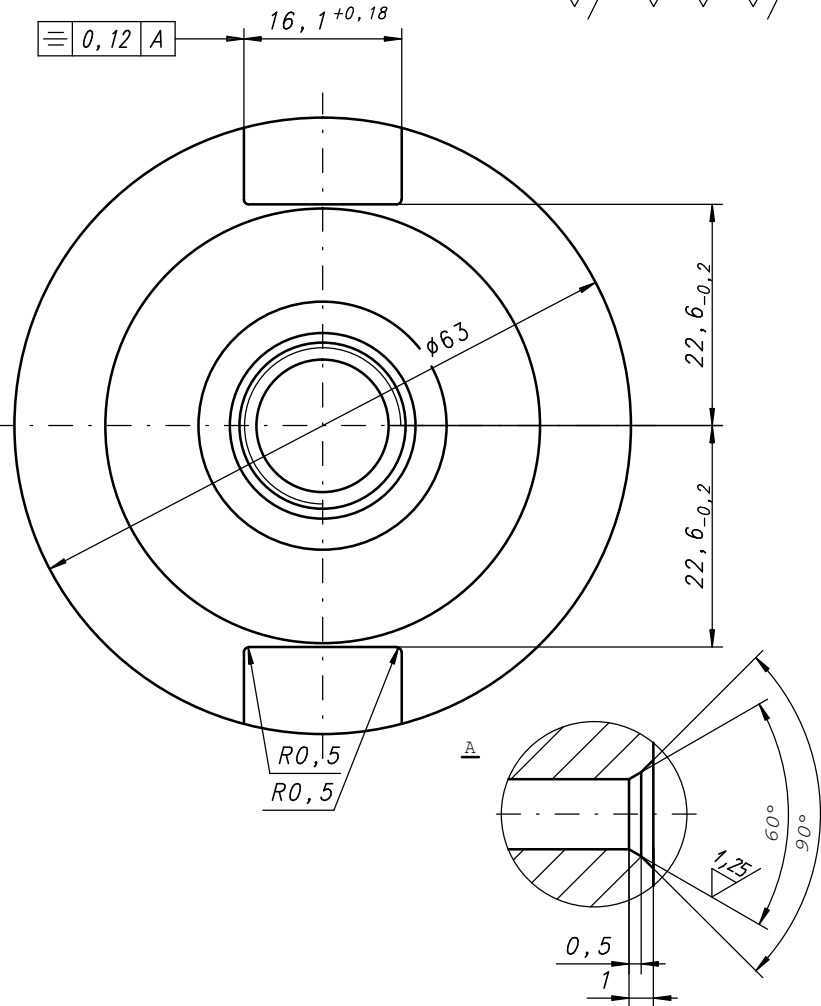
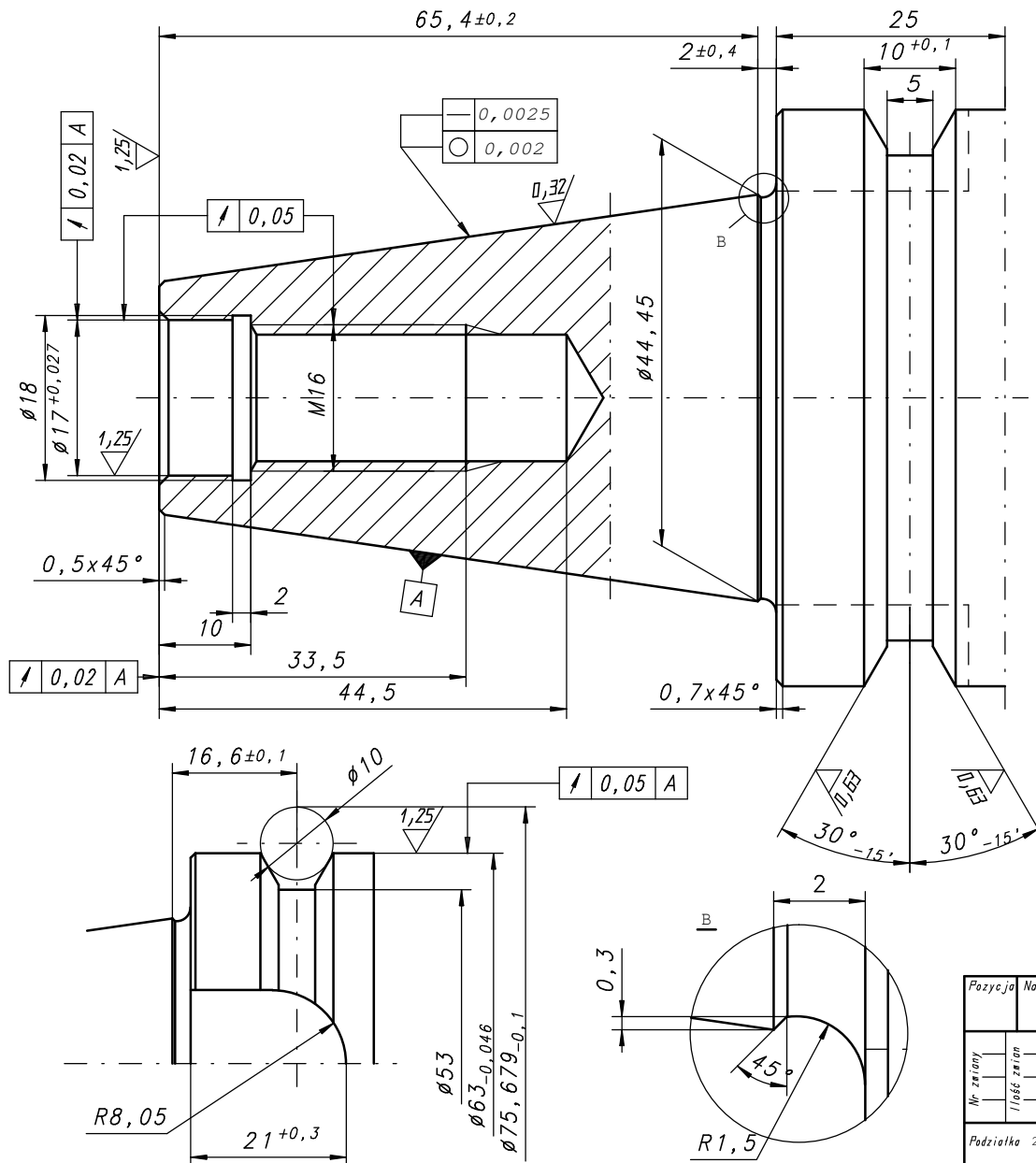
1. Ostre krawędzie stępić 0,3x45.
2. Nawęglić na głębokość 0,4-0,8 mm.
3. Hartować i odpuszczać 56-60HRC.
4. Powierzchnie nieszlifowane czernić.

1		KORPUS		1		18H2N2		1,16		5,00/10,00	
Nr zainst.		Nr kart. ze.		Zawrót		Pawino być		Podpis		Data	
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Kosztorys		A. BRZOSKA		B. JERZYŁO		28.10.04		28.10.04		K3-01745	
Sprawdził		B. JERZYŁO		B. JERZYŁO		28.10.04		28.10.04		K3-01745	
Zatwierdził		B. JERZYŁO		B. JERZYŁO		28.10.04		28.10.04		K3-01745	




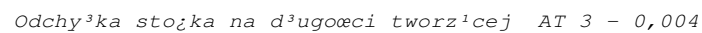



2,5/ 1,25/0,63/0,32/



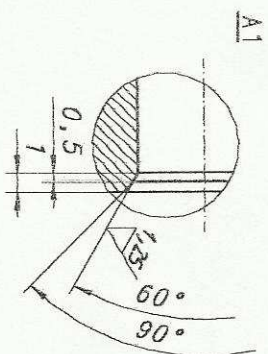
Odchyłka kłta stożka na długości tworzącej ATD 0,003.

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						Il. ark.				
	Z M KOLNO		Konstruoval	ELAZNY		Podpis	29,08,98		Cecha	
			Sprawdzil	B. JERZYEO			Data			
			Zatwierdzil	B. JERZYEO			29,08,98			
								Nr rys.		
								K3-00033		

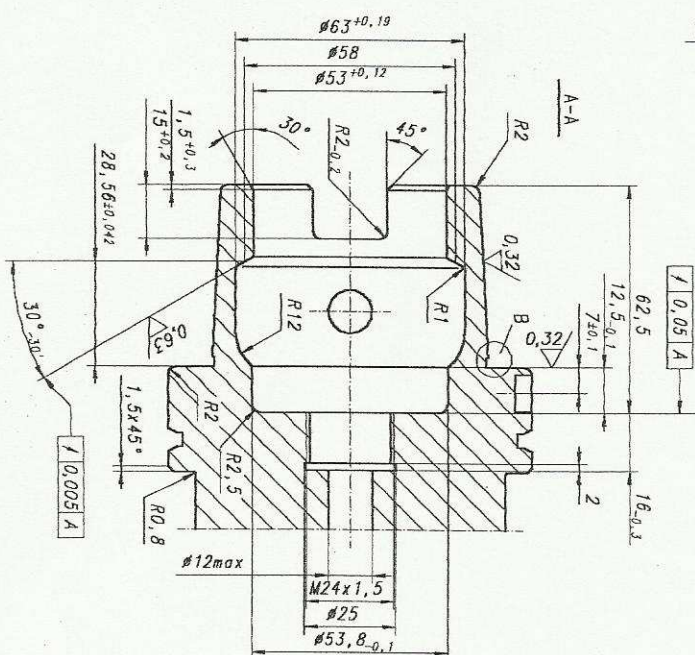
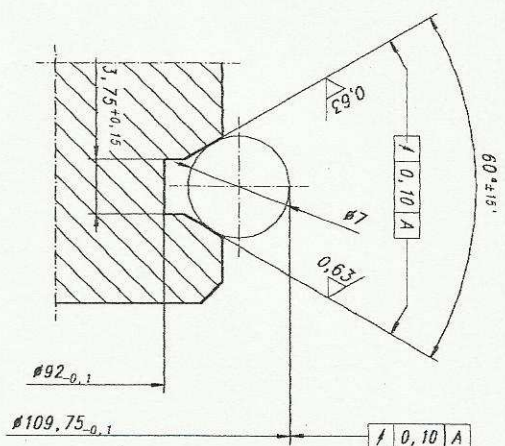
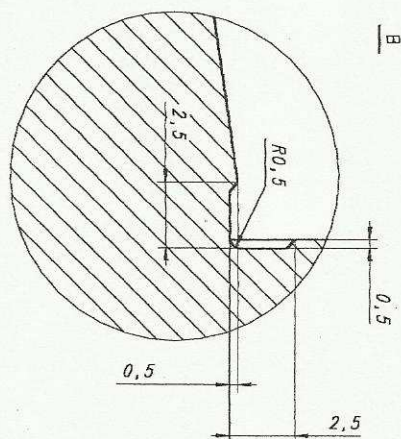


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							Il. ark.						
	Z M KOLNO		Konstruował		A. BRZÓSKA		Podpis	28.03.98		Cecha		Nr rys.	
			Sprawdził		B. JERZYŁO			28.03.98					
			Zatwierdził		B. JERZYŁO			28.03.98					
								DIN-50				K3-00027	



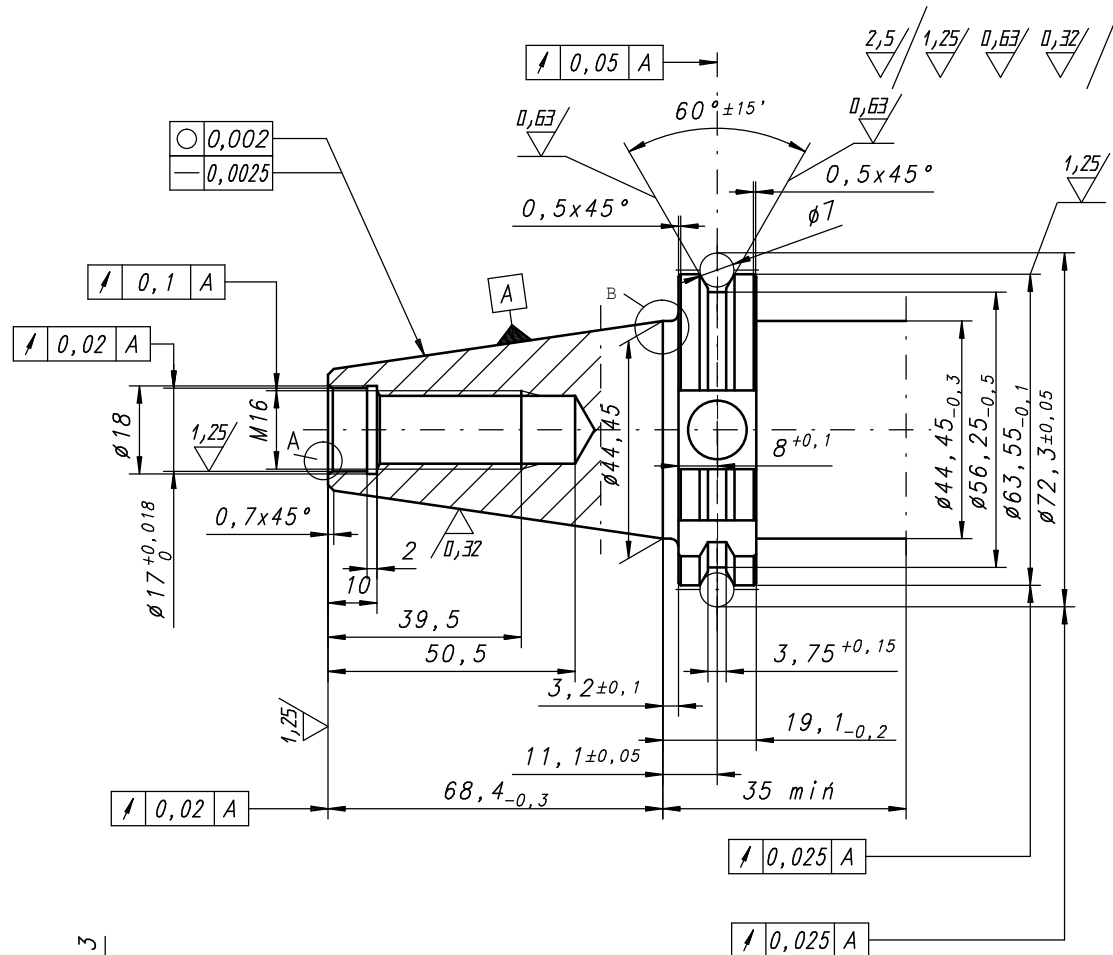
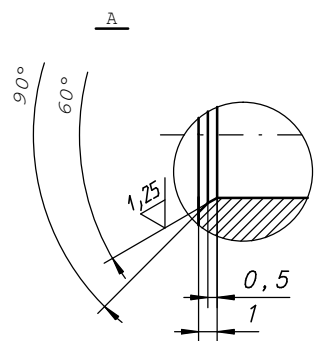
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Zbieżność słożka 1:10.  
Odczytka słożka na długości tworzącej AT 3 - 0,003

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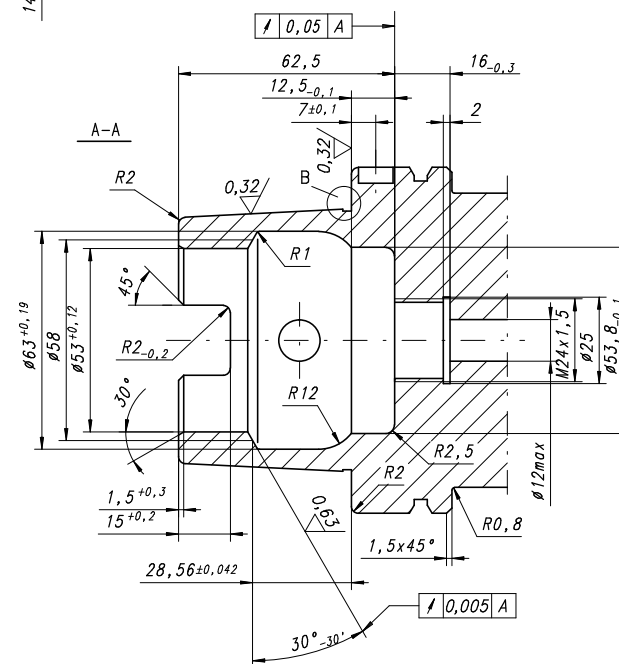
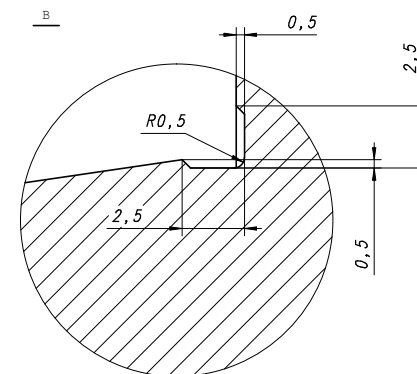
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							II. ark.								
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	Sprawdził	B. JERZYŃO			28.03.98										
	Zatwierdził	B. JERZYŃO			28.03.98										
							DIN-40								


Technical drawing of a circular part with the following dimensions:

- Overall diameter:  $88_{-0,2}^{+0,2}$
- Inner diameter:  $20_{+0,084}^{+0,084}$
- Outer diameter:  $22_{+0,084}^{+0,084}$
- Inner radius:  $31,5_{-0,3}^{+0,3}$
- Outer radius:  $31,5_{-0,3}^{+0,3}$

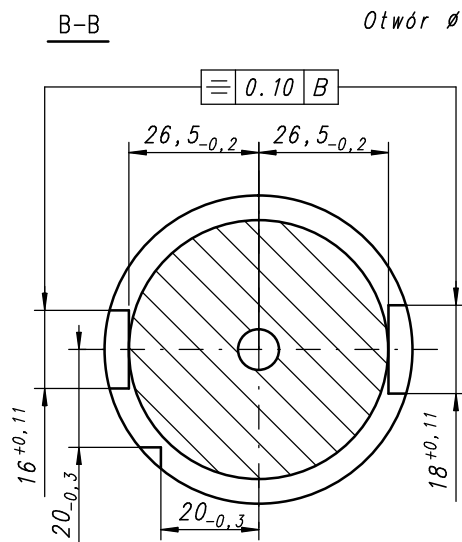
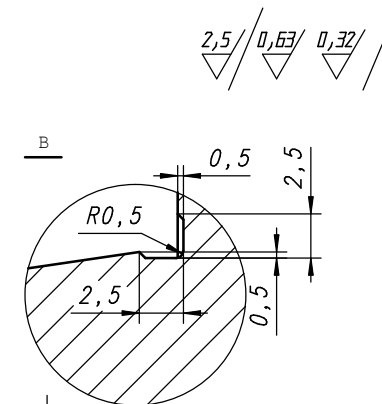
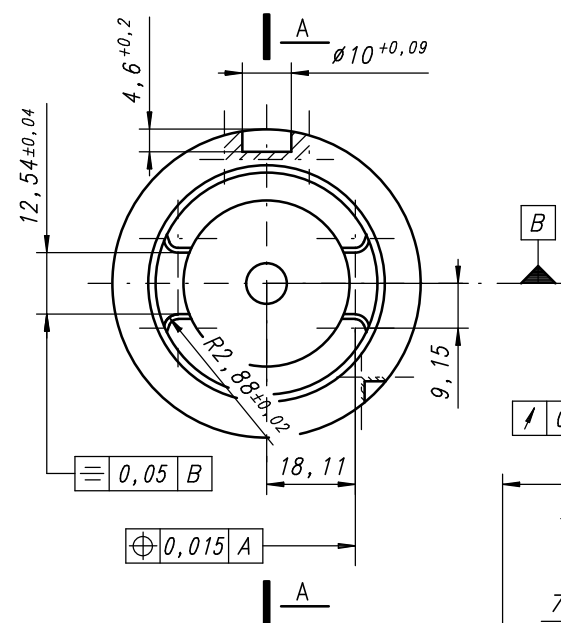
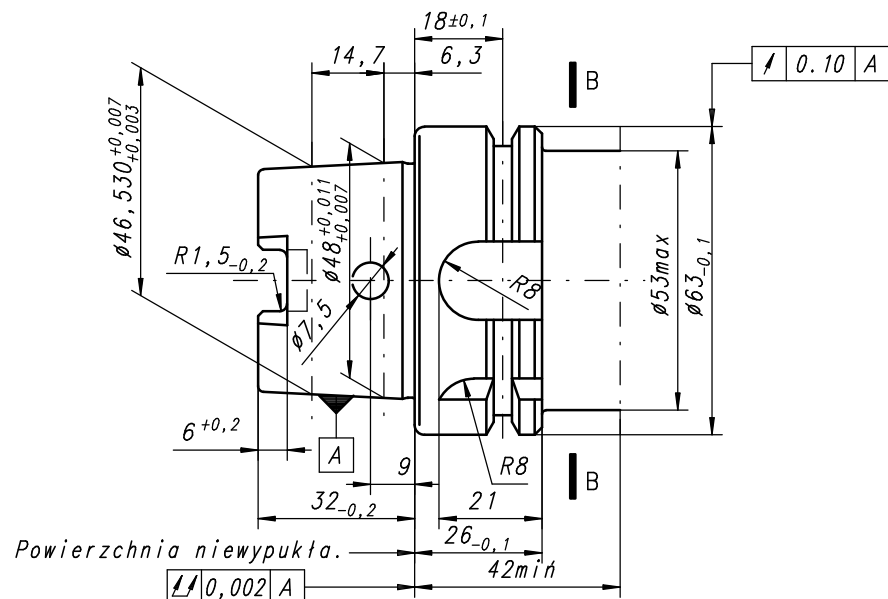
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Wielkość

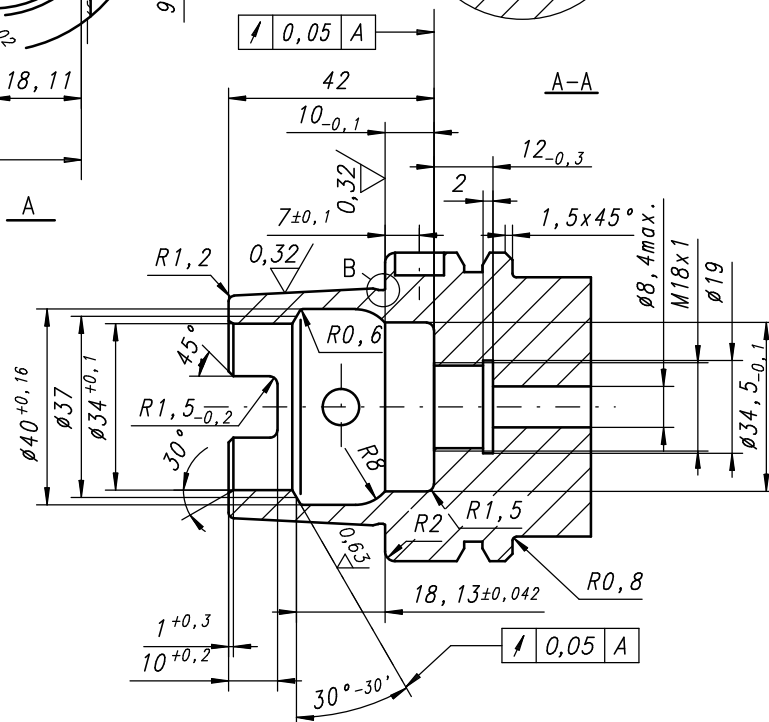
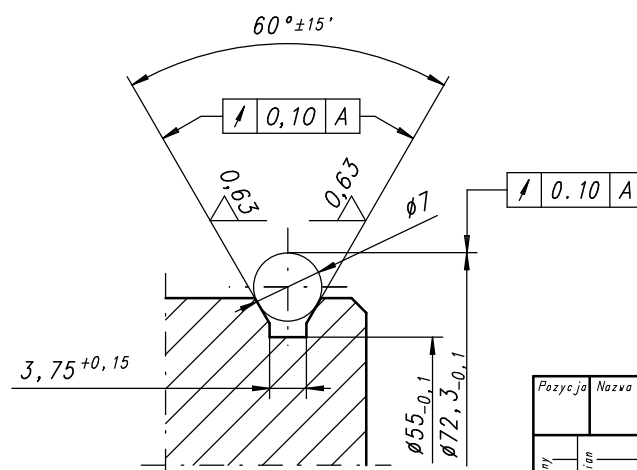


Porzycje		Nazwa <b>CHWYT HSK-A100</b>		II. szt.		Materiał		Nr rys. części Nr nory		Nr rys. z arch.		Uwagi: <b>FD</b>	
Nr zastęp		Ilość, mian		Nr kart. ze		Zawart		Fotogram był		Popraw		Data	
Podpisano 1:1		Zastęp. rys. Nr		Zast. przez rys. Nr		Rokusz 1		5K'u" do					
		Konstruował <b>A. BRZOSKA</b>		Wzrost <b>B. JERZYŁO</b>		II. ar.		21. 09. 12		Ciepła		Nr rys. z archiwum	
		Sprawdził <b>B. JERZYŁO</b>		Zatwierdził <b>B. JERZYŁO</b>		Podp. a		21. 09. 12				<b>HSK-A100</b>	
		<b>Z M KOLNO</b>						21. 09. 12				<b>K3-02585</b>	





Otwór  $\phi 7,5$  fazować  $0,5 \times 45^\circ$ .



Zbieżność stożka 1:10.

Odchyłka stożka na długości tworzącej AT 3 - 0,003

Pozycja		Nazwa	CHWYT DIN 69893-HSK-A63	Il. szt.	Materiał	Masa	Symbol/KTM
Nr zatwierdzonego	l. ark.	Nr krt. zw.	Zamiesz.	Powinno być	Podpis	Data	
Podziałka 1:1	Zastęp. rys. Nr	Zast. przez rys. Nr	Arkusze 1	Sluży do			
			Il. ark.				
	Konstruował	A. BRZÓSKA	Podpis	25.04.03	Cecha <b>HSK-A63</b> Nr rys. K3-01518		
	Sprawdził	B. JERZYŃO	Podpis	25.04.03			
	Zatwierdził	B. JERZYŃO	Podpis	25.04.03			

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**Polygonal taper interface with flange  
contact surface —**

**Part 1:  
Dimensions and designation of shanks**

*Interfaces à cône polygonal avec face d'appui —*

*Partie 1: Dimensions et désignation des queues*



Reference number  
ISO 26623-1:2008(E)

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Published in Switzerland

## Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

ISO 26623-1 was prepared by Technical Committee ISO/TC 29, *Small tools*.

ISO 26623 consists of the following parts, under the general title *Polygonal taper interface with flange contact surface*:

- *Part 1: Dimensions and designation of shanks*
- *Part 2: Dimensions and designation of receivers*



## Introduction

The International Organization for Standardization (ISO) draws attention to the fact that it is claimed that compliance with this document may involve the use of a patent concerning the modular taper with ball track system.

ISO takes no position concerning the evidence, validity and scope of this patent right.

The holder of this patent right has assured ISO that he/she is willing to waive the exercise of this patent right throughout the world. In this respect, the statement of the holder of this patent right is registered with ISO. Information may be obtained from:

ISO Central Secretariat  
International Organization for Standardization (ISO)  
1, chemin de la Voie-Creuse, Case postale 56  
CH-1211 Geneva 20, Switzerland

Attention is drawn to the possibility that some of the elements in this document may be the subject of patent rights other than that identified above. ISO shall not be held responsible for identifying any or all such patent rights.

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# Polygonal taper interface with flange contact surface —

## Part 1: Dimensions and designation of shanks

### 1 Scope

This part of ISO 26623 specifies the dimensions for polygonal taper interface with flange contact surface: polygon-shanks for automatic and manual tool exchange to be applied on machine tools (e.g. turning machines, drilling machines, milling machines and turn/milling centres, as well as grinding machines). A range of shank sizes is specified.

These shanks incorporate a grooved flange to enable automatic tool exchange. The clamping can be realized by a circular groove using clamping segments or internal screw threads using centre-bolts.

The torque is transmitted by form lock (polygon).

### 2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 965-2, *ISO general purpose metric screw threads — Tolerances — Part 2: Limits of sizes for general purpose external and internal screw threads — Medium quality*

ISO 2768-1, *General tolerances — Part 1: Tolerances for linear and angular dimensions without individual tolerance indications*

### 3 Dimensions

#### 3.1 General

Tolerancing of linear and angular dimensions not specified shall be of tolerance class “m” in accordance with ISO 2768-1. Tolerances for threads where the tolerance is not stated shall be in accordance with ISO 965-2.



3.2 Polygon-shank

The dimensions of polygon-shanks are shown in Figures 1 and 2 and given in Table 1.

Surface roughness in micrometres  
Dimensions in millimetres

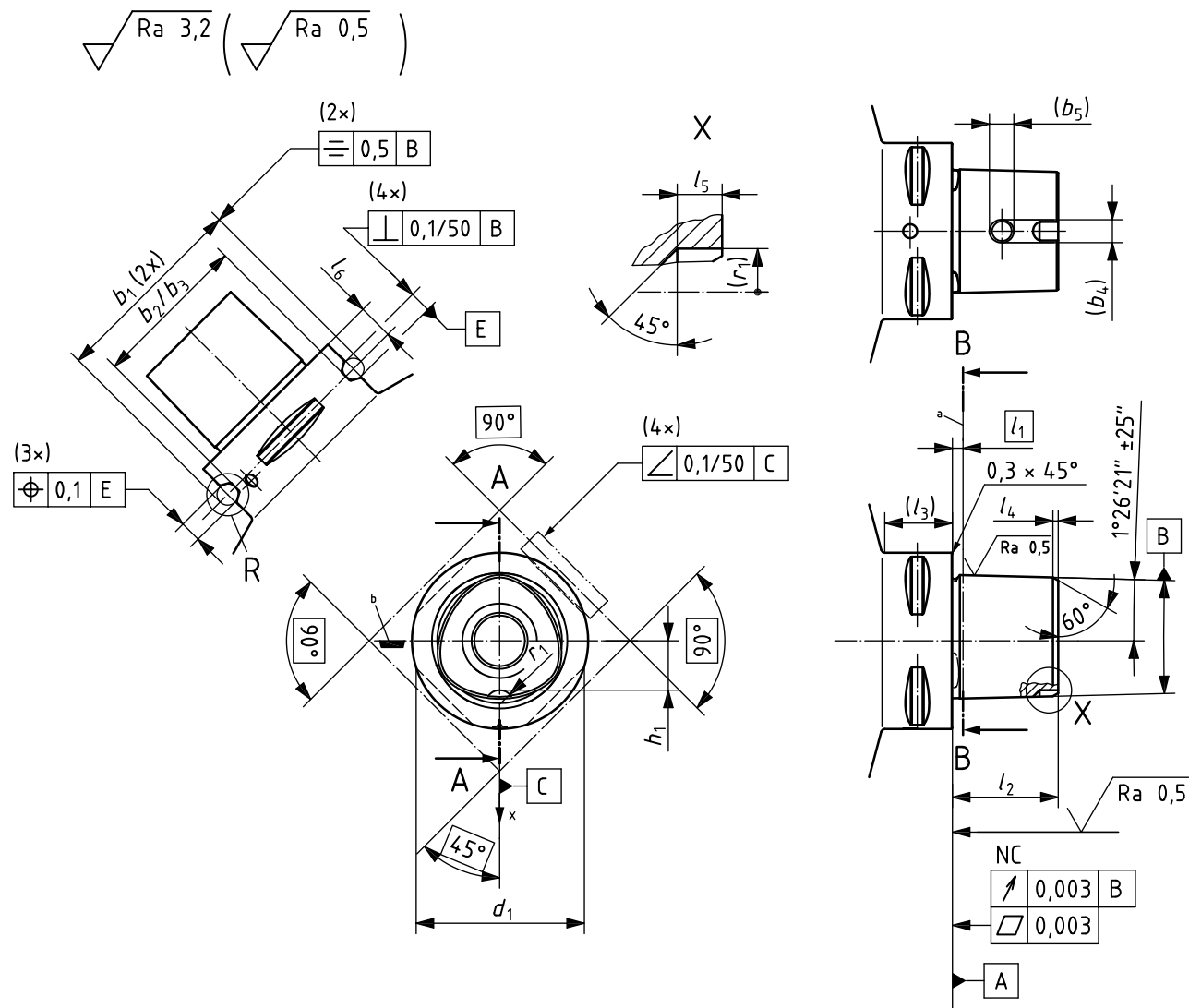
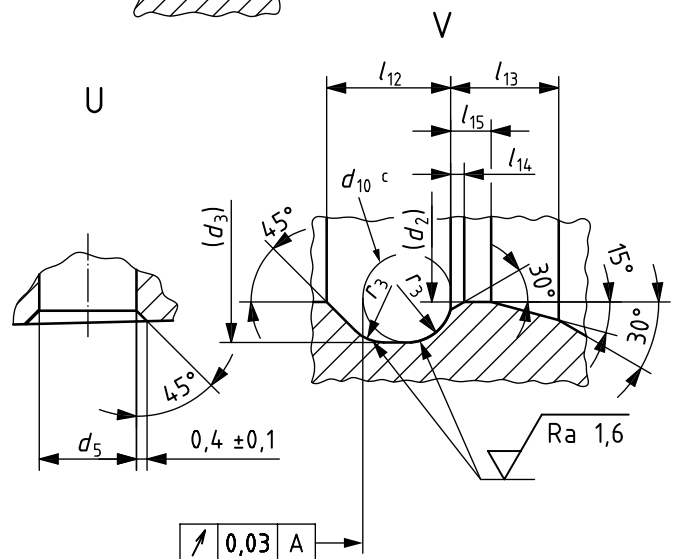
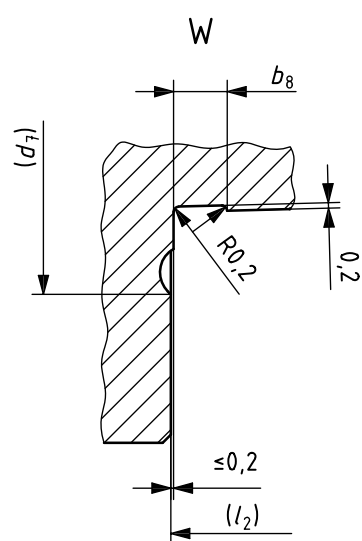
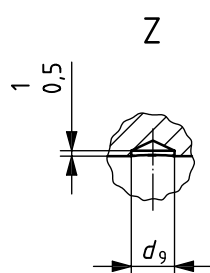
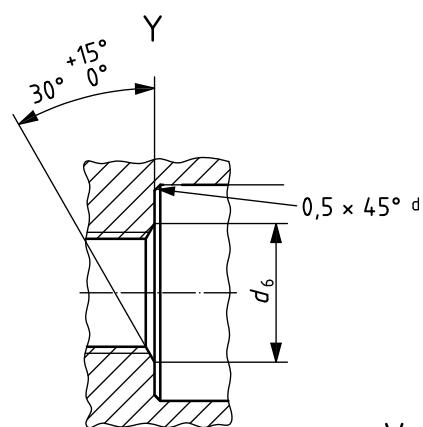
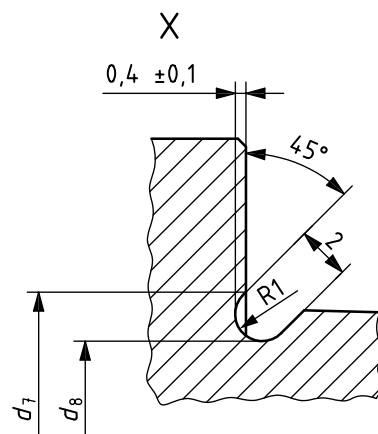
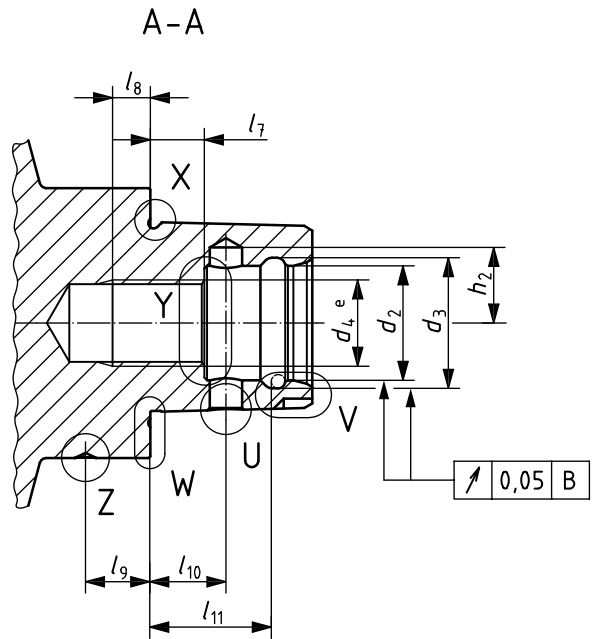


Figure 1 (continued)

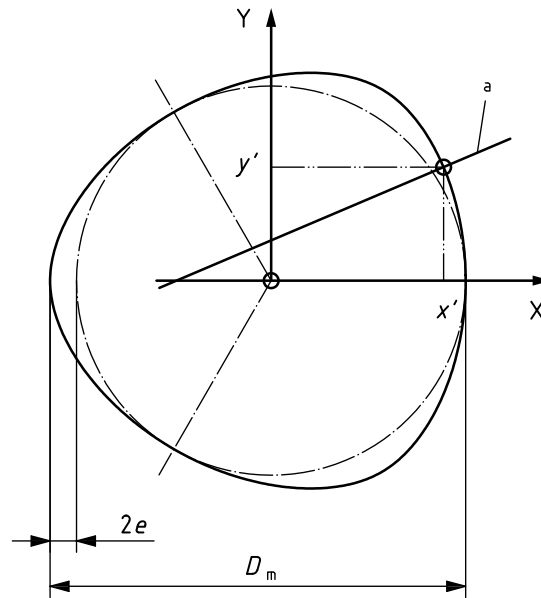


3



- |   |  |
|---|--|
| k | $r_2$ or $f_1$ as alternative.             |
| l | Detail R, alternative 1.                   |
| m | Detail R, alternative 2.                   |
| n | Form of profile from actual ground curve.  |
| o | Theoretical polygon curve.                 |
| p | Actual ground curve.                       |
| q | Polygon curve according to Figure 2.       |
| r | Section A-A with data chip hole, optional. |

### Figure 1 — Polygon-shank



$$x' = D_m/2 \times \cos \gamma - 2 \times e \times \cos(2\gamma) + e \times \cos(4\gamma)$$

$$y' = D_m/2 \times \sin \gamma + 2 \times e \times \sin(2\gamma) + e \times \sin(4\gamma)$$

a Normal to polygon curve.

**Figure 2 — Polygon curve**



Table 1 — Polygon-shank dimensions

Dimensions in millimetres

Nominal size	32	40	50	63	80	80X
$b_1 \pm 0,1$	39	46	59,3	70,7	86	110
$b_2$	28,3	35,3	44,4	55,8	71,1	88,7
$b_3 \pm 0,1$	27,9	34,9	44	55,4	70,7	88,3
$b_4$	4,2	5,2	6,5	8,5	9,6	9,6
$b_5$	4,5	5,5	7	9	10,1	10,1
$b_6$	2,5	2,5	3,5	3,5	3,5	5
$b_7$	2,6	2,6	4,1	4,1	4,1	6,1
$b_8$	1,5	1,5	2	2	2	2
$d_1 \pm 0,1$	32	40	50	63	80	100
$d_2 \begin{smallmatrix} +0,1 \\ -0,05 \end{smallmatrix}$	15	18	21	28	32	32
$d_3 \pm 0,05$	16,5	20	24	32	38	38
$d_4$	M12 $\times$ 1,5	M14 $\times$ 1,5	M16 $\times$ 1,5	M20 $\times$ 2	M20 $\times$ 2	M20 $\times$ 2
$d_5 \pm 0,1$	3,6	4,6	6,1	8,1	9,1	9,1
$d_6 \pm 0,2$	12,3	14,3	16,5	20,5	20,5	20,5
$d_7$	25,2	31,6	39,1	48,5	60,8	87
$d_8 \pm 0,1$	21,6	28	35,5	44,9	57,2	57,2
$d_9 \pm 0,3$	4	4	4	4	4	4
$d_{10}$	1,5	2	3	4	6	6
$d_{11}$	5	5	7	7	7	10
$D_m$	22	28	35	44	55	55
$e$	0,7	0,9	1,12	1,4	2	2
$f_1$	0,3 $\times$ 45°	0,3 $\times$ 45°	0,5 $\times$ 45°	0,5 $\times$ 45°	0,5 $\times$ 45°	0,5 $\times$ 45°
$h_1 \pm 0,1$	9	11	14	18	—	—
$h_1 \pm 0,2$	—	—	—	—	22,2	22,2
$h_2$	—	11	14	17,5	22	22
$h_3 \begin{smallmatrix} +0,2 \\ 0 \end{smallmatrix}$	5,4	5,2	5,1	5	4,9	4,9
$l_1$	2,5	2,5	3	3	3	3
$l_2 \pm 0,1$	19	24	30	38	48	48
$l_3 \text{ min}$	15	20	20	22	30	32
$l_4$	1	1,5	1,5	1,5	1,5	1,5
$l_5$	3,2 $\begin{smallmatrix} +0,3 \\ 0 \end{smallmatrix}$	4 $\begin{smallmatrix} +0,4 \\ 0 \end{smallmatrix}$	5,3 $\begin{smallmatrix} +0,5 \\ 0 \end{smallmatrix}$	6,2 $\begin{smallmatrix} +0,5 \\ 0 \end{smallmatrix}$	8 $\begin{smallmatrix} +0,5 \\ 0 \end{smallmatrix}$	8 $\begin{smallmatrix} +0,5 \\ 0 \end{smallmatrix}$

Table 1 (continued)

Dimensions in millimetres

Nominal size	32	40	50	63	80	80X
$l_6 \pm 0,15$	6	8	10	12	12	16
$l_7 \pm 0,15$	6	9	10	11	20	20
$l_8 \text{ min}$	6	6	7	9	0	0
$l_9$	9	12	12	12	12	12
$l_{10} \pm 0,2$	8	11,5	14	15,5	25	25
$l_{11} \pm 0,1$	13,5	17,5	22	26	34	34
$l_{12} \pm 0,15$	2,8	3,4	4,6	5,8	8,5	8,5
$l_{13}$	3,6	3,5	4	6,5	6,5	6,5
$l_{14}$	0,3	0,4	0,5	0,6	0,6	0,6
$l_{15}$	2	1,4	1,5	1,6	1,6	1,6
$l_{16}$	9	12	12	12	12	12
$r_1 \begin{smallmatrix} +2 \\ 0 \end{smallmatrix}$	3	3	4	5	6	6
$r_2$	0,3	0,3	0,5	0,5	0,5	0,5
$r_3 \begin{smallmatrix} 0 \\ -0,1 \end{smallmatrix}$	0,75	1	1,5	2	3	3

## 4 Clamping force

The clamping system shall provide sufficient clamping force to ensure contact of the shank flange with the face of the receiver.

A guide to clamping forces for polygon-shanks is given in Annex A.

## 5 Designation

A polygon-shank in accordance with this part of ISO 26623 shall be designated as follows:

- “Polygon-shank”;
- reference to this part of ISO 26623 (i.e. “ISO 26623-1”);
- designation symbol “PSC”;
- nominal size, in millimetres.

EXAMPLE Designation of a polygon-shank of nominal size 32 mm:

**Polygon-shank ISO 26623-1 - PSC 32**

## Annex A (informative)

### Recommendations for use and application

#### A.1 Clamping forces

Variations of taper shank and receiver size within the specified limits of tolerances will cause the portion of the clamping force acting on the flange surface to vary. The flange contact surface is decisive for the stiffness of the polygon taper surface. However, the clamping forces given in Table A.1 will ensure that the portion acting on the flange surface is never less than 80 % of the total.

**Table A.1 — Range of clamping forces**

Nominal size	32	40	50	63	80	80X
Clamping force, kN	15	20	25	30	40	40
Lower clamping forces can be sufficient when operational loads are low (e.g. cutting and feed forces in finish machining). Conversely, higher clamping forces can be required when high operational loads are encountered (e.g. cutting and feed forces in heavy machining).						

#### A.2 Information about speeds, torques, bending loads and stiffness

The manufacturer should provide information regarding permissible speeds, torque-transmitting capacities, bending loads and stiffness.

#### A.3 Material and heat treatment

Material and heat-treatment specifications for polygon taper shanks should be selected considering strength, hardness, case depth (if not through-hardened), as well as toughness and wear requirements.

It is recommended that coupling be either through-hardened or surface-hardened, depending on which is suitable for the range of application.

#### A.4 General surface hardness recommendations

Tapered polygon, internal clamping groove and axial contact surface: HRC 42 minimum.

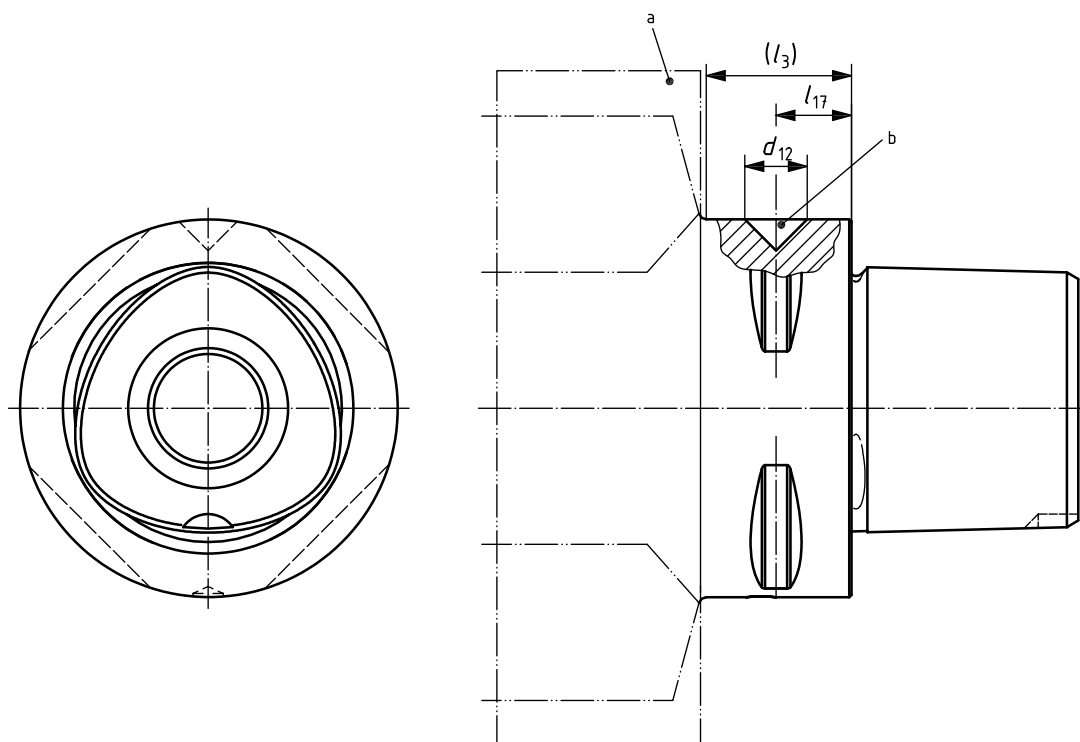
External gripper groove area: HRC 51 minimum.

#### A.5 Balancing

If the polygonal taper shank requires balancing before tools or equipment are assembled onto it, the shank may be balanced with a hole located as shown in Figure A.1 and in accordance with Table A.2.

**NOTE** The balancing hole is used exclusively for compensation of coolant hole and orientation recess on the polygonal taper (balanced by design). The data chip hole is not taken into consideration.

If post assembly balancing is needed, this should be confined to the preferred balancing zone, as shown in Figure A.1 and as given Table A.2.



- a Preferred balancing zone.  
b Pre-balancing hole.

**Figure A.1 — Balancing**

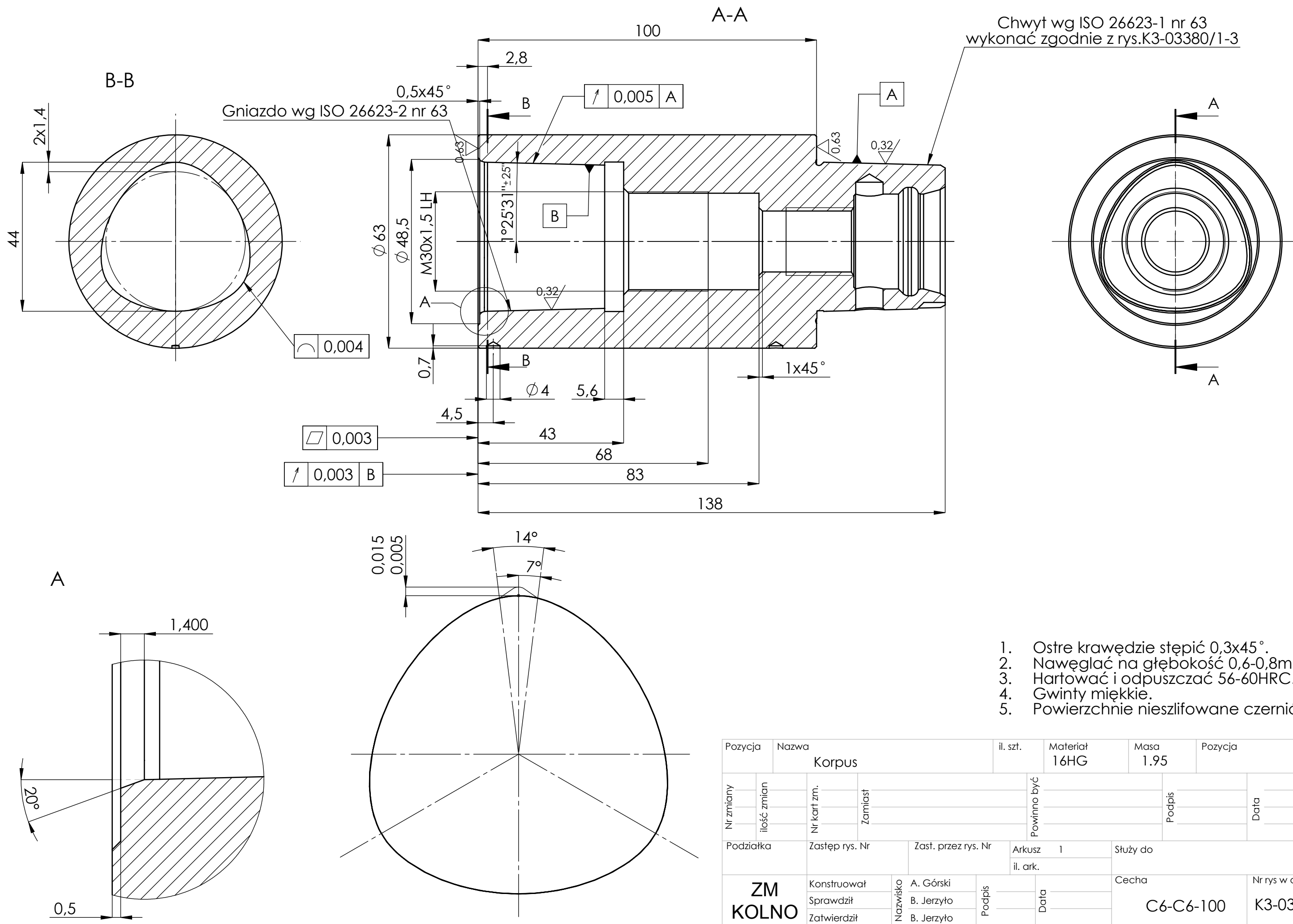
**Table A.2 — Dimensions for balancing**

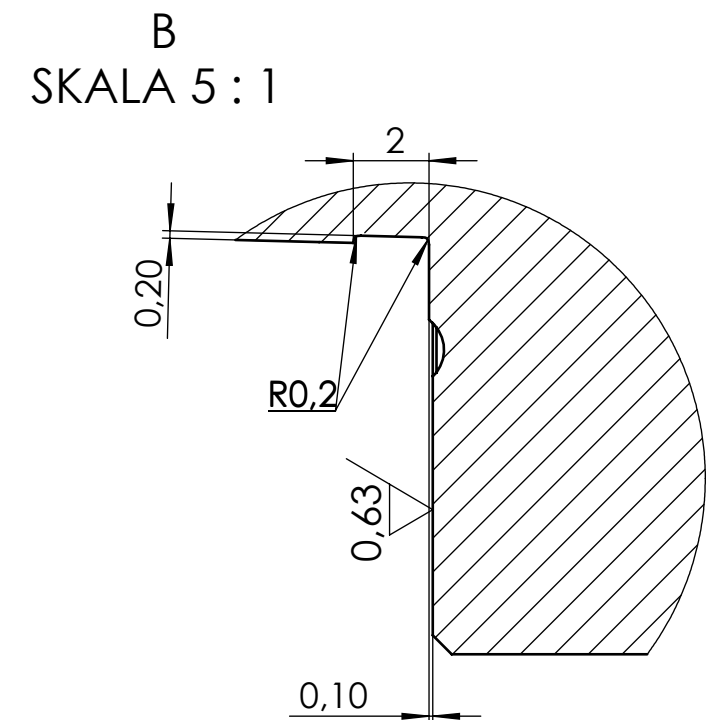
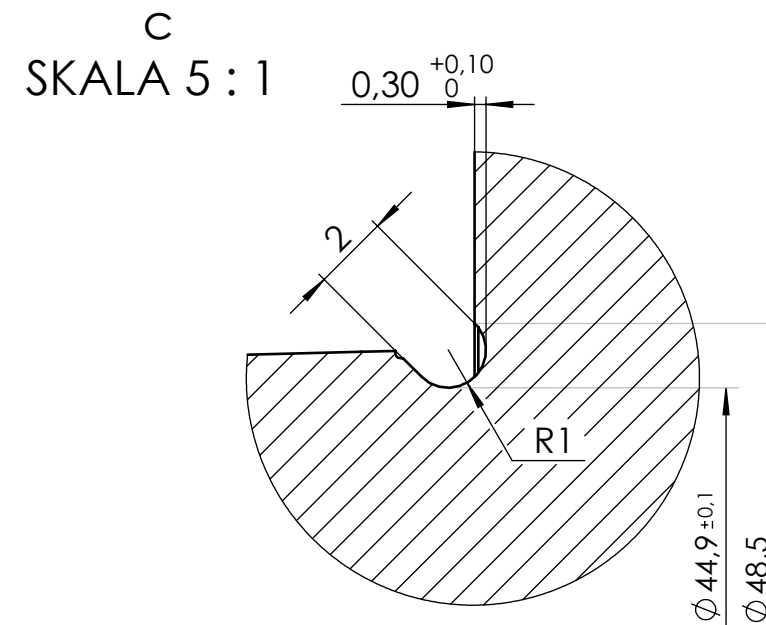
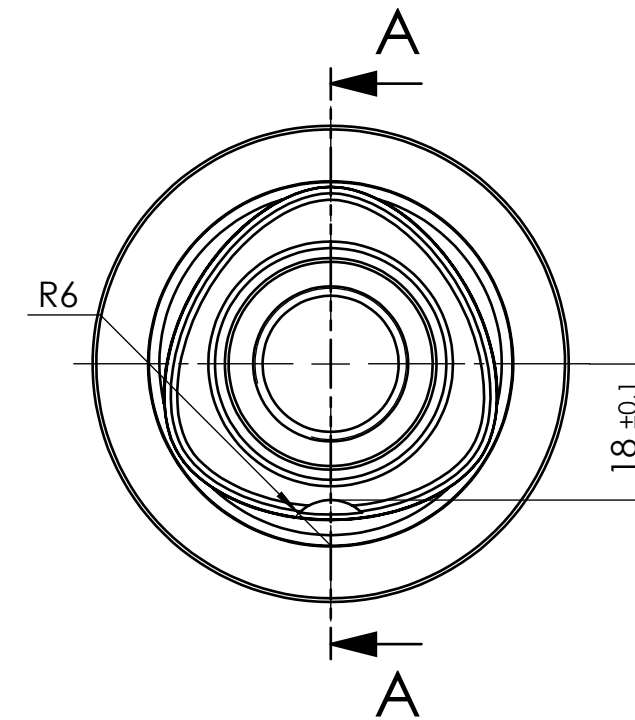
Dimensions in millimetres

Nominal size	32	40	50	63	80	80X
$d_{12}$ max. recommended	6,5	7,5	8,5	10	11,5	11,5
$l_{17}$	7	8	10	12	12	12

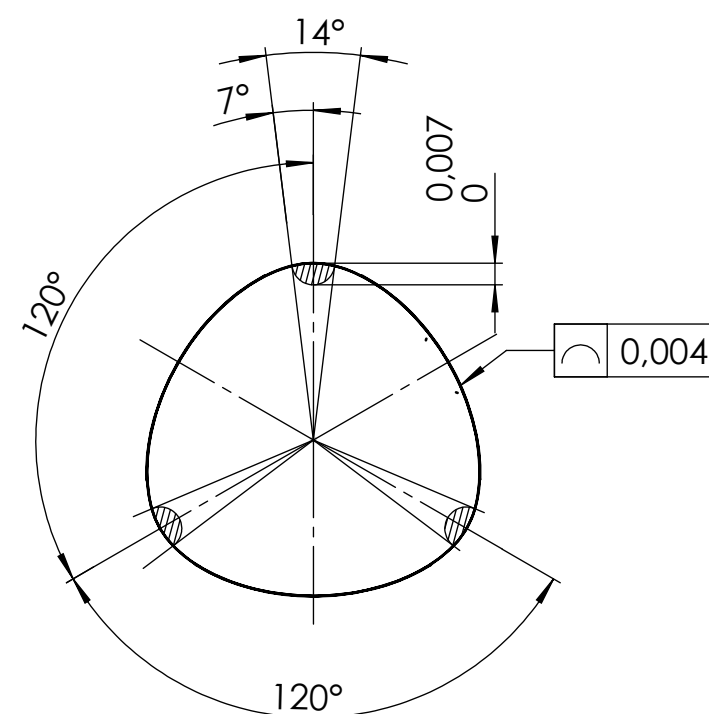
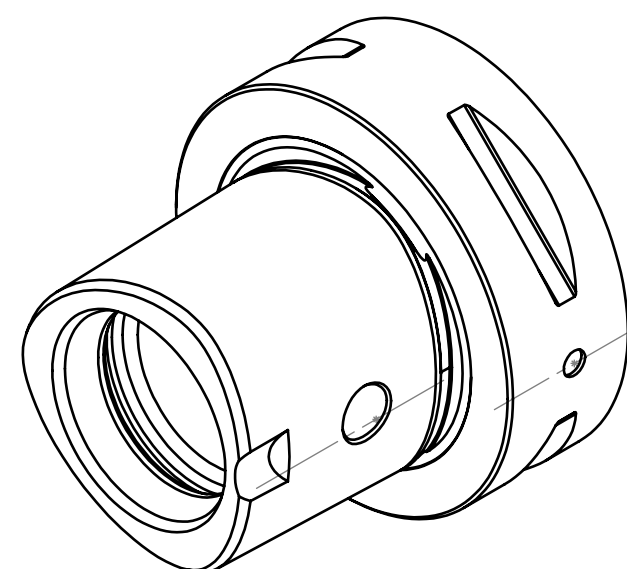
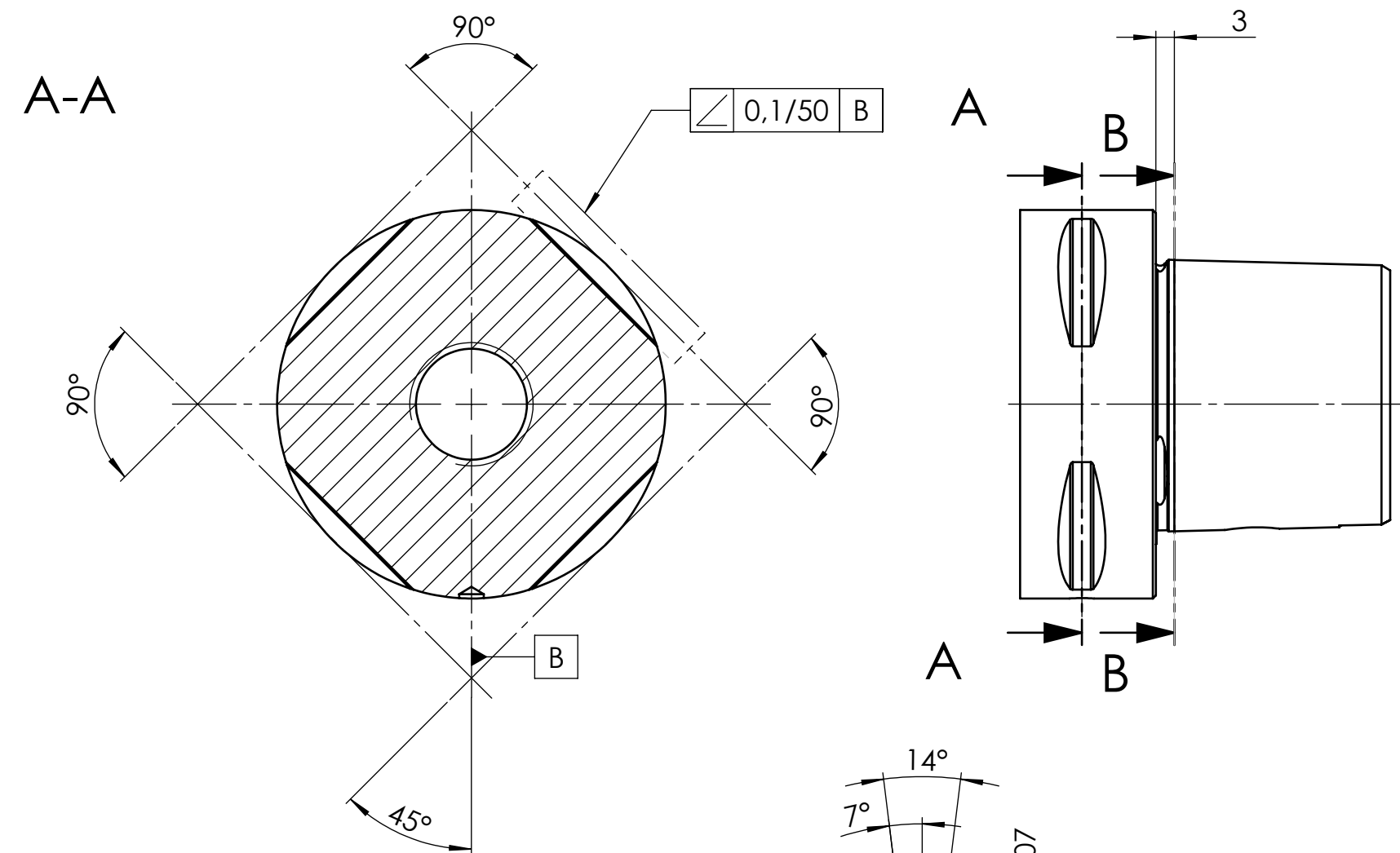




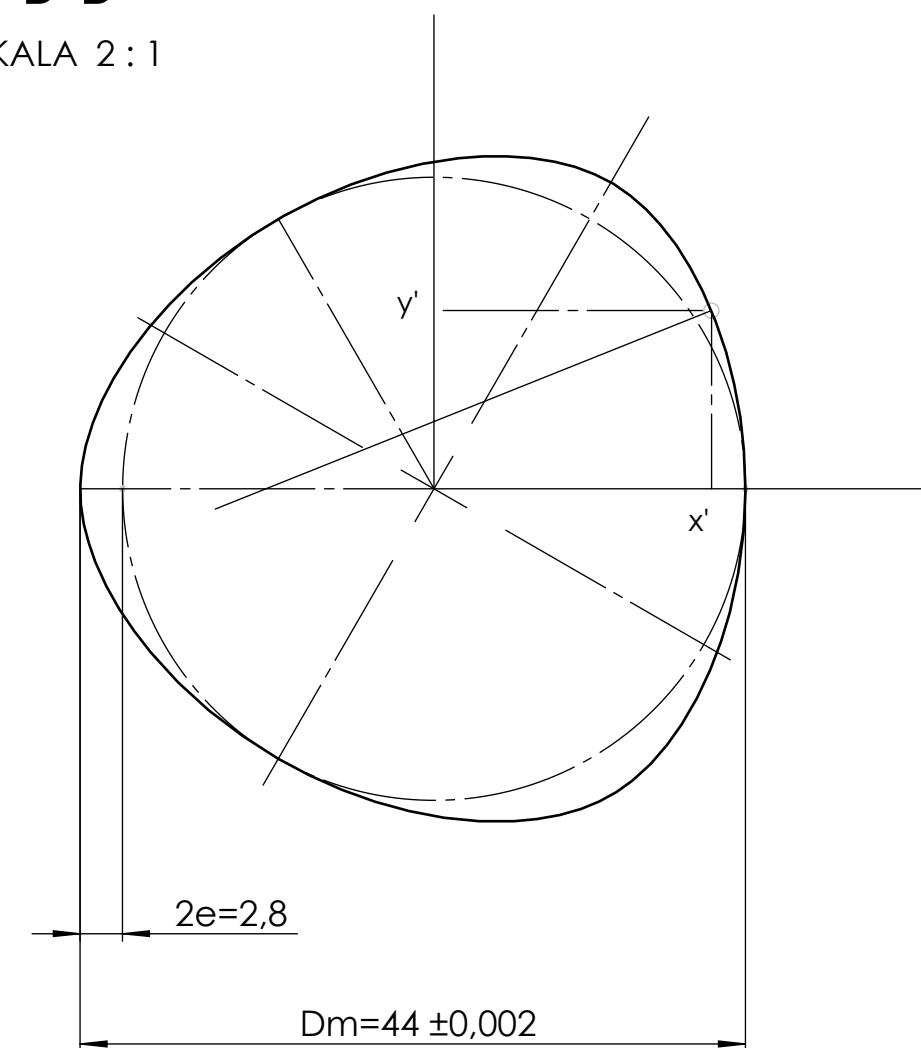




Pozycja		Nazwa <b>Chwył Capto C6 wg ISO 26623-1</b>			il. szt.		Materiał		Masa		Symbol/KTM	
Nr zmiany	ilość zmian	Nr kart zm.	Zamiast	Powinno być		Podpis		Data				
Podziałka		Zastęp rys. Nr		Zast. przez rys. Nr		Arkusz 1		Służy do				
						il. ark.						
<b>ZM KOLNO</b>		Konstruował	Nazwisko	<b>A. Górski</b>		Podpis		Data	12.07.17		Cecha	Nr rys w arch. K3-03380/1
		Sprawdził		<b>B. Jerzyło</b>					12.07.17			
		Zatwierdził		<b>B. Jerzyło</b>					12.07.17			



B-B  
SKALA 2 : 1



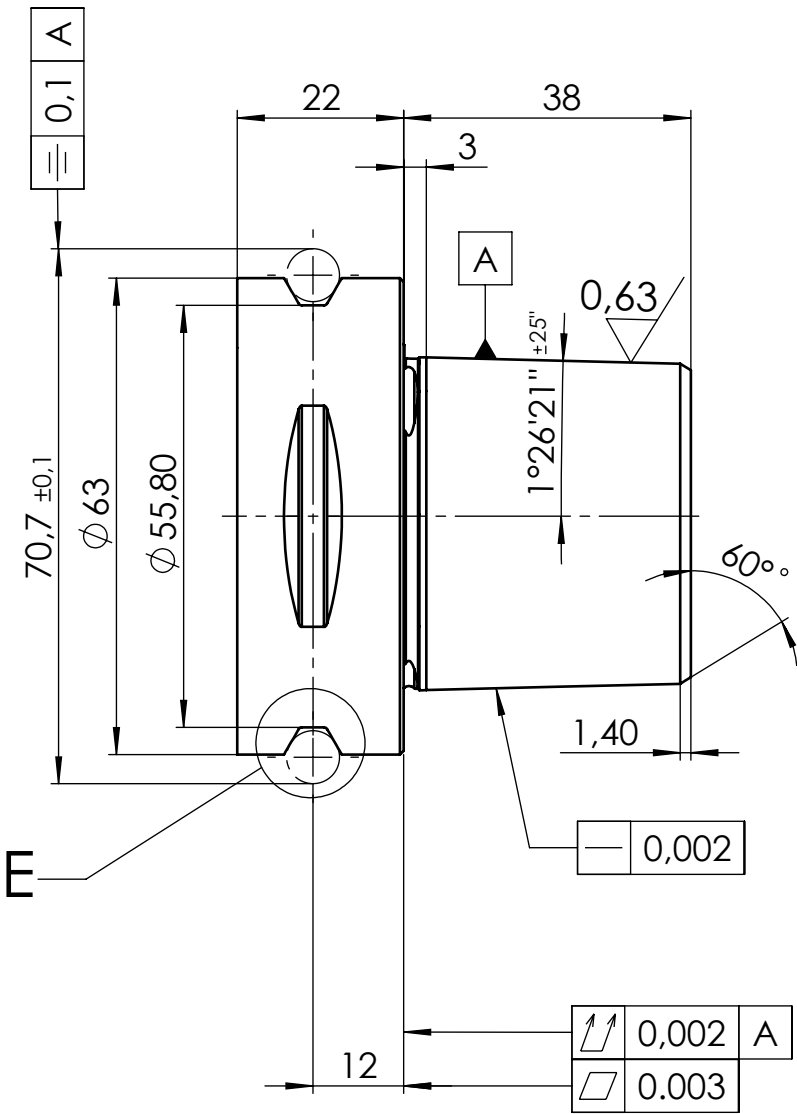
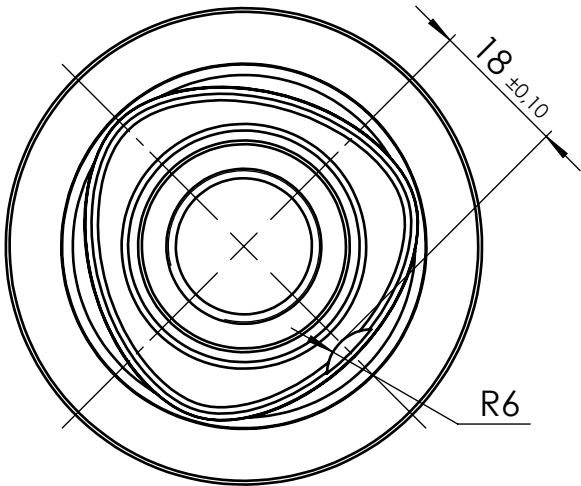
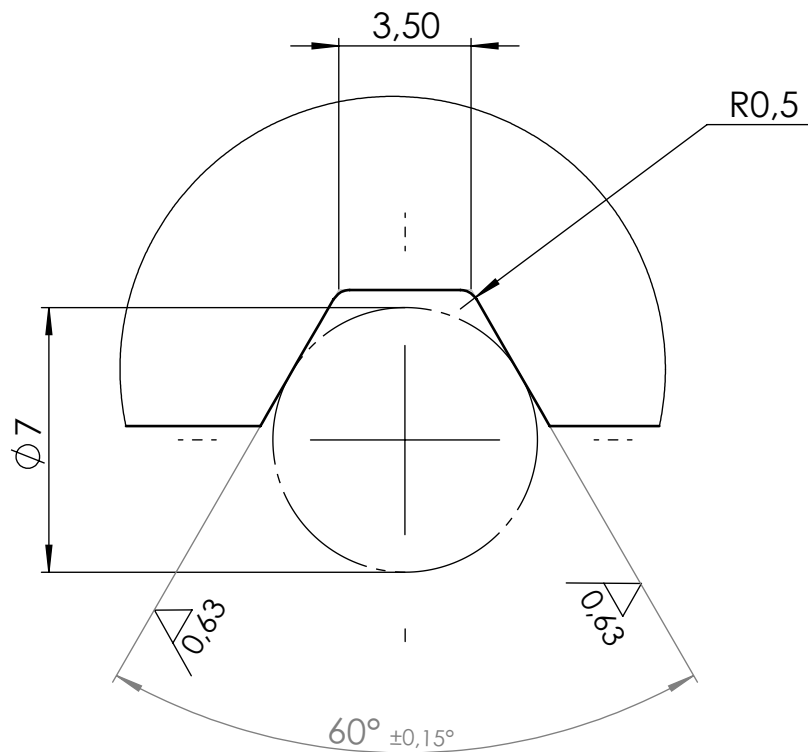
$$x' = Dm/2 \times \cos \zeta - 2 \times e \times \cos(2\zeta) + e \times \cos(4\zeta)$$

$$y' = Dm/2 \times \sin \zeta - 2 \times e \times \sin(2\zeta) + e \times \sin(4\zeta)$$

Pozycja		Nazwa			il. szt.		Materiał		Masa		Symbol/KTM	
		Chwył Capto C6 wg ISO 26623-1										
Nr zmiany	ilość zmian		Nr kart zm.	Zmiana		Powinno być			Podpis		Data	
Podziałka		Zastęp rys. Nr		Zast. przez rys. Nr		Arkusz 1		Służy do				
						il. ark.						
ZM KOLNO		Konstruował	Nazwisko	A. Górski	Podpis		Data	12.07.17	Cecha		Nr rys w arch. K3-03380-3	
		Sprawdził		B. Jerzyło			12.07.17					
		Zatwierdził		B. Jerzyło			12.07.17					



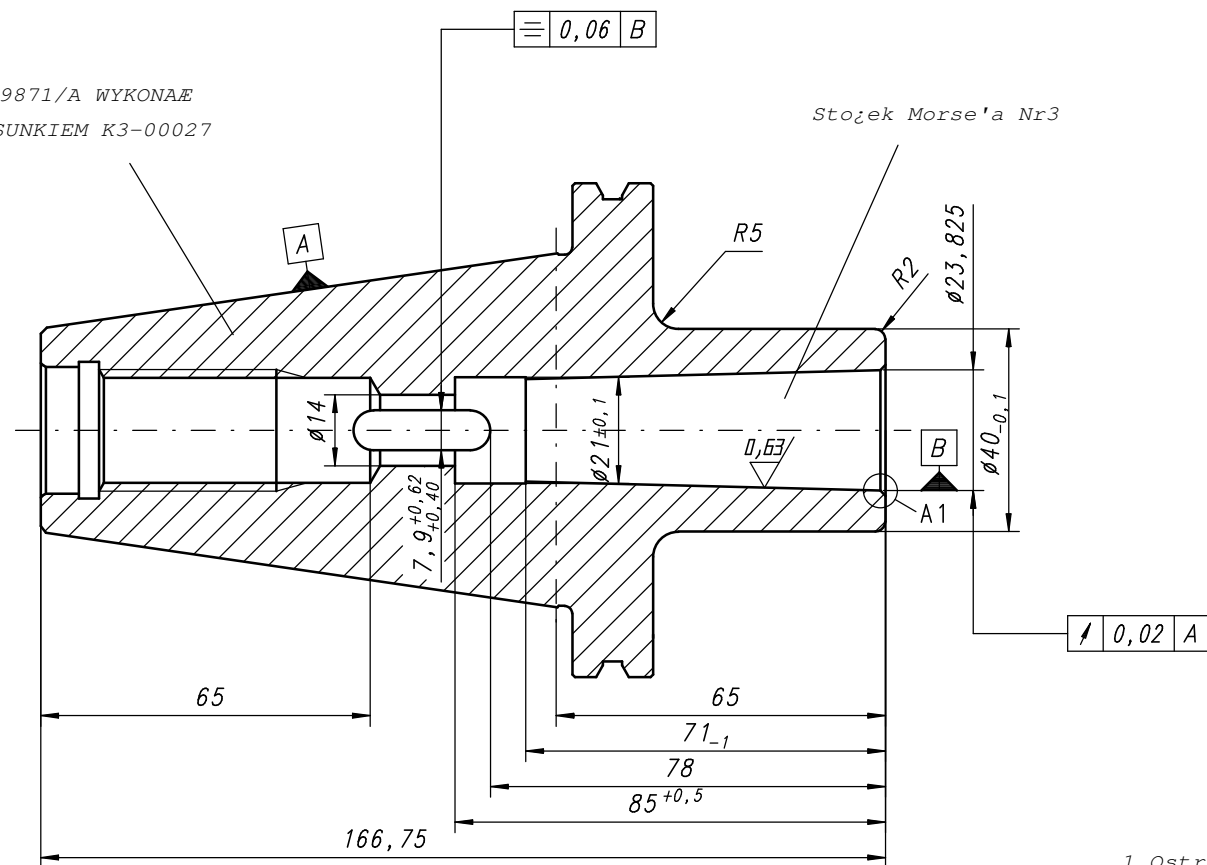
E  
SKALA 5 : 1



Pozycja	Nazwa	il. szt.	Materiał	Masa	Symbol/KTM
	Chwył Capto C6 wg ISO 26623-1				
Nr zmiany	ilość zmian	Nr kart zm.	Zamiast	Powinno być	Podpis
Podziałka	Zastęp rys. Nr	Zast. przez rys. Nr	Arkusz 1	Służy do	
			il. ark.		
ZM	Konstruował	Nazwisko	A. Górski		
KOLNO	Sprawdził	Nazwisko	B. Jerzyło		
	Zatwierdził	Nazwisko	B. Jerzyło		
		Podpis			
		Data	12.07.17	Cecha	Nr rys w arch.
			12.07.17		K3-03380/2
			12.07.17		

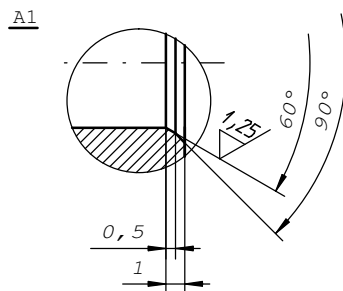
2,5/1,25/0,63/


CHWYT DIN 69871/A WYKONAĆ  
ZGODNIE Z RYSUNKIEM K3-00027



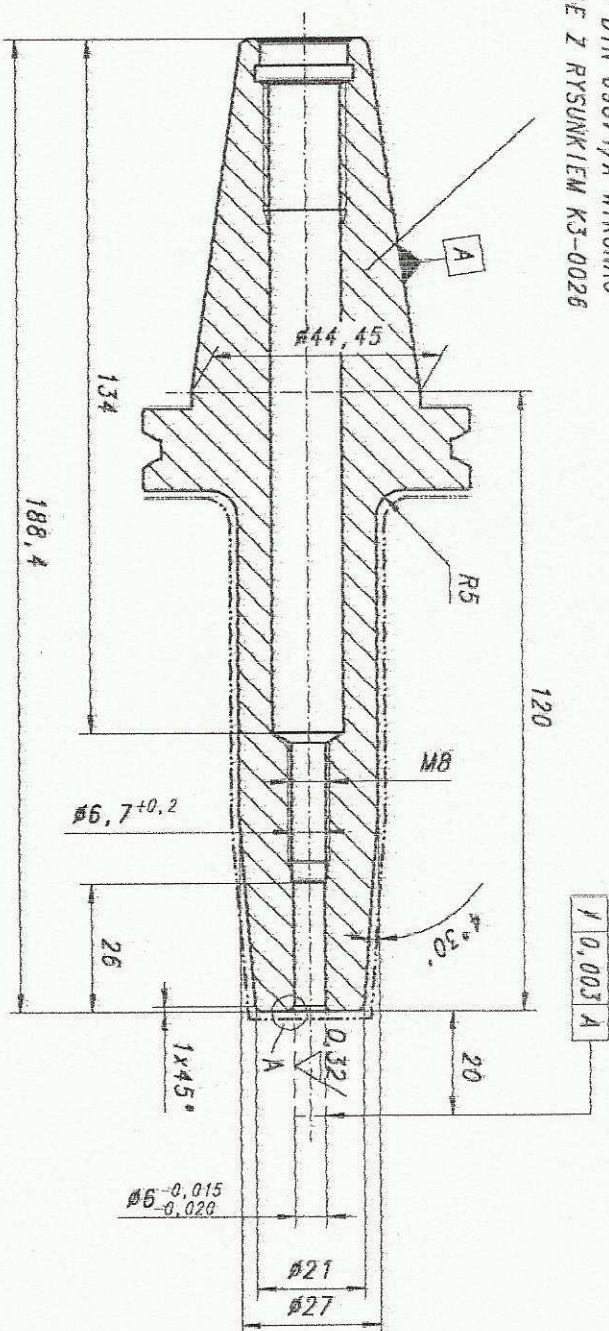
Okienko fazować 1x45°.

1. Ostre krawędzie stępiać 0.3x45°.
2. Nawęgląć na głębokość 0.4-0.8 mm.
3. Gwint miękki.
4. Hartować i odpuszczać 56-60HRC.
5. Powierzchnie nieszlifowane czernić.

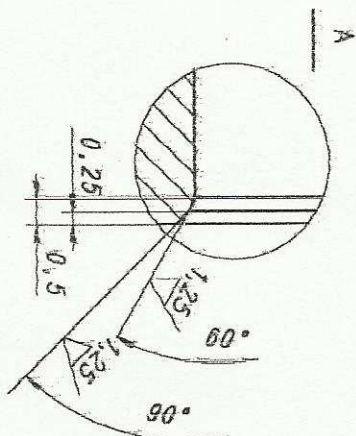


Pozycja		Nazwa TULEJA REDUKCYJNA NA STOŁEK MORSE'A Z CHWYTEM DIN 69871/A			Il. szt.	Materiał 16HG	Masa 3,2	Symbol/KTM 0642 116 811 300		
Nr zezw.  Lp. zezw.  Nr kart. zw.			Zam. iost.		Powinno być			Podpis		Data
Podziałka 1:1			Zast. rys. Nr		Zast. przez rys. Nr		Arkusz 1		Służy do	
							Il. ark.			
	Konstruował		A. BRZÓSKA		Podpis	04.06.01		Cecha		Nr rys.
	Sprawdził		B. JERZYŁO			04.06.01		1681-50-3-65		
	Zatwierdził		B. JERZYŁO			04.06.01				

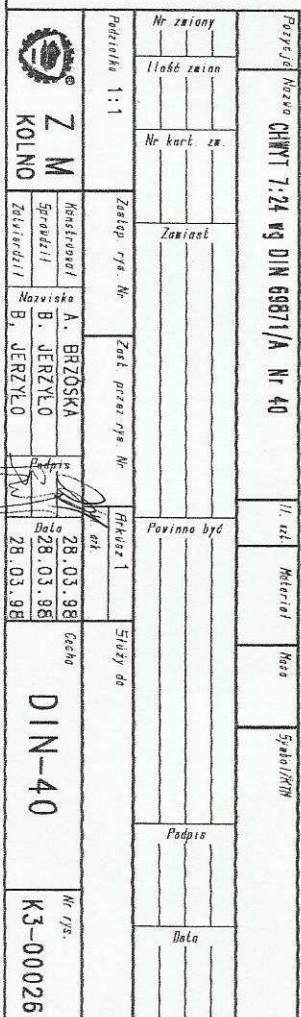
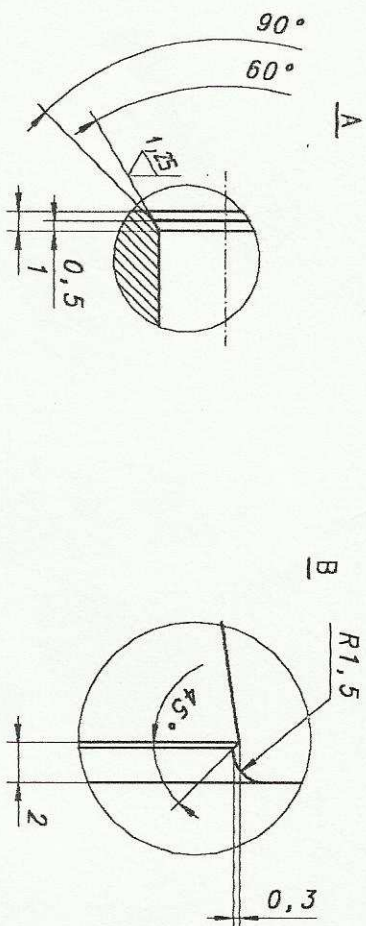
2,5 / 1,25 / 0,32 /



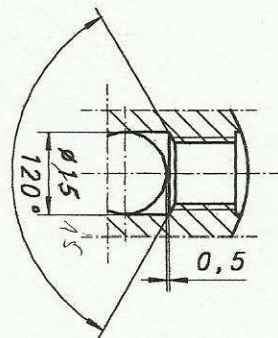
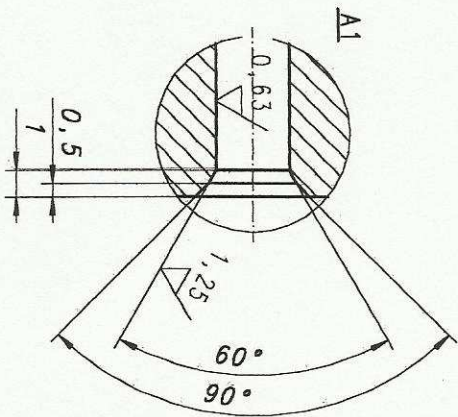
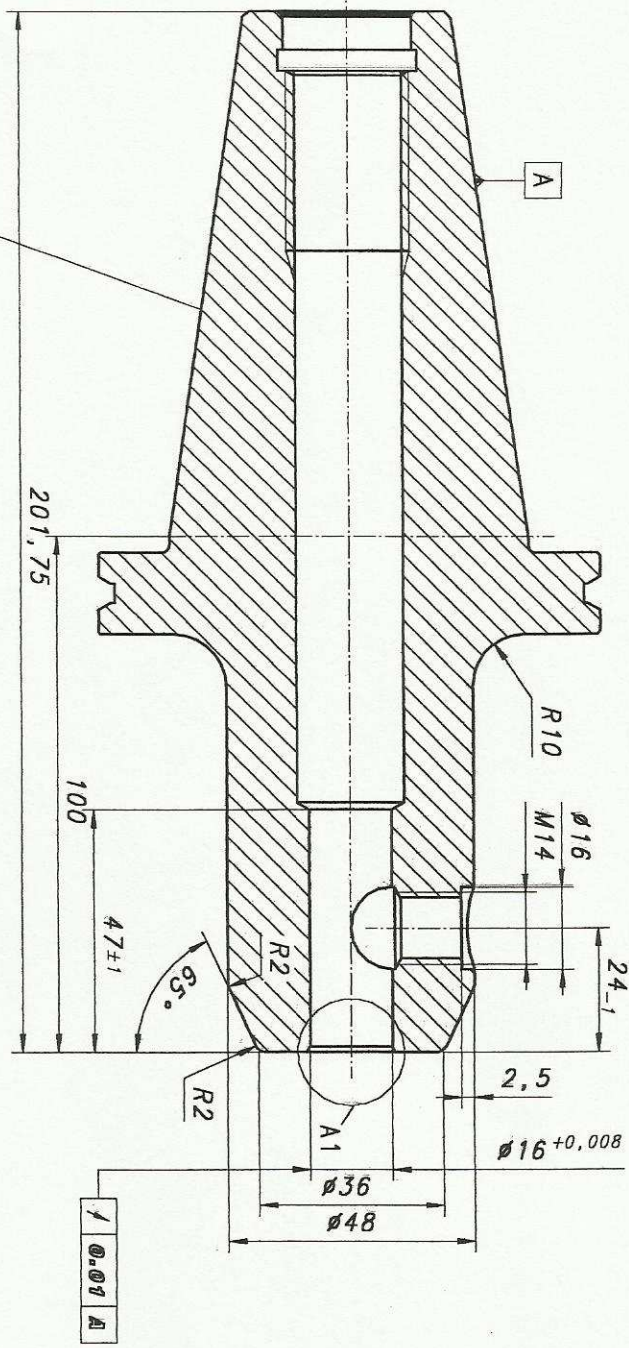
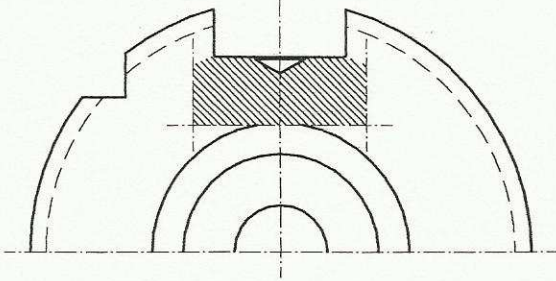
7,25

[illegible]









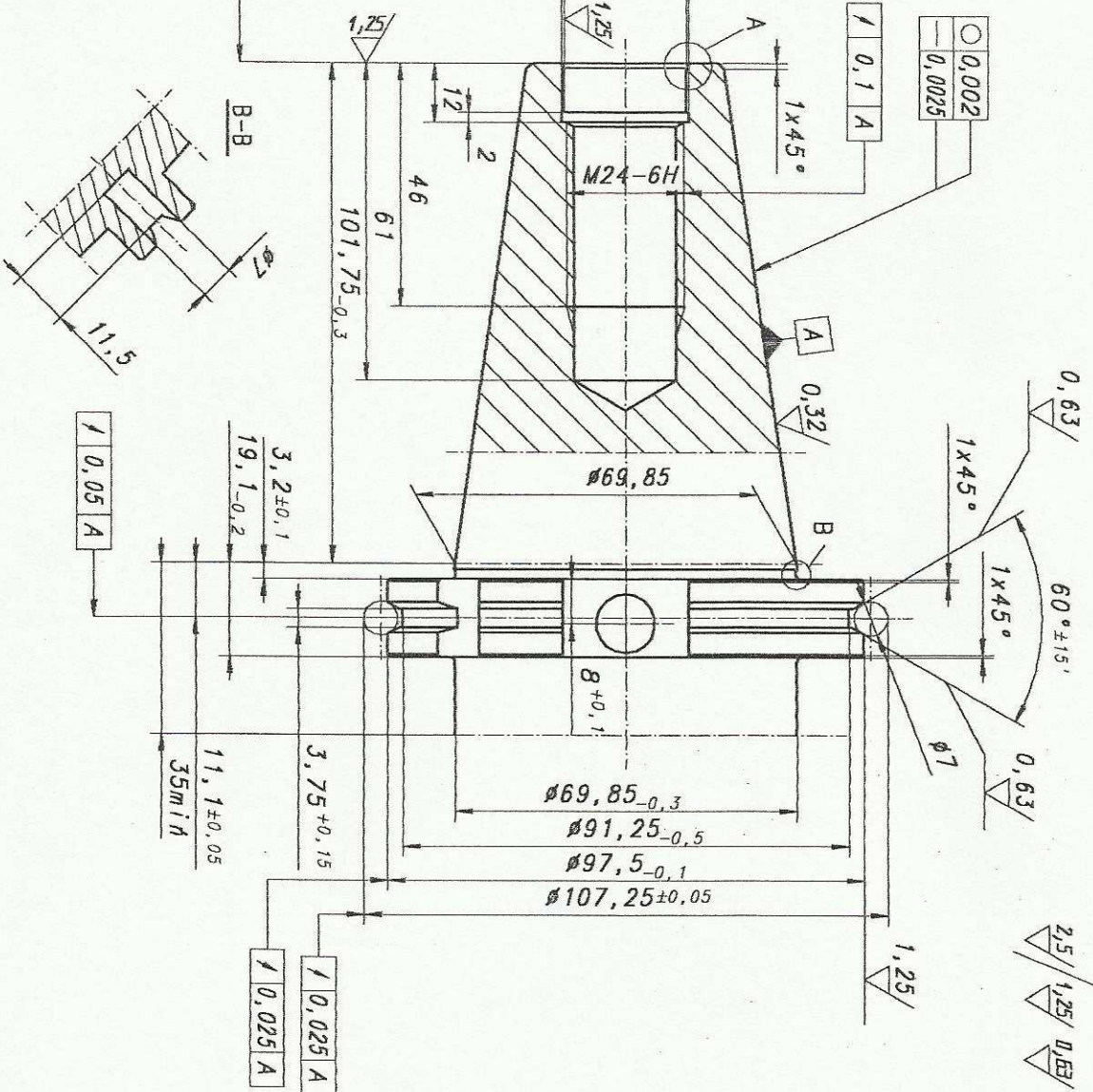
2,5 / 1,25 / 0,63 / 1

CHWYT DIN 69871/A WYKONAĆ  
ZGODNIE Z RYSUNKIEM K3-00027

1. Ostre krawędzie stepić 0.3x45.
2. Gwinty miękkie.
3. Nawęgląć na głębokość 0.4-0.8 mm.
4. Hartować i odpuszczając 56-60HRC.
5. Powierzchnie nieszlifowane czernić.

Początek		Nazwa		Il. szt.		Materiał		Masa (kg)		Symbol części/KTM	
1		KORPUS		1		16HG		3,5		U-0023/0	
Nr zmiany		Ilość zmian		Nr karł. zm.		Zamiat		Powinno być		Podpis	
Podziółka 1:1		Konstruował		ZŁAZNY		Sprawdził		30,06,98		Zatwierdził	
Fabryka Przyrządów i Uchwyty BISON-BIAL S.A. O/Koło		Nazwisko		B. JERZYŁO		Podpis		30,06,98		Zatwierdził	
		Data		30,06,98		Służy do		7625-50-16-100		Nr rys. w archiwum	
										K3-00091	



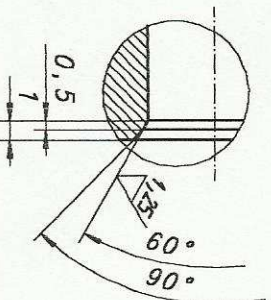
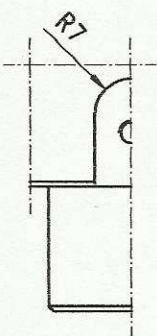
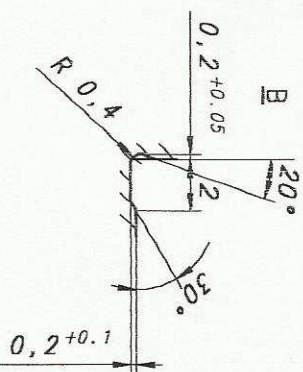
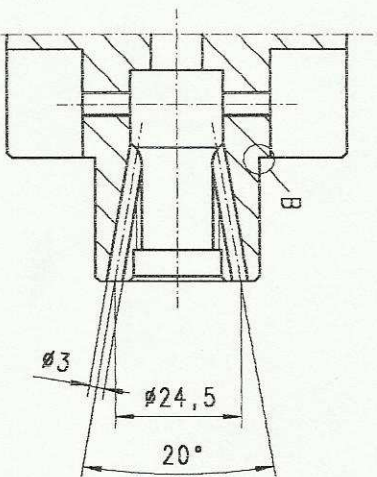
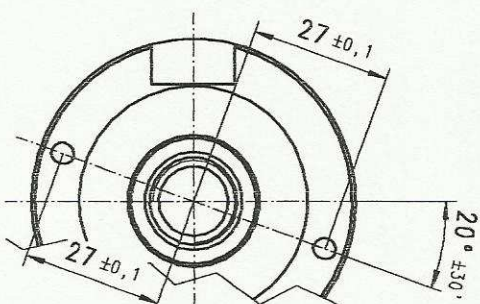
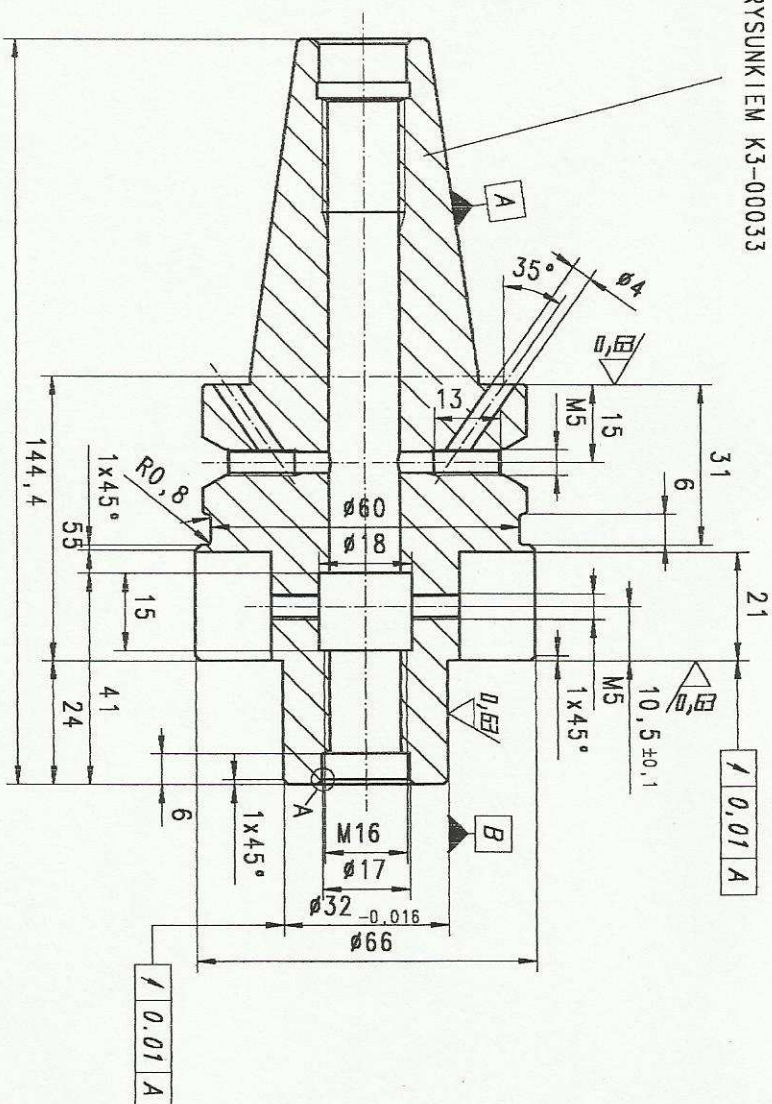
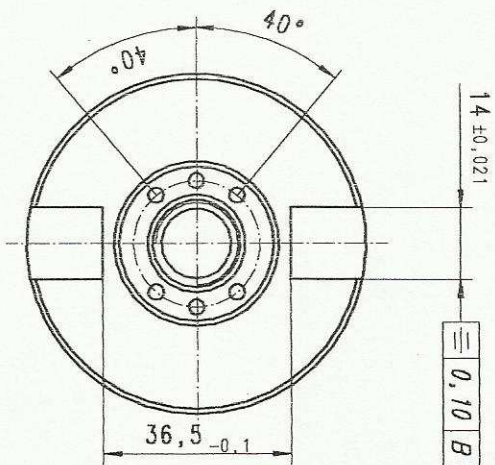


Odchyłka stozka na długości tworzącej AT 3 - 0,004

[illegible]

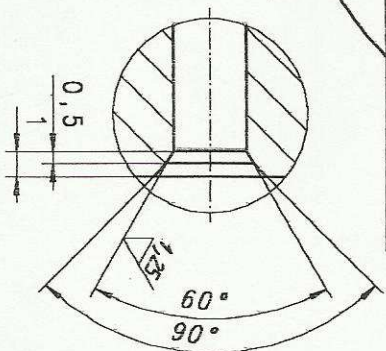
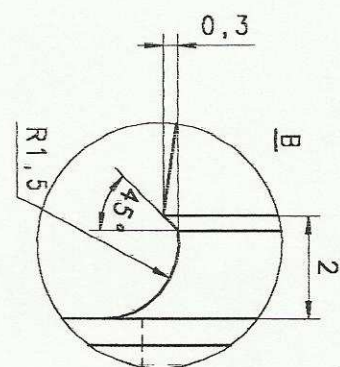


CHWYT MAS 403 BT WYKONAĆ  
ZGODNIE Z RYSUNKIEM K3-00033



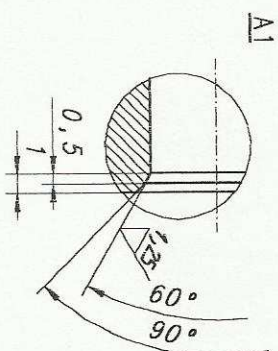
Podpis		Nazwa Korpus		11. rz.		Materiał		Masa		Symbol/KM	
				1		16H6		1,7		W-1896/0	
Podpis		Nr zeiany		Ilość zeian		Nr kart. ze.		Zamiat		Pozwino być	
Podpis		Zast. rps. Nr		Zast. przez rps. Nr		Rokusz 1		II et		Siazy do	
										7388-40-32-55 AD+B	
Podpis		Nazwisko		Imię		Data		Data		Nr rzs. w archiwum	
Fodryko		Konsztowal		B. JERYŁO		05.02.00		05.02.00		K3-01183	
Przyrządów i Lichwytów		Sprodzil		B. JERYŁO		05.02.00		05.02.00			
B150N-B1RL 5 R		Zabawierdzil		B. JERYŁO		05.02.00		05.02.00			





Odchyłka kąta stożka na długości tworzącej ATD 0,003.



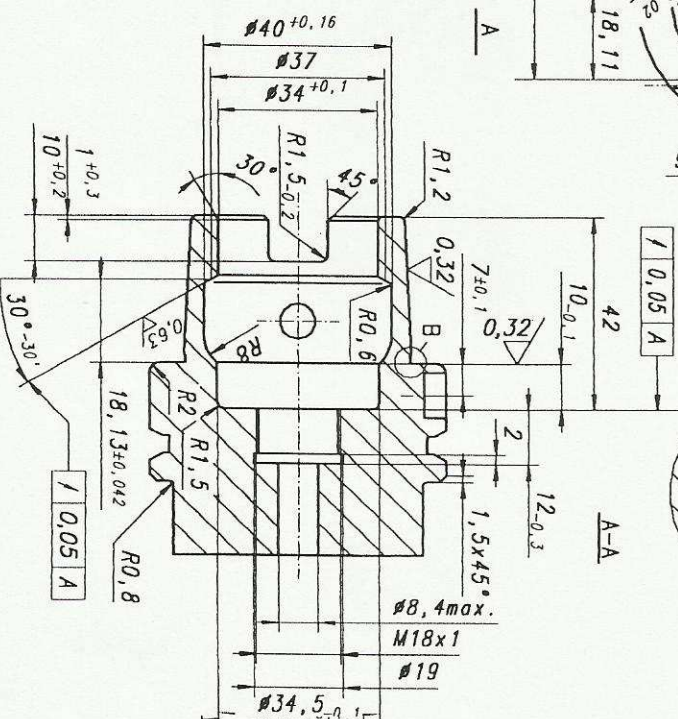


1. Ostre krawędzie stępić 0.3x45 .
2. Nowe gład na głębokość 0.4-0.8 mm.
3. Gwinty miękkie.
3. Hartować i odpuszczać 56-60HRC.
4. Powierzchnie nieszlifowane czernić.

[illegible]



3-3

$$\frac{2,5}{0,63} \quad \frac{0,63}{0,32} //$$


Zbieżność stożka 1:10.

Odchyłka stożka na długości tworzącej AT 3 - 0,003

[illegible]