



Cutter Style:
1TW7, 1TW8

Insert Series
NBEU1603R
NBEU1904R
NBEU25T4R

Grades:
IN2035
IN2504
IN2505
IN2530
IN4005
IN4030

Applications:
Die & Mold
Aerospace
General Purpose



Roughing & Semi-Finishing Ball Nose

Features and Benefits:

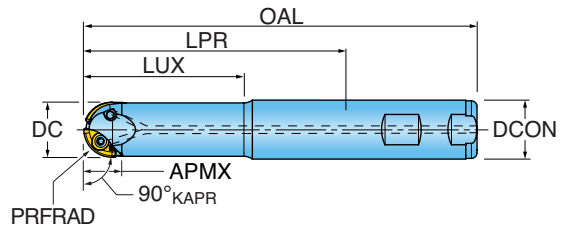
- Aggressive, strong insert design
- Exceptional cutting edge strength
- Highly stable cutting performance
- High helix cutting edge for smooth milling
- Designed for semi-rough and roughing applications
- Unique double-sided Insert with 2 cutting edges provides economy
- One insert is used for both central and peripheral pockets
- Coolant through cutter bodies



**PRODUCT
ANNOUNCEMENT
UPDATE
2019**

SERIES 1TW7, 1TW8 - WELDON

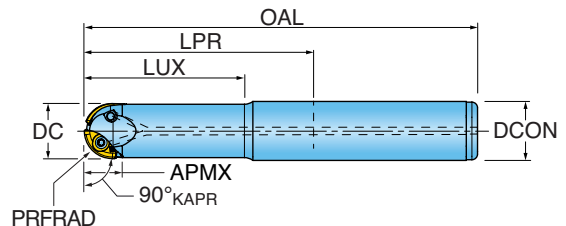
Ball Nose End Mill, 2-Flute, Steel Shank



Part Number	DC Cutting Dia.	APMX Depth of Cut Max.	LPR Protruding Length	LUX Usable Length Max.	OAL Overall Length	ZEFF Effective Cutting Edges	PRFRAD Profile Radius	DCON Shank Dia.
1TW7Q-0601379R01	0.625	0.47	2.84	1.38	4.75	2	0.312	Weldon .625"
1TW7J-0702084R01	0.750	0.51	2.00	1.89	4.00	2	0.375	Weldon .750"
1TW7J-0702084R02	0.750	0.51	4.00	1.89	6.00	2	0.375	Weldon .750"
1TW8J-0701580R01	0.750	0.51	3.75	1.53	6.00	2	0.375	Weldon 1.000"
1TW8J-0701580R02	0.750	0.51	4.75	1.53	7.00	2	0.375	Weldon 1.000"
1TW7K-1002780R01	1.000	0.68	2.75	2.36	5.00	2	0.500	Weldon 1.000"
1TW7K-1002780R02	1.000	0.68	3.75	3.36	6.00	2	0.500	Weldon 1.000"
1TW8K-1001981R01	1.000	0.68	3.75	2.36	6.00	2	0.500	Weldon 1.250"
1TW8K-1001981R02	1.000	0.68	4.75	2.36	7.00	2	0.500	Weldon 1.250"

SERIES 1TW7, 1TW8 - CYLINDRICAL

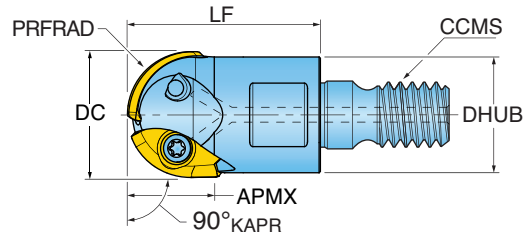
Ball Nose End Mill, 2-Flute, Steel Shank



Part Number	DC Cutting Dia.	APMX Depth of Cut Max.	LPR Protruding Length	LUX Usable Length Max.	OAL Overall Length	ZEFF Effective Cutting Edges	PRFRAD Profile Radius	DCON Shank Dia.
1TW8Q-06013S7R01	0.625	0.47	1.38	1.00	5.00	2	0.312	Cylindrical .750"
1TW8Q-06013S7R02	0.625	0.47	1.38	1.00	6.00	2	0.312	Cylindrical .750"

SERIES 1TW7 - TOP•ON STYLE

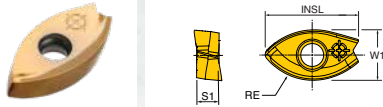
Ball Nose End Mill, 2-Flute



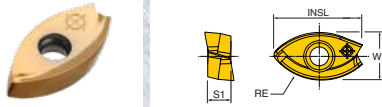
Part Number	DC Cutting Dia.	APMX Depth of Cut Max.	LF Functional Length	DHUB Hub Dia.	ZEFF Effective Cutting Edges	PRFRAD Profile Radius	CCMS Connection Code Machine Side
1TW7Q-06012X5R01	0.625	0.470	1.00	0.51	2	0.312	TopOn M08
1TW7J-07014X6R01	0.750	0.510	1.18	0.71	2	0.375	TopOn M10
1TW7K-10017X7R01	1.000	0.680	1.38	0.83	2	0.500	TopOn M12

INSERTS

NBEU1603R



NBEU1904R



NBEU25T4R



Part Number	Application	RE Profile Radius	INSL Insert Length	W1 Insert Width	S1 Thickness	IH Insert Hand	Grade					
							IN2035	IN2504	IN2505	IN2530	IN4005	IN4030
NBEU1603R	Center Cutting	0.312	0.489	0.269	0.118	Right	•	•	•	•	•	•
NBEU1904R	Center Cutting	0.375	0.578	0.307	0.146	Right	•	•	•	•	•	•
NBEU25T4R	Center Cutting	0.500	0.745	0.397	0.177	Right	•	•	•	•	•	•



* Please check both insert and pocket for correct positioning. Insert marked must be clamped in pocket marked on the cutter.

* One insert is used for both central and peripheral pockets

OPERATING GUIDELINES

Pro-Duo - Series 1TW7, 1TW8											
Material		Brinnell Hardness	SFM	Feed per Insert	IN2035	IN2504	IN2505	IN2530	IN4005	IN4030	Coolant
Cast Iron	Gray	-	785 - 1250	.006 - .035		3	2		1		No
	Nodular		590 - 920	.004 - .030							
Steel	Low Carbon 1018, 8620	85 - 175	650 - 1150	.004 - .035		3	2		1		No
	High Carbon F-6180	175 - 225	590 - 1050	.004 - .025							
	Alloyed Steel 4140	275 - 325	390 - 820	.002 - .030							
	Tool Steel P20 - H13	200 - 250	330 - 650	.002 - .025							
	Hardened Steel, HRC 50-65	495 - 712	300 - 600	.003 - .025							
Stainless Steel	300 Series, 304, 316	-	400 - 900	.002 - .030	1			3	4	2	No
	400 Series 15-5 PH, 17-4 PH	-	650 - 985	.002 - .030							Yes
	13-8 PH	-	200 - 400	.002 - .020							
Nickel Alloys	Inconel 600, 706, 718, 903, Hastelloy	-	65 - 265	.002 - .020	1			3		2	Yes
Titanium	6AL-4V	-	130 - 360	.002 - .030	1			3		2	Yes

Note: Feed and speed recommendations are starting operating parameters. They are only guidelines from which further optimization should take place. Operating parameters are influenced by many machining variables. These variables may cause for reductions in feeds and speed or dramatic increases. Additionally, DOC and WOC may need to be revised to optimize the tools performance.

HARDWARE



Insert Screw



Driver



Torx Driver

	Insert Screw	Driver	Torx Driver
1TW7Q-0601379R01	SM25-064-00	DS-T08S	-
1TW7J-0702084R01	SM30-072-00	-	DS-T09W
1TW7J-0702084R02	SM30-072-00	-	DS-T09W
1TW8J-0701580R01	SM30-072-00	-	DS-T09W
1TW8J-0701580R02	SM30-072-00	-	DS-T09W
1TW7K-1002780R01	SM35-087-70	-	DS-T15T
1TW7K-1002780R02	SM35-087-70	-	DS-T15T
1TW8K-1001981R01	SM35-087-70	-	DS-T15T
1TW8K-1001981R02	SM35-087-70	-	DS-T15T
1TW8Q-0601357R01	SM25-064-00	DS-T08S	-
1TW8Q-0601357R02	SM25-064-00	DS-T08S	-
1TW7Q-06012X5R01	SM25-064-00	DS-T08S	-
1TW7J-07014X6R01	SM30-072-00	DS-T09W	-
1TW7K-10017X7R01	SM30-072-00	DS-T09W	-