



**Minicut**  
*International*  
Leader in Cutting Tool Technology

# Catch <sup>THE</sup> Wave

***In High performance  
ROUGHING  
of Titanium***

- **Designed for high performance rough machining of Titanium and other exotic materials**
- **State-of-the-art patented flute profile generates efficient chip formation with higher volume of metal removal**
- **“SUPREME” PVD coating specifically developed for machining high strength alloys**
- **Made with Powdered metal**

**PM - Super Cobalt** *New* **Cyclone**

**HIGH PERFORMANCE FOR  
ROUGHING & FINISHING TITANIUM**

Maximum metal removal  
at high feeds & speeds  
High pressure coolant holes  
allowing for increased chip load  
per tooth, increased toughness  
for exceptional tool life

**HAUTE PERFORMANCE POUR  
EBAUCHE ET FINITION DU TITAN**

Enlèvement de matière  
grand débit à des vitesses  
et avances supérieures  
Trous refroidissants pour  
haute pression appropriés  
augmentant les avances et  
résistance accrue pour durée  
de vie prolongée

**ALTO RENDIMIENTO PARA  
DESASTES Y ACABADOS EL  
TITANIO**

Capacidad de arranque máximo  
a alta velocidad y avances  
Agujeros de lubricación para alta  
presión para anticipos importantes  
y resistencia superada por  
duración de vida prolongada

**HÖCHSTLEISTUNG IM SCHRUPPEN  
UND SCHLICHTEN IN TITAN**

Maximalste Spanabhebung mit  
erhöhten Schnitt- und  
Vorschubgeschwindigkeiten;  
erhöhten Vorschub pro Zahn durch  
innere Kühlmittelzufuhr;  
höhere Widerstandsfähigkeit für  
längere Standzeiten des  
Werkzeuges

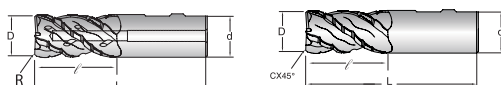


**LIST CY996**  
(WITH COOLANT HOLES)



**LIST CY996N**  
(WITHOUT COOLANT HOLES)

D	d	/	L	Z	COOLANT HOLES		NO COOLANT HOLES	
					Tool No. Uncoated	Tool No. TiAIN	Tool No. Uncoated	Tool No. TiAIN
3/8	3/8	3/4	2-1/2	4	CY996-1208	TACY996-1208	CY996N-1208	TACY996N-1208
3/8	3/8	1-3/8	3-1/8	4	CY996-1213	TACY996-1213	CY996N-1213	TACY996N-1213
1/2	1/2	1-1/4	3-1/4	4	CY996-1612	TACY996-1612	CY996N-1612	TACY996N-1612
1/2	1/2	2	4	4	CY996-1620	TACY996-1620	CY996N-1620	TACY996N-1620
5/8	5/8	1-5/8	3-3/4	4	CY996-2016	TACY996-2016	CY996N-2016	TACY996N-2016
5/8	5/8	2-1/2	4-5/8	4	CY996-2025	TACY996-2025	CY996N-2025	TACY996N-2025
3/4	3/4	1-5/8	3-7/8	4	CY996-2416	TACY996-2416	CY996N-2416	TACY996N-2416
3/4	3/4	3	5-1/4	4	CY996-2430	TACY996-2430	CY996N-2430	TACY996N-2430
1	1	2	4-1/2	5	CY996-3220	TACY996-3220	CY996N-3220	TACY996N-3220
1	1	2	4-1/2	6	CY996-3220-A	TACY996-3220-A	CY996N-3220-A	TACY996N-3220-A
1	1	3	5-1/2	5	CY996-3230	TACY996-3230	CY996N-3230	TACY996N-3230
1	1	3	5-1/2	6	CY996-3230-A	TACY996-3230-A	CY996N-3230-A	TACY996N-3230-A
1-1/4	1-1/4	2	4-1/2	5	CY996-4020	TACY996-4020	CY996N-4020	TACY996N-4020
1-1/4	1-1/4	2	4-1/2	6	CY996-4020-A	TACY996-4020-A	CY996N-4020-A	TACY996N-4020-A
1-1/4	1-1/4	3	5-1/2	5	CY996-4030	TACY996-4030	CY996N-4030	TACY996N-4030
1-1/4	1-1/4	3	5-1/2	6	CY996-4030-A	TACY996-4030-A	CY996N-4030-A	TACY996N-4030-A
1-1/4	1-1/4	4	6-1/2	5	CY996-4040	TACY996-4040	CY996N-4040	TACY996N-4040
1-1/4	1-1/4	4	6-1/2	6	CY996-4040-A	TACY996-4040-A	CY996N-4040-A	TACY996N-4040-A
1-1/2	1-1/4	2	4-1/2	6	CY996-4820-A	TACY996-4820-A	CY996N-4820-A	TACY996N-4820-A
1-1/2	1-1/4	3	5-1/2	6	CY996-4830-A	TACY996-4830-A	CY996N-4830-A	TACY996N-4830-A
1-1/2	1-1/4	4	6-1/2	6	CY996-4840-A	TACY996-4840-A	CY996N-4840-A	TACY996N-4840-A
2	1-1/4	2	4-1/2	6	CY996-6420-40A	TACY996-6420-40A	CY996N-6420-40A	TACY996N-6420-40A
2	1-1/4	4	6-1/2	6	CY996-6440-40A	TACY996-6440-40A	CY996N-6440-40A	TACY996N-6440-40A
2	2	3	6-3/4	6	CY996-6430-A	TACY996-6430-A	CY996N-6430-A	TACY996N-6430-A
2	2	4	7-3/4	6	CY996-6440-A	TACY996-6440-A	CY996N-6440-A	TACY996N-6440-A
2	2	6	9-3/4	8	CY996-6460-B	TACY996-6460-B	CY996N-6460-B	TACY996N-6460-B
2	2	8	11-3/4	8	CY996-6480-B	TACY996-6480-B	CY996N-6480-B	TACY996N-6480-B



# INCH SERIES

## PM - Super Cobalt Extended Neck

*New* **Cyclone**

**HIGH PERFORMANCE FOR  
ROUGHING DEEP POCKETS  
IN TITANIUM**

Maximum metal removal in deep pockets at high feeds & speeds  
High pressure coolant holes allowing for increased chip load per tooth, increased toughness for exceptional tool life

**HAUTE PERFORMANCE  
POUR ÉBAUCHE DE POCHES  
PROFONDES DU TITAN**

Enlèvement de matière grand débit à des vitesses et avances supérieures  
Trous refroidissants pour haute pression permettant d'augmenter les avances et résistance accrue pour durée de vie prolongée

**ALTO RENDIMIENTO PARA  
DESBASTES BOLSILLOS  
PROFUNDOS EN TITANIO**

Capacidad de arranque máximo a grandes velocidades y avances superiores  
Agujeros de lubricación para alta presión por anticipos importantes y resistencia superada por duración de vida prolongada

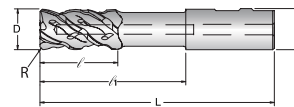
**HOCHLEISTUNGS-SCHRUPP-  
ERKZEUG FÜR TIEFE TASCHEN  
IN TITAN**

Bedeutende Spanabhebung mit erhöhten Schnitt- und Vorschubgeschwindigkeiten; innere Kühlmittelzufuhr ermöglicht höheren Vorschub; bessere Widerstandsfähigkeit für längere Standzeiten des Werkzeuges

### LIST CY997 (WITH COOLANT HOLES)



D	d	/	/ <sub>1</sub>	L	Z	Tool No. Uncoated	Tool No. TiAlN
1/2	1/2	1	3	5	4	CY997-1650	TACY997-1650
1/2	1/2	1	4	6	4	CY997-1660	TACY997-1660
5/8	5/8	1-1/4	3	5-1/8	4	CY997-2051	TACY997-2051
5/8	5/8	1-1/4	4	6-1/8	4	CY997-2061	TACY997-2061
3/4	3/4	1-1/2	3	5-1/4	4	CY997-2452	TACY997-2452
3/4	3/4	1-1/2	4	6-1/4	4	CY997-2462	TACY997-2462
3/4	3/4	1-1/2	6	8-1/4	4	CY997-2482	TACY997-2482
1	1	1-1/2	3	5-1/2	6	CY997-3255	TACY997-3255
1	1	1-1/2	4	6-1/2	6	CY997-3265	TACY997-3265
1	1	1-1/2	6	8-1/2	6	CY997-3285	TACY997-3285
1	1	1-1/2	8	10-1/2	6	CY997-32105	TACY997-32105
1-1/4	1-1/4	2-1/2	4	6-1/2	6	CY997-4065	TACY997-4065
1-1/4	1-1/4	2-1/2	5	7-1/2	6	CY997-4075	TACY997-4075
1-1/4	1-1/4	2-1/2	6	8-1/2	6	CY997-4085	TACY997-4085
1-1/2	1-1/4	2-1/2	4	6-1/2	6	CY997-4865	TACY997-4865
1-1/2	1-1/4	2-1/2	6	8-1/2	6	CY997-4885	TACY997-4885
2	2	3	6	9-3/4	6	CY997-6497	TACY997-6497
2	2	3	8	11-3/4	8	CY997-64117	TACY997-64117



PM



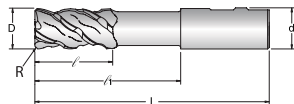
35°



### LIST CY997N (WITHOUT COOLANT HOLES)



D	d	/	/ <sub>1</sub>	L	Z	Tool No. Uncoated	Tool No. TiAlN
1/2	1/2	1	3	5	4	CY997N-1650	TACY997N-1650
1/2	1/2	1	4	6	4	CY997N-1660	TACY997N-1660
5/8	5/8	1-1/4	3	5-1/8	4	CY997N-2051	TACY997N-2051
5/8	5/8	1-1/4	4	6-1/8	4	CY997N-2061	TACY997N-2061
3/4	3/4	1-1/2	3	5-1/4	4	CY997N-2452	TACY997N-2452
3/4	3/4	1-1/2	4	6-1/4	4	CY997N-2462	TACY997N-2462
3/4	3/4	1-1/2	6	8-1/4	4	CY997N-2482	TACY997N-2482
1	1	1-1/2	3	5-1/2	6	CY997N-3255	TACY997N-3255
1	1	1-1/2	4	6-1/2	6	CY997N-3265	TACY997N-3265
1	1	1-1/2	6	8-1/2	6	CY997N-3285	TACY997N-3285
1	1	1-1/2	8	10-1/2	6	CY997N-32105	TACY997N-32105
1-1/4	1-1/4	2-1/2	4	6-1/2	6	CY997N-4065	TACY997N-4065
1-1/4	1-1/4	2-1/2	5	7-1/2	6	CY997N-4075	TACY997N-4075
1-1/4	1-1/4	2-1/2	6	8-1/2	6	CY997N-4085	TACY997N-4085
1-1/2	1-1/4	2-1/2	4	6-1/2	6	CY997N-4865	TACY997N-4865
1-1/2	1-1/4	2-1/2	6	8-1/2	6	CY997N-4885	TACY997N-4885
2	2	3	6	9-3/4	6	CY997N-6497	TACY997N-6497
2	2	3	8	11-3/4	8	CY997N-64117	TACY997N-64117



PM



35°



**PM - Super Cobalt Extended Neck**



**HIGH PERFORMANCE FOR FINISHING DEEP POCKET IN TITANIUM**

High pressure coolant holes allowing for increased chip load per tooth, increased toughness for exceptional tool life

**HAUTE PERFORMANCE POUR FINITION DE POCHE PROFONDES DU TITAN**

Trous refroidissants pour haute pression permettant d'augmenter les avances et résistance accrue pour durée de vie prolongée

**ALTO RENDIMIENTO PARA ACABADO BOLSILLOS PROFUNDO EN TITANIO**

Agujeros de lubricación para alta presión por anticipos importantes y resistencia superada por duración de vida prolongada

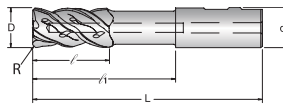
**HOCHLEISTUNGS-SCHLICHTWERKZEUG FÜR TIEFE TASCHEN IN TITAN**

Innere Kühlmittelzufuhr ermöglicht höheren Vorschub; bessere Widerstandsfähigkeit für längere Standzeiten des Werkzeuges

**LIST CY998**  
(WITH COOLANT HOLES)



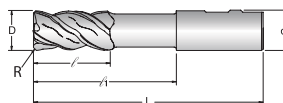
D	d	/	/ <sub>1</sub>	L	Z	Tool No. Uncoated	Tool No. TiAlN
1/2	1/2	1	3	5	4	CY998-1650	TACY998-1650
1/2	1/2	1	4	6	4	CY998-1660	TACY998-1660
5/8	5/8	1-1/4	3	5-1/8	4	CY998-2051	TACY998-2051
5/8	5/8	1-1/4	4	6-1/8	4	CY998-2061	TACY998-2061
3/4	3/4	1-1/2	3	5-1/4	4	CY998-2452	TACY998-2452
3/4	3/4	1-1/2	4	6-1/4	4	CY998-2462	TACY998-2462
3/4	3/4	1-1/2	6	8-1/4	4	CY998-2482	TACY998-2482
1	1	1-1/2	3	5-1/2	6	CY998-3255	TACY998-3255
1	1	1-1/2	4	6-1/2	6	CY998-3265	TACY998-3265
1	1	1-1/2	6	8-1/2	6	CY998-3285	TACY998-3285
1	1	1-1/2	8	10-1/2	6	CY998-32105	TACY998-32105
1-1/4	1-1/4	2-1/2	4	6-1/2	6	CY998-4065	TACY998-4065
1-1/4	1-1/4	2-1/2	5	7-1/2	6	CY998-4075	TACY998-4075
1-1/4	1-1/4	2-1/2	6	8-1/2	6	CY998-4085	TACY998-4085
1-1/2	1-1/4	2-1/2	4	6-1/2	6	CY998-4865	TACY998-4865
1-1/2	1-1/4	2-1/2	6	8-1/2	6	CY998-4885	TACY998-4885
2	2	3	6	9-3/4	6	CY998-6497	TACY998-6497
2	2	3	8	11-3/4	8	CY998-64117	TACY998-64117



**LIST CY998N**  
(WITHOUT COOLANT HOLES)



D	d	/	/ <sub>1</sub>	L	Z	Tool No. Uncoated	Tool No. TiAlN
1/2	1/2	1	3	5	4	CY998N-1650	TACY998N-1650
1/2	1/2	1	4	6	4	CY998N-1660	TACY998N-1660
5/8	5/8	1-1/4	3	5-1/8	4	CY998N-2051	TACY998N-2051
5/8	5/8	1-1/4	4	6-1/8	4	CY998N-2061	TACY998N-2061
3/4	3/4	1-1/2	3	5-1/4	4	CY998N-2452	TACY998N-2452
3/4	3/4	1-1/2	4	6-1/4	4	CY998N-2462	TACY998N-2462
3/4	3/4	1-1/2	6	8-1/4	4	CY998N-2482	TACY998N-2482
1	1	1-1/2	3	5-1/2	6	CY998N-3255	TACY998N-3255
1	1	1-1/2	4	6-1/2	6	CY998N-3265	TACY998N-3265
1	1	1-1/2	6	8-1/2	6	CY998N-3285	TACY998N-3285
1	1	1-1/2	8	10-1/2	6	CY998N-32105	TACY998N-32105
1-1/4	1-1/4	2-1/2	4	6-1/2	6	CY998N-4065	TACY998N-4065
1-1/4	1-1/4	2-1/2	5	7-1/2	6	CY998N-4075	TACY998N-4075
1-1/4	1-1/4	2-1/2	6	8-1/2	6	CY998N-4085	TACY998N-4085
1-1/2	1-1/4	2-1/2	4	6-1/2	6	CY998N-4865	TACY998N-4865
1-1/2	1-1/4	2-1/2	6	8-1/2	6	CY998N-4885	TACY998N-4885
2	2	3	6	9-3/4	6	CY998N-6497	TACY998N-6497
2	2	3	8	11-3/4	8	CY998N-64117	TACY998N-64117



# INCH SERIES

## PM - Super Cobalt

### ROUGHING END MILLS FOR TITANIUM

Optimum performance  
with maximum chip load per tooth  
High metal removal rates  
vibration free

### FRAISES POUR ÉBAUCHE DU TITAN

Performance optimale  
avec avances maximum par dent  
Enlèvement de matière accrue  
sans vibrations

### FRESAS PARA DESBASTES EN TITANIO

Óptimo rendimiento con anticipos  
máximo por diente  
Capacidad de arranque superior  
sin vibraciones

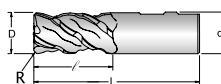
### SCHLICHTFRÄSER IN TITAN

Optimale Leistung mit maximalem  
Vorschub pro Zahn;  
höhere Spanabhebung;  
vibrationsfrei

## LIST 995



D	d	ℓ	L	Z	Tool No. Uncoated	Tool No. TiAlN
3/8	3/8	3/4	2-1/2	4	995-1208	TA995-1208
3/8	3/8	1-3/8	3-1/8	4	995-1213	TA995-1213
1/2	1/2	1-1/4	3-1/4	4	995-1612	TA995-1612
1/2	1/2	2	4	4	995-1620	TA995-1620
1/2	1/2	3	5	4	995-1630	TA995-1630
5/8	5/8	1-5/8	3-3/4	4	995-2016	TA995-2016
5/8	5/8	2-1/2	4-5/8	4	995-2025	TA995-2025
5/8	5/8	4	6-1/8	4	995-2040	TA995-2040
3/4	3/4	1-5/8	3-7/8	4	995-2416	TA995-2416
3/4	3/4	3	5-1/4	4	995-2430	TA995-2430
3/4	3/4	4	6-1/4	4	995-2440	TA995-2440
1	1	2	4-1/2	4	995-3220	TA995-3220
1	1	2	4-1/2	6	995-3220-A	TA995-3220-A
1	1	3	5-1/2	4	995-3230	TA995-3230
1	1	3	5-1/2	6	995-3230-A	TA995-3230-A
1	1	4	6-1/2	4	995-3240	TA995-3240
1	1	4	6-1/2	6	995-3240-A	TA995-3240-A
1	1	6	8-1/2	4	995-3260	TA995-3260
1	1	6	8-1/2	6	995-3260-A	TA995-3260-A
1-1/4	1-1/4	2	4-1/2	6	995-4020-A	TA995-4020-A
1-1/4	1-1/4	3	5-1/2	6	995-4030-A	TA995-4030-A
1-1/4	1-1/4	4	6-1/2	6	995-4040-A	TA995-4040-A
1-1/4	1-1/4	6	8-1/2	6	995-4060-A	TA995-4060-A
1-1/2	1-1/4	2	4-1/2	4	995-4820	TA995-4820
1-1/2	1-1/4	2	4-1/2	6	995-4820-A	TA995-4820-A
1-1/2	1-1/4	3	5-1/2	4	995-4830	TA995-4830
1-1/2	1-1/4	3	5-1/2	6	995-4830-A	TA995-4830-A
1-1/2	1-1/4	4	6-1/2	4	995-4840	TA995-4840
1-1/2	1-1/4	4	6-1/2	6	995-4840-A	TA995-4840-A
1-1/2	1-1/4	6	8-1/2	4	995-4860	TA995-4860
1-1/2	1-1/4	6	8-1/2	6	995-4860-A	TA995-4860-A
2	1-1/4	2	4-1/2	4	995-6420-40	TA995-6420-40
2	1-1/4	2	4-1/2	6	995-6420-40A	TA995-6420-40A
2	1-1/4	4	6-1/2	6	995-6440-40A	TA995-6440-40A
2	2	3	6-3/4	6	995-6430-A	TA995-6430-A
2	2	4	7-3/4	6	995-6440-A	TA995-6440-A
2	2	6	9-3/4	6	995-6460-A	TA995-6460-A
2	2	6	9-3/4	8	995-6460-B	TA995-6460-B
2	2	8	11-3/4	6	995-6480-A	TA995-6480-A
2	2	8	11-3/4	8	995-6480-B	TA995-6480-B



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et avances supérieures  
Trous refroidissants pour  
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Capacidad de arranque máximo  
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Agujeros de lubricación para alta  
presión para anticipos importantes  
y resistencia superada por  
duración de vida prolongada

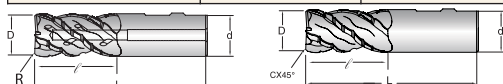
Maximalste Spanabhebung mit  
erhöhten Schnitt- und  
Vorschubgeschwindigkeiten;  
erhöhten Vorschub pro Zahn durch  
innere Kühlmittelzufuhr;  
höhere Widerstandsfähigkeit für  
längere Standzeiten des  
Werkzeuges



**LIST CY996M**  
(WITH COOLANT HOLES)

**LIST CY996MN**  
(WITHOUT COOLANT HOLES)

TOOL NO.	D	d	ℓ	L	Z	Uncoated EDP NO.	TiAlN EDP NO.
CY996M-1016	10	10	16	66	4	34500	34675
CY996M-1022	10	10	22	72	4	34505	34680
CY996M-1226	12	12	26	83	4	34510	34685
CY996M-1253	12	12	53	110	4	34515	34690
CY996M-1426	14	12	26	83	4	34520	34695
CY996M-1453	14	12	53	110	4	34525	34700
CY996M-1632	16	16	32	92	4	34530	34705
CY996M-1663	16	16	63	123	4	34535	34710
CY996M-1832	18	16	32	92	4	34540	34715
CY996M-1863	18	16	63	123	4	34545	34720
CY996M-2038	20	20	38	104	4	34550	34725
CY996M-2075	20	20	75	141	4	34555	34730
CY996M-2545	25	25	45	121	5	34560	34735
CY996M-2545-A	25	25	45	121	6	34565	34740
CY996M-2590	25	25	90	166	5	34570	34745
CY996M-2590-A	25	25	90	166	6	34575	34750
CY996M-3045	30	25	45	121	5	34580	34755
CY996M-3045-A	30	25	45	121	6	34585	34760
CY996M-3090	30	25	90	166	5	34590	34765
CY996M-3090-A	30	25	90	166	6	34595	34770
CY996M-3253	32	32	53	133	5	34600	34775
CY996M-3253-A	32	32	53	133	6	34605	34780
CY996M-3210	32	32	106	186	5	34610	34785
CY996M-3210-A	32	32	106	186	6	34515	34790
CY996M-4063-32	40	32	63	143	5	34620	34795
CY996M-4063-A	40	32	63	143	6	34625	34800
CY996M-4012-32-A	40	32	125	205	6	34630	34805
CY996M-5075-A	50	50	75	177	6	34635	34810
CY996M-5075-32-A	50	32	75	155	6	34640	34815
CY996M-5010-A	50	50	106	208	6	34645	34820
CY996M-5010-32-A	50	32	106	186	6	34650	34825
CY996M-5010-B	50	50	106	208	8	34655	34830
CY996M-5010-32-B	50	32	106	186	8	34660	34835
CY996M-5015-A	50	50	150	252	6	34665	34840
CY996M-5015-B	50	50	150	252	8	34670	34845



# METRIC SERIES

## PM - Super Cobalt Extended Neck



**HIGH PERFORMANCE FOR ROUGHING DEEP POCKETS IN TITANIUM**

Maximum metal removal in deep pockets at high feeds & speeds  
High pressure coolant holes allowing for increased chip load per tooth, increased toughness for exceptional tool life

**HAUTE PERFORMANCE POUR ÉBAUCHE DE POCHES PROFONDES DU TITAN**

Enlèvement de matière grand débit à des vitesses et avances supérieures  
Trous refroidissants pour haute pression permettant d'augmenter les avances et résistance accrue pour durée de vie prolongée

**ALTO RENDIMIENTO PARA DESBASTES BOLSILLOS PROFUNDOS EN TITANIO**

Capacidad de arranque máximo a grandes velocidades y avances superiores  
Agujeros de lubricación para alta presión por anticipos importantes y resistencia superada por duración de vida prolongada

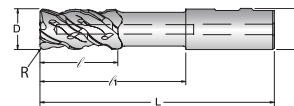
**HOCHLEISTUNGS-SCHRUPP-ERKZEUG FÜR TIEFE TASCHEN IN TITAN**

Bedeutende Spanabhebung mit erhöhten Schnitt- und Vorschubgeschwindigkeiten; innere Kühlmittelzufuhr ermöglicht höheren Vorschub; bessere Widerstandsfähigkeit für längere Standzeiten des Werkzeuges

### LIST CY997M (WITH COOLANT HOLES)



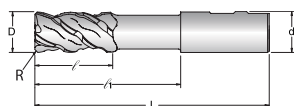
TOOL NO.	D	d	ℓ	ℓ <sub>1</sub>	L	C	Z	Uncoated EDP NO.	TiAIN EDP NO.
CY997M-12100	12	12	18	100	150	0.75	4	34860	34900
CY997M-16125	16	16	24	125	150	1.00	4	34865	34905
CY997M-20150	20	20	30	150	175	1.00	4	34870	34910
CY997M-25150	25	25	40	150	213	1.00	6	34875	34915
CY997M-32175	32	32	50	175	238	1.50	6	34880	34920
CY997M-40175	40	32	50	175	238	1.50	6	34885	34925
CY997M-50150	50	50	63	150	252	1.50	6	34890	34930
CY997M-50200	50	50	63	200	302	1.50	8	34895	34935



### LIST CY997MN (WITHOUT COOLANT HOLES)



TOOL NO.	D	d	ℓ	ℓ <sub>1</sub>	L	C	Z	Uncoated EDP NO.	TiAIN EDP NO.
CY997M-12100	12	12	18	100	150	0.75	4	34860	34900
CY997M-16125	16	16	24	125	150	1.00	4	34865	34905
CY997M-20150	20	20	30	150	175	1.00	4	34870	34910
CY997M-25150	25	25	40	150	213	1.00	6	34875	34915
CY997M-32175	32	32	50	175	238	1.50	6	34880	34920
CY997M-40175	40	32	50	175	238	1.50	6	34885	34925
CY997M-50150	50	50	63	150	252	1.50	6	34890	34930
CY997M-50200	50	50	63	200	302	1.50	8	34895	34935



**PM - Super Cobalt Extended Neck**

**HIGH PERFORMANCE FOR FINISHING DEEP POCKET IN TITANIUM**

High pressure coolant holes allowing for increased chip load per tooth, increased toughness for exceptional tool life

**HAUTE PERFORMANCE POUR FINITION DE POCHE PROFONDES DU TITAN**

Trous refroidissants pour haute pression permettant d'augmenter les avances et résistance accrue pour durée de vie prolongée

**ALTO RENDIMIENTO PARA ACABADO BOLSILLOS PROFUNDO EN TITANIO**

Agujeros de lubricación para alta presión por anticipos importantes y resistencia superada por duración de vida prolongada

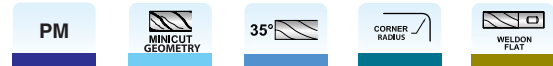
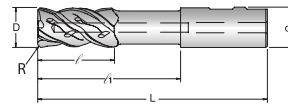
**HOCHLEISTUNGS-SCHLICHTWERKZEUG FÜR TIEFE TASCHEN IN TITAN**

Innere Kühlmittelzufuhr ermöglicht höheren Vorschub; bessere Widerstandsfähigkeit für längere Standzeiten des Werkzeuges

**LIST CY998M**  
(WITH COOLANT HOLES)



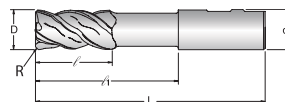
TOOL NO.	D	d	ℓ	ℓ <sub>1</sub>	L	C	Z	Uncoated EDP NO.	TiAlN EDP NO.
CY998M-12100	12	12	32	100	150	0.75	4	34940	34980
CY998M-16125	16	16	50	125	150	1.00	4	34945	34985
CY998M-20150	20	20	50	150	175	1.00	4	34950	34990
CY998M-25150	25	25	63	150	213	1.00	6	34955	34995
CY998M-32175	32	32	75	175	238	1.50	6	34960	35000
CY998M-40175	40	32	75	175	238	1.50	6	34965	35005
CY998M-50150	50	50	75	150	252	1.50	6	34970	35010
CY998M-50200	50	50	75	200	302	1.50	8	34975	35015



**LIST CY998MN**  
(WITHOUT COOLANT HOLES)



TOOL NO.	D	d	ℓ	ℓ <sub>1</sub>	L	C	Z	Uncoated EDP NO.	TiAlN EDP NO.
CY998M-12100	12	12	32	100	150	0.75	4	34940	34980
CY998M-16125	16	16	50	125	150	1.00	4	34945	34985
CY998M-20150	20	20	50	150	175	1.00	4	34950	34990
CY998M-25150	25	25	63	150	213	1.00	6	34955	34995
CY998M-32175	32	32	75	175	238	1.50	6	34960	35000
CY998M-40175	40	32	75	175	238	1.50	6	34965	35005
CY998M-50150	50	50	75	150	252	1.50	6	34970	35010
CY998M-50200	50	50	75	200	302	1.50	8	34975	35015





## PM - Super Cobalt

### ROUGHING END MILLS FOR TITANIUM

Optimum performance  
with maximum chip load per tooth  
High metal removal rates  
vibration free

### FRAISES POUR ÉBAUCHE DU TITAN

Performance optimale  
avec avances maximum par dent  
Enlèvement de matière accrue  
sans vibrations

### FRESAS PARA DESBASTES EN TITANIO

Óptimo rendimiento con anticipos  
máximo por diente  
Capacidad de arranque superior  
sin vibraciones

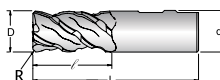
### SCHLICHTFRÄSER IN TITAN

Optimale Leistung mit maximalem  
Vorschub pro Zahn;  
höhere Spanabhebung;  
vibrationsfrei

## LIST 995M



TOOL NO.	D	d	ℓ	L	Z	Uncoated EDP NO.	TiAlN EDP NO.
995M-1016	10	10	16	66	4	38000	38175
995M-1022	10	10	22	72	4	38005	38180
995M-1226	12	12	26	83	4	38010	38185
995M-1253	12	12	53	110	4	38015	38190
995M-1426	14	12	26	83	4	38020	38195
995M-1453	14	12	53	110	4	38025	38200
995M-1632	16	16	32	92	4	38030	38205
995M-1663	16	16	63	123	4	38035	38210
995M-1832	18	16	32	92	4	38040	38215
995M-1863	18	16	63	123	4	38045	38220
995M-2038	20	20	38	104	4	38050	38225
995M-2075	20	20	75	141	4	38055	38230
995M-2545	25	25	45	121	5	38060	38235
995M-2545-A	25	25	45	121	6	38065	38240
995M-2590	25	25	90	166	5	38070	38245
995M-2590-A	25	25	90	166	6	38075	38250
995M-3045	30	25	45	121	5	38080	38255
995M-3045-A	30	25	45	121	6	38085	38260
995M-3090	30	25	90	166	5	38090	38265
995M-3090-A	30	25	90	166	6	38095	38270
995M-3253	32	32	53	133	5	38100	38275
995M-3253-A	32	32	53	133	6	38105	38280
995M-3210	32	32	106	186	5	38110	38285
995M-3210-A	32	32	106	186	6	38115	38290
995M-4063-32	40	32	63	143	5	38120	38295
995M-4063-A	40	32	63	143	6	38125	38300
995M-4012-32-A	40	32	125	205	6	38130	38305
995M-5075-A	50	50	75	177	6	38135	38310
995M-5075-32-A	50	32	75	155	6	38140	38315
995M-5010-A	50	50	106	208	6	38145	38320
995M-5010-32-A	50	32	106	186	6	38150	38325
995M-5010-B	50	50	106	208	8	38155	38330
995M-5010-32-B	50	32	106	186	8	38160	38335
995M-5015-A	50	50	150	252	6	38165	38340
995M-5015-B	50	50	150	252	8	38170	38345



COBALT

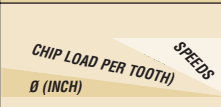


35°

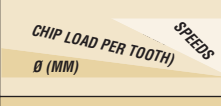


**Recommended Cutting Parameters**  
**Vitesses de coupe suggérées**  
**Velocidades y Avances Recomendados**  
**Empfohlene Schnittparameter**

**INCH SERIES**

MATERIAL	Titanium 6AL4V	Titanium 5553	Stainless Steels Inconel	Alloy Steels Tool Steels	Ductile and Malleable Cast Iron
 CHIP LOAD PER TOOTH g (INCH)	CY996 / CY996N CY997 / CY997N CY998 / CY998N 995	CY996 / CY996N CY997 / CY997N CY998 / CY998N 995	CY996 / CY996N CY997 / CY997N CY998 / CY998N 995	CY996 / CY996N CY997 / CY997N CY998 / CY998N 995	CY996 / CY996N CY997 / CY997N CY998 / CY998N 995
	55-82 SFM	32-50 SFM	55-82 SFM	55-82 SFM	60-92 SFM
3/8	0.0025	0.0015	0.0025	0.0025	0.0025
1/2	0.0030	0.0020	0.0030	0.0030	0.0030
5/8	0.0040	0.0025	0.0040	0.0040	0.0040
3/4	0.0045	0.0040	0.0045	0.0045	0.0045
1	0.0050	0.0043	0.0050	0.0050	0.0050
1-1/4	0.0050	0.0050	0.0050	0.0050	0.0055
1-1/2	0.0060	0.0050	0.0055	0.0055	0.0060
2	0.0060	0.0050	0.0060	0.0060	0.0063

**METRIC SERIES**

MATERIAL	Titanium 6AL4V	Titanium 5553	Stainless Steels Inconel	Alloy Steels Tool Steels	Ductile and Malleable Cast Iron
 CHIP LOAD PER TOOTH g (MM)	CY996M / CY996MN CY997M / CY997MN CY998M / CY998MN 995M	CY996M / CY996MN CY997M / CY997MN CY998M / CY998MN 995M	CY996M / CY996MN CY997M / CY997MN CY998M / CY998MN 995M	CY996M / CY996MN CY997M / CY997MN CY998M / CY998MN 995M	CY996M / CY996MN CY997M / CY997MN CY998M / CY998MN 995M
	17-25 M/min.	10-15 M/min.	17-25 M/min.	17-25 M/min.	18-28 M/min.
10	0.06	0.04	0.06	0.06	0.06
12	0.08	0.05	0.08	0.08	0.08
16	0.10	0.06	0.10	0.10	0.10
20	0.12	0.10	0.12	0.12	0.12
25	0.13	0.11	0.13	0.13	0.13
32	0.13	0.13	0.13	0.13	0.14
40	0.15	0.13	0.14	0.14	0.15
50	0.15	0.13	0.15	0.15	0.16

NOTE: N = WITH NO COOLANT HOLE

 THE ABOVE CUTTING FEEDS AND SPEEDS APPLY TO SHORT SERIES ONLY.  
 FOR LONG LENGTH TOOLS USE THE FOLLOWING REDUCTION FACTORS:

CUTTING LENGTH	REDUCTION FACTOR %
2 times dia.	Multiply by AS PER CHART
2.5 times dia.	Multiply by X 0.85
3 times dia.	Multiply by X 0.75
4 times dia.	Multiply by X 0.45
5 times dia.	Multiply by X 0.35
6 times dia.	Multiply by X 0.25

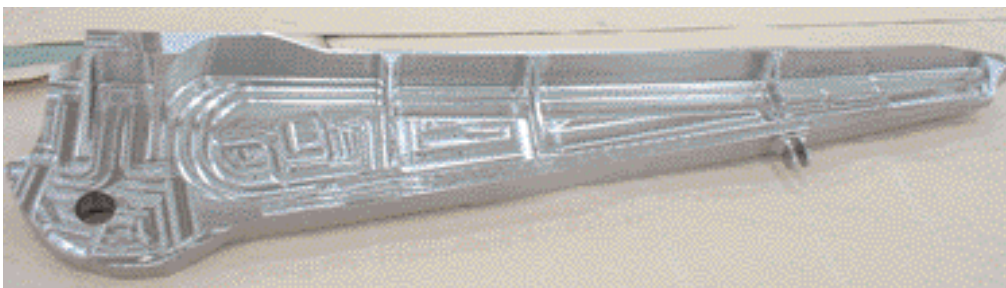
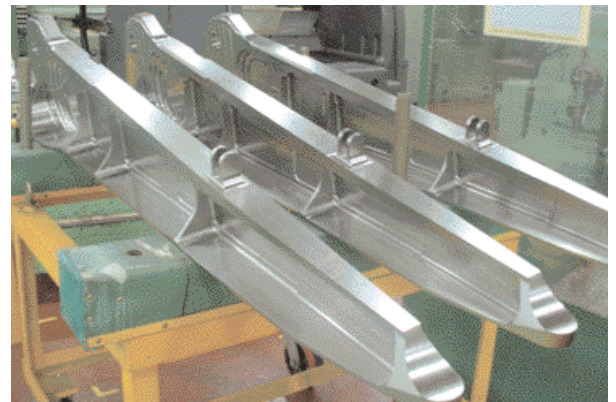
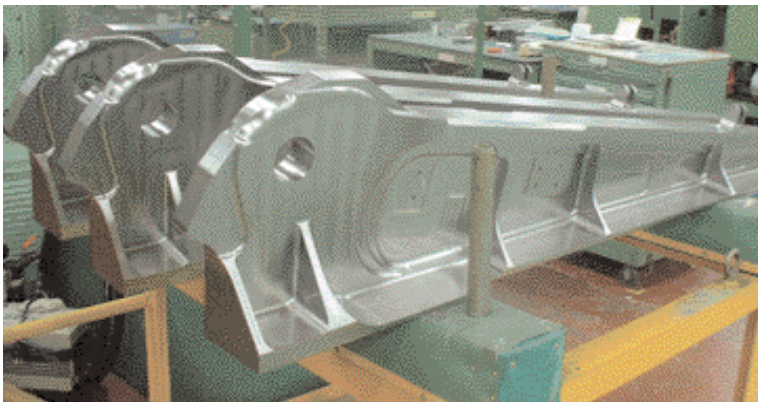
When using TiAlN coated CY996 Series with coolant holes and a High Pressure coolant system, Increase Speeds &amp; Feeds by 30%.

Cutting parameters are for rough profiling for slotting operations 1xD, reduce speeds &amp; feeds by 30%.

For long length tools, see reduction factor chart on this page.

 NOTE: 1) For aluminum reduce RPM and Feed as per above reduction factors.  
 2) For all other materials reduce Feed only, maintain same RPM.

***Titanium parts machined with patented Minicut end mills***  
***Pièces de titan usinées avec les fraises brevetées Minicut***  
***Partes de titanio trabajadas con fresas patentadas Minicut***  
***Mit patentierten Minicut Fräsern hergestellte Titanteile***





**Minicut**  
**International**

*Leader in Cutting Tool Technology*

**HEAD OFFICE AND PLANT**

11100, L.H. Lafontaine

Montréal (Québec)

Canada H1J 2Y5

Toll Free Tel.: 1 800 800-2011

Toll Free Fax.: 1 866 484-8134

Tel.: +1 514 352-6464

Fax: +1 514 352-6644

e-mail: [international@minicut.com](mailto:international@minicut.com)

**EUROPEAN SALES OFFICE AND WAREHOUSE**

International Minicut Italia s.r.l.

Via della Magliana, 525/E 00148 Roma, Italy

Tel.: + 39 06 51963476

Fax: + 39 06 51960350

e-mail: [int.minicutitalia@minicut.com](mailto:int.minicutitalia@minicut.com)

**U.S.A. SALES OFFICE AND WAREHOUSE**

15931, Chemical Lane, Unit B

Huntington Beach, Ca. 92649

Toll Free Tel.: 1 800 800-2011

Toll Free Fax.: 1 866 484-8134

e-mail: [international@minicut.com](mailto:international@minicut.com)

**[www.minicut.com](http://www.minicut.com)**