

ASPV Mini - Polish Mill Vertical Type ***For High Speed & High Efficiency Finishing***



D10mm ~ D32mm

- Modular & Shank Types
- Insert line-up: **CR: 0.2 | 0.5 | 1.0**
- With/without Wiper Edge



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ASPV | Super Polish Mill-Mini | Shank Type

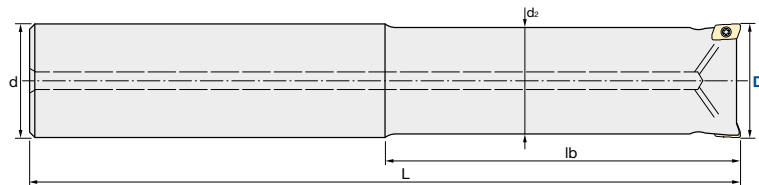
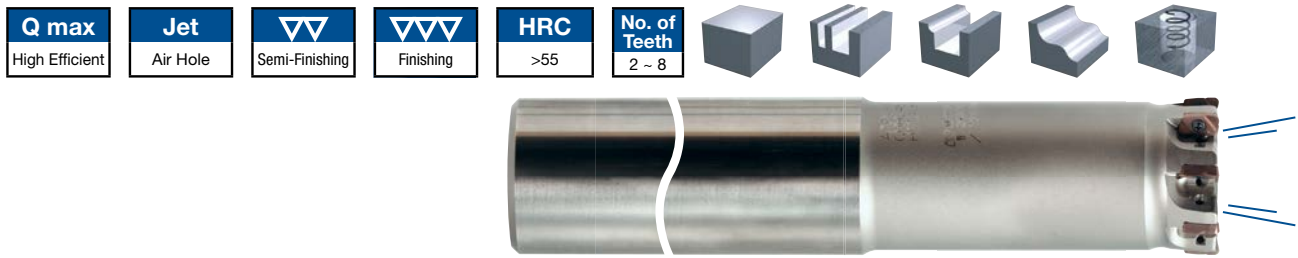


Fig. 1: Steel Shank

Diameter Holder only [mm]	Fastening Torque [Nm]
-0.046 / -0.096 mm	0.5 Nm

Shank Type		Flutes	D	L	lb	d	d ₂	Shank	Coolant hole	a _p max
FH227	ASPV-1010R-2	2	10	100	30	10	9.4	Steel (Fig. 1)	With coolant hole	2
FH228	ASPV-1012R-3	3	12		40	12	11.2			
FH229	ASPV-1016R-4	4	16	130	50	16	14.5			
FH230	ASPV-1020R-5	5	20	160	60	20	18			
FH231	ASPV-1025R-6	6	25	180	75	25	23			
FH232	ASPV-1032R-8	8	32	200	100	32	30			

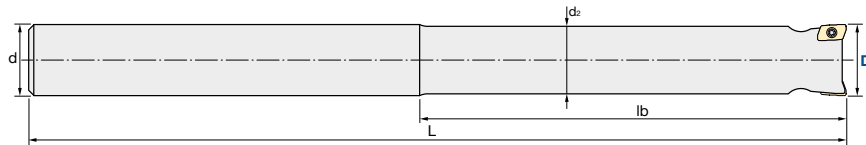
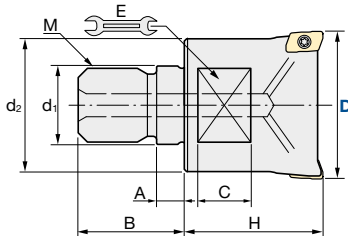


Fig. 2: Carbide Shank

Diameter Holder only [mm]	Fastening Torque [Nm]
-0.046 / -0.096 mm	0.5 Nm

Shank Type		Flutes	D	L	lb	d	d ₂	Shank	Coolant hole	a _p max
FH234	ASPV-1010R-2WL	2	10	130	75	10	9.5	Carbide (Fig. 2)	No coolant hole	2
FH235	ASPV-1012R-3WL	3	12	150	85	12	11.5			
FH236	ASPV-1016R-4WL	4	16	190	100	16	15			
FH237	ASPV-1020R-5WL	5	20	230	120	20	19			

ASPVM | Super Polish Mill-Mini | Modular Type



Diameter Holder only [mm]	Fastening Torque [Nm]
-0.046 / -0.096 mm	0.5 Nm

Modular Type													
ID Code	Item Code	Flutes	D	H	d ₁	M	d ₂	A	B	C	E	Coolant hole	a _p max
FH220	ASPVM-1010R-2-M6	2	10	20	6.5	M6	9.4	5.5	14.5	5	7	No coolant hole	2
FH221	ASPVM-1012R-3-M6	3	12				9.8						
FH222	ASPVM-1016R-4-M8	4	16	25	8.5	M8	12.8		17	8	10	With coolant hole	
FH223	ASPVM-1020R-5-M10	5	20				10.5		M10	17.8	19		
FH224	ASPVM-1025R-6-M12	6	25	30	12.5	M12	20.8		22	10	17		
FH225	ASPVM-1032R-8-M16	8	32				17	M16	28.8	6	23		

Inserts
MPHT-0402...ZEL...

ASC | Carbide Shanks for Modular Mills & AS | Steel Shanks for Modular Mills: page 6/7

INSERTS ASPV | Super Polish Mill-Mini

MPHT-0402...ZEL...

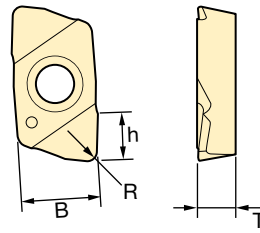


Fig. 1

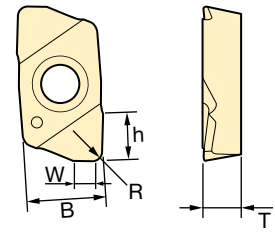




Fig. 2



Inserts		Tolerance Class	Grade	Size (mm)					
ID Code	Item Code		JP4005	B	W	T	h	R	Shape
WF322	MPHT-040202ZEL	H	●	4.3	No wiper	2	2.3	0.2	Fig. 1
WF323	MPHT-040202ZEL-0.5				0.5				Fig. 2
WF324	MPHT-040205ZEL				No wiper			Fig. 1	
WF325	MPHT-040205ZEL-0.5				0.5			Fig. 2	
WF326	MPHT-040205ZEL-1.0				1.0				
WF327	MPHT-040210ZEL				No wiper			Fig. 1	
WF328	MPHT-040210ZEL-0.5				0.5				Fig. 2

JP4005

Multi layered PVD coating + Ultra micro grain substrate

Cutting Conditions | Schnittwerte | Condizioni di taglio | Condiciones de Corte | Conditions de coupe | Valores de corte:

Bottom finishing		Page 8–9	Vertical wall finishing		Page 10–11
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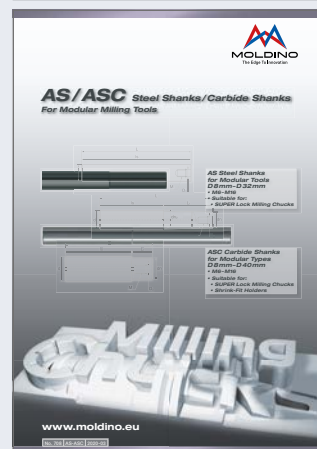
Clamp Screw		Screw Driver	
			
ID-Code	Item-Code	ID-Code	Item-Code
ET052	240-140	ET056	104-T6

➔ For more information about Modular Tools and available Shanks please check our brochures:

Indexable Modular No. 328.x



AS/ASC Shanks No. 708



ASPV | Super Polish Mill-Mini

Features and Applications ASPV Mini

1. High-efficiency finishing

- Multi flutes for higher speed & feed

- 3 types of body will fit in all application
- High accuracy insert provides good surface quality.

2. Body line-up: 3 types of high accuracy body

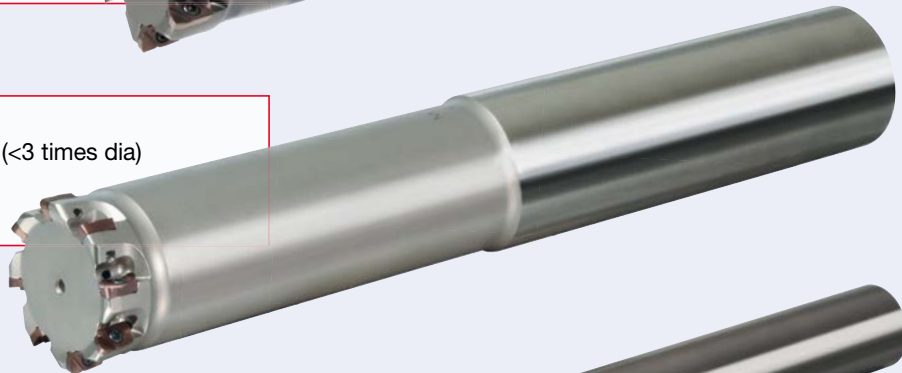
2.1. Modular type:

- For multi usage
- Dia 10–32
- 2–8 flutes



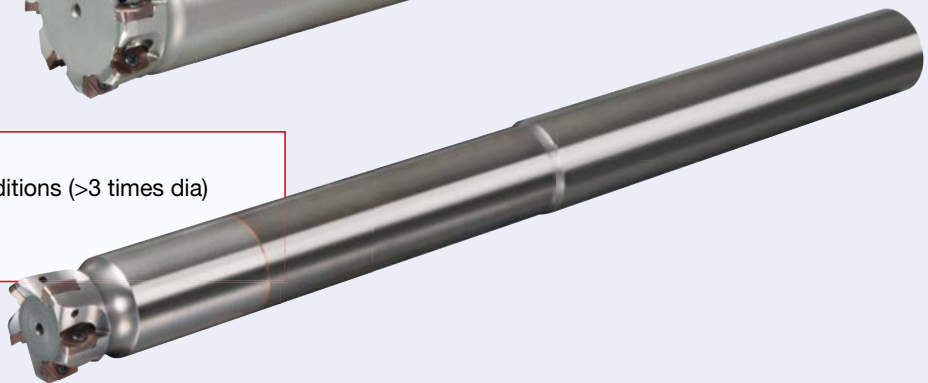
2.2. Steel shank type:

- For short overhang conditions (<3 times dia)
- Dia 10–32
- 2–8 flutes



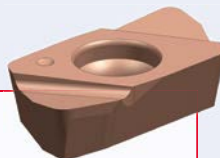
2.3. Carbide shank type:

- For extra long overhang conditions (>3 times dia)
- Dia 10–20
- 2–5 flutes

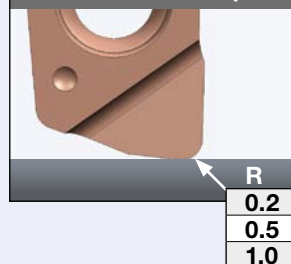


2.4. Insert line-up

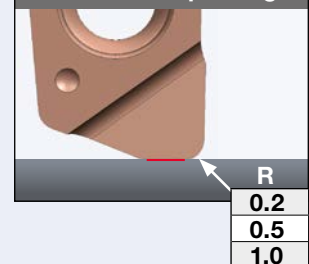
- Tolerance Class H
- All ground face for high accuracy, better surface quality & longer tool life.
- Nano-layered coating & Ultra micro grain JP4005
- **Selectable corner-R & wiper edge**



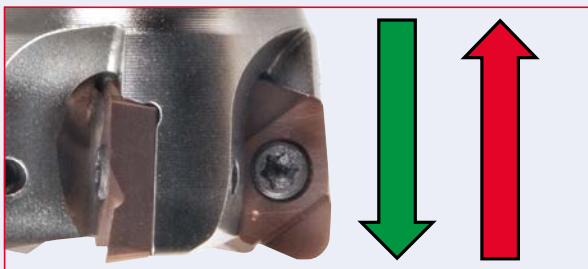
2.4.1. Without wiper



2.4.2. With wiper edge



3. Cautions during use – vertical milling:



Plunging – down (green direction)

- Possible.
- Please adjust cutting condition in case of long OH.

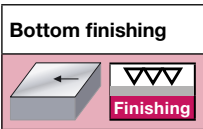
Plunging – up (red direction)

- Please don't use.
- Interference and breakage will happen.



ASPV | Super Polish Mill-Mini

🇩🇪 Besonderheiten und Applikationen ASPV Mini			
1. Hocheffizientes Schlichten <ul style="list-style-type: none"> Größere Schneidenanzahl für mehr Geschwindigkeit & Vorschub 3 verschiedene Halter – passend für jede Applikation Hochpräzise Schneidplatten für beste Oberflächenqualität 	2.2. Mit Stahlschaft: <ul style="list-style-type: none"> Für geringe Auskraglängen (<3 x D) Durchmesser 10–32 mm 2–8 Schneiden 	2.4. Schneidplatten-Auswahl: <ul style="list-style-type: none"> Toleranzklasse H Alle Flächen geschliffen für höchste Präzision, Oberflächenqualität & Werkzeug-Standzeit Feinstkorn-Schneidplatten mit JP4005 Nano-Beschichtung Verschiedene Eckenradien & Wiper 2.4.1. Ohne Wiper 2.4.2. Mit Wiper 	3. Beim Vertikalfräsen unbedingt beachten: Eintauchfräsen – abwärts (grüne Richtung) <ul style="list-style-type: none"> Anwendung möglich. Bei großen Auskraglängen Schnittbedingungen anpassen. Eintauchfräsen – aufwärts (rote Richtung) <ul style="list-style-type: none"> Nicht empfehlenswert. Erhöhte Rattermarken- und Bruchgefahr.
🇪🇸 Características y aplicaciones ASPV Mini			
1. Acabado de alta eficiencia <ul style="list-style-type: none"> Herramienta multiplaca para una mayor velocidad y avance. 3 tipos de soporte para encajar en todas las aplicaciones Placas de alta precisión para una buena calidad superficial. 	2.2. Mango de acero: <ul style="list-style-type: none"> Para voladizos cortos (< 3 x D) Dia 10 – 32 2–8 labios 	2.4. Características de las placas <ul style="list-style-type: none"> Tolerancia Clase H. Completamente rectificadas para una mayor precisión, mejor calidad superficial & mayor vida de la herramienta. Recubrimiento Nano-capas & Ultra micrograno JP4005 Disponibles con radio R & con wiper 2.4.1. Sin wiper 2.4.2. Con wiper 	3. Precauciones durante el uso – fresado vertical: Fresado vertical – hacia abajo (flecha verde) <ul style="list-style-type: none"> Adecuado. Por favor, ajustar condiciones de corte en caso de grandes voladizos (OH). Fresado vertical – hacia arriba (flecha roja) <ul style="list-style-type: none"> No utilizar. Se producirían interferencias y la rotura de la herramienta.
🇮🇹 Caratteristiche ed applicazioni ASPV Mini			
1. Finitura ad alta efficienza <ul style="list-style-type: none"> Multitaglienti per una più alta velocità ed avanzamento 3 tipologie di corpi fresa la rendono adatta per ogni applicazione L'alto grado di precisione degli inserti garantisce un'ottima qualità di finitura. 	2.2. Gambo in acciaio: <ul style="list-style-type: none"> Per lavorazioni a bassa sporgenza (<3 volte il diametro) Diametri da 10 a 32 mm 2–8 inserti 	2.4. Gamma inserti <ul style="list-style-type: none"> Classe di Tolleranza H Geometria per risultati ad alta precisione, miglior qualità di finitura e maggiore durata del tagliente. Rivestimento a nano-strati & substrato ad Ultra micrograno JP4005 Raggio torico R e raschiante selezionabili 2.4.1. Senza raschiante 2.4.2. Con raschiante 	3. Avvertenze durante l'utilizzo – fresatura verticale: Verso il basso – Plunging down (Direzione verde) <ul style="list-style-type: none"> Possibile Modificare opportunamente le condizioni di taglio in caso di alte sporgenze Verso l'alto – Plunging up (Direzione rossa) <ul style="list-style-type: none"> Da non utilizzare Possibilità di rotture e tallonamenti.
🇫🇷 Particularités et Applications de l'ASPV Mini			
1. Finition Haute efficacité <ul style="list-style-type: none"> Multi dents pour une plus grande vitesse & avance 3 types de corps de fraises couvrant toutes les applications De bons états de surfaces grâce aux plaquettes hautes tolérances 	2.2. Type queue cylindrique en acier: <ul style="list-style-type: none"> Pour des applications à faibles porte à faux (<3 fois le diamètre) Diamètre 10–32 2–8 dents 	2.4. Gamme des plaquettes <ul style="list-style-type: none"> Tolérance Classe H Plaquettes intégralement rectifiées pour plus de précision, une meilleure qualité surfacique & une grande durée de vie Revêtement Nano couche & Ultra micro grain JP4005 Rayons de tore au choix & arrête wiper 2.4.1. Sans arrête wiper 2.4.2. Avec arrête wiper 	3. Précautions d'utilisation – Tréflage: Plongée – vers le bas (fleche verte) <ul style="list-style-type: none"> Possible. Adapter les conditions de coupe en cas de long porte à faux. En tirant – vers le haut (fleche rouge) <ul style="list-style-type: none"> Ne pas utiliser. Une casse surviendra à cause des interférences.
🇵🇹 Características e aplicações ASPV Mini			
1. Acabamento de alta eficiência <ul style="list-style-type: none"> Mais plaquetas para Alta velocidade 3 Tipos de corpos para várias aplicações Plaquete de alta precisão garante alta qualidade superfície 	2.2. Encabadouro em aço: <ul style="list-style-type: none"> Para situações Curtas (<3 vezes Dia) Dia 10–32 2–8 plaquetas 	2.4. Linha de plaquetes <ul style="list-style-type: none"> Tolerância classe H Toda face de chão de alta precisão, melhor qualidade de superfície & maior vida útil da ferramenta. Revestimento de nano-camadas & Ultra micro grão JP4005 Raio selecionável – R & aresta “wiper” 2.4.1. Sem “wiper” 2.4.2. Com “wiper” 	3. Precações durante a utilização – Maquinação vertical: Maquinação – De cima para baixo (Direção verde) <ul style="list-style-type: none"> Possível. Por favor, ajuste as condições de corte em situações longas OH. Maquinação – De baixo para cima (Direção vermelha) <ul style="list-style-type: none"> Por favor não usar Interferência e rotura vai acontecer

ASPV | Super Polish Mill-Mini | Recommended Cutting Conditions | Bottom


Work piece material		Recommend grade & Target hardness (HRC)					Emulsion	Mist	Air	Parameter		D 10 (Z2)				D 12 (Z3)			
												High speed	3D - 5D	5D - 7D	> 7D	High speed	3D - 5D	5D - 7D	> 7D
		30	40	50															
I II	Carbon-Steel Alloy-Steel <30HRC									V_c	m/min	250	200	163	125	250	200	163	125
		JP4005					•	•	•	n	min ⁻¹	7960	6370	5170	3980	6630	5310	4310	3320
										f_z	mm/t	0.1	0.1	0.08	0.08	0.1	0.1	0.08	0.08
										V_f	mmn/min	1590	1270	830	640	1990	1590	1030	800
										a_p	mm	0.20	0.16	0.14	0.12	0.20	0.16	0.14	0.12
										a_e	mm	5-10	5-10	5-10	5	6-12	6-12	6-12	6
III	Alloy-Steel Tool-Steel 30~40HRC									V_c	m/min	200	160	130	100	200	160	130	100
		JP4005					•	•	•	n	min ⁻¹	6370	5090	4140	3180	5310	4240	3450	2650
										f_z	mm/t	0.1	0.1	0.08	0.08	0.1	0.1	0.08	0.08
										V_f	mmn/min	1270	1020	660	510	1590	1270	830	640
										a_p	mm	0.2	0.16	0.1	0.12	0.2	0.16	0.1	0.12
										a_e	mm	5-10	5-10	5-10	5	6-12	6-12	6-12	6
IV	Pre-Hardened Steel Tool-Steel 40~50HRC									V_c	m/min	150	120	98	75	150	120	98	75
		JP4005					•	•	•	n	min ⁻¹	4770	3820	3100	2390	3980	3180	2590	1990
										f_z	mm/t	0.1	0.1	0.08	0.08	0.1	0.1	0.08	0.08
										V_f	mmn/min	950	760	500	380	1190	950	620	480
										a_p	mm	0.15	0.12	0.11	0.09	0.15	0.12	0.11	0.09
										a_e	mm	5-10	5-10	5-10	5	6-12	6-12	6-12	6
V	Hardened Steel Tool-Steel 50~55HRC									V_c	m/min	120	96	78	60	120	96	78	60
		JP4005					•	•	•	n	min ⁻¹	3820	3060	2480	1910	3180	2550	2070	1590
										f_z	mmn/t	0.07	0.07	0.05	0.05	0.07	0.07	0.05	0.05
										V_f	mmn/min	530	430	250	190	670	530	310	240
										a_p	mm	0.10	0.08	0.07	0.06	0.10	0.08	0.07	0.06
										a_e	mm	5-10	5-10	5-10	5	6-12	6-12	6-12	6
V	Hardened Steel Tool-Steel > 55HRC									V_c	m/min	100	80	65	50	100	80	65	50
		JP4005					•	•	•	n	min ⁻¹	3180	2550	2070	1590	2650	2120	1720	1330
										f_z	mmn/t	0.05	0.05	0.03	0.03	0.05	0.05	0.03	0.03
										V_f	mmn/min	320	250	120	100	400	320	160	120
										a_p	mm	0.1	0.08	0.07	0.06	0.1	0.08	0.07	0.06
										a_e	mm	5-10	5-10	5-10	5	6-12	6-12	6-12	6
VIII	Cast-Iron GG EN-JL10** EN-GJL-***									V_c	m/min	200	160	130	100	200	160	130	100
		JP4005					•	•	•	n	min ⁻¹	6370	5090	4140	3180	5310	4240	3450	2650
										f_z	mmn/t	0.1	0.1	0.08	0.08	0.1	0.1	0.08	0.08
										V_f	mmn/min	1270	1020	660	510	1590	1270	830	640
										a_p	mm	0.2	0.16	0.14	0.12	0.2	0.16	0.14	0.12
										a_e	mm	5-10	5-10	5-10	5	6-12	6-12	6-12	6
VIII	Cast-Iron GGG EN-JS10** EN-GJS-***									V_c	m/min	160	128	104	80	160	128	104	80
		JP4005					•	•	•	n	min ⁻¹	5090	4070	3310	2550	4240	3400	2760	2120
										f_z	mm/t	0.1	0.1	0.08	0.08	0.1	0.1	0.08	0.08
										V_f	mmn/min	1020	810	530	410	1270	1020	660	510
										a_p	mm	0.15	0.12	0.11	0.09	0.15	0.12	0.11	0.09
										a_e	mm	5-10	5-10	5-10	5	6-12	6-12	6-12	6
VI	Stainless Steels High alloy Steels									V_c	m/min	200	160	130	100	200	160	130	100
		JP4005					•	•	•	n	min ⁻¹	6370	5090	4140	3180	5310	4240	3450	2650
										f_z	mm/t	0.1	0.1	0.08	0.08	0.1	0.1	0.08	0.08
										V_f	mmn/min	1270	1020	660	510	1590	1270	830	640
										a_p	mm	0.15	0.12	0.11	0.09	0.15	0.12	0.11	0.09
										a_e	mm	5-10	5-10	5-10	5	6-12	6-12	6-12	6

ASPV | Super Polish Mill-Mini | Recommended Cutting Conditions | Bottom

D 16 (Z4)				D 20 (Z5)				D 25 (Z6)				D 32 (Z8)			
High speed	3D - 5D	5D - 7D	> 7D	High speed	3D - 5D	5D - 7D	> 7D	High speed	3D - 5D	5D - 7D	> 7D	High speed	3D - 5D	5D - 7D	> 7D
250	200	163	125	250	200	163	125	250	200	163	125	250	200	163	125
4970	3980	3230	2490	3980	3180	2590	1990	3180	2550	2070	1590	2490	1990	1620	1240
0.1	0.1	0.08	0.08	0.1	0.1	0.08	0.08	0.1	0.1	0.08	0.08	0.1	0.1	0.08	0.08
1990	1590	1030	800	1990	1590	1030	800	1910	1530	990	760	1990	1590	1030	800
0.20	0.16	0.14	0.12	0.20	0.16	0.14	0.12	0.20	0.16	0.14	0.12	0.20	0.16	0.14	0.12
8-16	8-16	8-16	8	10-20	10-20	10-20	10	12-25	12-25	12-25	12	16-32	16-32	16-32	16
200	160	130	100	200	160	130	100	200	160	130	100	200	160	130	100
3980	3180	2590	1990	3180	2550	2070	1590	2550	2040	1660	1270	1990	1590	1290	990
0.1	0.1	0.08	0.08	0.1	0.1	0.08	0.08	0.1	0.1	0.08	0.08	0.1	0.1	0.08	0.08
1590	1270	830	640	1590	1270	830	640	1530	1220	790	610	1590	1270	830	640
0.2	0.16	0.1	0.12	0.2	0.16	0.1	0.12	0.2	0.16	0.1	0.12	0.2	0.16	0.1	0.12
8-16	8-16	8-16	8	10-20	10-20	10-20	10	12-25	12-25	12-25	12	16-32	16-32	16-32	16
150	120	98	75	150	120	98	75	150	120	98	75	150	120	98	75
2980	2390	1940	1490	2390	1910	1550	1190	1910	1530	1240	950	1490	1190	970	750
0.1	0.1	0.08	0.08	0.1	0.1	0.08	0.08	0.1	0.1	0.08	0.08	0.1	0.1	0.08	0.08
1190	950	620	480	950	760	500	380	1150	920	600	460	1190	950	620	480
0.15	0.12	0.11	0.09	0.15	0.12	0.11	0.09	0.15	0.12	0.11	0.09	0.15	0.12	0.11	0.09
8-16	8-16	8-16	8	10-20	10-20	10-20	10	12-25	12-25	12-25	12	16-32	16-32	16-32	16
120	96	78	60	120	96	78	60	120	96	78	60	120	96	78	60
2390	1910	1550	1190	1910	1530	1240	950	1530	1220	990	760	1190	950	780	600
0.07	0.07	0.05	0.05	0.07	0.07	0.05	0.05	0.07	0.07	0.05	0.05	0.07	0.07	0.05	0.05
670	530	310	240	670	530	310	240	640	510	300	230	580	470	270	210
0.10	0.08	0.07	0.06	0.10	0.08	0.07	0.06	0.10	0.08	0.07	0.06	0.10	0.08	0.07	0.06
8-16	8-16	8-16	8	10-20	10-20	10-20	10	12-25	12-25	12-25	12	16-32	16-32	16-32	16
100	80	65	50	100	80	65	50	100	80	65	50	100	80	65	50
1990	1590	1290	990	1590	1270	1030	800	1270	1020	830	640	990	800	650	500
0.05	0.05	0.03	0.03	0.05	0.05	0.03	0.03	0.05	0.05	0.03	0.03	0.05	0.05	0.03	0.03
400	320	160	120	400	320	160	120	380	310	150	110	400	320	160	120
0.1	0.08	0.07	0.06	0.1	0.08	0.07	0.06	0.1	0.08	0.07	0.06	0.1	0.08	0.07	0.06
8-16	8-16	8-16	8	10-20	10-20	10-20	10	12-25	12-25	12-25	12	16-32	16-32	16-32	16
200	160	130	100	200	160	130	100	200	160	130	100	200	160	130	100
3980	3180	2590	1990	3180	2550	2070	1590	2550	2040	1660	1270	1990	1590	1290	990
0.1	0.1	0.08	0.08	0.1	0.1	0.08	0.08	0.1	0.1	0.08	0.08	0.1	0.1	0.08	0.08
1590	1270	830	640	1590	1270	830	640	1530	1220	790	610	1590	1270	830	640
0.2	0.16	0.14	0.12	0.2	0.16	0.14	0.12	0.2	0.16	0.14	0.12	0.2	0.16	0.14	0.12
8-16	8-16	8-16	8	10-20	10-20	10-20	10	12-25	12-25	12-25	12	16-32	16-32	16-32	16
160	128	104	80	160	128	104	80	160	128	104	80	160	128	104	80
3180	2550	2070	1590	2550	2040	1660	1270	2040	1630	1320	1020	1590	1270	1030	800
0.1	0.1	0.08	0.08	0.1	0.1	0.08	0.08	0.1	0.1	0.08	0.08	0.1	0.1	0.08	0.08
1270	1020	660	510	1270	1020	660	510	1220	980	640	490	1270	1020	660	510
0.15	0.12	0.11	0.09	0.15	0.12	0.11	0.09	0.15	0.12	0.11	0.09	0.15	0.12	0.11	0.09
8-16	8-16	8-16	8	10-20	10-20	10-20	10	12-25	12-25	12-25	12	16-32	16-32	16-32	16
200	160	130	100	200	160	130	100	200	160	130	100	200	160	130	100
3980	3180	2590	1990	3180	2550	2070	1590	2550	2040	1660	1270	1990	1590	1290	990
0.1	0.1	0.08	0.08	0.1	0.1	0.08	0.08	0.1	0.1	0.08	0.08	0.1	0.1	0.08	0.08
1590	1270	830	640	1590	1270	830	640	1530	1220	790	610	1590	1270	830	640
0.15	0.12	0.11	0.09	0.15	0.12	0.11	0.09	0.15	0.12	0.11	0.09	0.15	0.12	0.11	0.09
8-16	8-16	8-16	8	10-20	10-20	10-20	10	12-25	12-25	12-25	12	16-32	16-32	16-32	16

Cutting Conditions | Schnittwerte | Condizioni di taglio | Condiciones de Corte | Conditions de coupe | Valores de corte:

Vertical wall finishing



Page 10-11

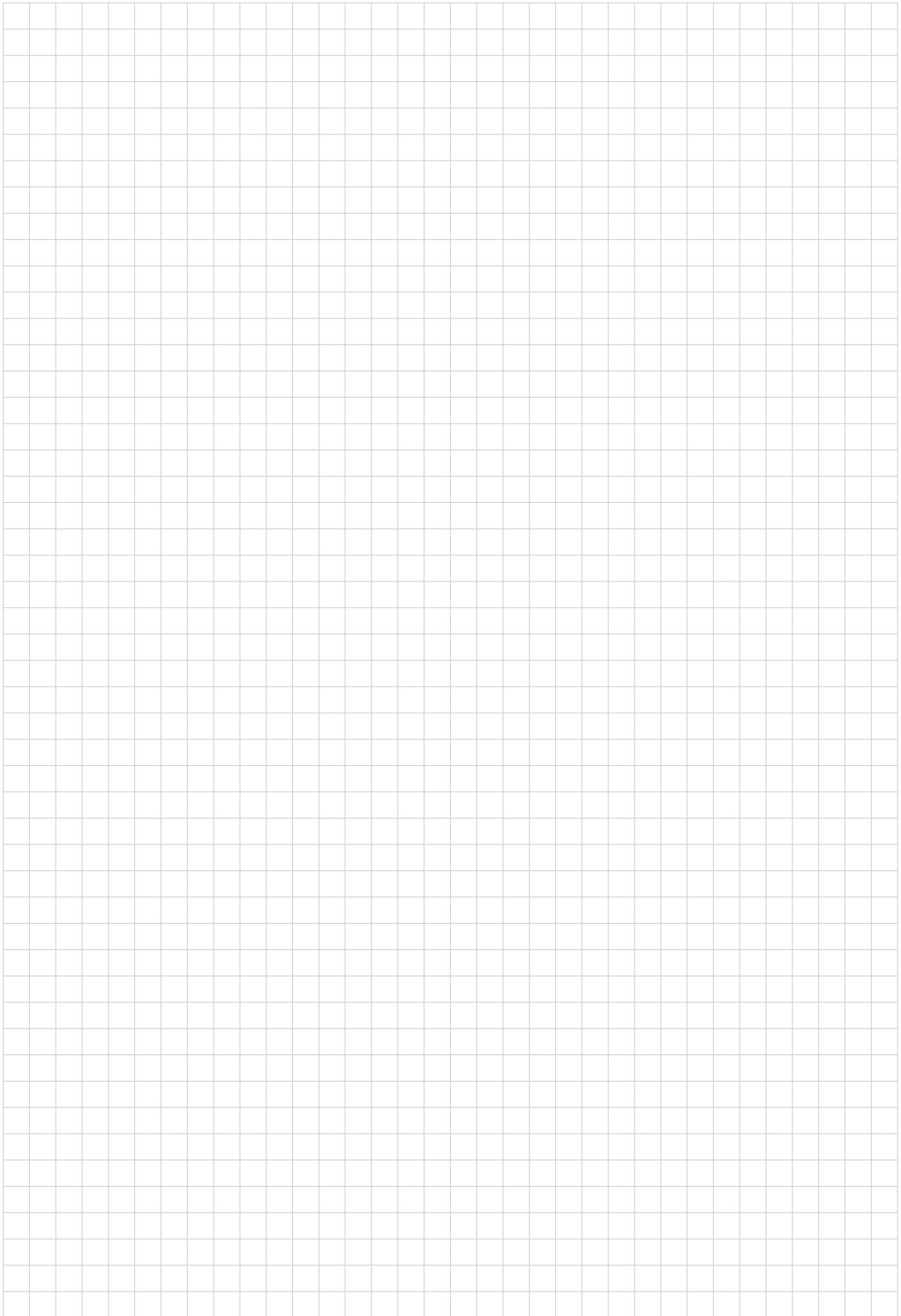
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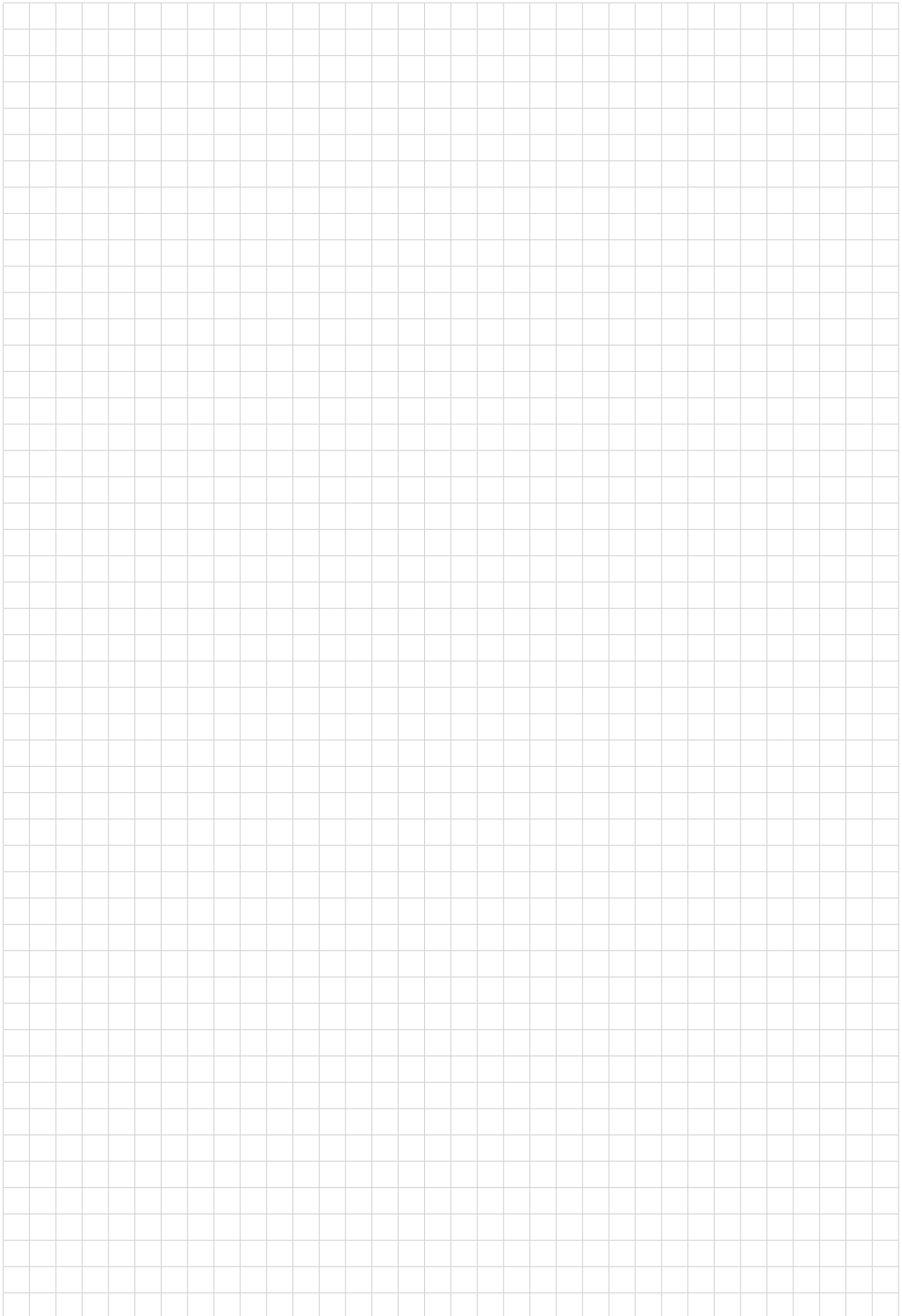


Work piece material		Recommend grade & Target hardness (HRC)					Emulsion	Mist	Air	Parameter		D 10 (Z2)				D 12 (Z3)			
												High speed	3D - 5D	5D - 7D	> 7D	High speed	3D - 5D	5D - 7D	> 7D
		30	40	50															
I II	Carbon-Steel Alloy-Steel <30HRC									V _c	m/min	400	320	260	200	400	320	260	200
		JP4005					•	•	•	n	min ⁻¹	12730	10190	8280	6370	10610	8490	6900	5310
										f _z	mm/t	0.1	0.1	0.08	0.08	0.1	0.1	0.08	0.08
										V _f	mmn/min	2550	2040	1320	1020	3180	2550	1660	1270
										a _p	mm	0.8	0.7	0.6	0.5	0.8	0.7	0.6	0.5
										a _e	mm	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
III	Alloy-Steel Tool-Steel 30~40HRC									V _c	m/min	300	240	195	150	300	240	195	150
		JP4005					•	•	•	n	min ⁻¹	9550	7640	6210	4770	7960	6370	5170	3980
										f _z	mm/t	0.1	0.1	0.08	0.08	0.1	0.1	0.08	0.08
										V _f	mmn/min	1910	1530	990	760	2390	1910	1240	950
										a _p	mm	0.8	0.7	0.6	0.5	0.8	0.7	0.6	0.5
										a _e	mm	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
IV	Pre-Hardened Steel Tool-Steel 40~50HRC									V _c	m/min	250	200	163	125	250	200	163	125
		JP4005					•	•	•	n	min ⁻¹	7960	6370	5170	3980	6630	5310	4310	3320
										f _z	mm/t	0.1	0.1	0.08	0.08	0.1	0.1	0.08	0.08
										V _f	mmn/min	1590	1270	830	640	1990	1590	1030	800
										a _p	mm	0.7	0.6	0.5	0.4	0.7	0.6	0.5	0.4
										a _e	mm	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
V	Hardened Steel Tool-Steel 50~55HRC									V _c	m/min	200	160	130	100	200	160	130	100
		JP4005					•	•	•	n	min ⁻¹	6370	5090	4140	3180	5310	4240	3450	2650
										f _z	mmn/t	0.07	0.07	0.05	0.05	0.07	0.07	0.05	0.05
										V _f	mmn/min	890	710	410	320	1110	890	520	400
										a _p	mm	0.5	0.4	0.35	0.3	0.5	0.4	0.35	0.3
										a _e	mm	< 0.15	< 0.15	< 0.15	< 0.15	< 0.15	< 0.15	< 0.15	< 0.15
V	Hardened Steel Tool-Steel > 55HRC									V _c	m/min	150	120	98	75	150	120	98	75
		JP4005					•	•	•	n	min ⁻¹	4770	3820	3100	2390	3980	3180	2590	1990
										f _z	mmn/t	0.05	0.05	0.03	0.03	0.05	0.05	0.03	0.03
										V _f	mmn/min	480	380	190	140	600	480	230	180
										a _p	mm	0.5	0.4	0.35	0.3	0.5	0.4	0.35	0.3
										a _e	mm	< 0.15	< 0.15	< 0.15	< 0.15	< 0.15	< 0.15	< 0.15	< 0.15
VIII	Cast-Iron GG EN-JL10** EN-GJL-***									V _c	m/min	250	200	163	125	250	200	163	125
		JP4005					•	•	•	n	min ⁻¹	7960	6370	5170	3980	6630	5310	4310	3320
										f _z	mmn/t	0.1	0.1	0.08	0.08	0.1	0.1	0.08	0.08
										V _f	mmn/min	1590	1270	830	640	1990	1590	1030	800
										a _p	mm	0.8	0.7	0.6	0.5	0.8	0.7	0.6	0.5
										a _e	mm	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
VIII	Cast-Iron GGG EN-JS10** EN-GJS-***									V _c	m/min	200	160	130	100	200	160	130	100
		JP4005					•	•	•	n	min ⁻¹	6370	5090	4140	3180	5310	4240	3450	2650
										f _z	mmn/t	0.1	0.1	0.08	0.08	0.1	0.1	0.08	0.08
										V _f	mmn/min	1270	1020	660	510	1590	1270	830	640
										a _p	mm	0.7	0.6	0.5	0.4	0.7	0.6	0.5	0.4
										a _e	mm	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
VI	Stainless Steels High alloy Steels									V _c	m/min	250	200	163	125	250	200	163	125
		JP4005					•	•	•	n	min ⁻¹	7960	6370	5170	3980	6630	5310	4310	3320
										f _z	mmn/t	0.1	0.1	0.08	0.08	0.1	0.1	0.08	0.08
										V _f	mmn/min	1590	1270	830	640	1990	1590	1030	800
										a _p	mm	0.8	0.7	0.6	0.5	0.8	0.7	0.6	0.5
										a _e	mm	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2

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D 16 (Z4)				D 20 (Z5)				D 25 (Z6)				D 32 (Z8)			
High speed	3D - 5D	5D - 7D	> 7D	High speed	3D - 5D	5D - 7D	> 7D	High speed	3D - 5D	5D - 7D	> 7D	High speed	3D - 5D	5D - 7D	> 7D
400	320	260	200	400	320	260	200	400	320	260	200	400	320	260	200
7960	6370	5170	3980	6370	5090	4140	3180	5090	4070	3310	2550	3980	3180	2590	1990
0.09	0.09	0.07	0.07	0.09	0.09	0.07	0.07	0.08	0.08	0.06	0.06	0.07	0.07	0.05	0.05
2860	2290	1450	1110	2860	2290	1450	1110	2440	1960	1190	920	2230	1780	1030	800
0.8	0.7	0.6	0.5	0.8	0.7	0.6	0.5	0.8	0.7	0.6	0.5	0.8	0.7	0.6	0.5
< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
300	240	195	150	300	240	195	150	300	240	195	150	300	240	195	150
5970	4770	3880	2980	4770	3820	3100	2390	3820	3060	2480	1910	2980	2390	1940	1490
0.09	0.09	0.07	0.07	0.09	0.09	0.07	0.07	0.08	0.08	0.06	0.06	0.08	0.08	0.06	0.06
2150	1720	1090	840	2150	1720	1090	840	1830	1470	890	690	1910	1530	930	720
0.8	0.7	0.6	0.5	0.8	0.7	0.6	0.5	0.8	0.7	0.6	0.5	0.8	0.7	0.6	0.5
< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
250	200	163	125	250	200	163	125	250	200	163	125	250	200	163	125
4970	3980	3230	2490	3980	3180	2590	1990	3180	2550	2070	1590	2490	1990	1620	1240
0.09	0.09	0.07	0.07	0.09	0.09	0.07	0.07	0.08	0.08	0.06	0.06	0.08	0.08	0.06	0.06
1790	1430	910	700	1790	1430	910	700	1530	1220	740	570	1590	1270	780	600
0.7	0.6	0.5	0.4	0.7	0.6	0.5	0.4	0.7	0.6	0.5	0.4	0.7	0.6	0.5	0.4
< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
200	160	130	100	200	160	130	100	200	160	130	100	200	160	130	100
3980	3180	2590	1990	3180	2550	2070	1590	2550	2040	1660	1270	1990	1590	1290	990
0.06	0.06	0.05	0.05	0.06	0.06	0.05	0.05	0.05	0.05	0.04	0.04	0.05	0.05	0.04	0.04
950	760	520	400	950	760	520	400	760	610	400	310	800	640	410	320
0.5	0.4	0.35	0.3	0.5	0.4	0.35	0.3	0.5	0.4	0.35	0.3	0.5	0.4	0.35	0.3
< 0.15	< 0.15	< 0.15	< 0.15	< 0.15	< 0.15	< 0.15	< 0.15	< 0.15	< 0.15	< 0.15	< 0.15	< 0.15	< 0.15	< 0.15	< 0.15
150	120	98	75	150	120	98	75	150	120	98	75	150	120	98	75
2980	2390	1940	1490	2390	1910	1550	1190	1910	1530	1240	950	1490	1190	970	750
0.04	0.04	0.03	0.03	0.04	0.04	0.03	0.03	0.035	0.035	0.025	0.025	0.035	0.035	0.025	0.025
480	380	230	180	480	380	230	180	400	320	190	140	420	330	190	150
0.5	0.4	0.35	0.3	0.5	0.4	0.35	0.3	0.5	0.4	0.35	0.3	0.5	0.4	0.35	0.3
< 0.15	< 0.15	< 0.15	< 0.15	< 0.15	< 0.15	< 0.15	< 0.15	< 0.15	< 0.15	< 0.15	< 0.15	< 0.15	< 0.15	< 0.15	< 0.15
250	200	163	125	250	200	163	125	250	200	163	125	250	200	163	125
4970	3980	3230	2490	3980	3180	2590	1990	3180	2550	2070	1590	2490	1990	1620	1240
0.09	0.09	0.07	0.07	0.09	0.09	0.07	0.07	0.08	0.08	0.06	0.06	0.08	0.08	0.06	0.06
1790	1430	910	700	1790	1430	910	700	1530	1220	740	570	1590	1270	780	600
0.8	0.7	0.6	0.5	0.8	0.7	0.6	0.5	0.8	0.7	0.6	0.5	0.8	0.7	0.6	0.5
< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
200	160	130	100	200	160	130	100	200	160	130	100	200	160	130	100
3980	3180	2590	1990	3180	2550	2070	1590	2550	2040	1660	1270	1990	1590	1290	990
0.09	0.09	0.07	0.07	0.09	0.09	0.07	0.07	0.08	0.08	0.06	0.06	0.08	0.08	0.06	0.06
1430	1150	720	560	1430	1150	720	560	1220	980	600	460	1270	1020	620	480
0.7	0.6	0.5	0.4	0.7	0.6	0.5	0.4	0.7	0.6	0.5	0.4	0.7	0.6	0.5	0.4
< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
250	200	163	125	250	200	163	125	250	200	163	125	250	200	163	125
4970	3980	3230	2490	3980	3180	2590	1990	3180	2550	2070	1590	2490	1990	1620	1240
0.09	0.09	0.07	0.07	0.09	0.09	0.07	0.07	0.08	0.08	0.06	0.06	0.08	0.08	0.06	0.06
1790	1430	910	700	1790	1430	910	700	1530	1220	740	570	1590	1270	780	600
0.8	0.7	0.6	0.5	0.8	0.7	0.6	0.5	0.8	0.7	0.6	0.5	0.8	0.7	0.6	0.5
< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2





Always up to date: Please check our P50 QuickFinder



Attentions on Safety

1. Cautions regarding handling

- (1) When removing the tool from its case (packaging), be careful that the tool does not pop out or is dropped. Be particularly careful regarding contact with the tool flutes.
- (2) When handling tools with sharp cutting flutes, be careful not to touch the cutting flutes directly with your bare hands.

2. Cautions regarding mounting

- (1) Before use, check the outside appearance of the tool for scratches, cracks, etc. and that it is firmly mounted in the collet chuck, etc.
- (2) When preparing for use, be sure that the inserts are firmly mounted in place and that they are firmly mounted on the arbor, etc.
- (3) If abnormal chattering, etc. occurs during use, stop the machine immediately and remove the cause of the chattering.

3. Cautions during use

- (1) Before use, confirm the dimensions and direction of rotation of the tool and milling work material.
- (2) The numerical values in the standard cutting conditions table should be used as criteria when starting new work. The cutting conditions should be adjusted as appropriate when the cutting depth is large, the rigidity of the machine being used is low, or according to the conditions of the work material.
- (3) Cutting tools are made of a hard material. During use, they may break and fly off. In addition, cutting chips may also fly off. Since there is a danger of injury to workers, fire, or eye damage from such flying pieces, a safety cover should be attached when work is performed and safety equipment such as safety goggles should be worn to create a safe environment for work.
- (4) There is a risk of fire or inflammation due to sparks, heat due to breakage, and cutting chips. Do not use where there is a risk of fire or explosion. Please caution of fire while using oil base coolant, fire prevention is necessary.
- (5) Do not use the tool for any purpose other than that for which it is intended.

4. Cautions regarding regrinding

- (1) If regrinding is not performed at the proper time, there is a risk of the tool breaking. Replace the tool with one in good condition, or perform regrinding.
- (2) Grinding dust will be created when regrinding a tool. When regrinding, be sure to attach a safety cover over the work area and wear safety clothes such as safety goggles, etc.
- (3) This product contains the specified chemical substance cobalt and its inorganic compounds. When performing regrinding or similar processing, be sure to handle the processing in accordance with the local laws and regulations regarding prevention of hazards due to specified chemical substances.

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Specifications for the products listed in this catalog are subject to change without notice due to replacement or modification.

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