



 **VERGNANO**

FRESE / END MILLS / SCHAFTFRÄSER

[www.vergnano.com](http://www.vergnano.com)

# 65

Con i suoi 75 anni di esperienza nell'industria degli utensili da taglio di alta precisione, Vergnano è tra le aziende leader nella produzione di maschi filettatori, creatori, frese e filiere. Un'azienda ormai storica, di impronta familiare ma con assetto di respiro internazionale. Alla forte identità, caratterizzata dal rispetto dei valori tradizionali, Vergnano affianca una consolidata cultura aziendale fatta di qualità, affidabilità, ricerca, flessibilità, dinamismo e rapidità di risposta.

With over 75 years of experience in the cutting tool industry, Vergnano is one of the world's leading manufacturers of high quality precision threading taps, hobs, end mills and threading dies. While keeping a firm foothold in the honoured tradition of the Vergnano brand, Vergnano has established itself internationally and is renowned for quality, reliability, flexibility, innovation and commitment.

Mit über 75 Jahren Erfahrung auf dem Sektor der Hochpräzisionswerkzeuge gehört Vergnano zu den führenden Unternehmen bei der Herstellung von Gewindewerkzeugen, Schaftfräsern, Abwälzfräsern und Schneideisen.

Mit der Herkunftsregion eng verbunden und unter Bewahrung gewachsener Traditionen steht Vergnano auf dem Weltmarkt gleichzeitig für Qualität, Zuverlässigkeit, Flexibilität, Innovation und Einsatzbereitschaft.



LEGENDA TIPOLOGIA ARTICOLI / ARTICLE LEGEND / ARTIKEL LEGENDE

**FH...** Frese in metallo duro per impiego generico  
Solid carbide end mills for generic applications  
VHM-Schaftfräser für den allgemeinen Einsatz

**FP...** Frese in metallo duro ad alte prestazioni  
High performance solid carbide end mills  
Hochleistungs-VHM-Schaftfräser

**FA...** Frese in acciaio per impiego generico  
High speed steel end mills for generic applications  
HSS-Schaftfräser für den allgemeinen Einsatz

**...W** Frese con Weldon / End mills with Weldon / Schaftfräser mit Weldon-Spannfläche

**...E** Frese con smusso a 90° / End mills with 90° corner chamfer / Schaftfräser mit 90° Fase

**...R** Frese raggiate / End mills with corner radius / Schaftfräser mit Eckradius

**...X** Serie extra corta / Extra short series / Ausführung extra kurz

**...S** Serie corta / Short series / Ausführung kurz

**...L** Serie lunga / Long series / Ausführung lang

LEGENDA MATERIALI / MATERIALS LEGEND / SCHNEIDSTOFF LEGENDE

**HM** Metallo duro / Solid carbide / Hartmetall




**HSSY** Acciaio super-rapido da polveri / Powder metallurgy high speed steel / Pulvermetallurgischer Schnellarbeitsstahl

ISO 513	Materiale Material Werkstoff	Applicazione Application Anwendung
<b>P</b>	Acciaio Steel Stahl	Acciaio / Steel / Stahl <800 N/mm <sup>2</sup>
		Acciaio / Steel / Stahl <1000 N/mm <sup>2</sup>
		Acciaio / Steel / Stahl <1300 N/mm <sup>2</sup>
		Acciaio altolegato / High strength steel / Stahl mit erhöhter Festigkeit
<b>M</b>	Acciaio inossidabile Stainless steel Rostfreier Stahl	Ferritico / Ferritic / Ferritisch
		Austenitico / Austenitic / Austenitisch
		Duplex
<b>K</b>	Ghisa Cast iron Gusswerkstoffe	Ghisa grigia / Grey cast iron / Grauguss
<b>N</b>	Leghe leggere Light alloys Leichtmetalle	Alluminio e leghe / Al and Al alloys / Al und Al-Legierungen
		Rame e leghe / Copper and Copper alloys / Kupfer und Kupfer-Legierungen
<b>S</b>	Superleghe Superalloys Superlegierungen	Leghe di Titanio / Titanium alloys / Titan Legierungen
		Leghe di Nichel / Nickel alloys / Nickel Legierungen
<b>O</b>	Altri materiali Other materials Andere Werkstoffe	Termoplastici / Thermoplastics / Thermoplaste

**FH / FP / FA**  
S E R I E S

Frese / End mills / Schaftfräser

# INDICE ARTICOLI / TOOL CODE LIST / ARTIKEL INDEX

FH SERIES		FP SERIES		FA SERIES	
CODE		CODE		CODE	
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FH770E	18				
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# LEGENDA ICONE / ICON LEGEND / IKONEN LEGENDE

## TIPOLOGIA DI LAVORAZIONE TYPE OF MACHINING / BEARBEITUNGSART

-  Cava / Slotting / Nutfräsen
-  Contornatura / Contouring / Eckfräsen
-  Dinamica / Dynamic / Dynamisch
-  Rampa / Diagonal plunging / Eintauchfräsen
-  Interpolazione elicoidale / Helical interpolation / Spiralförmige Interpolation
-  Foratura / Drilling / Bohren
-  Copiatura 3D / 3D Copying / 3D-Radiuskopierfräsen
-  Smussatura / Chamfering / Fasen

## NUMERO DI TAGLIENTI / NUMBER OF FLUTES NUTENZAHL

-  4 taglienti, con divisione irregolare / 4 flutes, with unequal flute spacing / Vierschneider, ungleiche Teilung
-  4 taglienti / 4 flutes / Vierschneider
-  3 taglienti, con divisione irregolare / 3 flutes, with unequal flute spacing / Dreischneider, ungleiche Teilung
-  3 taglienti / 3 flutes / Dreischneider
-  2 taglienti / 2 flutes / Zweischneider
-  Semisferica 2 taglienti / Ball nose 2 flutes / Radiusfräser Zweischneider





## DIREZIONE DI AVANZAMENTO FEED DIRECTION / VORSCHUBRICHTUNG





## ANGOLO DELL'ELICA / SPIRAL FLUTE ANGLE DRALLWINKEL



## INDICAZIONE SERIE / SERIES TYPE AUSFÜHRUNG

-  Serie lunga / Long series / Ausführung lang
-  Serie normale / Normal series / Ausführung normal
-  Serie corta / Short series / Ausführung kurz
-  Serie extra corta / Extra short series / Ausführung extra kurz

## MATERIALE / MATERIAL / SCHNEIDSTOFF

-  HM Metallo duro / Solid carbide / Hartmetall
-  HSSY Acciaio super-rapido da polveri / Powder metallurgy high speed steel / Pulvermetallurgischer Schnellarbeitsstahl

## PROFILO ROMPIRUCIOLO / ROUGHING PROFILE SCHRUPP-PROFIL

-  Profilo Vergnano / Vergnano roughing profile / Vergnano Werksnorm Schrapp-Profil

# LEGENDA ICONE / ICON LEGEND / IKONEN LEGENDE

## NORMA DI DIMENSIONAMENTO DIMENSIONAL STANDARD / BAU-NORM



## RIBASSAMENTO / NECK RELIEF HALSFREISTICH



## NORMA DEL GAMBO / SHANK STANDARD SCHAFT-NORM



## GEOMETRIA FRONTALE / FRONTAL GEOMETRY STIRN GEOMETRIE



Smusso a 45° / 45° Corner chamfer / 45° Fase



Smusso a 90° / 90° Corner chamfer / 90° Fase



Punta a 60° / 60° chamfering / 60° Entgrater



Punta a 90° / 90° chamfering / 90° Entgrater



Smusso raggiato / Corner radius / Eckradius



Testa raggiata / Ball nose / Radiusfräser

# **FH** S E R I E S

Frese in metallo duro per impiego generico  
Solid carbide end mills for generic applications  
VHM-Schaftfräser für den allgemeinen Einsatz

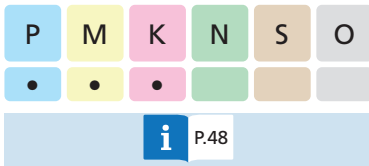
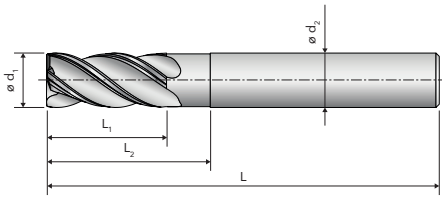


Fresa 4 taglienti serie normale con divisione irregolare  
End mill 4 flutes, with unequal flute spacing  
VHM-Schaftfräser, Vierschneider, Ungleichteilung



FH700  
V-MAXX

FH700W  
V-MAXX

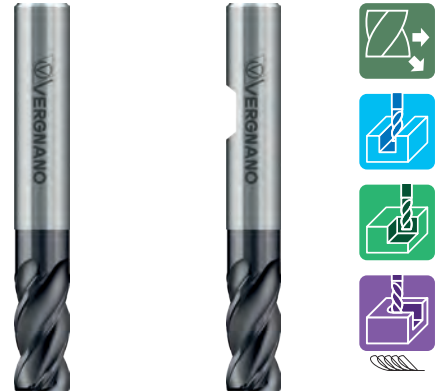
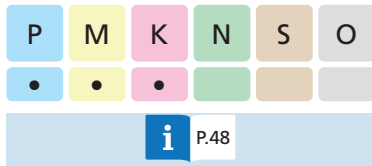
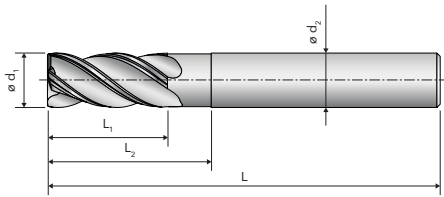


FH700 V-MAXX									
Cod.	d <sub>1</sub> h10 [mm]	d <sub>2</sub> h6 [mm]	L [mm]	L <sub>1</sub> [mm]	L <sub>2</sub> [mm]	a [mm]	45° [mm]	z	[-]
FH700030A0VC000	3,0	6	57	8	11	0,10	0,05	4	
FH700040A0VC000	4,0	6	57	9	16	0,10	0,10	4	
FH700050A0VC000	5,0	6	57	13	18	0,10	0,10	4	
FH700060A0VC000	6,0	6	57	13	20	0,15	0,10	4	
FH700080A0VC000	8,0	8	63	19	25	0,15	0,15	4	
FH700100A0VC000	10,0	10	72	22	30	0,15	0,15	4	
FH700120A0VC000	12,0	12	83	26	36	0,20	0,15	4	
FH700140A0VC000	14,0	14	83	26	36	0,20	0,15	4	
FH700160A0VC000	16,0	16	92	32	42	0,20	0,20	4	
FH700180A0VC000	18,0	18	92	32	42	0,20	0,20	4	
FH700200A0VC000	20,0	20	104	38	52	0,20	0,20	4	

FH700W V-MAXX									
Cod.	d <sub>1</sub> h10 [mm]	d <sub>2</sub> h6 [mm]	L [mm]	L <sub>1</sub> [mm]	L <sub>2</sub> [mm]	a [mm]	45° [mm]	z	[-]
FH700030A1VC000	3,0	6	57	8	11	0,10	0,05	4	
FH700040A1VC000	4,0	6	57	9	16	0,10	0,10	4	
FH700050A1VC000	5,0	6	57	13	18	0,10	0,10	4	
FH700060A1VC000	6,0	6	57	13	20	0,15	0,10	4	
FH700080A1VC000	8,0	8	63	19	25	0,15	0,15	4	
FH700100A1VC000	10,0	10	72	22	30	0,15	0,15	4	
FH700120A1VC000	12,0	12	83	26	36	0,20	0,15	4	
FH700140A1VC000	14,0	14	83	26	36	0,20	0,15	4	
FH700160A1VC000	16,0	16	92	32	42	0,20	0,20	4	
FH700180A1VC000	18,0	18	92	32	42	0,20	0,20	4	
FH700200A1VC000	20,0	20	104	38	52	0,20	0,20	4	

Fresa 4 taglienti serie normale con divisione irregolare  
 End mill 4 flutes, with unequal flute spacing  
 VHM-Schaftfräser, Vierschneider, Ungleichteilung


**FH700E**  
 V-MAXX

**FH700WE**  
 V-MAXX

**FH700E**  
 V-MAXX

Cod.	d <sub>1</sub> h10 [mm]	d <sub>2</sub> h6 [mm]	L [mm]	L <sub>1</sub> [mm]	L <sub>2</sub> [mm]	a [mm]	z [-]
FH700030A0VE000	3,0	6	57	8	11	0,10	4
FH700040A0VE000	4,0	6	57	9	16	0,10	4
FH700050A0VE000	5,0	6	57	13	18	0,10	4
FH700060A0VE000	6,0	6	57	13	20	0,15	4
FH700080A0VE000	8,0	8	63	19	25	0,15	4
FH700100A0VE000	10,0	10	72	22	30	0,15	4
FH700120A0VE000	12,0	12	83	26	36	0,20	4
FH700140A0VE000	14,0	14	83	26	36	0,20	4
FH700160A0VE000	16,0	16	92	32	42	0,20	4
FH700180A0VE000	18,0	18	92	32	42	0,20	4
FH700200A0VE000	20,0	20	104	38	52	0,20	4

**FH700WE**  
 V-MAXX

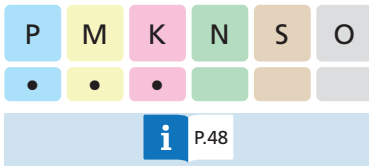
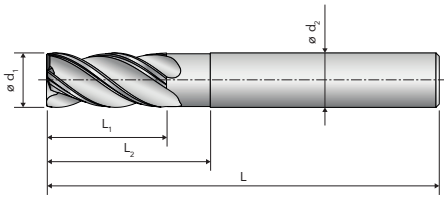
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FH700030A1VE000	3,0	6	57	8	11	0,10	4
FH700040A1VE000	4,0	6	57	9	16	0,10	4
FH700050A1VE000	5,0	6	57	13	18	0,10	4
FH700060A1VE000	6,0	6	57	13	20	0,15	4
FH700080A1VE000	8,0	8	63	19	25	0,15	4
FH700100A1VE000	10,0	10	72	22	30	0,15	4
FH700120A1VE000	12,0	12	83	26	36	0,20	4
FH700140A1VE000	14,0	14	83	26	36	0,20	4
FH700160A1VE000	16,0	16	92	32	42	0,20	4
FH700180A1VE000	18,0	18	92	32	42	0,20	4
FH700200A1VE000	20,0	20	104	38	52	0,20	4

Fresa 4 taglienti serie normale raggiata con divisione irregolare  
End mill 4 flutes, with unequal flute spacing  
VHM-Schaftfräser, Vierschneider, Ungleichteilung



FH700R  
V-MAXX

FH700WR  
V-MAXX



**FH700R**  
V-MAXX

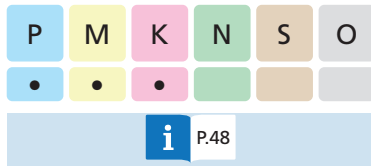
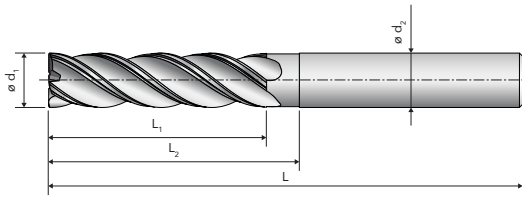
Cod.	d <sub>1</sub> h10 [mm]	d <sub>2</sub> h6 [mm]	L [mm]	L <sub>1</sub> [mm]	L <sub>2</sub> [mm]	a [mm]	Cr [mm]	z [-]
FH700030F0VR000	3,0	6	57	8	11	0,10	0,5	4
FH700040F0VR000	4,0	6	57	9	16	0,10	0,5	4
FH700050K0VR000	5,0	6	57	13	18	0,10	1,0	4
FH700060F0VR000	6,0	6	57	13	20	0,15	0,5	4
FH700060K0VR000	6,0	6	57	13	20	0,15	1,0	4
FH700080F0VR000	8,0	8	63	19	25	0,15	0,5	4
FH700080K0VR000	8,0	8	63	19	25	0,15	1,0	4
FH700100F0VR000	10,0	10	72	22	30	0,15	0,5	4
FH700100K0VR000	10,0	10	72	22	30	0,15	1,0	4
FH700100M0VR000	10,0	10	72	22	30	0,15	2,0	4
FH700120F0VR000	12,0	12	83	26	36	0,20	0,5	4
FH700120K0VR000	12,0	12	83	26	36	0,20	1,0	4
FH700120M0VR000	12,0	12	83	26	36	0,20	2,0	4

**FH700WR**  
V-MAXX

Cod.	d <sub>1</sub> h10 [mm]	d <sub>2</sub> h6 [mm]	L [mm]	L <sub>1</sub> [mm]	L <sub>2</sub> [mm]	a [mm]	Cr [mm]	z [-]
FH700030F1VR000	3,0	6	57	8	11	0,10	0,5	4
FH700040F1VR000	4,0	6	57	9	16	0,10	0,5	4
FH700050K1VR000	5,0	6	57	13	18	0,10	1,0	4
FH700060F1VR000	6,0	6	57	13	20	0,15	0,5	4
FH700060K1VR000	6,0	6	57	13	20	0,15	1,0	4
FH700080F1VR000	8,0	8	63	19	25	0,15	0,5	4
FH700080K1VR000	8,0	8	63	19	25	0,15	1,0	4
FH700100F1VR000	10,0	10	72	22	30	0,15	0,5	4
FH700100K1VR000	10,0	10	72	22	30	0,15	1,0	4
FH700100M1VR000	10,0	10	72	22	30	0,15	2,0	4
FH700120F1VR000	12,0	12	83	26	36	0,20	0,5	4
FH700120K1VR000	12,0	12	83	26	36	0,20	1,0	4
FH700120M1VR000	12,0	12	83	26	36	0,20	2,0	4

Fresa 4 taglienti serie lunga con divisione irregolare  
 End mill 4 flutes, long version, with unequal flute spacing  
 VHM-Schaftfräser, Vierschneider lang, Ungleichteilung


**FH700L**  
 V-MAXX

**FH700WL**  
 V-MAXX

**FH700L**  
 V-MAXX

Cod.	d <sub>1</sub> h10 [mm]	d <sub>2</sub> h6 [mm]	L [mm]	L <sub>1</sub> [mm]	L <sub>2</sub> [mm]	a [mm]	45° [mm]	z [-]
FH700050A0VC600	5,0	6	74	20	25	0,10	0,10	4
FH700060A0VC600	6,0	6	74	24	30	0,15	0,10	4
FH700080A0VC600	8,0	8	80	32	40	0,15	0,15	4
FH700100A0VC600	10,0	10	87	40	46	0,15	0,15	4
FH700120A0VC600	12,0	12	105	48	58	0,20	0,15	4
FH700140A0VC600	14,0	14	105	48	58	0,20	0,15	4
FH700160A0VC600	16,0	16	125	64	68	0,20	0,20	4
FH700200A0VC600	20,0	20	160	70	80	0,20	0,20	4

**FH700WL**  
 V-MAXX

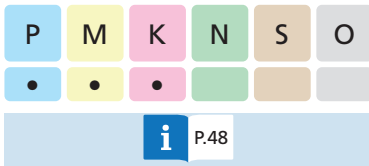
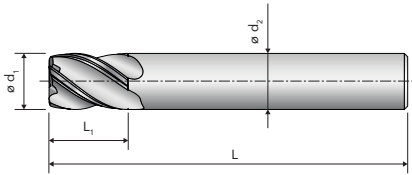
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FH700050A1VC600	5,0	6	74	20	25	0,10	0,10	4
FH700060A1VC600	6,0	6	74	24	30	0,15	0,10	4
FH700080A1VC600	8,0	8	80	32	40	0,15	0,15	4
FH700100A1VC600	10,0	10	87	40	46	0,15	0,15	4
FH700120A1VC600	12,0	12	105	48	58	0,20	0,15	4
FH700140A1VC600	14,0	14	105	48	58	0,20	0,15	4
FH700160A1VC600	16,0	16	125	64	68	0,20	0,20	4
FH700200A1VC600	20,0	20	160	70	80	0,20	0,20	4

Fresa 4 taglienti serie corta con divisione irregolare  
End mill 4 flutes, short version, with unequal flute spacing  
VHM-Schaftfräser, Vierschneider kurz, Ungleichteilung



FH700S  
V-MAXX

FH700WS  
V-MAXX



**FH700S**  
V-MAXX

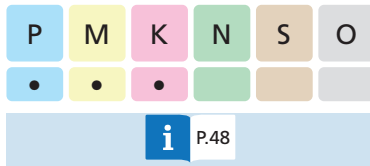
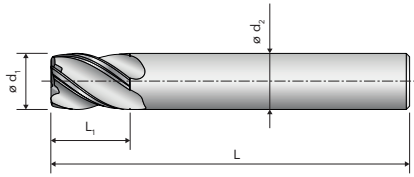
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FH700030A0VC400	3,0	6	54	6	-	-	0,05	4
FH700040A0VC400	4,0	6	54	8	-	-	0,10	4
FH700050A0VC400	5,0	6	54	9	-	-	0,10	4
FH700060A0VC400	6,0	6	54	10	-	-	0,10	4
FH700080A0VC400	8,0	8	57	12	-	-	0,15	4
FH700100A0VC400	10,0	10	66	14	-	-	0,15	4
FH700120A0VC400	12,0	12	73	16	-	-	0,15	4
FH700140A0VC400	14,0	14	75	18	-	-	0,15	4
FH700160A0VC400	16,0	16	82	22	-	-	0,20	4
FH700180A0VC400	18,0	18	84	24	-	-	0,20	4
FH700200A0VC400	20,0	20	92	26	-	-	0,20	4

**FH700WS**  
V-MAXX

Cod.	d <sub>1</sub> h10 [mm]	d <sub>2</sub> h6 [mm]	L [mm]	L <sub>1</sub> [mm]	L <sub>2</sub> [mm]	a [mm]	45° [mm]	z [-]
FH700030A1VC400	3,0	6	54	6	-	-	0,05	4
FH700040A1VC400	4,0	6	54	8	-	-	0,10	4
FH700050A1VC400	5,0	6	54	9	-	-	0,10	4
FH700060A1VC400	6,0	6	54	10	-	-	0,10	4
FH700080A1VC400	8,0	8	57	12	-	-	0,15	4
FH700100A1VC400	10,0	10	66	14	-	-	0,15	4
FH700120A1VC400	12,0	12	73	16	-	-	0,15	4
FH700140A1VC400	14,0	14	75	18	-	-	0,15	4
FH700160A1VC400	16,0	16	82	22	-	-	0,20	4
FH700180A1VC400	18,0	18	84	24	-	-	0,20	4
FH700200A1VC400	20,0	20	92	26	-	-	0,20	4

Fresa 4 taglienti serie corta con divisione irregolare  
 End mill 4 flutes, short version, with unequal flute spacing  
 VHM-Schaftfräser, Vierschneider kurz, Ungleichteilung


**FH700SE**  
 V-MAXX

**FH700WSE**  
 V-MAXX


<b>FH700SE</b> V-MAXX							
Cod.	d <sub>1</sub> h10 [mm]	d <sub>2</sub> h6 [mm]	L [mm]	L <sub>1</sub> [mm]	L <sub>2</sub> [mm]	a [mm]	z [-]
FH700030A0VE400	3,0	6	54	6	-	-	4
FH700040A0VE400	4,0	6	54	8	-	-	4
FH700050A0VE400	5,0	6	54	9	-	-	4
FH700060A0VE400	6,0	6	54	10	-	-	4
FH700080A0VE400	8,0	8	57	12	-	-	4
FH700100A0VE400	10,0	10	66	14	-	-	4
FH700120A0VE400	12,0	12	73	16	-	-	4
FH700140A0VE400	14,0	14	75	18	-	-	4
FH700160A0VE400	16,0	16	82	22	-	-	4
FH700180A0VE400	18,0	18	84	24	-	-	4
FH700200A0VE400	20,0	20	92	26	-	-	4

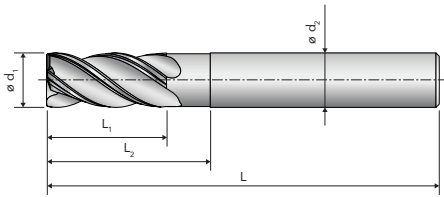
<b>FH700WSE</b> V-MAXX							
Cod.	d <sub>1</sub> h10 [mm]	d <sub>2</sub> h6 [mm]	L [mm]	L <sub>1</sub> [mm]	L <sub>2</sub> [mm]	a [mm]	z [-]
FH700030A1VE400	3,0	6	54	6	-	-	4
FH700040A1VE400	4,0	6	54	8	-	-	4
FH700050A1VE400	5,0	6	54	9	-	-	4
FH700060A1VE400	6,0	6	54	10	-	-	4
FH700080A1VE400	8,0	8	57	12	-	-	4
FH700100A1VE400	10,0	10	66	14	-	-	4
FH700120A1VE400	12,0	12	73	16	-	-	4
FH700140A1VE400	14,0	14	75	18	-	-	4
FH700160A1VE400	16,0	16	82	22	-	-	4
FH700180A1VE400	18,0	18	84	24	-	-	4
FH700200A1VE400	20,0	20	92	26	-	-	4

Fresa 4 taglienti serie normale con divisione irregolare - per acciai inox, acciai dolci e leghe di titanio  
End mill 4 flutes, with unequal flute spacing - for stainless steel, mild steel and Titanium alloys  
VHM-Schaftfräser, Vierschneider, Ungleichteilung - für VA-Stähle, Baustähle und Titan-Legierungen



FH710  
V-MAXX

FH710W  
V-MAXX

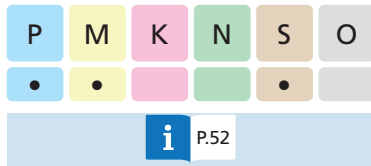
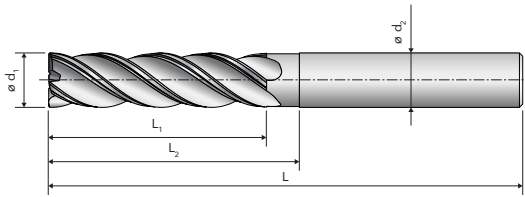


FH710 V-MAXX								
Cod.	d <sub>1</sub> h10 [mm]	d <sub>2</sub> h6 [mm]	L [mm]	L <sub>1</sub> [mm]	L <sub>2</sub> [mm]	a [mm]	45° [mm]	z [-]
FH710030A0VC000	3,0	6	57	8	11	0,10	0,10	4
FH710040A0VC000	4,0	6	57	9	16	0,10	0,10	4
FH710050A0VC000	5,0	6	57	13	18	0,10	0,10	4
FH710060A0VC000	6,0	6	57	13	20	0,15	0,10	4
FH710080A0VC000	8,0	8	63	19	25	0,15	0,15	4
FH710100A0VC000	10,0	10	72	22	30	0,15	0,15	4
FH710120A0VC000	12,0	12	83	26	36	0,20	0,15	4
FH710140A0VC000	14,0	14	83	26	36	0,20	0,15	4
FH710160A0VC000	16,0	16	92	32	42	0,20	0,20	4
FH710180A0VC000	18,0	18	92	32	42	0,20	0,20	4
FH710200A0VC000	20,0	20	104	38	52	0,20	0,20	4

FH710W V-MAXX								
Cod.	d <sub>1</sub> h10 [mm]	d <sub>2</sub> h6 [mm]	L [mm]	L <sub>1</sub> [mm]	L <sub>2</sub> [mm]	a [mm]	45° [mm]	z [-]
FH710030A1VC000	3,0	6	57	8	11	0,10	0,10	4
FH710040A1VC000	4,0	6	57	9	16	0,10	0,10	4
FH710050A1VC000	5,0	6	57	13	18	0,10	0,10	4
FH710060A1VC000	6,0	6	57	13	20	0,15	0,10	4
FH710080A1VC000	8,0	8	63	19	25	0,15	0,15	4
FH710100A1VC000	10,0	10	72	22	30	0,15	0,15	4
FH710120A1VC000	12,0	12	83	26	36	0,20	0,15	4
FH710140A1VC000	14,0	14	83	26	36	0,20	0,15	4
FH710160A1VC000	16,0	16	92	32	42	0,20	0,20	4
FH710180A1VC000	18,0	18	92	32	42	0,20	0,20	4
FH710200A1VC000	20,0	20	104	38	52	0,20	0,20	4

Fresa 4 taglienti serie lunga con divisione irregolare - per acciai inox, acciai dolci e leghe di titanio  
 End mill 4 flutes, long version, with unequal flute spacing - for stainless steel, mild steel and Titanium alloys  
 VHM-Schaftfräser, Vierschneider lang, Ungleichteilung - für VA-Stähle, Baustähle und Titan-Legierungen


**FH710L**  
 V-MAXX

**FH710WL**  
 V-MAXX

**FH710L**  
 V-MAXX

Cod.	d <sub>1</sub> h10 [mm]	d <sub>2</sub> h6 [mm]	L [mm]	L <sub>1</sub> [mm]	L <sub>2</sub> [mm]	a [mm]	45° [mm]	z [-]
FH710050A0VC600	5,0	6	74	20	25	0,10	0,10	4
FH710060A0VC600	6,0	6	74	24	30	0,15	0,10	4
FH710080A0VC600	8,0	8	80	32	40	0,15	0,15	4
FH710100A0VC600	10,0	10	87	40	46	0,15	0,15	4
FH710120A0VC600	12,0	12	105	48	58	0,20	0,15	4
FH710140A0VC600	14,0	14	105	48	58	0,20	0,15	4
FH710160A0VC600	16,0	16	125	64	68	0,20	0,20	4
FH710200A0VC600	20,0	20	160	70	80	0,20	0,20	4

**FH710WL**  
 V-MAXX

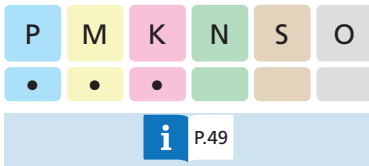
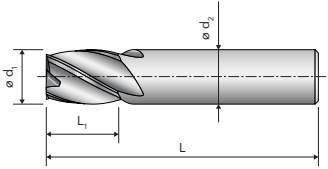
Cod.	d <sub>1</sub> h10 [mm]	d <sub>2</sub> h6 [mm]	L [mm]	L <sub>1</sub> [mm]	L <sub>2</sub> [mm]	a [mm]	45° [mm]	z [-]
FH710050A1VC600	5,0	6	74	20	25	0,10	0,10	4
FH710060A1VC600	6,0	6	74	24	30	0,15	0,10	4
FH710080A1VC600	8,0	8	80	32	40	0,15	0,15	4
FH710100A1VC600	10,0	10	87	40	46	0,15	0,15	4
FH710120A1VC600	12,0	12	105	48	58	0,20	0,15	4
FH710140A1VC600	14,0	14	105	48	58	0,20	0,15	4
FH710160A1VC600	16,0	16	125	64	68	0,20	0,20	4
FH710200A1VC600	20,0	20	160	70	80	0,20	0,20	4



Fresa 4 taglienti serie extra corta  
End mill 4 flutes, extra short version  
VHM-Schaftfräser, Vierschneider extra kurz



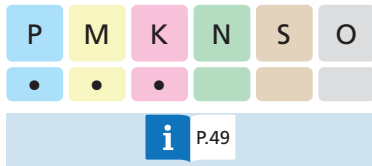
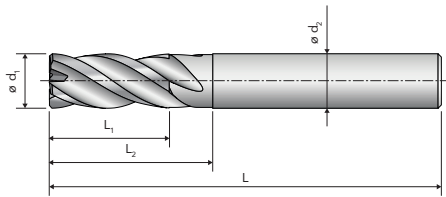
**FH740XE**  
V-MAXX



FH740XE V-MAXX							
Cod.	d <sub>1</sub> h10 [mm]	d <sub>2</sub> h6 [mm]	L [mm]	L <sub>1</sub> [mm]	L <sub>2</sub> [mm]	a [mm]	z [-]
FH740020A0VE200	2,0	6	38	4	-	-	4
FH740030A0VE200	3,0	6	38	5	-	-	4
FH740040A0VE200	4,0	6	38	7	-	-	4
FH740050A0VE200	5,0	6	38	8	-	-	4
FH740060A0VE200	6,0	6	38	8	-	-	4
FH740080A0VE200	8,0	8	43	11	-	-	4
FH740100A0VE200	10,0	10	50	13	-	-	4

Fresa universale 4 taglienti serie normale con divisione irregolare - per fresatura in rampa  
 Multi-purpose end mill, with unequal flute spacing - for ramp milling  
 Universal VHM-Schaftfräser, Vierschneider, Ungleichteilung - zum Rampenfräsen


**FH745**  
 V-MAXX

**FH745W**  
 V-MAXX

**FH745**  
 V-MAXX

Cod.	d <sub>1</sub> h10 [mm]	d <sub>2</sub> h6 [mm]	L [mm]	L <sub>1</sub> [mm]	L <sub>2</sub> [mm]	a [mm]	45° [mm]	z [-]
FH745040A0VC000	4,0	6	57	11	15	0,15	0,20	4
FH745050A0VC000	5,0	6	57	13	18	0,15	0,20	4
FH745060A0VC000	6,0	6	57	13	20	0,15	0,25	4
FH745080A0VC000	8,0	8	63	19	25	0,15	0,30	4
FH745100A0VC000	10,0	10	72	22	30	0,15	0,35	4
FH745120A0VC000	12,0	12	83	26	36	0,20	0,40	4
FH745160A0VC000	16,0	16	92	32	42	0,20	0,45	4
FH745200A0VC000	20,0	20	104	38	52	0,20	0,50	4

**FH745W**  
 V-MAXX

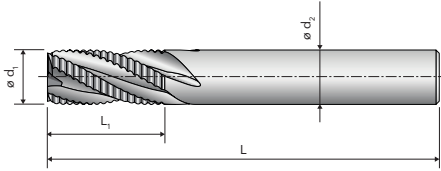
Cod.	d <sub>1</sub> h10 [mm]	d <sub>2</sub> h6 [mm]	L [mm]	L <sub>1</sub> [mm]	L <sub>2</sub> [mm]	a [mm]	45° [mm]	z [-]
FH745040A1VC000	4,0	6	57	11	15	0,15	0,20	4
FH745050A1VC000	5,0	6	57	13	18	0,15	0,20	4
FH745060A1VC000	6,0	6	57	13	20	0,15	0,25	4
FH745080A1VC000	8,0	8	63	19	25	0,15	0,30	4
FH745100A1VC000	10,0	10	72	22	30	0,15	0,35	4
FH745120A1VC000	12,0	12	83	26	36	0,20	0,40	4
FH745160A1VC000	16,0	16	92	32	42	0,20	0,45	4
FH745200A1VC000	20,0	20	104	38	52	0,20	0,50	4

Fresa 4 taglienti serie normale con rompitruciolo e divisione irregolare  
Roughing end mill 4 flutes, with unequal flute spacing  
VHM-Schrupp-Schaftfräser, Vierschneider, Ungleichteilung



FH750  
V-MAXX

FH750W  
V-MAXX



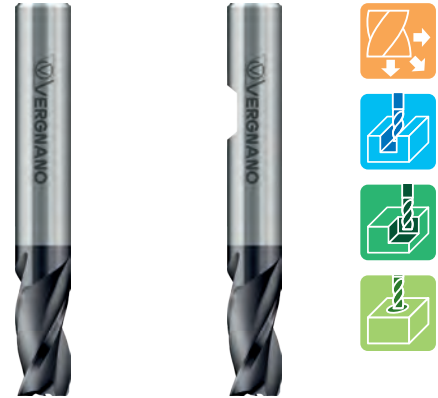
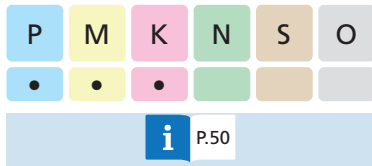
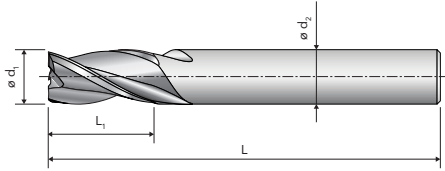
**FH750**  
V-MAXX

Cod.	d <sub>1</sub> h10 [mm]	d <sub>2</sub> h6 [mm]	L [mm]	L <sub>1</sub> [mm]	L <sub>2</sub> [mm]	a [mm]	45° [mm]	z [-]
FH750040A0VC000	4,0	6	57	13	-	-	0,40	4
FH750050A0VC000	5,0	6	57	13	-	-	0,50	4
FH750060A0VC000	6,0	6	57	13	-	-	0,50	4
FH750080A0VC000	8,0	8	63	19	-	-	0,50	4
FH750100A0VC000	10,0	10	72	22	-	-	0,50	4
FH750120A0VC000	12,0	12	83	26	-	-	0,50	4
FH750160A0VC000	16,0	16	92	32	-	-	0,60	4

**FH750W**  
V-MAXX

Cod.	d <sub>1</sub> h10 [mm]	d <sub>2</sub> h6 [mm]	L [mm]	L <sub>1</sub> [mm]	L <sub>2</sub> [mm]	a [mm]	45° [mm]	z [-]
FH750040A1VC000	4,0	6	57	13	-	-	0,40	4
FH750050A1VC000	5,0	6	57	13	-	-	0,50	4
FH750060A1VC000	6,0	6	57	13	-	-	0,50	4
FH750080A1VC000	8,0	8	63	19	-	-	0,50	4
FH750100A1VC000	10,0	10	72	22	-	-	0,50	4
FH750120A1VC000	12,0	12	83	26	-	-	0,50	4
FH750160A1VC000	16,0	16	92	32	-	-	0,60	4


**FH760E**  
 V-MAXX

**FH760WE**  
 V-MAXX

**FH760E**  
 V-MAXX

Cod.	d <sub>1</sub> h10 [mm]	d <sub>2</sub> h6 [mm]	L [mm]	L <sub>1</sub> [mm]	L <sub>2</sub> [mm]	a [mm]	z [-]
FH760020A0VE000	2,0	4	50	5	-	-	3
FH760030A0VE000	3,0	4	50	7	-	-	3
FH760040A0VE000	4,0	4	50	8	-	-	3
FH760050A0VE000	5,0	5	50	10	-	-	3
FH760060A0VE000	6,0	6	57	10	-	-	3
FH760080A0VE000	8,0	8	63	16	-	-	3
FH760100A0VE000	10,0	10	72	19	-	-	3
FH760120A0VE000	12,0	12	83	22	-	-	3
FH760160A0VE000	16,0	16	92	26	-	-	3
FH760200A0VE000	20,0	20	104	32	-	-	3

**FH760WE**  
 V-MAXX

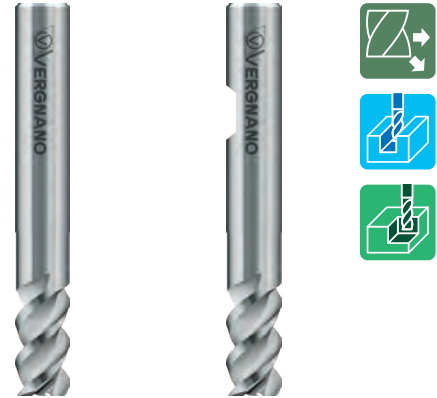
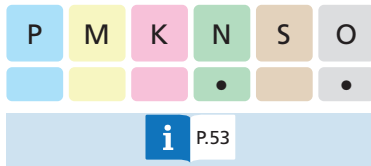
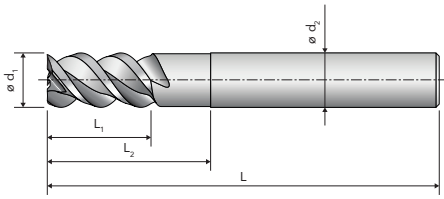
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FH760060A1VE000	6,0	6	57	10	-	-	3
FH760080A1VE000	8,0	8	63	16	-	-	3
FH760100A1VE000	10,0	10	72	19	-	-	3
FH760120A1VE000	12,0	12	83	22	-	-	3
FH760160A1VE000	16,0	16	92	26	-	-	3
FH760200A1VE000	20,0	20	104	32	-	-	3

Fresa 3 taglienti serie normale - per alluminio e leghe leggere  
End mill 3 flutes - for aluminium and light alloys  
VHM-Schaftfräser, Dreischneider - für Alu und Leichtmetalle



FH770E

FH770WE



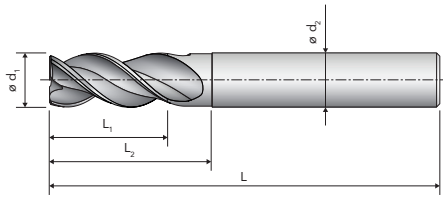
FH770E

Cod.	d <sub>1</sub> h10 [mm]	d <sub>2</sub> h6 [mm]	L [mm]	L <sub>1</sub> [mm]	L <sub>2</sub> [mm]	a [mm]	z [-]
FH770040A0AE000	4,0	4	50	8	19	0,10	3
FH770050A0AE000	5,0	5	50	10	21	0,10	3
FH770060A0AE000	6,0	6	57	10	21	0,15	3
FH770070A0AE000	7,0	7	60	13	24	0,15	3
FH770080A0AE000	8,0	8	63	16	27	0,15	3
FH770090A0AE000	9,0	9	67	16	27	0,15	3
FH770100A0AE000	10,0	10	72	19	30	0,15	3
FH770120A0AE000	12,0	12	83	22	38	0,20	3
FH770140A0AE000	14,0	14	83	22	38	0,20	3
FH770160A0AE000	16,0	16	92	26	42	0,20	3
FH770200A0AE000	20,0	20	104	32	54	0,20	4

FH770WE

Cod.	d <sub>1</sub> h10 [mm]	d <sub>2</sub> h6 [mm]	L [mm]	L <sub>1</sub> [mm]	L <sub>2</sub> [mm]	a [mm]	z [-]
FH770060A1AE000	6,0	6	57	10	21	0,15	3
FH770070A1AE000	7,0	7	60	13	24	0,15	3
FH770080A1AE000	8,0	8	63	16	27	0,15	3
FH770090A1AE000	9,0	9	67	16	27	0,15	3
FH770100A1AE000	10,0	10	72	19	30	0,15	3
FH770120A1AE000	12,0	12	83	22	38	0,20	3
FH770140A1AE000	14,0	14	83	22	38	0,20	3
FH770160A1AE000	16,0	16	92	26	42	0,20	3
FH770200A1AE000	20,0	20	104	32	54	0,20	4

Fresa 3 taglienti serie normale con divisione irregolare - per alluminio e leghe leggere  
 End mill 3 flutes, with unequal flute spacing - for aluminium and light alloys  
 VHM-Schaftfräser, Dreischneider, Ungleichteilung - für Alu und Leichtmetalle


**FH780**
**FH780W**

**FH780**

Cod.	d <sub>1</sub> h10 [mm]	d <sub>2</sub> h6 [mm]	L [mm]	L <sub>1</sub> [mm]	L <sub>2</sub> [mm]	a [mm]	45° [mm]	z [-]
FH780030A0AC000	3,0	6	57	8	-	-	0,05	3
FH780040A0AC000	4,0	6	57	11	-	-	0,05	3
FH780050A0AC000	5,0	6	57	13	-	-	0,10	3
FH780060A0AC000	6,0	6	57	13	20	0,15	0,10	3
FH780080A0AC000	8,0	8	63	19	25	0,15	0,15	3
FH780100A0AC000	10,0	10	72	22	30	0,15	0,20	3
FH780120A0AC000	12,0	12	83	26	36	0,20	0,25	3
FH780160A0AC000	16,0	16	92	32	42	0,20	0,30	3
FH780200A0AC000	20,0	20	104	38	52	0,20	0,35	3

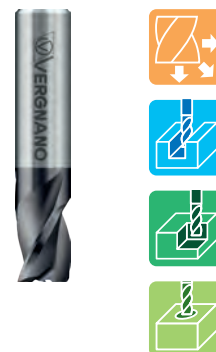
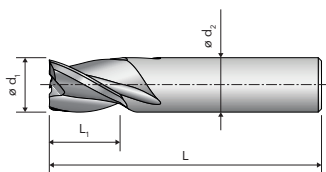
**FH780W**

Cod.	d <sub>1</sub> h10 [mm]	d <sub>2</sub> h6 [mm]	L [mm]	L <sub>1</sub> [mm]	L <sub>2</sub> [mm]	a [mm]	45° [mm]	z [-]
FH780030A1AC000	3,0	6	57	8	-	-	0,05	3
FH780040A1AC000	4,0	6	57	11	-	-	0,05	3
FH780050A1AC000	5,0	6	57	13	-	-	0,10	3
FH780060A1AC000	6,0	6	57	13	20	0,15	0,10	3
FH780080A1AC000	8,0	8	63	19	25	0,15	0,15	3
FH780100A1AC000	10,0	10	72	22	30	0,15	0,20	3
FH780120A1AC000	12,0	12	83	26	36	0,20	0,25	3
FH780160A1AC000	16,0	16	92	32	42	0,20	0,30	3
FH780200A1AC000	20,0	20	104	38	52	0,20	0,35	3

Fresa 3 taglienti serie extra corta  
End mill 3 flutes, extra short version  
VHM-Schaftfräser, Dreischneider extra kurz



FH790XE  
V-MAXX

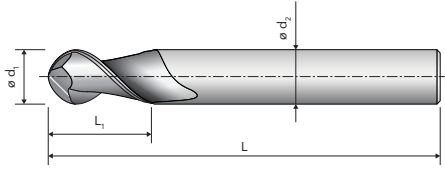


FH790XE  
V-MAXX

Cod.	d <sub>1</sub> h10 [mm]	d <sub>2</sub> h6 [mm]	L [mm]	L <sub>1</sub> [mm]	L <sub>2</sub> [mm]	a [mm]	z [-]
FH790020A0VE200	2,0	6	38	4	-	-	3
FH790025A0VE200	2,5	6	38	4	-	-	3
FH790030A0VE200	3,0	6	38	5	-	-	3
FH790035A0VE200	3,5	6	38	6	-	-	3
FH790040A0VE200	4,0	6	38	7	-	-	3
FH790045A0VE200	4,5	6	38	8	-	-	3
FH790050A0VE200	5,0	6	38	8	-	-	3
FH790060A0VE200	6,0	6	38	8	-	-	3
FH790070A0VE200	7,0	8	43	11	-	-	3
FH790080A0VE200	8,0	8	43	11	-	-	3
FH790090A0VE200	9,0	10	50	13	-	-	3
FH790100A0VE200	10,0	10	50	13	-	-	3

Fresa semisferica 2 taglienti serie normale  
 Ball nose end mill 2 flutes  
 VHM-Radiusfräser, Zweischneider

**FH800R**  
 V-MAXX

**FH800WR**  
 V-MAXX


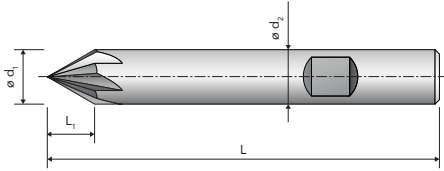
<b>FH800R</b> V-MAXX							
Cod.	d <sub>1</sub> h10 [mm]	d <sub>2</sub> h6 [mm]	L [mm]	L <sub>1</sub> [mm]	L <sub>2</sub> [mm]	a [mm]	z [-]
FH800020A0VR000	2,0	4	50	5	-	-	2
FH800030A0VR000	3,0	4	50	7	-	-	2
FH800040A0VR000	4,0	4	50	8	-	-	2
FH800050A0VR000	5,0	5	50	10	-	-	2
FH800060A0VR000	6,0	6	57	10	-	-	2
FH800080A0VR000	8,0	8	63	16	-	-	2
FH800100A0VR000	10,0	10	72	19	-	-	2
FH800120A0VR000	12,0	12	83	22	-	-	2
FH800140A0VR000	14,0	14	83	22	-	-	2
FH800160A0VR000	16,0	16	92	26	-	-	2
FH800200A0VR000	20,0	20	104	32	-	-	2

<b>FH800WR</b> V-MAXX							
Cod.	d <sub>1</sub> h10 [mm]	d <sub>2</sub> h6 [mm]	L [mm]	L <sub>1</sub> [mm]	L <sub>2</sub> [mm]	a [mm]	z [-]
FH800060A1VR000	6,0	6	57	10	-	-	2
FH800080A1VR000	8,0	8	63	16	-	-	2
FH800100A1VR000	10,0	10	72	19	-	-	2
FH800120A1VR000	12,0	12	83	22	-	-	2
FH800140A1VR000	14,0	14	83	22	-	-	2
FH800160A1VR000	16,0	16	92	26	-	-	2
FH800200A1VR000	20,0	20	104	32	-	-	2





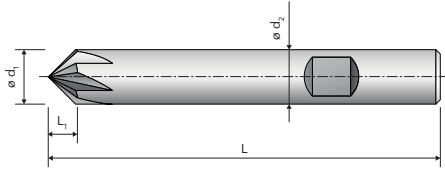
**FH960W**  
V-MAXX



**FH960W**  
V-MAXX

Cod.	d <sub>1</sub> e8 [mm]	d <sub>2</sub> h6 [mm]	L [mm]	L <sub>1</sub> [mm]	L <sub>2</sub> [mm]	a [mm]	45° [mm]	z [-]
FH960030A1VC000	3,0(*)	4	50	2,5	-	-	-	4
FH960040A1VC000	4,0(*)	4	50	3,5	-	-	-	4
FH960060A1VC000	6,0	6	57	5,0	-	-	-	6
FH960080A1VC000	8,0	8	63	7,0	-	-	-	6
FH960100A1VC000	10,0	10	72	8,5	-	-	-	6
FH960120A1VC000	12,0	12	83	10,5	-	-	-	6
FH960160A1VC000	16,0	16	92	14,0	-	-	-	6
FH960200A1VC000	20,0	20	104	17,0	-	-	-	6

(\*) = Senza Weldon / without Weldon / ohne Weldon-Spannfläche


**FH990W**  
 V-MAXX


FH990W V-MAXX								
Cod.	d <sub>1</sub> e8 [mm]	d <sub>2</sub> h6 [mm]	L [mm]	L <sub>1</sub> [mm]	L <sub>2</sub> [mm]	a [mm]	45° [mm]	z [-]
FH990030A1VC000	3,0(*)	4	50	1,5	-	-	-	4
FH990040A1VC000	4,0(*)	4	50	2,0	-	-	-	4
FH990060A1VC000	6,0	6	57	3,0	-	-	-	6
FH990080A1VC000	8,0	8	63	4,0	-	-	-	6
FH990100A1VC000	10,0	10	72	5,0	-	-	-	6
FH990120A1VC000	12,0	12	83	6,0	-	-	-	6
FH990160A1VC000	16,0	16	92	8,0	-	-	-	6
FH990200A1VC000	20,0	20	104	10,0	-	-	-	6

(\*) = Senza Weldon / without Weldon / ohne Weldon-Spannfläche



# **FP** S E R I E S

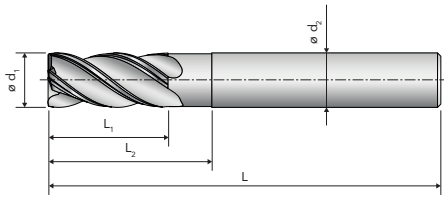
Frese in metallo duro ad alte prestazioni  
High performance solid carbide end mills  
Hochleistungs-VHM-Schaftfräser

Fresa 4 taglienti serie normale con divisione irregolare - per acciai inox e superleghe  
End mill 4 flutes, with unequal flute spacing - for stainless steel and superalloys  
VHM-Schaftfräser, Vierschneider, Ungleichteilung - für VA-Stähle und Superlegierungen



**FP710**  
V-MAXX

**FP710W**  
V-MAXX



**FP710**  
V-MAXX

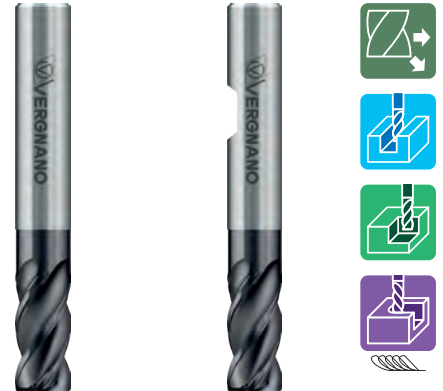
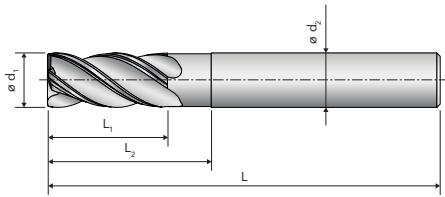
Cod.	d <sub>1</sub> h10 [mm]	d <sub>2</sub> h6 [mm]	L [mm]	L <sub>1</sub> [mm]	L <sub>2</sub> [mm]	a [mm]	45° [mm]	z [-]
FP710030A0VC000	3,0	6	57	8	11	0,10	0,10	4
FP710040A0VC000	4,0	6	57	9	16	0,10	0,10	4
FP710050A0VC000	5,0	6	57	13	18	0,10	0,10	4
FP710060A0VC000	6,0	6	57	13	20	0,15	0,10	4
FP710080A0VC000	8,0	8	63	19	25	0,15	0,15	4
FP710100A0VC000	10,0	10	72	22	30	0,15	0,15	4
FP710120A0VC000	12,0	12	83	26	36	0,20	0,15	4
FP710160A0VC000	16,0	16	92	32	42	0,20	0,20	4
FP710200A0VC000	20,0	20	104	38	52	0,20	0,20	4
FP710250A0VC000	25,0	25	125	45	65	0,25	0,20	4

**FP710W**  
V-MAXX

Cod.	d <sub>1</sub> h10 [mm]	d <sub>2</sub> h6 [mm]	L [mm]	L <sub>1</sub> [mm]	L <sub>2</sub> [mm]	a [mm]	45° [mm]	z [-]
FP710030A1VC000	3,0	6	57	8	11	0,10	0,10	4
FP710040A1VC000	4,0	6	57	9	16	0,10	0,10	4
FP710050A1VC000	5,0	6	57	13	18	0,10	0,10	4
FP710060A1VC000	6,0	6	57	13	20	0,15	0,10	4
FP710080A1VC000	8,0	8	63	19	25	0,15	0,15	4
FP710100A1VC000	10,0	10	72	22	30	0,15	0,15	4
FP710120A1VC000	12,0	12	83	26	36	0,20	0,15	4
FP710160A1VC000	16,0	16	92	32	42	0,20	0,20	4
FP710200A1VC000	20,0	20	104	38	52	0,20	0,20	4
FP710250A1VC000	25,0	25	125	45	65	0,25	0,20	4

Fresa 4 taglienti serie normale con divisione irregolare - per acciai inox e superleghe  
 End mill 4 flutes, with unequal flute spacing - for stainless steel and superalloys  
 VHM-Schaftfräser, Vierschneider, Ungleichteilung - für VA-Stähle und Superlegierungen


**FP710E**  
 V-MAXX

**FP710WE**  
 V-MAXX

**FP710E**  
 V-MAXX

Cod.	d <sub>1</sub> h10 [mm]	d <sub>2</sub> h6 [mm]	L [mm]	L <sub>1</sub> [mm]	L <sub>2</sub> [mm]	a [mm]	z [-]
FP710030A0VE000	3,0	6	57	8	11	0,10	4
FP710040A0VE000	4,0	6	57	9	16	0,10	4
FP710050A0VE000	5,0	6	57	13	18	0,10	4
FP710060A0VE000	6,0	6	57	13	20	0,15	4
FP710080A0VE000	8,0	8	63	19	25	0,15	4
FP710100A0VE000	10,0	10	72	22	30	0,15	4
FP710120A0VE000	12,0	12	83	26	36	0,20	4
FP710160A0VE000	16,0	16	92	32	42	0,20	4
FP710200A0VE000	20,0	20	104	38	52	0,20	4
FP710250A0VE000	25,0	25	124	45	65	0,25	4

**FP710WE**  
 V-MAXX

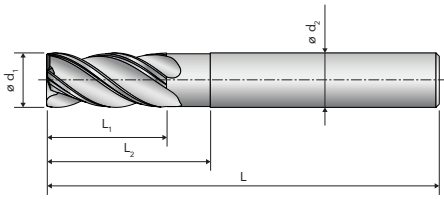
Cod.	d <sub>1</sub> h10 [mm]	d <sub>2</sub> h6 [mm]	L [mm]	L <sub>1</sub> [mm]	L <sub>2</sub> [mm]	a [mm]	z [-]
FP710030A1VE000	3,0	6	57	8	11	0,10	4
FP710040A1VE000	4,0	6	57	9	16	0,10	4
FP710050A1VE000	5,0	6	57	13	18	0,10	4
FP710060A1VE000	6,0	6	57	13	20	0,15	4
FP710080A1VE000	8,0	8	63	19	25	0,15	4
FP710100A1VE000	10,0	10	72	22	30	0,15	4
FP710120A1VE000	12,0	12	83	26	36	0,20	4
FP710160A1VE000	16,0	16	92	32	42	0,20	4
FP710200A1VE000	20,0	20	104	38	52	0,20	4
FP710250A1VE000	25,0	25	124	45	65	0,25	4

Fresa 4 taglienti serie normale con eliche differenziate e divisione irregolare  
End mill 4 flute with unequal flute spacing and variable helix  
VHM-Schaftfräser, Vierschneider, Ungleiche Teilung u. Drallsteigung



**FP720**  
V-MAXX

**FP720W**  
V-MAXX

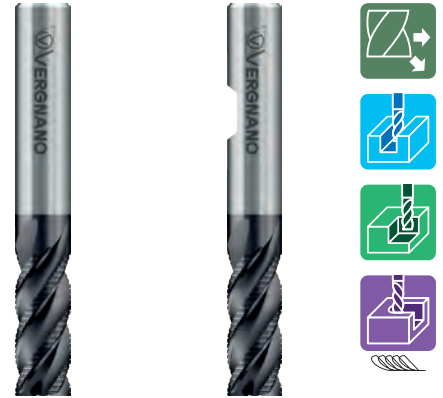
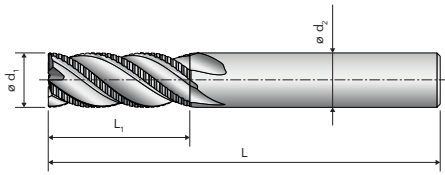


FP720 V-MAXX									
Cod.	d <sub>1</sub> h10 [mm]	d <sub>2</sub> h6 [mm]	L [mm]	L <sub>1</sub> [mm]	L <sub>2</sub> [mm]	a [mm]	45° [mm]	z	
FP720030A0VC000	3,0	6	57	8	-	-	0,05	4	
FP720040A0VC000	4,0	6	57	11	-	-	0,05	4	
FP720050A0VC000	5,0	6	57	13	-	-	0,05	4	
FP720060A0VC000	6,0	6	57	13	20	0,15	0,05	4	
FP720070A0VC000	7,0	7	60	16	22	0,15	0,05	4	
FP720080A0VC000	8,0	8	63	19	25	0,15	0,05	4	
FP720090A0VC000	9,0	9	67	19	28	0,15	0,05	4	
FP720100A0VC000	10,0	10	72	22	30	0,15	0,05	4	
FP720120A0VC000	12,0	12	83	26	36	0,20	0,05	4	
FP720140A0VC000	14,0	14	83	26	36	0,20	0,05	4	
FP720160A0VC000	16,0	16	92	32	42	0,20	0,05	4	
FP720200A0VC000	20,0	20	104	38	52	0,20	0,05	4	

FP720W V-MAXX									
Cod.	d <sub>1</sub> h10 [mm]	d <sub>2</sub> h6 [mm]	L [mm]	L <sub>1</sub> [mm]	L <sub>2</sub> [mm]	a [mm]	45° [mm]	z	
FP720030A1VC000	3,0	6	57	8	-	-	0,05	4	
FP720040A1VC000	4,0	6	57	11	-	-	0,05	4	
FP720050A1VC000	5,0	6	57	13	-	-	0,05	4	
FP720060A1VC000	6,0	6	57	13	20	0,15	0,05	4	
FP720070A1VC000	7,0	7	60	16	22	0,15	0,05	4	
FP720080A1VC000	8,0	8	63	19	25	0,15	0,05	4	
FP720090A1VC000	9,0	9	67	19	28	0,15	0,05	4	
FP720100A1VC000	10,0	10	72	22	30	0,15	0,05	4	
FP720120A1VC000	12,0	12	83	26	36	0,20	0,05	4	
FP720140A1VC000	14,0	14	83	26	36	0,20	0,05	4	
FP720160A1VC000	16,0	16	92	32	42	0,20	0,05	4	
FP720200A1VC000	20,0	20	104	38	52	0,20	0,05	4	

Fresa 4 taglienti serie normale con rompitrucciolo, eliche differenziate e divisione irregolare  
 Roughing end mill 4 flute with unequal flute spacing and variable helix  
 VHM-Schrupp-Schaftfräser, Vierschneider, Ungleiche Teilung u. Drallsteigung


**FP750**  
 V-MAXX

**FP750W**  
 V-MAXX

**FP750**  
 V-MAXX

Cod.	d <sub>1</sub> h10 [mm]	d <sub>2</sub> h6 [mm]	L [mm]	L <sub>1</sub> [mm]	L <sub>2</sub> [mm]	a [mm]	45° [mm]	z [-]
FP750030A0VC000	3,0	6	57	6	-	-	0,15	3
FP750040A0VC000	4,0	6	57	8	-	-	0,15	3
FP750050A0VC000	5,0	6	57	10	-	-	0,15	3
FP750060A0VC000	6,0	6	57	15	-	-	0,15	4
FP750080A0VC000	8,0	8	63	20	-	-	0,20	4
FP750100A0VC000	10,0	10	72	25	-	-	0,30	4

**FP750W**  
 V-MAXX

Cod.	d <sub>1</sub> h10 [mm]	d <sub>2</sub> h6 [mm]	L [mm]	L <sub>1</sub> [mm]	L <sub>2</sub> [mm]	a [mm]	45° [mm]	z [-]
FP750030A1VC000	3,0	6	57	6	-	-	0,15	3
FP750040A1VC000	4,0	6	57	8	-	-	0,15	3
FP750050A1VC000	5,0	6	57	10	-	-	0,15	3
FP750060A1VC000	6,0	6	57	15	-	-	0,15	4
FP750080A1VC000	8,0	8	63	20	-	-	0,20	4
FP750100A1VC000	10,0	10	72	25	-	-	0,30	4
FP750120A1VC000	12,0	12	83	30	-	-	0,40	4
FP750140A1VC000	14,0	14	92	35	-	-	0,45	4
FP750160A1VC000	16,0	16	104	40	-	-	0,50	4
FP750200A1VC000	20,0	20	104	40	-	-	0,60	4

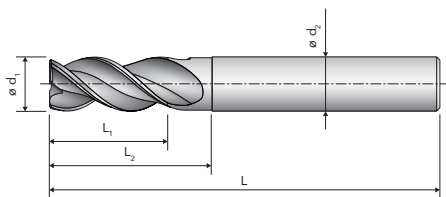


Fresa 3 taglienti serie normale con divisione irregolare - per acciai inox e superleghe  
End mill 3 flutes, with unequal flute spacing - for stainless steel and superalloys  
VHM-Schaftfräser, Dreischneider, Ungleichteilung - für VA-Stähle und Superlegierungen



**FP765**  
V-MAXX

**FP765W**  
V-MAXX



**FP765**  
V-MAXX

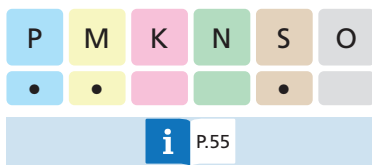
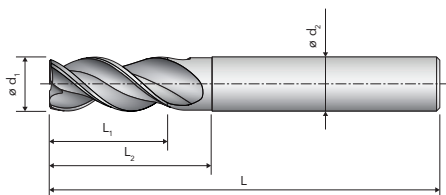
Cod.	d <sub>1</sub> h10 [mm]	d <sub>2</sub> h6 [mm]	L [mm]	L <sub>1</sub> [mm]	L <sub>2</sub> [mm]	a [mm]	45° [mm]	z [-]
FP765020A0VC000	2,0	6	57	5	8	0,10	0,05	3
FP765025A0VC000	2,5	6	57	6	9	0,10	0,05	3
FP765030A0VC000	3,0	6	57	8	11	0,10	0,10	3
FP765035A0VC000	3,5	6	57	8	13	0,10	0,10	3
FP765040A0VC000	4,0	6	57	9	16	0,10	0,10	3
FP765045A0VC000	4,5	6	57	10	16	0,10	0,10	3
FP765050A0VC000	5,0	6	57	13	18	0,10	0,10	3
FP765060A0VC000	6,0	6	57	13	20	0,15	0,10	3
FP765080A0VC000	8,0	8	63	19	25	0,15	0,15	3
FP765100A0VC000	10,0	10	72	22	30	0,15	0,15	3
FP765120A0VC000	12,0	12	83	26	36	0,20	0,15	3
FP765160A0VC000	16,0	16	92	32	42	0,20	0,20	3
FP765200A0VC000	20,0	20	104	38	52	0,20	0,20	3

**FP765W**  
V-MAXX

Cod.	d <sub>1</sub> h10 [mm]	d <sub>2</sub> h6 [mm]	L [mm]	L <sub>1</sub> [mm]	L <sub>2</sub> [mm]	a [mm]	45° [mm]	z [-]
FP765020A1VC000	2,0	6	57	5	8	0,10	0,05	3
FP765025A1VC000	2,5	6	57	6	9	0,10	0,05	3
FP765030A1VC000	3,0	6	57	8	11	0,10	0,10	3
FP765035A1VC000	3,5	6	57	8	13	0,10	0,10	3
FP765040A1VC000	4,0	6	57	9	16	0,10	0,10	3
FP765045A1VC000	4,5	6	57	10	16	0,10	0,10	3
FP765050A1VC000	5,0	6	57	13	18	0,10	0,10	3
FP765060A1VC000	6,0	6	57	13	20	0,15	0,10	3
FP765080A1VC000	8,0	8	63	19	25	0,15	0,15	3
FP765100A1VC000	10,0	10	72	22	30	0,15	0,15	3
FP765120A1VC000	12,0	12	83	26	36	0,20	0,15	3
FP765160A1VC000	16,0	16	92	32	42	0,20	0,20	3
FP765200A1VC000	20,0	20	104	38	52	0,20	0,20	3

Fresa 3 taglienti serie normale con divisione irregolare - per acciai inox e superleghe  
 End mill 3 flutes, with unequal flute spacing - for stainless steel and superalloys  
 VHM-Schafffräser, Dreischneider, Ungleichteilung - für VA-Stähle und Superlegierungen


**FP765E**  
 V-MAXX

**FP765WE**  
 V-MAXX

**FP765E**  
 V-MAXX

Cod.	d <sub>1</sub> h10 [mm]	d <sub>2</sub> h6 [mm]	L [mm]	L <sub>1</sub> [mm]	L <sub>2</sub> [mm]	a [mm]	z [-]
FP765020A0VE000	2,0	6	57	5	8	0,10	3
FP765025A0VE000	2,5	6	57	6	9	0,10	3
FP765030A0VE000	3,0	6	57	8	11	0,10	3
FP765035A0VE000	3,5	6	57	8	13	0,10	3
FP765040A0VE000	4,0	6	57	9	16	0,10	3
FP765045A0VE000	4,5	6	57	10	16	0,10	3
FP765050A0VE000	5,0	6	57	13	18	0,10	3
FP765060A0VE000	6,0	6	57	13	20	0,15	3
FP765070A0VE000	7,0	8	63	19	25	0,15	3
FP765080A0VE000	8,0	8	63	19	25	0,15	3
FP765090A0VE000	9,0	10	72	22	30	0,15	3
FP765100A0VE000	10,0	10	72	22	30	0,15	3
FP765120A0VE000	12,0	12	83	26	36	0,20	3
FP765140A0VE000	14,0	14	83	30	40	0,20	3
FP765160A0VE000	16,0	16	92	32	42	0,20	3
FP765200A0VE000	20,0	20	104	38	52	0,20	3

**FP765WE**  
 V-MAXX

Cod.	d <sub>1</sub> h10 [mm]	d <sub>2</sub> h6 [mm]	L [mm]	L <sub>1</sub> [mm]	L <sub>2</sub> [mm]	a [mm]	z [-]
FP765020A1VE000	2,0	6	57	5	8	0,10	3
FP765025A1VE000	2,5	6	57	6	9	0,10	3
FP765030A1VE000	3,0	6	57	8	11	0,10	3
FP765035A1VE000	3,5	6	57	8	13	0,10	3
FP765040A1VE000	4,0	6	57	9	16	0,10	3
FP765045A1VE000	4,5	6	57	10	16	0,10	3
FP765050A1VE000	5,0	6	57	13	18	0,10	3
FP765060A1VE000	6,0	6	57	13	20	0,15	3
FP765070A1VE000	7,0	8	63	19	25	0,15	3
FP765080A1VE000	8,0	8	63	19	25	0,15	3
FP765090A1VE000	9,0	10	72	22	30	0,15	3
FP765100A1VE000	10,0	10	72	22	30	0,15	3
FP765120A1VE000	12,0	12	83	26	36	0,20	3
FP765140A1VE000	14,0	14	83	30	40	0,20	3
FP765160A1VE000	16,0	16	92	32	42	0,20	3
FP765200A1VE000	20,0	20	104	38	52	0,20	3

Fresa 2 taglienti serie normale - per alluminio e leghe leggere

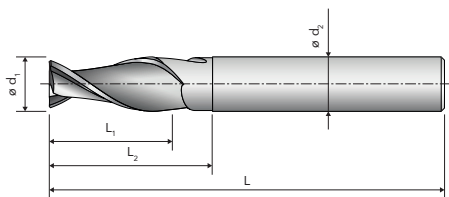
End mill 2 flutes - for aluminium and light alloys

VHM-Schaftfräser, Zweischneider - für Alu und Leichtmetalle



**FP795E**  
ALU-MAXX

**FP795WE**  
ALU-MAXX



**FP795E**  
ALU-MAXX

Cod.	d <sub>1</sub> h6 [mm]	d <sub>2</sub> h6 [mm]	L [mm]	L <sub>1</sub> [mm]	L <sub>2</sub> [mm]	a [mm]	z [-]
FP795020A0WE000	2,0	3	50	6	-	-	2
FP795030A0WE000	3,0	3	50	7	18	0,10	2
FP795040A0WE000	4,0	4	50	8	19	0,10	2
FP795050A0WE000	5,0	5	50	10	21	0,10	2
FP795060A0WE000	6,0	6	57	10	21	0,15	2
FP795080A0WE000	8,0	8	63	16	27	0,15	2
FP795100A0WE000	10,0	10	72	19	30	0,15	2
FP795120A0WE000	12,0	12	83	22	38	0,20	2
FP795140A0WE000	14,0	14	83	22	38	0,20	2
FP795160A0WE000	16,0	16	92	26	42	0,20	2
FP795200A0WE000	20,0	20	104	32	54	0,20	2
FP795250A0WE000	25,0	25	121	40	68	0,20	2

**FP795WE**  
ALU-MAXX

Cod.	d <sub>1</sub> h6 [mm]	d <sub>2</sub> h6 [mm]	L [mm]	L <sub>1</sub> [mm]	L <sub>2</sub> [mm]	a [mm]	z [-]
FP795060A1WE000	6,0	6	57	10	21	0,15	2
FP795080A1WE000	8,0	8	63	16	27	0,15	2
FP795100A1WE000	10,0	10	72	19	30	0,15	2
FP795120A1WE000	12,0	12	83	22	38	0,20	2
FP795140A1WE000	14,0	14	83	22	38	0,20	2
FP795160A1WE000	16,0	16	92	26	42	0,20	2
FP795200A1WE000	20,0	20	104	32	54	0,20	2
FP795250A1WE000	25,0	25	121	40	68	0,20	2

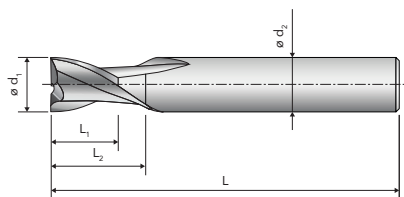
# **FA** S E R I E S

Frese in acciaio per impiego generico  
High speed steel end mills for generic applications  
HSS-Schaftfräser für den allgemeinen Einsatz

Fresa 2 taglienti serie corta, per cave  
End mill for slots 2 flutes, short version  
Bohrnutenfräser, Zweischneider kurz



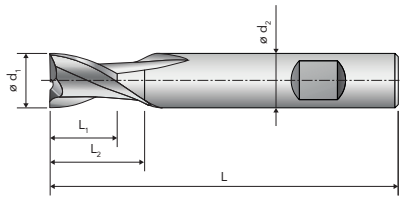
FA300SE  
V-MAXX



FA300SE  
V-MAXX

Cod.	d <sub>1</sub> e8 [mm]	d <sub>2</sub> h6 [mm]	L [mm]	L <sub>1</sub> [mm]	L <sub>2</sub> [mm]	a [mm]	z [-]
FA300020A0VE400	2,0	6	48	4	6	-	2
FA300025A0VE400	2,5	6	49	5	9	-	2
FA300030A0VE400	3,0	6	49	5	11	-	2
FA300035A0VE400	3,5	6	50	6	12	-	2
FA300040A0VE400	4,0	6	51	7	13	-	2
FA300045A0VE400	4,5	6	51	7	13	-	2
FA300050A0VE400	5,0	6	52	8	15	-	2
FA300055A0VE400	5,5	6	52	8	18	-	2
FA300060A0VE400	6,0	6	52	8	-	-	2
FA300065A0VE400	6,5	10	60	10	17	-	2
FA300070A0VE400	7,0	10	60	10	17	-	2
FA300075A0VE400	7,5	10	60	10	17	-	2
FA300080A0VE400	8,0	10	61	11	18	-	2
FA300085A0VE400	8,5	10	61	11	18,5	-	2
FA300090A0VE400	9,0	10	61	11	19	-	2
FA300095A0VE400	9,5	10	61	11	23	-	2
FA300100A0VE400	10,0	10	63	13	-	-	2
FA300105A0VE400	10,5	12	70	13	21	-	2
FA300110A0VE400	11,0	12	70	13	21	-	2
FA300115A0VE400	11,5	12	70	13	25	-	2
FA300120A0VE400	12,0	12	73	16	-	-	2
FA300125A0VE400	12,5	12	73	16	26	0,40	2
FA300130A0VE400	13,0	12	73	16	26	0,65	2
FA300135A0VE400	13,5	12	73	16	26	0,90	2
FA300140A0VE400	14,0	12	73	16	26	1,15	2
FA300145A0VE400	14,5	12	73	16	26	1,40	2
FA300150A0VE400	15,0	12	73	16	26	1,65	2
FA300160A0VE400	16,0	16	79	19	29	0,30	2
FA300170A0VE400	17,0	16	79	19	29	0,80	2
FA300180A0VE400	18,0	16	79	19	29	1,30	2
FA300190A0VE400	19,0	16	79	19	29	1,80	2
FA300200A0VE400	20,0	20	88	22	34	0,50	2
FA300220A0VE400	22,0	20	88	22	34	1,50	2
FA300250A0VE400	25,0	25	102	26	40	0,50	2

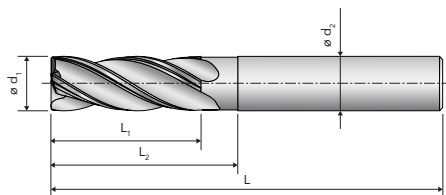
Fresa 2 taglienti serie corta, per cave  
 End mill for slots 2 flutes, short version  
 Bohrnutenfräser, Zweischneider kurz

**FA300WSE**  
 V-MAXX

**FA300WSE**  
 V-MAXX

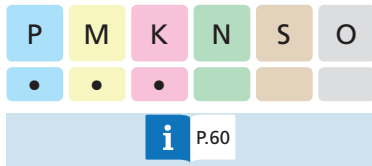
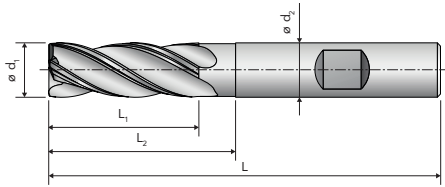
Cod.	d <sub>1</sub> e8 [mm]	d <sub>2</sub> h6 [mm]	L [mm]	L <sub>1</sub> [mm]	L <sub>2</sub> [mm]	a [mm]	z [-]
FA300020A1VE400	2,0	6	48	4	6	-	2
FA300025A1VE400	2,5	6	49	5	9	-	2
FA300030A1VE400	3,0	6	49	5	11	-	2
FA300035A1VE400	3,5	6	50	6	12	-	2
FA300040A1VE400	4,0	6	51	7	13	-	2
FA300045A1VE400	4,5	6	51	7	13	-	2
FA300050A1VE400	5,0	6	52	8	15	-	2
FA300055A1VE400	5,5	6	52	8	18	-	2
FA300060A1VE400	6,0	6	52	8	-	-	2
FA300065A1VE400	6,5	10	60	10	17	-	2
FA300070A1VE400	7,0	10	60	10	17	-	2
FA300075A1VE400	7,5	10	60	10	17	-	2
FA300080A1VE400	8,0	10	61	11	18	-	2
FA300085A1VE400	8,5	10	61	11	18,5	-	2
FA300090A1VE400	9,0	10	61	11	19	-	2
FA300095A1VE400	9,5	10	61	11	23	-	2
FA300100A1VE400	10,0	10	63	13	-	-	2
FA300105A1VE400	10,5	12	70	13	21	-	2
FA300110A1VE400	11,0	12	70	13	21	-	2
FA300115A1VE400	11,5	12	70	13	25	-	2
FA300120A1VE400	12,0	12	73	16	-	-	2
FA300125A1VE400	12,5	12	73	16	26	0,40	2
FA300130A1VE400	13,0	12	73	16	26	0,65	2
FA300135A1VE400	13,5	12	73	16	26	0,90	2
FA300140A1VE400	14,0	12	73	16	26	1,15	2
FA300145A1VE400	14,5	12	73	16	26	1,40	2
FA300150A1VE400	15,0	12	73	16	26	1,65	2
FA300160A1VE400	16,0	16	79	19	29	0,30	2
FA300170A1VE400	17,0	16	79	19	29	0,80	2
FA300180A1VE400	18,0	16	79	19	29	1,30	2
FA300190A1VE400	19,0	16	79	19	29	1,80	2
FA300200A1VE400	20,0	20	88	22	34	0,50	2
FA300220A1VE400	22,0	20	88	22	34	1,50	2
FA300250A1VE400	25,0	25	102	26	40	0,50	2



**FA405E**  
V-MAXX



FA405E V-MAXX							
Cod.	d <sub>1</sub> k10 [mm]	d <sub>2</sub> h6 [mm]	L [mm]	L <sub>1</sub> [mm]	L <sub>2</sub> [mm]	a [mm]	z [-]
FA405030A0VE000	3,0	6	52	8	13	-	4
FA405040A0VE000	4,0	6	55	11	17	-	4
FA405050A0VE000	5,0	6	57	13	20	-	4
FA405060A0VE000	6,0	6	57	13	-	-	4
FA405070A0VE000	7,0	10	66	16	22	-	4
FA405080A0VE000	8,0	10	69	19	26	-	4
FA405090A0VE000	9,0	10	69	19	27	-	4
FA405100A0VE000	10,0	10	72	22	-	-	4
FA405110A0VE000	11,0	12	79	22	30	-	4
FA405120A0VE000	12,0	12	83	26	-	-	4
FA405130A0VE000	13,0	12	83	26	37	0,65	4
FA405140A0VE000	14,0	12	83	26	37	1,15	4
FA405150A0VE000	15,0	12	83	26	37	1,65	4
FA405160A0VE000	16,0	16	92	32	43	0,25	4
FA405170A0VE000	17,0	16	92	32	43	0,75	4
FA405180A0VE000	18,0	16	92	32	43	1,25	4
FA405190A0VE000	19,0	16	92	32	43	1,75	4
FA405200A0VE000	20,0	20	104	38	50	0,50	4
FA405220A0VE000	22,0	20	104	38	49	1,50	4
FA405250A0VE000	25,0	25	121	45	57	0,50	6
FA405280A0VE000	28,0	25	121	45	57	2,00	6
FA405300A0VE000	30,0	25	121	45	57	3,00	6
FA405320A0VE000	32,0	32	133	53	65	0,50	6


**FA405WE**  
 V-MAXX


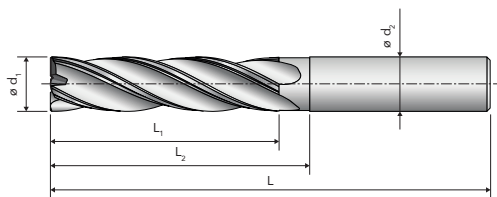
FA405WE V-MAXX							
Cod.	d <sub>1</sub> k10 [mm]	d <sub>2</sub> h6 [mm]	L [mm]	L <sub>1</sub> [mm]	L <sub>2</sub> [mm]	a [mm]	z [-]
FA405030A1VE000	3,0	6	52	8	13	-	4
FA405040A1VE000	4,0	6	55	11	17	-	4
FA405050A1VE000	5,0	6	57	13	20	-	4
FA405060A1VE000	6,0	6	57	13	-	-	4
FA405070A1VE000	7,0	10	66	16	22	-	4
FA405080A1VE000	8,0	10	69	19	26	-	4
FA405090A1VE000	9,0	10	69	19	27	-	4
FA405100A1VE000	10,0	10	72	22	-	-	4
FA405110A1VE000	11,0	12	79	22	30	-	4
FA405120A1VE000	12,0	12	83	26	-	-	4
FA405130A1VE000	13,0	12	83	26	37	0,65	4
FA405140A1VE000	14,0	12	83	26	37	1,15	4
FA405150A1VE000	15,0	12	83	26	37	1,65	4
FA405160A1VE000	16,0	16	92	32	43	0,25	4
FA405170A1VE000	17,0	16	92	32	43	0,75	4
FA405180A1VE000	18,0	16	92	32	43	1,25	4
FA405190A1VE000	19,0	16	92	32	43	1,75	4
FA405200A1VE000	20,0	20	104	38	50	0,50	4
FA405220A1VE000	22,0	20	104	38	49	1,50	4
FA405250A1VE000	25,0	25	121	45	57	0,50	6
FA405280A1VE000	28,0	25	121	45	57	2,00	6
FA405300A1VE000	30,0	25	121	45	57	3,00	6
FA405320A1VE000	32,0	32	133	53	65	0,50	6



Fresa 4 taglienti serie lunga  
End mill 4 flutes, long version  
Schaftfräser, Vierschneider lang



**FA425E**  
V-MAXX

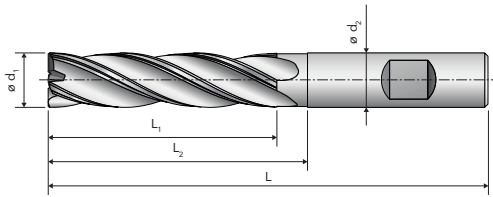


**FA425E**  
V-MAXX

Cod.	d <sub>1</sub> k10 [mm]	d <sub>2</sub> h6 [mm]	L [mm]	L <sub>1</sub> [mm]	L <sub>2</sub> [mm]	a [mm]	z [-]
FA425060A0VE600	6,0	6	68	24	-	-	4
FA425080A0VE600	8,0	10	88	38	43	-	4
FA425100A0VE600	10,0	10	95	45	-	-	4
FA425120A0VE600	12,0	12	110	53	-	-	4
FA425140A0VE600	14,0	12	110	53	63	1,15	4
FA425160A0VE600	16,0	16	123	63	73	0,25	4
FA425180A0VE600	18,0	16	123	63	73	1,25	4
FA425200A0VE600	20,0	20	141	75	87	0,50	4
FA425220A0VE600	22,0	20	141	75	87	1,50	4
FA425250A0VE600	25,0	25	166	90	102	0,50	6
FA425280A0VE600	28,0	25	166	90	102	2,00	6
FA425300A0VE600	30,0	25	166	90	102	3,00	6



**FA425WE**  
V-MAXX

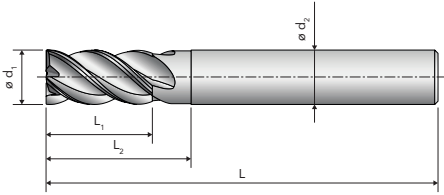


FA425WE V-MAXX							
Cod.	d <sub>1</sub> k10 [mm]	d <sub>2</sub> h6 [mm]	L [mm]	L <sub>1</sub> [mm]	L <sub>2</sub> [mm]	a [mm]	z
FA425060A1VE600	6,0	6	68	24	-	-	4
FA425080A1VE600	8,0	10	88	38	43	-	4
FA425100A1VE600	10,0	10	95	45	-	-	4
FA425120A1VE600	12,0	12	110	53	-	-	4
FA425140A1VE600	14,0	12	110	53	63	1,15	4
FA425160A1VE600	16,0	16	123	63	73	0,25	4
FA425180A1VE600	18,0	16	123	63	73	1,25	4
FA425200A1VE600	20,0	20	141	75	87	0,50	4
FA425220A1VE600	22,0	20	141	75	87	1,50	4
FA425250A1VE600	25,0	25	166	90	102	0,50	6
FA425280A1VE600	28,0	25	166	90	102	2,00	6
FA425300A1VE600	30,0	25	166	90	102	3,00	6

Fresa 3 taglienti serie normale, elica 45°  
End mill 3 flutes, 45° helix  
Schaftfräser, Dreischneider, Drallwinkel 45°



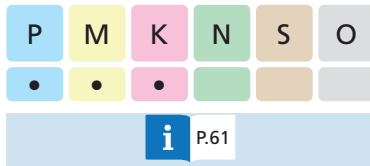
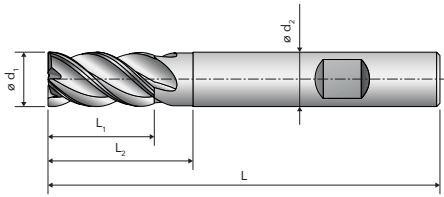
**FA465E**  
V-MAXX



**FA465E**  
V-MAXX

Cod.	d <sub>1</sub> k10 [mm]	d <sub>2</sub> h6 [mm]	L [mm]	L <sub>1</sub> [mm]	L <sub>2</sub> [mm]	a [mm]	z
FA465060A0VE000	6,0	6	57	13	-	-	3
FA465080A0VE000	8,0	10	69	19	26	-	3
FA465100A0VE000	10,0	10	72	22	-	-	3
FA465120A0VE000	12,0	12	83	26	-	-	3
FA465140A0VE000	14,0	12	83	26	36	1,15	3
FA465160A0VE000	16,0	16	92	32	42	0,25	3
FA465180A0VE000	18,0	16	92	32	42	1,25	3
FA465200A0VE000	20,0	20	104	38	50	0,50	4
FA465220A0VE000	22,0	20	104	38	50	1,50	4
FA465250A0VE000	25,0	25	121	45	57	0,50	4

Fresa 3 taglienti serie normale, elica 45°  
 End mill 3 flutes, 45° helix  
 Schaftfräser, Dreischneider, Drallwinkel 45°

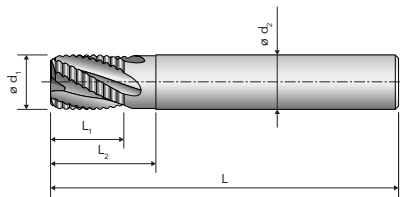
**FA465WE**  
 V-MAXX


FA465WE V-MAXX							
Cod.	d <sub>1</sub> k10 [mm]	d <sub>2</sub> h6 [mm]	L [mm]	L <sub>1</sub> [mm]	L <sub>2</sub> [mm]	a [mm]	z [-]
FA465060A1VE000	6,0	6	57	13	-	-	3
FA465080A1VE000	8,0	10	69	19	26	-	3
FA465100A1VE000	10,0	10	72	22	-	-	3
FA465120A1VE000	12,0	12	83	26	-	-	3
FA465140A1VE000	14,0	12	83	26	36	1,15	3
FA465160A1VE000	16,0	16	92	32	42	0,25	3
FA465180A1VE000	18,0	16	92	32	42	1,25	3
FA465200A1VE000	20,0	20	104	38	50	0,50	4
FA465220A1VE000	22,0	20	104	38	50	1,50	4
FA465250A1VE000	25,0	25	121	45	57	0,50	4

Fresa a sgrossare serie corta, rompitruciolo fine  
Roughing end mill, short version, fine pitch profile  
Schrupp-Schaftfräser, kurz, Kordel fein



**FA505S**  
V-MAXX



P	M	K	N	S	O
•	•	•			
		<b>i</b> P.62			

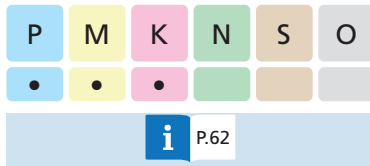
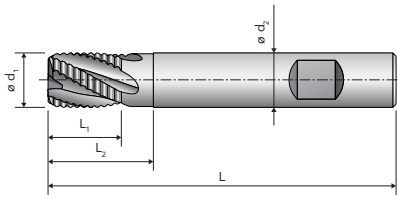


FA505S V-MAXX								
Cod.	d <sub>1</sub> k12 [mm]	d <sub>2</sub> h6 [mm]	L [mm]	L <sub>1</sub> [mm]	L <sub>2</sub> [mm]	a [mm]	45° [mm]	z [-]
FA505060A0VC400	6,0	6	52	8	-	-	0,40	3
FA505080A0VC400	8,0	10	61	11	18	-	0,40	4
FA505100A0VC400	10,0	10	63	13	-	-	0,50	4
FA505120A0VC400	12,0	12	73	16	-	-	0,60	4
FA505140A0VC400	14,0	12	73	16	26	1,15	0,60	4
FA505160A0VC400	16,0	16	79	19	29	0,25	0,70	4
FA505180A0VC400	18,0	16	79	19	29	1,25	0,70	4
FA505200A0VC400	20,0	20	88	22	34	0,50	0,80	4
FA505250A0VC400	25,0	25	102	26	40	0,50	0,80	4
FA505320A0VC400	32,0	32	112	32	47	0,50	1,20	6

Fresa a sgrossare serie corta, rompitrucolo fine  
 Roughing end mill, short version, fine pitch profile  
 Schrapp-Schaftfräser, kurz, Kordel fein



**FA505WS**  
 V-MAXX



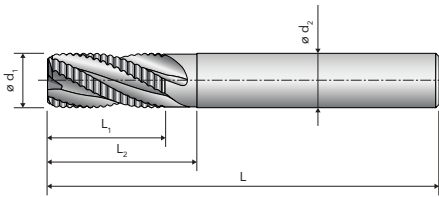
**FA505WS**  
 V-MAXX

Cod.	d <sub>1</sub> k12 [mm]	d <sub>2</sub> h6 [mm]	L [mm]	L <sub>1</sub> [mm]	L <sub>2</sub> [mm]	a [mm]	45° [mm]	z [-]
FA505060A1VC400	6,0	6	52	8	-	-	0,40	3
FA505080A1VC400	8,0	10	61	11	18	-	0,40	4
FA505100A1VC400	10,0	10	63	13	-	-	0,50	4
FA505120A1VC400	12,0	12	73	16	-	-	0,60	4
FA505140A1VC400	14,0	12	73	16	26	1,15	0,60	4
FA505160A1VC400	16,0	16	79	19	29	0,25	0,70	4
FA505180A1VC400	18,0	16	79	19	29	1,25	0,70	4
FA505200A1VC400	20,0	20	88	22	34	0,50	0,80	4
FA505250A1VC400	25,0	25	102	26	40	0,50	0,80	4
FA505320A1VC400	32,0	32	112	32	47	0,50	1,20	6

Fresa a sgrossare serie normale, rompitrucolo fine  
Roughing end mill, fine pitch profile  
Schrupp-Schaftfräser, Kordel fein



FA545  
V-MAXX

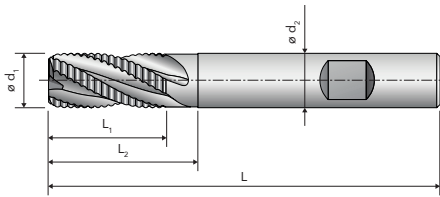


FA545 V-MAXX								
Cod.	d <sub>1</sub> k12 [mm]	d <sub>2</sub> h6 [mm]	L [mm]	L <sub>1</sub> [mm]	L <sub>2</sub> [mm]	a [mm]	45° [mm]	z [-]
FA545050A0VC000	5,0	6	57	13	20	-	0,40	3
FA545060A0VC000	6,0	6	57	13	-	-	0,40	3
FA545070A0VC000	7,0	10	66	16	22	-	0,40	4
FA545080A0VC000	8,0	10	69	19	26	-	0,40	4
FA545090A0VC000	9,0	10	69	19	27	-	0,45	4
FA545100A0VC000	10,0	10	72	22	-	-	0,50	4
FA545110A0VC000	11,0	12	79	22	30	-	0,50	4
FA545120A0VC000	12,0	12	83	26	-	-	0,60	4
FA545130A0VC000	13,0	12	83	26	37	0,65	0,60	4
FA545140A0VC000	14,0	12	83	26	37	1,15	0,60	4
FA545150A0VC000	15,0	12	83	26	37	1,65	0,60	4
FA545160A0VC000	16,0	16	92	32	43	0,25	0,70	4
FA545170A0VC000	17,0	16	92	32	43	0,75	0,70	4
FA545180A0VC000	18,0	16	92	32	43	1,25	0,70	4
FA545190A0VC000	19,0	16	92	32	43	1,75	0,70	4
FA545200A0VC000	20,0	20	104	38	49	0,50	0,80	4
FA545220A0VC000	22,0	20	104	38	49	1,50	0,80	4
FA545250A0VC000	25,0	25	121	45	57	0,50	0,80	4
FA545280A0VC000	28,0	25	121	45	57	2,00	0,80	6
FA545300A0VC000	30,0	25	121	45	57	3,00	1,20	6
FA545320A0VC000	32,0	32	133	53	65	0,50	1,20	6

Fresa a grossare serie normale, rompitrucolo fine  
 Roughing end mill, fine pitch profile  
 Schrupp-Schaftfräser, Kordel fein



**FA545W**  
 V-MAXX



FA545W V-MAXX								
Cod.	d <sub>1</sub> k12 [mm]	d <sub>2</sub> h6 [mm]	L [mm]	L <sub>1</sub> [mm]	L <sub>2</sub> [mm]	a [mm]	45° [mm]	z [-]
FA545050A1VC000	5,0	6	57	13	20	-	0,40	3
FA545060A1VC000	6,0	6	57	13	-	-	0,40	3
FA545070A1VC000	7,0	10	66	16	22	-	0,40	4
FA545080A1VC000	8,0	10	69	19	26	-	0,40	4
FA545090A1VC000	9,0	10	69	19	27	-	0,45	4
FA545100A1VC000	10,0	10	72	22	-	-	0,50	4
FA545110A1VC000	11,0	12	79	22	30	-	0,50	4
FA545120A1VC000	12,0	12	83	26	-	-	0,60	4
FA545130A1VC000	13,0	12	83	26	37	0,65	0,60	4
FA545140A1VC000	14,0	12	83	26	37	1,15	0,60	4
FA545150A1VC000	15,0	12	83	26	37	1,65	0,60	4
FA545160A1VC000	16,0	16	92	32	43	0,25	0,70	4
FA545170A1VC000	17,0	16	92	32	43	0,75	0,70	4
FA545180A1VC000	18,0	16	92	32	43	1,25	0,70	4
FA545190A1VC000	19,0	16	92	32	43	1,75	0,70	4
FA545200A1VC000	20,0	20	104	38	49	0,50	0,80	4
FA545220A1VC000	22,0	20	104	38	49	1,50	0,80	4
FA545250A1VC000	25,0	25	121	45	57	0,50	0,80	4
FA545280A1VC000	28,0	25	121	45	57	2,00	0,80	6
FA545300A1VC000	30,0	25	121	45	57	3,00	1,20	6
FA545320A1VC000	32,0	32	133	53	65	0,50	1,20	6











INFORMAZIONI TECNICHE  
TECHNICAL INFORMATION  
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Parametri di lavoro frese in metallo duro per impiego generico  
 Working parameters for solid carbide end mills for generic applications  
 Schnittparameter für VHM-Schaftfräser für den allgemeinen Einsatz

FH700 / FH700E / FH700R / FH700S / FH700SE							FH700L							
MATERIAL	DIAMETER	 1 x D			 0,2 x D			DIAMETER	 D			 FULL		
		Vc = 140			Vc = 160				Vc = 120			Vc = 135		
Steel <800 N/mm <sup>2</sup>	m/min	fz	F	N	fz	F	N	m/min	fz	F	N	fz	F	N
	D	mm/z	mm/min	rpm	mm/z	mm/min	rpm	D	mm/z	mm/min	rpm	mm/z	mm/min	rpm
	2	-	-	-	-	-	-	2	-	-	-	-	-	-
	3	0,010	594	14854	0,010	679	16977	3	-	-	-	-	-	-
	4	0,015	668	11141	0,015	764	12732	4	-	-	-	-	-	-
	5	0,020	713	8913	0,020	815	10186	5	0,017	519	7639	0,017	584	8594
	6	0,030	891	7427	0,030	1019	8488	6	0,026	649	6366	0,026	731	7162
	8	0,045	1003	5570	0,045	1146	6366	8	0,038	731	4775	0,038	822	5371
	10	0,060	1070	4456	0,060	1222	5093	10	0,051	779	3820	0,051	877	4297
	12	0,070	1040	3714	0,070	1188	4244	12	0,060	758	3183	0,060	852	3581
14	0,072	917	3183	0,072	1048	3638	14	0,061	668	2728	0,061	751	3069	
16	0,075	836	2785	0,075	955	3183	16	0,064	609	2387	0,064	685	2686	
18	0,079	777	2476	0,083	934	2829	18	-	-	-	-	-	-	
20	0,082	731	2228	0,090	917	2546	20	0,070	532	1910	0,077	657	2149	
Steel <1000 N/mm <sup>2</sup> - Cast iron	m/min	fz	F	N	fz	F	N	m/min	fz	F	N	fz	F	N
	D	mm/z	mm/min	rpm	mm/z	mm/min	rpm	D	mm/z	mm/min	rpm	mm/z	mm/min	rpm
	2	-	-	-	-	-	-	2	-	-	-	-	-	-
	3	0,010	488	12202	0,010	531	13263	3	-	-	-	-	-	-
	4	0,015	549	9151	0,015	597	9947	4	-	-	-	-	-	-
	5	0,020	586	7321	0,020	637	7958	5	0,017	433	6366	0,017	455	6685
	6	0,030	732	6101	0,030	796	6631	6	0,026	541	5305	0,026	568	5570
	8	0,045	824	4576	0,045	895	4974	8	0,038	609	3979	0,038	639	4178
	10	0,060	879	3661	0,060	955	3979	10	0,051	649	3183	0,051	682	3342
	12	0,070	854	3050	0,070	928	3316	12	0,060	631	2653	0,060	663	2785
14	0,072	753	2615	0,072	819	2842	14	0,061	557	2274	0,061	584	2387	
16	0,075	686	2288	0,075	746	2487	16	0,064	507	1989	0,064	533	2089	
18	0,079	639	2034	0,083	729	2210	18	-	-	-	-	-	-	
20	0,082	600	1830	0,090	716	1989	20	0,070	444	1592	0,077	511	1671	



















**Parametri di lavoro frese in metallo duro ad alte prestazioni**  
**Working parameters for high performance solid carbide end mills**  
**Schnittparameter für Hochleistungs-VHM-Schaftfräser**

FP710 / FP710E										
MATERIAL	DIAMETER	 1 x D			 0,4 x D			 FULL		
Ferritic stainless steel	m/min	Vc = 140			Vc = 130			Vc = 170		
	D mm	fz mm/z	F mm/min	N rpm	fz mm/z	F mm/min	N rpm	fz mm/z	F mm/min	N rpm
	3	0,013	772	14854	0,013	717	13793	0,020	1443	18038
	4	0,020	891	11141	0,020	828	10345	0,060	3247	13528
	5	0,025	891	8913	0,025	828	8276	0,095	4113	10823
	6	0,030	891	7427	0,030	828	6897	0,130	4690	9019
	8	0,040	891	5570	0,040	828	5173	0,160	4329	6764
	10	0,050	891	4456	0,050	828	4138	0,190	4113	5411
	12	0,060	891	3714	0,060	828	3448	0,220	3968	4509
	16	0,070	780	2785	0,070	724	2586	0,250	3382	3382
	20	0,080	713	2228	0,080	662	2069	0,300	3247	2706
	25	0,090	642	1783	0,090	596	1655	0,350	3030	2165
Austenitic stainless steel	m/min	Vc = 120			Vc = 110			Vc = 150		
	D mm	fz mm/z	F mm/min	N rpm	fz mm/z	F mm/min	N rpm	fz mm/z	F mm/min	N rpm
	3	0,013	662	12732	0,013	607	11671	0,020	1273	15915
	4	0,020	764	9549	0,020	700	8754	0,060	2865	11937
	5	0,025	764	7639	0,025	700	7003	0,095	3629	9549
	6	0,030	764	6366	0,030	700	5836	0,130	4138	7958
	8	0,040	764	4775	0,040	700	4377	0,160	3820	5968
	10	0,050	764	3820	0,050	700	3501	0,190	3629	4775
	12	0,060	764	3183	0,060	700	2918	0,220	3501	3979
	16	0,070	668	2387	0,070	613	2188	0,250	2984	2984
	20	0,080	611	1910	0,080	560	1751	0,300	2865	2387
	25	0,090	550	1528	0,090	504	1401	0,350	2674	1910
Titanium alloys	m/min	Vc = 80			Vc = 80			Vc = 100		
	D mm	fz mm/z	F mm/min	N rpm	fz mm/z	F mm/min	N rpm	fz mm/z	F mm/min	N rpm
	3	0,004	136	8488	0,011	373	8488	0,020	849	10610
	4	0,006	153	6366	0,015	382	6366	0,060	1910	7958
	5	0,008	153	5093	0,019	387	5093	0,095	2419	6366
	6	0,009	153	4244	0,023	390	4244	0,130	2759	5305
	8	0,012	153	3183	0,030	382	3183	0,160	2546	3979
	10	0,015	153	2546	0,040	407	2546	0,190	2419	3183
	12	0,020	170	2122	0,050	424	2122	0,220	2334	2653
	16	0,030	191	1592	0,060	382	1592	0,250	1989	1989
	20	0,040	204	1273	0,075	382	1273	0,300	1910	1592
	25	0,050	204	1019	0,090	367	1019	0,350	1783	1273
Steel <800 N/mm²	m/min	Vc = 195			Vc = 210			Vc = 220		
	D mm	fz mm/z	F mm/min	N rpm	fz mm/z	F mm/min	N rpm	fz mm/z	F mm/min	N rpm
	3	0,008	662	20690	0,008	713	22282	0,020	1867	23343
	4	0,012	745	15518	0,012	802	16711	0,060	4202	17507
	5	0,016	795	12414	0,016	856	13369	0,095	5322	14006
	6	0,020	828	10345	0,020	891	11141	0,130	6069	11671
	8	0,030	931	7759	0,030	1003	8356	0,160	5602	8754
	10	0,040	993	6207	0,040	1070	6685	0,190	5322	7003
	12	0,050	1035	5173	0,050	1114	5570	0,220	5135	5836
	16	0,060	931	3879	0,060	1003	4178	0,250	4377	4377
	20	0,070	869	3104	0,070	936	3342	0,300	4202	3501
	25	0,080	795	2483	0,080	856	2674	0,350	3922	2801
Steel < 1000 N/mm²	m/min	Vc = 140			Vc = 150			Vc = 180		
	D mm	fz mm/z	F mm/min	N rpm	fz mm/z	F mm/min	N rpm	fz mm/z	F mm/min	N rpm
	3	0,008	475	14854	0,008	509	15915	0,020	1528	19099
	4	0,012	535	11141	0,012	573	11937	0,060	3438	14324
	5	0,016	570	8913	0,016	611	9549	0,095	4354	11459
	6	0,020	594	7427	0,020	637	7958	0,130	4966	9549
	8	0,030	668	5570	0,030	716	5968	0,160	4584	7162
	10	0,040	713	4456	0,040	764	4775	0,190	4354	5730
	12	0,050	743	3714	0,050	796	3979	0,220	4202	4775
	16	0,060	668	2785	0,060	716	2984	0,250	3581	3581
	20	0,070	624	2228	0,070	668	2387	0,300	3438	2865
	25	0,080	570	1783	0,080	611	1910	0,350	3209	2292


FP765 / FP765E

MATERIAL	DIAMETER	 1 x D	 0,4 x D	 STEP 0,5 x D						
Ferritic stainless steel	m/min	Vc = 130			Vc = 130			Vc = 130		
	D mm	fz mm/z	F mm/min	N rpm	fz mm/z	F mm/min	N rpm	fz mm/z	F mm/min	N rpm
	2	0,010	621	20690	0,015	931	20690	0,004	248	20690
	3	0,015	621	13793	0,020	828	13793	0,006	248	13793
	4	0,020	621	10345	0,025	776	10345	0,008	248	10345
	5	0,024	596	8276	0,029	720	8276	0,011	261	8276
	6	0,028	579	6897	0,033	683	6897	0,013	269	6897
	7	0,032	559	5911	0,037	647	5911	0,016	275	5911
	8	0,035	543	5173	0,040	621	5173	0,018	279	5173
	9	0,040	545	4598	0,045	614	4598	0,021	283	4598
	10	0,044	546	4138	0,049	608	4138	0,023	286	4138
12	0,053	548	3448	0,058	600	3448	0,030	310	3448	
14	0,061	541	2956	0,066	585	2956	0,035	310	2956	
16	0,070	543	2586	0,075	582	2586	0,035	272	2586	
20	0,078	484	2069	0,088	546	2069	0,043	267	2069	
Austenitic stainless steel	m/min	Vc = 110			Vc = 110			Vc = 110		
	D mm	fz mm/z	F mm/min	N rpm	fz mm/z	F mm/min	N rpm	fz mm/z	F mm/min	N rpm
	2	0,010	525	17507	0,015	788	17507	0,004	210	17507
	3	0,015	525	11671	0,020	700	11671	0,006	210	11671
	4	0,020	525	8754	0,025	657	8754	0,008	210	8754
	5	0,024	504	7003	0,029	609	7003	0,011	221	7003
	6	0,028	490	5836	0,033	578	5836	0,013	228	5836
	7	0,032	473	5002	0,037	548	5002	0,016	233	5002
	8	0,035	460	4377	0,040	525	4377	0,018	236	4377
	9	0,040	461	3890	0,045	519	3890	0,021	239	3890
	10	0,044	462	3501	0,049	515	3501	0,023	242	3501
12	0,053	464	2918	0,058	508	2918	0,030	263	2918	
14	0,061	458	2501	0,066	495	2501	0,035	263	2501	
16	0,070	460	2188	0,075	492	2188	0,035	230	2188	
20	0,078	410	1751	0,088	462	1751	0,043	226	1751	
Titanium alloys	m/min	Vc = 90			Vc = 80			Vc = 90		
	D mm	fz mm/z	F mm/min	N rpm	fz mm/z	F mm/min	N rpm	fz mm/z	F mm/min	N rpm
	2	0,003	129	14324	0,005	191	12732	0,004	172	14324
	3	0,006	158	9549	0,009	229	8488	0,006	172	9549
	4	0,008	172	7162	0,013	248	6366	0,008	172	7162
	5	0,012	206	5730	0,017	260	5093	0,011	180	5730
	6	0,016	229	4775	0,021	267	4244	0,013	186	4775
	7	0,020	239	4093	0,025	267	3638	0,016	190	4093
	8	0,023	247	3581	0,028	267	3183	0,018	193	3581
	9	0,028	263	3183	0,033	276	2829	0,021	196	3183
	10	0,032	275	2865	0,037	283	2546	0,023	198	2865
12	0,041	294	2387	0,046	293	2122	0,030	215	2387	
14	0,049	301	2046	0,054	295	1819	0,035	215	2046	
16	0,058	312	1790	0,063	301	1592	0,035	188	1790	
20	0,066	284	1432	0,076	290	1273	0,043	185	1432	
Steel <800 N/mm²	m/min	Vc = 170			Vc = 180			Vc = 170		
	D mm	fz mm/z	F mm/min	N rpm	fz mm/z	F mm/min	N rpm	fz mm/z	F mm/min	N rpm
	2	0,007	568	27056	0,007	602	28648	0,003	244	27056
	3	0,012	622	18038	0,013	716	19099	0,005	271	18038
	4	0,016	649	13528	0,018	773	14324	0,007	284	13528
	5	0,020	649	10823	0,023	773	11459	0,009	292	10823
	6	0,024	649	9019	0,027	773	9549	0,011	298	9019
	7	0,028	649	7730	0,032	773	8185	0,013	301	7730
	8	0,032	649	6764	0,036	773	7162	0,015	304	6764
	9	0,036	649	6013	0,041	773	6366	0,017	307	6013
	10	0,040	649	5411	0,045	773	5730	0,019	308	5411
12	0,048	649	4509	0,054	773	4775	0,022	298	4509	
14	0,055	638	3865	0,060	737	4093	0,024	278	3865	
16	0,060	609	3382	0,065	698	3581	0,026	264	3382	
20	0,075	609	2706	0,080	688	2865	0,028	227	2706	
Steel <1000 N/mm²	m/min	Vc = 130			Vc = 150			Vc = 130		
	D mm	fz mm/z	F mm/min	N rpm	fz mm/z	F mm/min	N rpm	fz mm/z	F mm/min	N rpm
	2	0,007	434	20690	0,007	501	23873	0,003	186	20690
	3	0,012	476	13793	0,013	597	15915	0,005	207	13793
	4	0,016	497	10345	0,018	645	11937	0,007	217	10345
	5	0,020	497	8276	0,023	645	9549	0,009	223	8276
	6	0,024	497	6897	0,027	645	7958	0,011	228	6897
	7	0,028	497	5911	0,032	645	6821	0,013	231	5911
	8	0,032	497	5173	0,036	645	5968	0,015	233	5173
	9	0,036	497	4598	0,041	645	5305	0,017	234	4598
	10	0,040	497	4138	0,045	645	4775	0,019	236	4138
12	0,048	497	3448	0,054	645	3979	0,022	228	3448	
14	0,055	488	2956	0,060	614	3410	0,024	213	2956	
16	0,060	466	2586	0,065	582	2984	0,026	202	2586	
20	0,075	466	2069	0,080	573	2387	0,028	174	2069	

N.B.: Per i diametri intermedi si consigliano i valori di avanzamento fz del diametro inferiore  
 For intermediate diameters use feed rate fz values for closest smaller diameter  
 Für Zwischendurchmesser Schubwerte fz für nächstkleinere Fräserdurchmesser benutzen



FP750

MATERIAL	DIAMETER	 1 x D 1,5 x D				 0,5 x D 2 x D				MATERIAL	DIAMETER	 1 x D 1,5 x D				 0,5 x D 2 x D			
		Vc = 140				Vc = 160						Vc = 60				Vc = 70			
	D mm	fz mm/z	F mm/min	N rpm	fz mm/z	F mm/min	N rpm	fz mm/z	F mm/min	N rpm	D mm	fz mm/z	F mm/min	N rpm	fz mm/z	F mm/min	N rpm		
Steel <800 N/mm <sup>2</sup>	m/min	Vc = 140				Vc = 160				Ferritic stainless steel	m/min	Vc = 60				Vc = 70			
	3	0,012	535	14854	0,014	713	16977	0,009	172		6366	0,010	223	7427					
	4	0,018	602	11141	0,020	764	12732	0,012	172		4775	0,016	267	5570					
	5	0,024	642	8913	0,030	917	10186	0,017	195		3820	0,021	281	4456					
	6	0,032	951	7427	0,050	1698	8488	0,022	280		3183	0,026	386	3714					
	7	-	-	-	-	-	-	-	-		-	-	-	-					
	8	0,042	936	5570	0,064	1630	6366	0,038	363		2387	0,042	468	2785					
	9	-	-	-	-	-	-	-	-		-	-	-	-					
	10	0,049	873	4456	0,076	1548	5093	0,041	313		1910	0,045	401	2228					
	12	0,054	802	3714	0,082	1392	4244	0,045	286		1592	0,049	364	1857					
	14	0,060	764	3183	0,086	1251	3638	0,048	262		1364	0,052	331	1592					
16	0,063	702	2785	0,091	1159	3183	0,052	248	1194	0,056	312	1393							
20	0,067	597	2228	0,096	978	2546	0,062	237	955	0,066	294	1114							
Steel <1000 N/mm <sup>2</sup> - Cast iron	m/min	Vc = 110				Vc = 140				Austenitic stainless steel	m/min	Vc = 50				Vc = 55			
	3	0,012	420	11671	0,014	624	14854	0,009	143		5305	0,010	175	5836					
	4	0,018	473	8754	0,020	668	11141	0,012	143		3979	0,016	210	4377					
	5	0,024	504	7003	0,030	802	8913	0,017	162		3183	0,021	221	3501					
	6	0,032	747	5836	0,050	1485	7427	0,022	233		2653	0,026	303	2918					
	7	-	-	-	-	-	-	-	-		-	-	-	-					
	8	0,042	735	4377	0,064	1426	5570	0,038	302		1989	0,042	368	2188					
	9	-	-	-	-	-	-	-	-		-	-	-	-					
	10	0,049	686	3501	0,076	1355	4456	0,041	261		1592	0,045	315	1751					
	12	0,054	630	2918	0,082	1218	3714	0,045	239		1326	0,049	286	1459					
	14	0,060	600	2501	0,086	1095	3183	0,048	218		1137	0,052	260	1251					
16	0,063	551	2188	0,091	1014	2785	0,052	207	995	0,056	245	1094							
20	0,067	469	1751	0,096	856	2228	0,062	197	796	0,066	231	875							
Steel <1300 N/mm <sup>2</sup>	m/min	Vc = 95				Vc = 100				DUPLEX	m/min	Vc = 40				Vc = 45			
	3	0,012	363	10080	0,014	446	10610	0,009	115		4244	0,010	143	4775					
	4	0,018	408	7560	0,020	477	7958	0,012	115		3183	0,016	172	3581					
	5	0,024	435	6048	0,030	573	6366	0,017	130		2546	0,021	180	2865					
	6	0,032	645	5040	0,050	1061	5305	0,022	187		2122	0,026	248	2387					
	7	-	-	-	-	-	-	-	-		-	-	-	-					
	8	0,042	635	3780	0,064	1019	3979	0,038	242		1592	0,042	301	1790					
	9	-	-	-	-	-	-	-	-		-	-	-	-					
	10	0,049	593	3024	0,076	968	3183	0,041	209		1273	0,045	258	1432					
	12	0,054	544	2520	0,082	870	2653	0,045	191		1061	0,049	234	1194					
	14	0,060	518	2160	0,086	782	2274	0,048	175		909	0,052	213	1023					
16	0,063	476	1890	0,091	724	1989	0,052	166	796	0,056	201	895							
20	0,067	405	1512	0,096	611	1592	0,062	158	637	0,066	189	716							
High strength steel	m/min	Vc = 45				Vc = 65				Titanium alloys	m/min	Vc = 40				Vc = 45			
	3	0,012	172	4775	0,014	290	6897	0,012	153		4244	0,014	201	4775					
	4	0,018	193	3581	0,020	310	5173	0,018	172		3183	0,020	215	3581					
	5	0,024	206	2865	0,030	372	4138	0,024	183		2546	0,030	258	2865					
	6	0,032	306	2387	0,040	552	3448	0,032	272		2122	0,040	382	2387					
	7	-	-	-	-	-	-	-	-		-	-	-	-					
	8	0,042	301	1790	0,050	517	2586	0,042	267		1592	0,050	358	1790					
	9	-	-	-	-	-	-	-	-		-	-	-	-					
	10	0,049	281	1432	0,060	497	2069	0,049	250		1273	0,060	344	1432					
	12	0,054	258	1194	0,067	462	1724	0,054	229		1061	0,067	320	1194					
	14	0,060	246	1023	0,071	420	1478	0,060	218		909	0,071	291	1023					
16	0,063	226	895	0,078	403	1293	0,063	201	796	0,078	279	895							
20	0,067	192	716	0,085	352	1035	0,067	171	637	0,085	244	716							

## FP795E




MATERIAL	DIAMETER	 1 x D 0,5 x D				 0,5 x D 1,5 x D		
		Vc = 600				Vc = 800		
Al and Al alloys <6% Si	m/min							
	D mm	fz mm/z	F mm/min	N rpm	fz mm/z	F mm/min	N rpm	
	2	0,010	1910	95493	0,010	2546	127324	
	3	0,016	2037	63662	0,016	2716	84883	
	4	0,025	2387	47746	0,025	3183	63662	
	5	0,040	3056	38197	0,040	4074	50930	
	6	0,060	3820	31831	0,060	5093	42441	
	8	0,075	3581	23873	0,075	4775	31831	
	10	0,100	3820	19099	0,100	5093	25465	
	12	0,120	3820	15915	0,120	5093	21221	
	14	0,135	3683	13642	0,135	4911	18189	
	16	0,150	3581	11937	0,150	4775	15915	
	20	0,175	3342	9549	0,175	4456	12732	
	25	0,200	3056	7639	0,200	4074	10186	
	Al and Al alloys >6% Si	m/min						
D mm		fz mm/z	F mm/min	N rpm	fz mm/z	F mm/min	N rpm	
2		0,010	1910	95493	0,010	2546	127324	
3		0,016	2037	63662	0,016	2716	84883	
4		0,025	2387	47746	0,025	3183	63662	
5		0,040	3056	38197	0,040	4074	50930	
6		0,060	3820	31831	0,060	5093	42441	
8		0,075	3581	23873	0,075	4775	31831	
10		0,100	3820	19099	0,100	5093	25465	
12		0,120	3820	15915	0,120	5093	21221	
14		0,135	3683	13642	0,135	4911	18189	
16		0,150	3581	11937	0,150	4775	15915	
20		0,175	3342	9549	0,175	4456	12732	
25		0,200	3056	7639	0,200	4074	10186	
Copper and Copper alloys		m/min						
	D mm	fz mm/z	F mm/min	N rpm	fz mm/z	F mm/min	N rpm	
	2	0,010	1178	58887	0,010	1592	79577	
	3	0,016	1256	39258	0,016	1698	53052	
	4	0,025	1472	29444	0,025	1989	39789	
	5	0,040	1884	23555	0,040	2546	31831	
	6	0,060	2355	19629	0,060	3183	26526	
	8	0,075	2208	14722	0,075	2984	19894	
	10	0,100	2355	11777	0,100	3183	15915	
	12	0,120	2355	9815	0,120	3183	13263	
	14	0,135	2271	8412	0,135	3069	11368	
	16	0,150	2208	7361	0,150	2984	9947	
	20	0,175	2061	5889	0,175	2785	7958	
	25	0,200	1884	4711	0,200	2546	6366	
	Thermoplastics	m/min						
D mm		fz mm/z	F mm/min	N rpm	fz mm/z	F mm/min	N rpm	
2		0,010	1432	71620	0,010	1910	95493	
3		0,016	1528	47746	0,016	2037	63662	
4		0,025	1790	35810	0,025	2387	47746	
5		0,040	2292	28648	0,040	3056	38197	
6		0,060	2865	23873	0,060	3820	31831	
8		0,075	2686	17905	0,075	3581	23873	
10		0,100	2865	14324	0,100	3820	19099	
12		0,120	2865	11937	0,120	3820	15915	
14		0,135	2762	10231	0,135	3683	13642	
16		0,150	2686	8952	0,150	3581	11937	
20		0,175	2507	7162	0,175	3342	9549	
25		0,200	2292	5730	0,200	3056	7639	



Per l'operazione di foratura utilizzare un avanzamento fz ridotto del 60%  
 For drilling operations the feed rate fz should be reduced by 60%  
 Beim Bohren den Vorschub fz um 60% reduzieren







FA425E					FA465E							
MATERIAL	DIAMETER	 <b>0,1 x D</b>			DIAMETER	 <b>1 x D</b>			DIAMETER	 <b>0,1 x D</b>		
		m/min	Vc = 40			m/min	Vc = 40			Vc = 50		
Steel <800 N/mm <sup>2</sup>	D mm	fz mm/z	F mm/min	N rpm	D mm	fz mm/z	F mm/min	N rpm	fz mm/z	F mm/min	N rpm	
	6	0,014	119	2122	6	0,015	95	2122	0,030	239	2653	
	8	0,025	156	1592	8	0,026	122	1592	0,053	313	1989	
	10	0,035	178	1273	10	0,033	126	1273	0,075	358	1592	
	12	0,043	184	1061	12	0,042	134	1061	0,093	370	1326	
	14	0,053	191	909	14	0,053	143	909	0,113	384	1137	
	16	0,063	201	796	16	0,063	150	796	0,135	403	995	
	18	0,074	208	707	18	0,072	153	707	0,158	418	884	
	20	0,084	214	637	20	0,075	191	637	0,180	573	796	
	22	0,095	219	579	22	0,083	191	579	0,203	586	723	
	25	0,105	321	509	25	0,090	183	509	0,233	592	637	
	28	0,112	306	455	28	-	-	-	-	-	-	
30	0,112	285	424	30	-	-	-	-	-	-		
Steel <1000 N/mm <sup>2</sup> - Cast iron	Vc = 30				Vc = 30				Vc = 35			
	D mm	fz mm/z	F mm/min	N rpm	D mm	fz mm/z	F mm/min	N rpm	fz mm/z	F mm/min	N rpm	
	6	0,014	89	1592	6	0,015	72	1592	0,030	167	1857	
	8	0,025	117	1194	8	0,026	91	1194	0,053	219	1393	
	10	0,035	134	955	10	0,033	95	955	0,075	251	1114	
	12	0,043	138	796	12	0,042	100	796	0,093	259	928	
	14	0,053	143	682	14	0,053	107	682	0,113	269	796	
	16	0,063	150	597	16	0,063	113	597	0,135	282	696	
	18	0,074	156	531	18	0,072	115	531	0,158	292	619	
	20	0,084	160	477	20	0,075	143	477	0,180	401	557	
	22	0,095	164	434	22	0,083	143	434	0,203	410	506	
	25	0,105	241	382	25	0,090	138	382	0,233	414	446	
28	0,112	229	341	28	-	-	-	-	-	-		
30	0,112	214	318	30	-	-	-	-	-	-		
Steel <1300 N/mm <sup>2</sup>	Vc = 25				Vc = 25				Vc = 30			
	D mm	fz mm/z	F mm/min	N rpm	D mm	fz mm/z	F mm/min	N rpm	fz mm/z	F mm/min	N rpm	
	6	0,013	67	1326	6	0,015	60	1326	0,030	143	1592	
	8	0,021	84	995	8	0,023	67	995	0,053	188	1194	
	10	0,032	100	796	10	0,030	72	796	0,075	215	955	
	12	0,042	111	663	12	0,038	75	663	0,093	222	796	
	14	0,049	111	568	14	0,048	82	568	0,113	230	682	
	16	0,056	111	497	16	0,057	85	497	0,135	242	597	
	18	0,063	111	442	18	0,066	88	442	0,158	251	531	
	20	0,070	111	398	20	0,075	119	398	0,165	315	477	
	22	0,081	116	362	22	0,081	117	362	0,180	313	434	
	25	0,084	160	318	25	0,090	115	318	0,203	309	382	
28	0,091	155	284	28	-	-	-	-	-	-		
30	0,098	156	265	30	-	-	-	-	-	-		
High strength steel	Vc = 20				Vc = 20				Vc = 25			
	D mm	fz mm/z	F mm/min	N rpm	D mm	fz mm/z	F mm/min	N rpm	fz mm/z	F mm/min	N rpm	
	6	0,013	53	1061	6	0,014	43	1061	0,030	119	1326	
	8	0,018	56	796	8	0,023	54	796	0,042	125	995	
	10	0,028	71	637	10	0,030	57	637	0,065	154	796	
	12	0,035	74	531	12	0,038	60	531	0,083	164	663	
	14	0,042	76	455	14	0,048	65	455	0,098	166	568	
	16	0,049	78	398	16	0,057	68	398	0,113	168	497	
	18	0,055	77	354	18	0,066	70	354	0,128	169	442	
	20	0,056	71	318	20	0,075	95	318	0,128	203	398	
	22	0,067	77	289	22	0,081	94	289	0,143	206	362	
	25	0,077	118	255	25	0,090	92	255	0,165	210	318	
28	0,084	115	227	28	-	-	-	-	-	-		
30	0,084	107	212	30	-	-	-	-	-	-		
Stainless steel	Vc = 25				Vc = 25				Vc = 30			
	D mm	fz mm/z	F mm/min	N rpm	D mm	fz mm/z	F mm/min	N rpm	fz mm/z	F mm/min	N rpm	
	6	0,013	67	1326	6	0,015	60	1326	0,030	143	1592	
	8	0,021	84	995	8	0,023	67	995	0,053	188	1194	
	10	0,032	100	796	10	0,030	72	796	0,075	215	955	
	12	0,042	111	663	12	0,038	75	663	0,093	222	796	
	14	0,049	111	568	14	0,048	82	568	0,113	230	682	
	16	0,056	111	497	16	0,057	85	497	0,135	242	597	
	18	0,063	111	442	18	0,066	88	442	0,158	251	531	
	20	0,070	111	398	20	0,075	119	398	0,165	315	477	
	22	0,081	116	362	22	0,081	117	362	0,180	313	434	
	25	0,084	160	318	25	0,090	115	318	0,203	309	382	
28	0,091	155	284	28	-	-	-	-	-	-		
30	0,098	156	265	30	-	-	-	-	-	-		



# FA505S

MATERIAL	DIAMETER	 1 x D				 0,5 x D			
		Vc = 40				Vc = 50			
Steel <800 N/mm <sup>2</sup>	m/min								
	D mm	fz mm/z	F mm/min	N rpm	fz mm/z	F mm/min	N rpm		
	6	0,020	127	2122	0,030	239	2653		
	8	0,034	216	1592	0,044	350	1989		
	10	0,044	224	1273	0,060	382	1592		
	12	0,056	238	1061	0,080	424	1326		
	14	0,070	255	909	0,110	500	1137		
	16	0,084	267	796	0,126	501	995		
	18	0,096	272	707	0,140	495	884		
	20	0,110	280	637	0,160	509	796		
	25	0,140	285	509	0,180	458	637		
32	0,140	334	398	0,190	567	497			
Steel <1000 N/mm <sup>2</sup> - Cast iron	m/min	Vc = 30				Vc = 35			
	D mm	fz mm/z	F mm/min	N rpm	fz mm/z	F mm/min	N rpm		
	6	0,020	95	1592	0,030	167	1857		
	8	0,034	162	1194	0,044	245	1393		
	10	0,044	168	955	0,060	267	1114		
	12	0,056	178	796	0,080	297	928		
	14	0,070	191	682	0,110	350	796		
	16	0,084	201	597	0,126	351	696		
	18	0,096	204	531	0,140	347	619		
	20	0,110	210	477	0,160	357	557		
	25	0,140	214	382	0,180	321	446		
32	0,140	251	298	0,190	397	348			
Steel <1300 N/mm <sup>2</sup>	m/min	Vc = 25				Vc = 30			
	D mm	fz mm/z	F mm/min	N rpm	fz mm/z	F mm/min	N rpm		
	6	0,018	72	1326	0,024	115	1592		
	8	0,020	80	995	0,040	191	1194		
	10	0,040	127	796	0,056	214	955		
	12	0,050	133	663	0,070	223	796		
	14	0,064	146	568	0,100	273	682		
	16	0,076	151	497	0,114	272	597		
	18	0,086	152	442	0,130	276	531		
	20	0,100	159	398	0,146	279	477		
	25	0,130	166	318	0,170	260	382		
32	0,130	194	249	0,180	322	298			
High strength steel	m/min	Vc = 20				Vc = 25			
	D mm	fz mm/z	F mm/min	N rpm	fz mm/z	F mm/min	N rpm		
	6	0,018	57	1061	0,024	95	1326		
	8	0,030	95	796	0,040	159	995		
	10	0,040	102	637	0,056	178	796		
	12	0,050	106	531	0,070	186	663		
	14	0,064	116	455	0,100	227	568		
	16	0,076	121	398	0,114	227	497		
	18	0,086	122	354	0,130	230	442		
	20	0,100	127	318	0,146	232	398		
	25	0,130	132	255	0,170	216	318		
32	0,130	155	199	0,180	269	249			
Stainless steel	m/min	Vc = 25				Vc = 30			
	D mm	fz mm/z	F mm/min	N rpm	fz mm/z	F mm/min	N rpm		
	6	0,018	72	1326	0,024	115	1592		
	8	0,030	119	995	0,040	191	1194		
	10	0,040	127	796	0,056	214	955		
	12	0,050	133	663	0,070	223	796		
	14	0,064	146	568	0,100	273	682		
	16	0,076	151	497	0,114	272	597		
	18	0,086	152	442	0,130	276	531		
	20	0,100	159	398	0,146	279	477		
	25	0,130	166	318	0,170	260	382		
32	0,130	194	249	0,180	322	298			



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