

**Grampelhuber**  
Gesellschaft m.b.H.

**Karnasch**<sup>®</sup>  
PROFESSIONAL TOOLS

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## HSSX-V2 SCHAFTFRÄSER

## HSSX-V2 END MILLS



1.3

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PROFESSIONAL TOOLS



Index

Qualitätsprodukte für die Metallbearbeitung.  
Quality products for metalworking.

# HSSX-V2

Die Neuauflage der Power-Serie.  
The new edition of the power series.



## Der wahrscheinlich beste HSS-Fräser der Welt.

HSSX-V2 TIALN-FUTURA beschichtet, sensationell verschleißfest.

## Probably the best HSS end mill in the world.





HSSX-V2 TIALN-FUTURA coated, extremely wear-resistant.

- Extrem zäh (bei HRC 68 ± 1)
- Trocken- und Nassbearbeitung
- Schnittgeschwindigkeit ca. 50 % höher als mit HSSE-Fräsern
- Deutliche Standzeiterhöhung auch bei schwer zerspanbarem Material
- Anwendungstemperatur bis max. 800° C
- Erhöhung der Verschleißbeständigkeit
- Feines Oberflächenmuster (Typ N und Typ HR)
- Große Fertigungssicherheit
- Niedrige Werkzeugkosten
- Extremely tough material (HRC 68 ± 1)
- For dry and wet machining
- Cutting speed approx. 50% faster than HSS-E end milling cutter
- Considerable increasing of endurance even in hard-cut material
- Application temperature until 800°C
- Increasing of wear resistance
- Fine surface pattern (Type N and Type HR)
- High manufacturing security
- Low tool costs

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10

Index

INHALTSVERZEICHNIS · TABLE OF CONTENTS

Art.	HSSX-V2 Schaftfräser · HSSX-V2 End mills	Material	UNI	STAHL steel < 1400 N/mm²	GJL	GJS	INOX Edelstahl STAINLESS STEEL	INCONEL HASTELLOY TITANIUM	NE METALLE non-ferrous
Schaftfräser / End mills z=3				P	K	K	M	S	N
P 44 2429		HSSX V2	212	✓	✓	✓	✓	✓	✓
P 44 2469		HSSX V2	213	✓	✓	✓	✓	✓	✓
Schaftfräser / End mills z=4				P	K	K	M	S	N
P 44 1661		HSSX V2	214	✓	✓	✓	✓	✓	✓
P 44 1663		HSSX V2	215	✓	✓	✓	✓	✓	✓



- Lagerware / Stock tool
- Keine Lagerware, Lieferzeit und Preis auf Anfrage  
No stock tool. Price and delivery on request
- ◼ Lieferzeit kurzfristig da Rohlinglager vorhanden  
Short delivery deadline possible then blanks are on stock available

- 🏷️ Sonderpreis. Solange Vorrat reicht. Rückgabe nicht möglich.  
Special price. While stocks last. Return not possible.
- 📅 2-3 Arbeitstage Lieferzeit / 2-3 work days delivery time

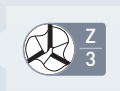
- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10

44 2429

HSSX-V2-Schaftfräser  
HSSX-V2-end mills



- UNI
- STAHL  
steel  
< 1400 N/mm<sup>2</sup>
- INOX  
Edelstahl  
STAINLESS STEEL
- GJL
- GJS
- TITAN  
TITANIUM  
< 1100 N/mm<sup>2</sup>
- NE  
METALLE  
non-ferrous



d1* = Ø 6,0	tol 0 / -0,028
d1* = Ø 8,0 - Ø 10,0	tol 0 / -0,034
d1* = Ø 12,0 - Ø 16,0	tol 0 / -0,043
d1* = Ø 20,0	tol 0 / -0,053

Art.	d1	l2	d2	l1	z
44 2429 0600	• 6	13	6	57	3
44 2429 0800	• 8	19	10	69	3
44 2429 1000	• 10	22	10	72	3
44 2429 1200	• 12	26	12	83	3
44 2429 1600	• 16	32	16	92	3
44 2429 2000	• 20	38	20	104	3

HSSX V2	DIN 844 K-B
N	DIN 1835 Form B

Schnittdaten Cutting data	Zeichnungen Drawings
1423	DXF/STEP

70 3004

HSSX-V2-Schaftfräser – Set  
HSSX-V2-end mills – set



- UNI
- STAHL  
steel  
< 1400 N/mm<sup>2</sup>
- INOX  
Edelstahl  
STAINLESS STEEL
- GJL
- GJS
- TITAN  
TITANIUM  
< 1100 N/mm<sup>2</sup>
- NE  
METALLE  
non-ferrous



d1* = Ø 6,0	tol 0 / -0,028
d1* = Ø 8,0 - Ø 10,0	tol 0 / -0,034
d1* = Ø 12,0 - Ø 16,0	tol 0 / -0,043
d1* = Ø 20,0	tol 0 / -0,053

Art.	Set
70 3004	Set bestehend aus je 1 St. Art. 44 2429 Ø 6, 8, 10, 12, 16, 20 Set consisting of 1 pc. each Art. 44 2429 Ø 6, 8, 10, 12, 16, 20

HSSX V2	DIN 844 K-B
N	DIN 1835 Form B

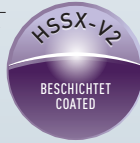
Schnittdaten Cutting data	Zeichnungen Drawings
1423	DXF/STEP

HSSX-V2-Feinschruppfräser  
HSSX-V2-fine roughing end mills



44 2469

- UNI**
- STAHL**  
steel  
< 1400 N/mm<sup>2</sup>
- INOX**  
**Edelstahl**  
STAINLESS STEEL
- GJL**
- GJS**
- TITAN**  
**TITANIUM**  
< 1100 N/mm<sup>2</sup>
- NE**  
**METALLE**  
non-ferrous



d1* = Ø 6,0	tol +0,120 / 0
d1* = Ø 8,0 - Ø 10,0	tol +0,150 / 0
d1* = Ø 12,0 - Ø 16,0	tol +0,180 / 0
d1* = Ø 20,0	tol +0,210 / 0

Art.	d1	l2	d2	l1	z
44 2469 0600	• 6	13	6	57	3
44 2469 0800	• 8	19	10	69	3
44 2469 1000	• 10	22	10	72	3
44 2469 1200	• 12	26	12	83	3
44 2469 1600	• 16	32	16	92	3
44 2469 2000	• 20	38	20	104	3

<b>HSSX V2</b>	<b>DIN 844 K-B</b>
<b>HR</b>	<b>DIN 1835 Form B</b>
	<b>HRC &lt; 45</b>
	<b>TIALN-FUTURA</b>

Schnittdaten Cutting data	Zeichnungen Drawings
1423	DXF/STEP

HSSX-V2-Feinschruppfräser – Set  
HSSX-V2-fine roughing end mills – set



70 3006

- UNI**
- STAHL**  
steel  
< 1400 N/mm<sup>2</sup>
- INOX**  
**Edelstahl**  
STAINLESS STEEL
- GJL**
- GJS**
- TITAN**  
**TITANIUM**  
< 1100 N/mm<sup>2</sup>
- NE**  
**METALLE**  
non-ferrous



d1* = Ø 6,0	tol +0,120 / 0
d1* = Ø 8,0 - Ø 10,0	tol +0,150 / 0
d1* = Ø 12,0 - Ø 16,0	tol +0,180 / 0
d1* = Ø 20,0	tol +0,210 / 0

Art.	Set
70 3006	Set bestehend aus je 1 St. Art. 44 2469 Ø 6, 8, 10, 12, 16, 20 Set consisting of 1 pc. each Art. 44 2469 Ø 6, 8, 10, 12, 16, 20

<b>HSSX V2</b>	<b>DIN 844 K-B</b>
<b>HR</b>	<b>DIN 1835 Form B</b>
	<b>HRC &lt; 45</b>
	<b>TIALN-FUTURA</b>

Schnittdaten Cutting data	Zeichnungen Drawings
1423	DXF/STEP

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10

44 1661

HSSX-V2-Schaftfräser  
HSSX-V2-end mills



- UNI
- STAHL  
steel  
< 1400 N/mm<sup>2</sup>
- INOX  
Edelstahl  
STAINLESS STEEL
- GJL
- GJS
- TITAN  
TITANIUM  
< 1100 N/mm<sup>2</sup>
- NE  
METALLE  
non-ferrous



d1* = Ø 6,0	tol 0 / -0,028
d1* = Ø 8,0 - Ø 10,0	tol 0 / -0,034
d1* = Ø 12,0 - Ø 16,0	tol 0 / -0,043
d1* = Ø 20,0	tol 0 / -0,053

HSSX V2	DIN 844 K-B
N	DIN 1835 Form B
	HRC < 45
	TIALN-FUTURA
	OIL Emul MMKS

Art.	d1	l2	d2	l1	z
44 1661 0600	• 6	13	6	57	4
44 1661 0800	• 8	19	10	69	4
44 1661 1000	• 10	22	10	72	4
44 1661 1200	• 12	26	12	83	4
44 1661 1600	• 16	32	16	92	4
44 1661 2000	• 20	38	20	104	4

Schnittdaten  
Cutting data

Zeichnungen  
Drawings

1423

DXF/STEP

70 3008

HSSX-V2-Schaftfräser – Set  
HSSX-V2-end mills – set



- UNI
- STAHL  
steel  
< 1400 N/mm<sup>2</sup>
- INOX  
Edelstahl  
STAINLESS STEEL
- GJL
- GJS
- TITAN  
TITANIUM  
< 1100 N/mm<sup>2</sup>
- NE  
METALLE  
non-ferrous



d1* = Ø 6,0	tol 0 / -0,028
d1* = Ø 8,0 - Ø 10,0	tol 0 / -0,034
d1* = Ø 12,0 - Ø 16,0	tol 0 / -0,043
d1* = Ø 20,0	tol 0 / -0,053

HSSX V2	DIN 844 K-B
N	DIN 1835 Form B
	HRC < 45
	TIALN-FUTURA
	OIL Emul MMKS

Art.	Set
70 3008	Set bestehend aus je 1 St. Art. 44 1661 Ø 6, 8, 10, 12, 16, 20 Set consisting of 1 pc. each Art. 44 1661 Ø 6, 8, 10, 12, 16, 20

Schnittdaten  
Cutting data

Zeichnungen  
Drawings

1423

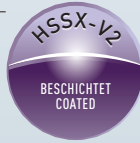
DXF/STEP

HSSX-V2-Feinschruppfräser  
HSSX-V2-fine roughing end mills



44 1663

- UNI**
- STAHL**  
steel  
< 1400 N/mm<sup>2</sup>
- INOX**  
Edelstahl  
STAINLESS STEEL
- GJL**
- GJS**
- TITAN**  
TITANIUM  
< 1100 N/mm<sup>2</sup>
- NE**  
METALLE  
non-ferrous



d1* = Ø 6,0	tol +0,120 / 0
d1* = Ø 8,0 - Ø 10,0	tol +0,150 / 0
d1* = Ø 12,0 - Ø 16,0	tol +0,180 / 0
d1* = Ø 20,0	tol +0,210 / 0

Art.	d1	l2	d2	l1	z
44 1663 0600	• 6	13	6	57	4
44 1663 0800	• 8	19	10	69	4
44 1663 1000	• 10	22	10	72	4
44 1663 1200	• 12	26	12	83	4
44 1663 1600	• 16	32	16	92	4
44 1663 2000	• 20	38	20	104	4

<b>HSSX V2</b>	<b>DIN 844 K-B</b>
<b>HR</b>	<b>DIN 1835 Form B</b>
	<b>HRC &lt; 45</b>
	<b>TIALN-FUTURA</b>

Schnittdaten Cutting data	Zeichnungen Drawings
1423	DXF/STEP

HSSX-V2-Feinschruppfräser – Set  
HSSX-V2-fine roughing end mills – set



70 3009

- UNI**
- STAHL**  
steel  
< 1400 N/mm<sup>2</sup>
- INOX**  
Edelstahl  
STAINLESS STEEL
- GJL**
- GJS**
- TITAN**  
TITANIUM  
< 1100 N/mm<sup>2</sup>
- NE**  
METALLE  
non-ferrous



d1* = Ø 6,0	tol +0,120 / 0
d1* = Ø 8,0 - Ø 10,0	tol +0,150 / 0
d1* = Ø 12,0 - Ø 16,0	tol +0,180 / 0
d1* = Ø 20,0	tol +0,210 / 0

Art.	Set
70 3009	Set bestehend aus je 1 St. Art. 44 1663 Ø 6, 8, 10, 12, 16, 20 Set consisting of 1 pc. each Art. 44 1663 Ø 6, 8, 10, 12, 16, 20

<b>HSSX V2</b>	<b>DIN 844 K-B</b>
<b>HR</b>	<b>DIN 1835 Form B</b>
	<b>HRC &lt; 45</b>
	<b>TIALN-FUTURA</b>

Schnittdaten Cutting data	Zeichnungen Drawings
1423	DXF/STEP

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10