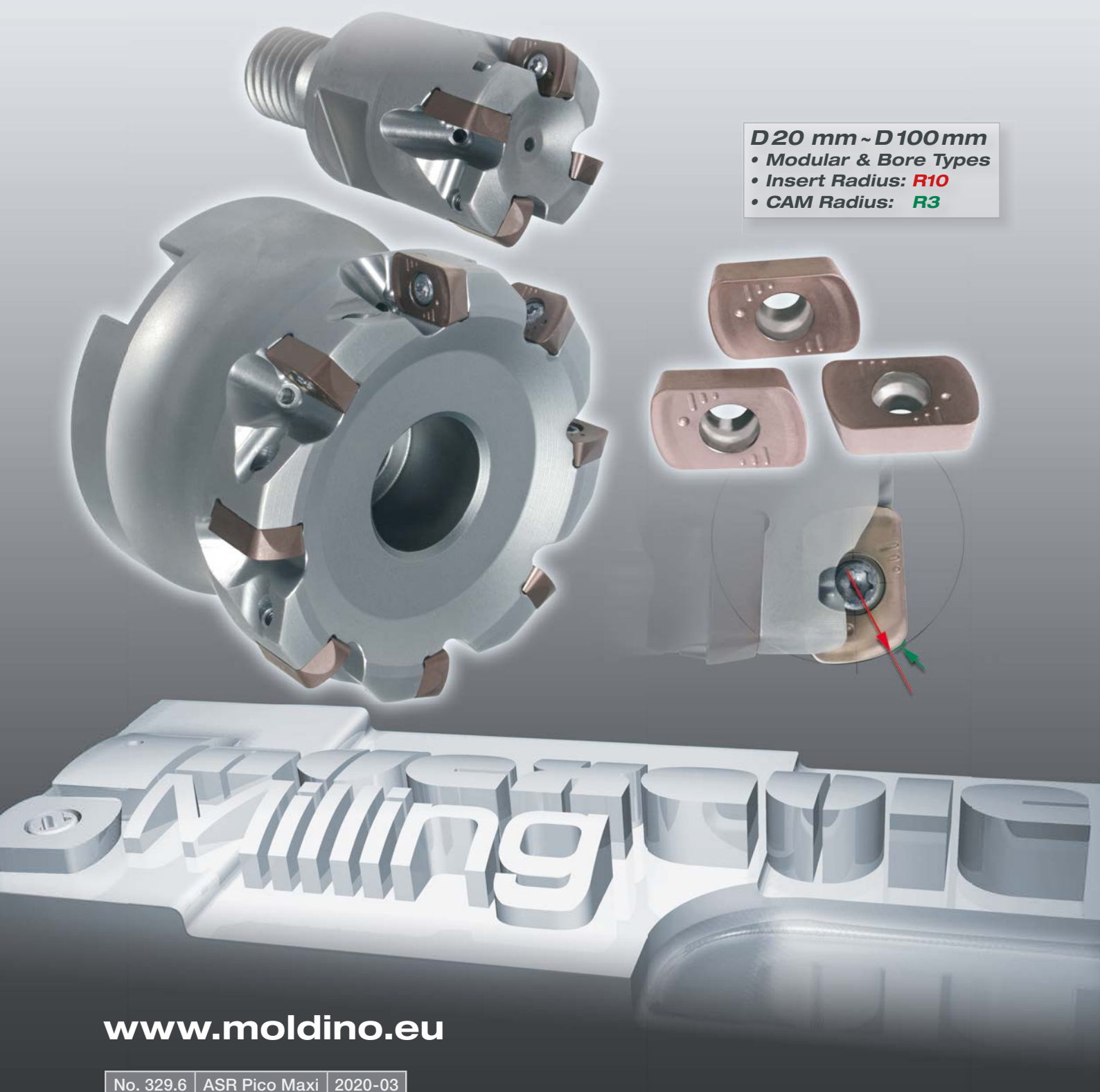


ASR Pico Maxi Turbo Metric Series

High Feed Cutting (HFC) & High Hardness Cutting (HHC)

D20 mm ~ D100 mm

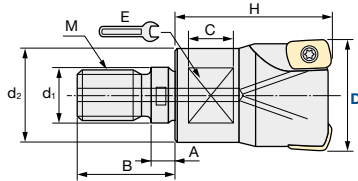
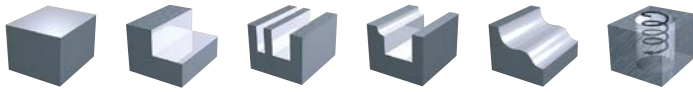
- **Modular & Bore Types**
- **Insert Radius: *R10***
- **CAM Radius: *R3***



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ASRM | Pico Maxi – Turbo Metric Series – Modular Type

Q max	Jet	▽	▽▽	HRC	No. of Teeth
High Efficient	Air Hole	Roughing	Semi-Finishing	62	2~6



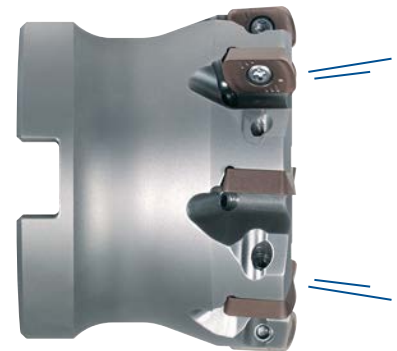
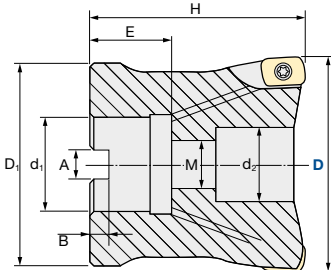
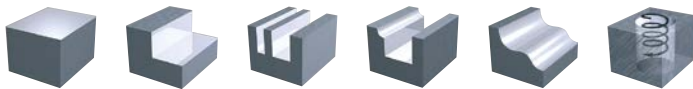
Diameter Holder only [mm]	CAM Radius:	Fastening Torque [Nm]
-0.1/-0.2 mm	3 mm	2.0 Nm

Modular Type												
ID Code	Item Code	Flutes	D	H	d ₁	M	d ₂	A	B	C	E	Inserts
FH180	ASRM-3020R-2-M10	2	20	30	10.5	M10	18	5.5	19	10	15	EPNW08T3TN-10 EPMT08T3TN-10
FH181	ASRM-3025R-3-M12	3	25	35	12.5	M12	21	5.5	22	10	17	
FH173	ASRM-3032R-4-M16	4	32	40	17	M16	29	6	23	12	22	
FH174	ASRM-3035R-4-M16		35									
FH175	ASRM-3042R-6-M16	6	42									
												<div>Wrench Size</div>

Wrench Size

ASRB | Pico Maxi – Turbo Metric Series – Bore Type

Q max	Jet	▽	▽▽	HRC	No. of Teeth
High Efficient	Air Hole	Roughing	Semi-Finishing	62	6~10



Diameter Holder only [mm]	CAM Radius:	Fastening Torque [Nm]
-0.1/-0.2 mm	3 mm	2.0 Nm

Bore Type												
ID Code	Item Code	Flutes	D	H	d ₁	d ₂	M	D ₁	A	B	E	Inserts
FH167	ASRB-3042RM-6-16	6	42	40	16	13.5	8	35	8.4	5.6	19	EPNW08T3TN-10 EPMT08T3TN-10
FH274	ASRB-3050RM-7-22	7	50	50	22	17	10	40	10.4	6.3	20	
FH168	ASRB-3052RM-7-22		52					45	12.4	7	22	
FH169	ASRB-3052RM-7-27											
FH275	ASRB-3063RM-8-27	8	63	70	27	20	12	60	12.4	7	22	
FH170	ASRB-3066RM-8-27		66									
FH171	ASRB-3080RM-9-27	9	80	70	32	26	16	70	14.4	8	25.5	
FH172	ASRB-3100RM-10-32	10	100									

For more Details about ASR Pico and EPNW06...-8 Inserts please see our brochure No. 320 ASR Pico

Mehr Details über ASR Pico und EPNW06...-8 Schneidplatten finden Sie in unserem Prospekt No. 320 ASR Pico

Per maggiori dettagli relative a ASR Pico ed inserti EPNW06...-8 fare riferimento al nostro catalogo No. 320 ASR Pico

Para una información más detallada acerca del ASR Pico y las placas EPNW06...-8 ver nuestro catálogo ASR Pico No. 320

Pour plus de détails concernant notre ASR Pico et les EPNW06...-8 référez-vous à notre brochure N° 320 ASR Pico

Para mais detalhes sobre a ASR Pico e plaquetas EPNW06...-8 consulte nosso folheto N° 320 ASR Pico



INSERTS ASRM/ASRB | Pico Maxi – Turbo Metric Series – Modular/Bore Type

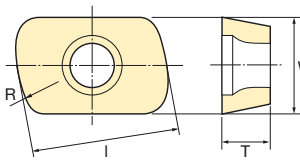


Fig.1: EPNW Standard Shape

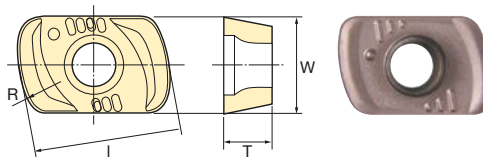
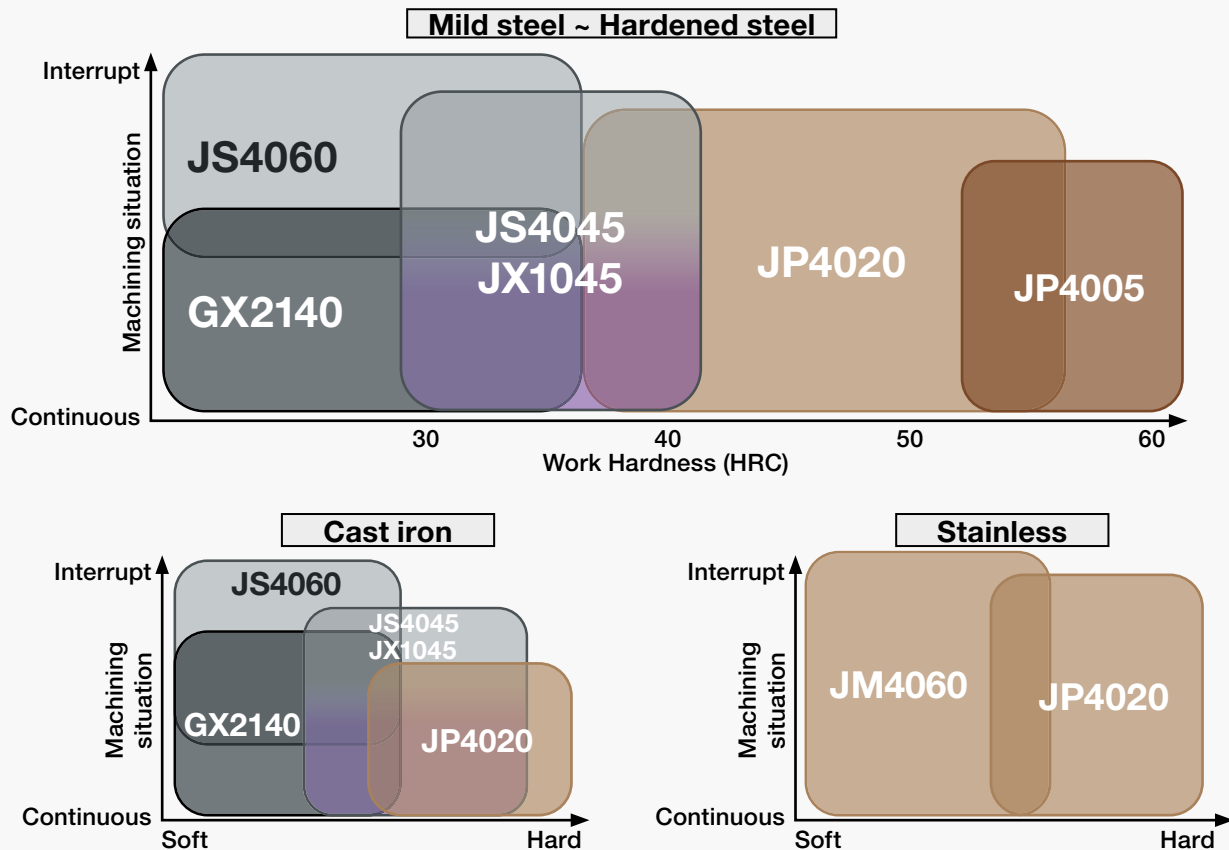




Fig.2: EPMT with Breaker

<div>Soft ← Target Hardness of Workpiece → Hard</div>													
Inserts	Tolerance Class	Grade							Size (mm)				
		GX2140	JM4060	JS4060	JX1045	JS4045	JP4020	JP4005	R	I	T	W	
Item Code		ID Code											
EPNW-08T3TN-10	N	WF243		WF204	WF205	WF373	WF203	WF342	10	12.648	3.97	8.25	Fig.1
EPMT-08T3TN-10	M	WF242	WF343	WF201	WF202	WF372	WF200						Fig.2

GX2140	CVD · For heavy roughing of mild steels Recommended for dry cutting
JM4060	PVD · For stainless steels
JX1045	PVD · General grade for 30–40 HRC Recommended for dry cutting
JS4045 – 4060	PVD · General grade for 30–40 HRC Recommended for dry cutting
JP4020	PVD · For pre-hardened steels 40–55 HRC
JP4005	PVD · For hardened steels > 50 HRC

ASR Pico Maxi Insert grade – target material




Type	Cutter body	Parts Shape	Clamp Screw		Wrench	
			ID Code	Item Code	ID Code	Item Code
Modular	ASRM-3020R-2-M10 – ASRM-3042R-6-M16		ET152	265-141		ET011
Bore Type	ASRB-3042RM-6-16 – ASRB-3100RM-10-32					
						104-T10


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


D 20 (Z2) – D 42 (Z6) | Page 4–5 | D 50 (Z7) – D 100 (Z10) | Page 6–7


ASRM/ASRB | Pico Maxi – Recommended Cutting Conditions


Work piece material		Recommend grade & Target hardness (HRC)			Emulsion	Mist	Air	Parameter	D 20 (Z2)				D 25 (Z3)					
									Q max	3D - 5D	5D - 7D	> 7D	Q max	3D - 5D	5D - 7D	> 7D		
		30	40	50														
I II	Carbon-Steel Alloy-Steel <30HRC							V _c	m/min	200	160	130	100	200	160	130	100	
		GX2140						•	n	min ⁻¹	3180	2550	2070	1590	2550	2040	1660	1270
								•	f _z	mm/t	1.8	1.8	1.2	1.2	1.8	1.8	1.2	1.2
		JS4060						•	V _f	mm/min	11460	9170	4970	3820	13750	11000	5960	4580
		JS4045							a _p	mm	1.2	1.2	0.8	0.6	1.2	1.2	0.8	0.6
		JX1045							a _e	mm	14	14	14	14	18	18	18	18
III	Alloy-Steel Tool-Steel 30~40HRC							Q	cm³/min	193	154	54	32	297	238	84	49	
								V _c	m/min	160	128	104	80	160	128	104	80	
		GX2140						•	n	min ⁻¹	2550	2040	1660	1270	2040	1630	1320	1020
								•	f _z	mm/t	1.8	1.8	1.2	1.2	1.8	1.8	1.2	1.2
		JS4045						•	V _f	mm/min	9170	7330	3970	3060	11000	8800	4770	3670
		JX1045						•	a _p	mm	1	1	0.7	0.5	1	1	0.7	0.5
IV	Pre-Hardened Steel Tool-Steel 40~50HRC							a _e	mm	14	14	14	14	18	18	18	18	
								Q	cm³/min	128	103	36	21	198	158	56	33	
								V _c	m/min	120	96	78	60	120	96	78	60	
								n	min ⁻¹	1910	1530	1240	950	1530	1220	990	760	
								f _z	mm/t	1.2	1.2	1	1	1.2	1.2	1	1	
		JS4045						•	V _f	mm/min	4580	3670	2480	1910	5500	4400	2980	2290
V	Hardened Steel Tool-Steel 50~55HRC	JX1045						•	a _p	mm	0.8	0.8	0.5	0.4	0.8	0.8	0.5	0.4
								•	a _e	mm	14	14	14	14	18	18	18	18
								Q	cm³/min	51	41	18	11	79	63	28	16	
								V _c	m/min	100	80	65	50	100	80	65	50	
								n	min ⁻¹	1590	1270	1030	800	1270	1020	830	640	
								f _z	mm/t	0.8	0.8	0.6	0.6	0.8	0.8	0.6	0.6	
VI	Hardened Steel Tool-Steel > 55HRC	V _f						•	a _p	mm	0.5	0.5	0.3	0.25	0.5	0.5	0.3	0.25
								•	a _e	mm	14	14	14	14	18	18	18	18
								•	Q	cm³/min	18	14	6	3	28	22	9	5
								V _c	m/min	80	64	52	40	80	64	52	40	
								n	min ⁻¹	1270	1020	830	640	1020	810	660	510	
								f _z	mm/t	0.6	0.6	0.4	0.4	0.6	0.6	0.4	0.4	
VII	Cast-Iron GG EN-JL10** EN-GJL-***							V _f	mm/min	1530	1220	660	510	1830	1470	790	610	
								a _p	mm	0.35	0.35	0.2	0.175	0.35	0.35	0.2	0.175	
								•	a _e	mm	14	14	14	14	18	18	18	18
								•	Q	cm³/min	7	6	2	1	12	9	3	2
								V _c	m/min	200	160	130	100	200	160	130	100	
								n	min ⁻¹	3180	2550	2070	1590	2550	2040	1660	1270	
VIII	Cast-Iron GGG EN-JS10** EN-GJS-***	JS4060						•	f _z	mm/t	1.8	1.8	1.2	1.2	1.8	1.8	1.2	1.2
		JS4045						•	V _f	mm/min	11460	9170	4970	3820	13750	11000	5960	4580
		JX1045						•	a _p	mm	1.2	1.2	0.8	0.6	1.2	1.2	0.8	0.6
								•	a _e	mm	14	14	14	14	18	18	18	18
								Q	cm³/min	193	154	54	32	297	238	84	49	
								V _c	m/min	180	144	117	90	180	144	117	90	
IX	Stainless Steels High alloy Steels	GX2140						•	n	min ⁻¹	2860	2290	1860	1430	2290	1830	1490	1150
								•	f _z	mm/t	1.5	1.5	1	1	1.5	1.5	1	1
		JS4060						•	V _f	mm/min	8590	6880	3720	2860	10310	8250	4470	3440
		JS4045						•	a _p	mm	1.2	1.2	0.8	0.6	1.2	1.2	0.8	0.6
								•	a _e	mm	14	14	14	14	18	18	18	18
								Q	cm³/min	144	116	41	24	223	178	63	37	
X	Stainless Steels High alloy Steels							V _c	m/min	160	128	104	80	160	128	104	80	
								n	min ⁻¹	2550	2040	1660	1270	2040	1630	1320	1020	
		JM4060						•	f _z	mm/t	1.5	1.5	1	1	1.5	1.5	1	1
		JS4045						•	V _f	mm/min	7640	6110	3310	2550	9170	7330	3970	3060
		JX1045						•	a _p	mm	1.2	0.8	0.6	0.4	1.2	0.8	0.6	0.4
								•	a _e	mm	14	14	14	14	18	18	18	18
XI	Stainless Steels High alloy Steels							Q	cm³/min	128	68	28	14	198	106	43	22	


 All conditions must be adopted to the machine stability.
In case of ISO40 please reduce a_p & f_z if necessary. Good air-blow or horizontal machining is recommended for chip evacuation.

 Alle Schnittbedingungen müssen an die Stabilität der Maschine angepasst werden. Bei Verwendung von ISO40-Aufnahmen reduzieren Sie, falls erforderlich, a_p & f_z . Zur Späneabfuhr empfehlen wir ausreichende Blasluft oder die Horizontalbearbeitung.

 Le condizioni di taglio vanno comunque predisposte in funzione alla stabilità della macchina utensile. In caso di mandrini ISO40 se necessario ridurre a_p e f_z . Per quanto riguarda l'evacuazione dei trucioli è raccomandabile l'utilizzo di soffio d'aria sufficientemente potente o di predisporre ove possibile la lavorazione su centri di lavoro orizzontali.

 Las condiciones deben adaptarse a la estabilidad de la máquina.
En caso de ISO 40 reduzca la a_p & f_z si es necesario. Un buen caudal de aire o mecanizado horizontal se recomiendan para evacuar la viruta

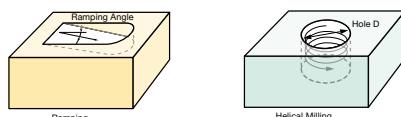
 Toutes nos conditions de coupe doivent être adaptées en fonction de la stabilité de la machine. En cas de broche ISO40, veuillez réduire a_p et f_z si nécessaire. Un soufflage d'air et/ou un montage horizontal sont recommandés pour l'évacuation des copeaux.

 Todas as condições devem adoptar-se para a estabilidade da máquina. No caso de ISO40 por favor reduzir a_p & f_z se for necessário. Boa pressão de ar ou maquinação horizontal é recomendado para remoção de limalhas.

ASRM/ASRB | Pico Maxi – Recommended Cutting Conditions

D 32 (Z4)				D 35 (Z4)				D 42 (Z6)			
Q max	3D - 5D	5D - 7D	> 7D	Q max	3D - 5D	5D - 7D	> 7D	Q max	3D - 5D	5D - 7D	> 7D
200	160	130	100	200	160	130	100	200	160	130	100
1990	1590	1290	990	1820	1460	1180	910	1520	1210	990	760
1.8	1.8	1.2	1.2	1.8	1.8	1.2	1.2	1.8	1.8	1.2	1.2
14320	11460	6210	4770	13100	10480	5680	4370	16370	13100	7090	5460
1.2	1.2	0.8	0.6	1.2	1.2	0.8	0.6	1.2	1.2	0.8	0.6
22	22	22	22	24	24	24	24	29	29	29	29
378	303	107	63	377	302	106	63	570	456	160	95
160	128	104	80	160	128	104	80	160	128	104	80
1590	1270	1030	800	1460	1160	950	730	1210	970	790	610
1.8	1.8	1.2	1.2	1.8	1.8	1.2	1.2	1.8	1.8	1.2	1.2
11460	9170	4970	3820	10480	8380	4540	3490	13100	10480	5680	4370
1	1	0.7	0.5	1	1	0.7	0.5	1	1	0.7	0.5
22	22	22	22	24	24	24	24	29	29	29	29
252	202	71	42	252	201	71	42	380	304	107	63
120	96	78	60	120	96	78	60	120	96	78	60
1190	950	780	600	1090	870	710	550	910	730	590	450
1.2	1.2	1	1	1.2	1.2	1	1	1.2	1.2	1	1
5730	4580	3100	2390	5240	4190	2840	2180	6550	5240	3550	2730
0.8	0.8	0.5	0.4	0.8	0.8	0.5	0.4	0.8	0.8	0.5	0.4
22	22	22	22	24	24	24	24	29	29	29	29
101	81	35	21	101	80	35	21	152	122	54	32
100	80	65	50	100	80	65	50	100	80	65	50
990	800	650	500	910	730	590	450	760	610	490	380
0.8	0.8	0.6	0.6	0.8	0.8	0.6	0.6	0.8	0.8	0.6	0.6
3180	2550	1550	1190	2910	2330	1420	1090	3640	2910	1770	1360
0.5	0.5	0.3	0.25	0.5	0.5	0.3	0.25	0.5	0.5	0.3	0.25
22	22	22	22	24	24	24	24	29	29	29	29
35	28	11	7	35	28	11	7	53	42	17	10
80	64	52	40	80	64	52	40	80	64	52	40
800	640	520	400	730	580	470	360	610	490	390	300
0.6	0.6	0.4	0.4	0.6	0.6	0.4	0.4	0.6	0.6	0.4	0.4
1910	1530	830	640	1750	1400	760	580	2180	1750	950	730
0.35	0.35	0.2	0.175	0.35	0.35	0.2	0.175	0.35	0.35	0.2	0.175
22	22	22	22	24	24	24	24	29	29	29	29
15	12	4	2	15	12	4	2	22	18	6	4
200	160	130	100	200	160	130	100	200	160	130	100
1990	1590	1290	990	1820	1460	1180	910	1520	1210	990	760
1.8	1.8	1.2	1.2	1.8	1.8	1.2	1.2	1.8	1.8	1.2	1.2
14320	11460	6210	4770	13100	10480	5680	4370	16370	13100	7090	5460
1.2	1.2	0.8	0.6	1.2	1.2	0.8	0.6	1.2	1.2	0.8	0.6
22	22	22	22	24	24	24	24	29	29	29	29
378	303	107	63	377	302	106	63	570	456	160	95
180	144	117	90	180	144	117	90	180	144	117	90
1790	1430	1160	900	1640	1310	1060	820	1360	1090	890	680
1.5	1.5	1	1	1.5	1.5	1	1	1.5	1.5	1	1
10740	8590	4660	3580	9820	7860	4260	3270	12280	9820	5320	4090
1.2	1.2	0.8	0.6	1.2	1.2	0.8	0.6	1.2	1.2	0.8	0.6
22	22	22	22	24	24	24	24	29	29	29	29
284	227	80	47	283	226	80	47	427	342	120	71
160	128	104	80	160	128	104	80	160	128	104	80
1590	1270	1030	800	1460	1160	950	730	1210	970	790	610
1.5	1.5	1	1	1.5	1.5	1	1	1.5	1.5	1	1
9550	7640	4140	3180	8730	6980	3780	2910	10910	8730	4730	3640
1.2	0.8	0.6	0.4	1.2	0.8	0.6	0.4	1.2	0.8	0.6	0.4
22	22	22	22	24	24	24	24	29	29	29	29
252	134	55	28	251	134	54	28	380	203	82	42


Ramping / Helical Milling





Tool diameter D mm	D 32	D 35	D 42	D 52	D 66	D 80	D 100
Max. ramp angle °	4.5°	3.5	2.5°	1.5°	1°	0.5°	0.5°
Helical Milling / Hole Dia. (mm)	50 ~ 62	56 ~ 68	70 ~ 82	90 ~ 102	118 ~ 130	146 ~ 158	186 ~ 198


ASRM/ASRB | Pico Maxi – Recommended Cutting Conditions


Work piece material		Recommend grade & Target hardness (HRC)			Emulsion	Mist	Air	Parameter	D 50 / D 52 (Z7)				D 63 / D 66 (Z8)					
									Q max	3D - 5D	5D - 7D	> 7D	Q max	3D - 5D	5D - 7D	> 7D		
		30	40	50														
I II	Carbon-Steel Alloy-Steel <30HRC							V _c	m/min	200	160	130	100	200	160	130	100	
		GX2140						•	n	min ⁻¹	1220	980	800	610	960	770	630	480
								•	f _z	mm/t	1.8	1.8	1.2	1.2	1.8	1.8	1.2	1.2
		JS4060					•	•	V _f	mm/min	15430	12340	6680	5140	13890	11110	6020	4630
		JS4045							a _p	mm	1.2	1.2	0.8	0.6	1.2	1.2	0.8	0.6
		JX1045							a _e	mm	36	36	36	36	48	48	48	48
III	Alloy-Steel Tool-Steel 30~40HRC							Q	cm³/min	667	533	188	111	800	640	225	133	
								V _c	m/min	160	128	104	80	160	128	104	80	
		GX2140						•	n	min ⁻¹	980	780	640	490	770	620	500	390
		JS4060					•	•	f _z	mm/t	1.8	1.8	1.2	1.2	1.8	1.8	1.2	1.2
		JS4045							V _f	mm/min	12340	9870	5350	4110	11110	8890	4820	3700
		JX1045							a _p	mm	1	1	0.7	0.5	1	1	0.7	0.5
IV	Pre-Hardened Steel Tool-Steel 40~50HRC							a _e	mm	36	36	36	36	48	48	48	48	
								Q	cm³/min	444	355	125	74	533	427	150	89	
								V _c	m/min	120	96	78	60	120	96	78	60	
								n	min ⁻¹	730	590	480	370	580	460	380	290	
								f _z	mm/t	1.2	1.2	1	1	1.2	1.2	1	1	
		JS4045						•	V _f	mm/min	6170	4940	3340	2570	5560	4440	3010	2310
V	Hardened Steel Tool-Steel 50~55HRC	JX1045						a _p	mm	0.8	0.8	0.5	0.4	0.8	0.8	0.5	0.4	
								a _e	mm	36	36	36	36	48	48	48	48	
								Q	cm³/min	178	142	63	37	214	170	75	44	
								V _c	m/min	100	80	65	50	100	80	65	50	
								n	min ⁻¹	610	490	400	310	480	390	310	240	
								f _z	mm/t	0.8	0.8	0.6	0.6	0.8	0.8	0.6	0.6	
VI	Hardened Steel Tool-Steel > 55HRC							V _f	mm/min	3430	2740	1670	1290	3090	2470	1500	1160	
								a _p	mm	0.5	0.5	0.3	0.25	0.5	0.5	0.3	0.25	
								a _e	mm	36	36	36	36	48	48	48	48	
								Q	cm³/min	62	49	20	12	74	59	23	14	
								V _c	m/min	80	64	52	40	80	64	52	40	
								n	min ⁻¹	490	390	320	240	390	310	250	190	
VII	Cast-Iron GG EN-JL10** EN-GJL-***							f _z	mm/t	0.6	0.6	0.4	0.4	0.6	0.6	0.4	0.4	
								V _f	mm/min	2060	1650	890	690	1850	1480	800	620	
								a _p	mm	0.35	0.35	0.2	0.175	0.35	0.35	0.2	0.175	
								a _e	mm	36	36	36	36	48	48	48	48	
								Q	cm³/min	26	21	7	4	31	25	9	5	
								V _c	m/min	200	160	130	100	200	160	130	100	
VIII	Cast-Iron GGG EN-JS10** EN-GJS-***	GX2140						•	n	min ⁻¹	1220	980	800	610	960	770	630	480
		JS4060					•	•	f _z	mm/t	1.8	1.8	1.2	1.2	1.8	1.8	1.2	1.2
		JS4045							V _f	mm/min	15430	12340	6680	5140	13890	11110	6020	4630
		JX1045							a _p	mm	1.2	1.2	0.8	0.6	1.2	1.2	0.8	0.6
		JP4020					•	•	a _e	mm	36	36	36	36	48	48	48	48
								Q	cm³/min	667	533	188	111	800	640	225	133	
IX	Stainless Steels High alloy Steels							V _c	m/min	180	144	117	90	180	144	117	90	
		GX2140						•	n	min ⁻¹	1100	880	720	550	870	690	560	430
		JS4060					•	•	f _z	mm/t	1.5	1.5	1	1	1.5	1.5	1	1
		JS4045							V _f	mm/min	11570	9260	5010	3860	10420	8330	4510	3470
		JX1045							a _p	mm	1.2	1.2	0.8	0.6	1.2	1.2	0.8	0.6
								a _e	mm	36	36	36	36	48	48	48	48	
X	Stainless Steels High alloy Steels							Q	cm³/min	500	400	141	83	600	480	169	100	
								V _c	m/min	160	128	104	80	160	128	104	80	
								n	min ⁻¹	980	780	640	490	770	620	500	390	
		JM4060					•	•	f _z	mm/t	1.5	1.5	1	1	1.5	1.5	1	1
		JS4045							V _f	mm/min	10280	8230	4460	3430	9260	7410	4010	3090
		JX1045							a _p	mm	1.2	0.8	0.6	0.4	1.2	0.8	0.6	0.4
XI	Stainless Steels High alloy Steels	JP4020					•	•	a _e	mm	36	36	36	36	48	48	48	48
								Q	cm³/min	444	237	96	49	533	285	115	59	


 All conditions must be adopted to the machine stability.
In case of ISO40 please reduce a_p & f_z if necessary. Good air-blow or horizontal machining is recommended for chip evacuation.

 Alle Schnittbedingungen müssen an die Stabilität der Maschine angepasst werden. Bei Verwendung von ISO40-Aufnahmen reduzieren Sie, falls erforderlich, a_p & f_z . Zur Späneabfuhr empfehlen wir ausreichende Blasluft oder die Horizontalbearbeitung.

 Le condizioni di taglio vanno comunque predisposte in funzione alla stabilità della macchina utensile. In caso di mandrini ISO40 se necessario ridurre a_p e f_z . Per quanto riguarda l'evacuazione dei trucioli è raccomandabile l'utilizzo di soffio d'aria sufficientemente potente o di predisporre ove possibile la lavorazione su centri di lavoro orizzontali.

 Las condiciones deben adaptarse a la estabilidad de la máquina.
En caso de ISO 40 reduzca la a_p & f_z si es necesario. Un buen caudal de aire o mecanizado horizontal se recomiendan para evacuar la viruta

 Toutes nos conditions de coupe doivent être adaptées en fonction de la stabilité de la machine. En cas de broche ISO40, veuillez réduire a_p et f_z si nécessaire. Un soufflage d'air et/ou un montage horizontal sont recommandés pour l'évacuation des copeaux.

 Todas as condições devem adoptar-se para a estabilidade da máquina. No caso de ISO40 por favor reduzir a_p & f_z se for necessário. Boa pressão de ar ou maquinação horizontal é recomendado para remoção de limbas.

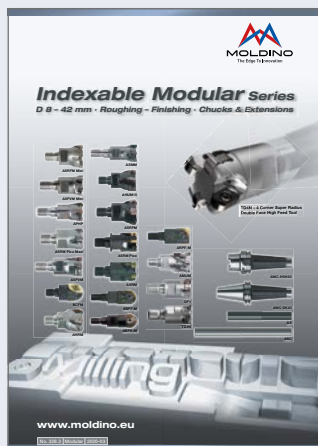


ASRM/ASRB | Pico Maxi – Recommended Cutting Conditions

D 80 (Z9)				D 100 (Z10)			
Q max	3D - 5D	5D - 7D	> 7D	Q max	3D - 5D	5D - 7D	> 7D
200	160	130	100	200	160	130	100
800	640	630	480	640	510	630	480
1.8	1.8	1.2	1.2	1.8	1.8	1.2	1.2
12890	10310	6020	4630	11460	9170	6020	4630
1.2	1.2	0.8	0.6	1.2	1.2	0.8	0.6
60	60	48	48	75	75	48	48
928	742	225	133	1031	825	225	133
160	128	104	80	160	128	104	80
640	510	500	390	510	410	500	390
1.8	1.8	1.2	1.2	1.8	1.8	1.2	1.2
10310	8250	4820	3700	9170	7330	4820	3700
1	1	0.7	0.5	1	1	0.7	0.5
60	60	48	48	75	75	48	48
619	495	150	89	688	550	150	89
120	96	78	60	120	96	78	60
480	380	380	290	380	310	380	290
1.2	1.2	1	1	1.2	1.2	1	1
5160	4130	3010	2310	4580	3670	3010	2310
0.8	0.8	0.5	0.4	0.8	0.8	0.5	0.4
60	60	48	48	75	75	48	48
248	198	75	44	275	220	75	44
100	80	65	50	100	80	65	50
400	320	310	240	320	250	310	240
0.8	0.8	0.6	0.6	0.8	0.8	0.6	0.6
2860	2290	1500	1160	2550	2040	1500	1160
0.5	0.5	0.3	0.25	0.5	0.5	0.3	0.25
60	60	48	48	75	75	48	48
86	69	23	14	96	77	23	14
80	64	52	40	80	64	52	40
320	250	250	190	250	200	250	190
0.6	0.6	0.4	0.4	0.6	0.6	0.4	0.4
1720	1380	800	620	1530	1220	800	620
0.35	0.35	0.2	0.175	0.35	0.35	0.2	0.175
60	60	48	48	75	75	48	48
36	29	9	5	40	32	9	5
200	160	130	100	200	160	130	100
800	640	630	480	640	510	630	480
1.8	1.8	1.2	1.2	1.8	1.8	1.2	1.2
12890	10310	6020	4630	11460	9170	6020	4630
1.2	1.2	0.8	0.6	1.2	1.2	0.8	0.6
60	60	48	48	75	75	48	48
928	742	225	133	1031	825	225	133
180	144	117	90	180	144	117	90
720	570	560	430	570	460	560	430
1.5	1.5	1	1	1.5	1.5	1	1
9670	7730	4510	3470	8590	6880	4510	3470
1.2	1.2	0.8	0.6	1.2	1.2	0.8	0.6
60	60	48	48	75	75	48	48
696	557	169	100	773	619	169	100
160	128	104	80	160	128	104	80
640	510	500	390	510	410	500	390
1.5	1.5	1	1	1.5	1.5	1	1
8590	6880	4010	3090	7640	6110	4010	3090
1.2	0.8	0.6	0.4	1.2	0.8	0.6	0.4
60	60	48	48	75	75	48	48
618	330	115	59	688	367	115	59

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

Indexable Modular No. 328.x



AS/ASC Shanks No. 708



⚠ Attention 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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MOLDINO Tool Engineering Europe GmbH

Itterpark 12 · 40724 Hilden · Germany · Phone +49 (0) 21 03-24 82-0 · Fax +49 (0) 21 03-24 82-30

E-Mail info@moldino.eu · Internet www.moldino.eu

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